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Traffic and Transportation Technical Report

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TRAFFIC & TRANSPORTATION TECHNICAL REPORT

Martinsville Southern Connector Study Route 220 Environmental Impact Statement

Federal Project Number STP-044-2(059)
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List of Acronyms

| | |
|---------|--|
| %RMSE | Percent Root Mean Square Error |
| AADT | Average Annual Daily Traffic |
| CFR | Code of Federal Regulations |
| EIS | Environmental Impact Statement |
| EO | Executive Order |
| EPA | Environmental Protection Agency |
| FHWA | Federal Highway Administration |
| FY | Fiscal Year |
| HCM | Highway Capacity Manual |
| LOS | Level of Service |
| MPH | Miles Per Hour |
| NEPA | National Environmental Policy Act of 1969 |
| OD | Origin and Destination |
| ODME | Origin-Destination Matrix Estimation |
| OFD | One Federal Decision |
| SEC/VEH | Vehicle Per Second |
| TAZ | Traffic Analysis Zone |
| TOSAM | Traffic Operations and Safety Analysis Manual, Version 1.1 |
| USACE | U.S. Army Corps of Engineers |
| VDOT | Virginia Department of Transportation |
| VMT | Vehicle Miles Traveled |
| VSTM | Virginia Statewide Travel Demand Model, Version 1.0 |

1. INTRODUCTION

The Virginia Department of Transportation (VDOT), in coordination with the Federal Highway Administration (FHWA) as the Federal Lead Agency and in cooperation with the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA), have prepared a Draft Environmental Impact Statement (EIS) for the Martinsville Southern Connector Study – Route 220 EIS (Martinsville Southern Connector Study). This study evaluates potential transportation improvements along the U.S. Route 220 (Route 220) corridor between the North Carolina state line and U.S. Route 58 (Route 58) in Henry County near the City of Martinsville (Martinsville), Virginia.

The Draft EIS and supporting technical documentation have been prepared pursuant to the National Environmental Policy Act of 1969 (NEPA), codified in 42 United States Code §4321-4347, as amended, and in accordance with FHWA regulations, found in 23 Code of Federal Regulations (CFR) §771. As part of the Draft EIS, the environmental review process has been carried out following the conditions and understanding of the *NEPA and Clean Water Act (Section 404) Merged Process for Highway Projects in Virginia* (merged process)¹. The Martinsville Southern Connector Study also follows the One Federal Decision (OFD) process, which was enacted by Executive Order 13807: *Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects* (82 FR 163)².

The study area for the Martinsville Southern Connector Study is located south of Martinsville in Henry County, Virginia (see **Figure 1-1**). Positioned on the southern border of Virginia, the study area is located approximately 60 miles southeast of the City of Roanoke via Route 220, 30 miles west of the City of Danville via Route 58, and 40 miles north of the City of Greensboro in North Carolina via Interstate 73 and Route 220.

The study area encompasses approximately seven miles of the Route 220 corridor, between the interchange of Route 220 with the William F. Stone Highway and the North Carolina state line. Within the study area, existing Route 220 consists of a four-lane roadway, with two travel lanes in each direction. The William F. Stone Highway is signed as Route 58 to the east of its interchange with Route 220; west of the interchange, Route 220 is collocated with Route 58, as both bypass Martinsville. For the purposes of consistency in this study, portions of the William F. Stone Highway east and west of the Route 220 interchange are herein referred to as Route 58. The study area also includes the interchange of Route 58 at Route 641 (Joseph Martin Highway), approximately 1.25 miles west of Route 220. Additionally, the study area encompasses the Town of Ridgeway (Ridgeway), where Route 220 connects with Route 87 (Morehead Avenue), approximately three miles south of Route 58. The study area boundary for the Martinsville Southern Connector Study has been developed to assist with data collection efforts and the evaluation of the alternatives retained for evaluation.

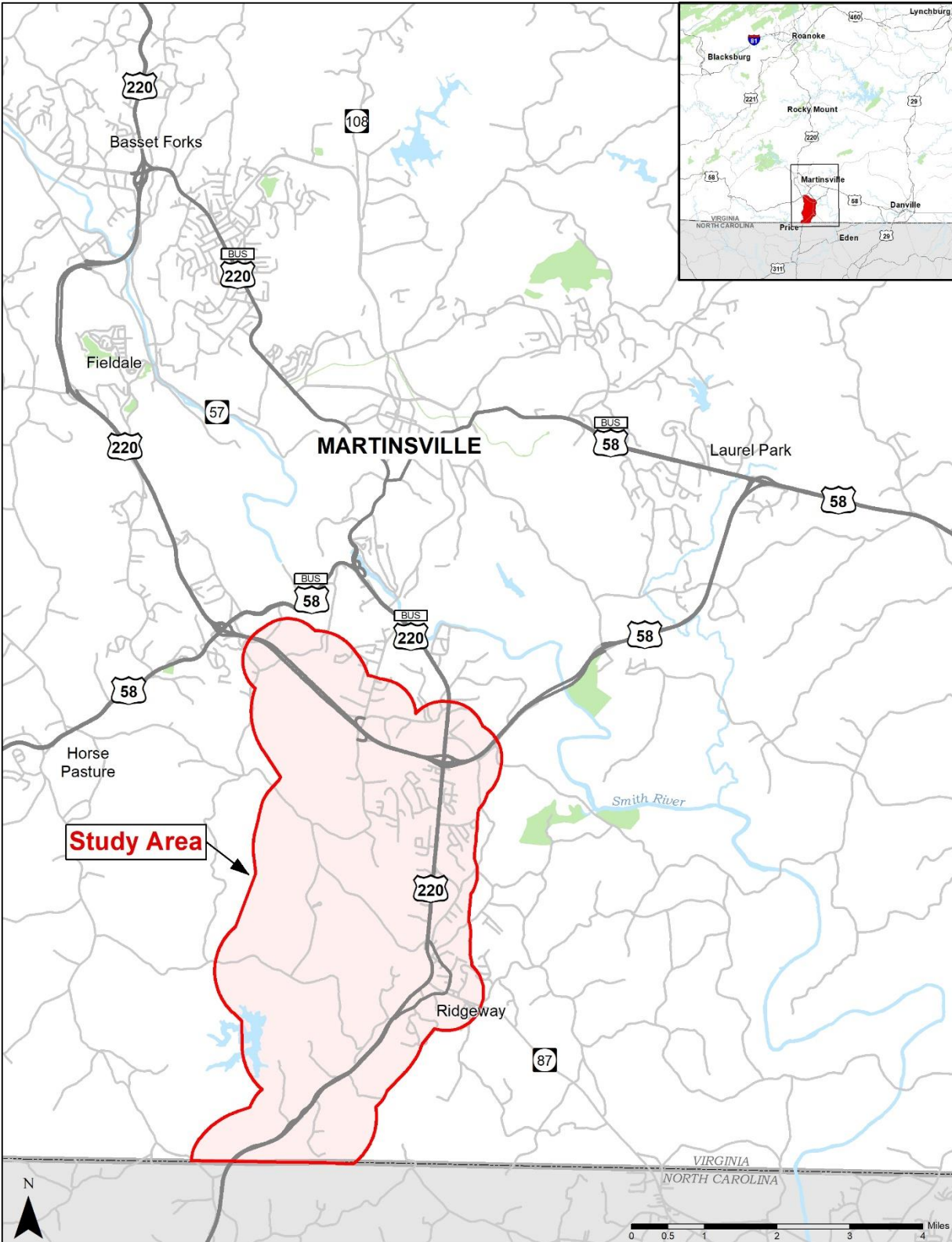
¹Established under a memorandum of understanding between VDOT, FHWA, USACE, EPA, and the U.S. Fish and Wildlife Service (USFWS), the merged process establishes a procedure for coordinated environmental review and development of documentation in Virginia that complies with the requirements of NEPA and provides sufficient information to support Federal regulatory decision-making, including FHWA approval or permits issued by other Federal agencies.

²The Martinsville Southern Connector Study is following the OFD process, subsequent to receiving OFD designation by FHWA. OFD requires that major infrastructure projects have a single permitting timetable for synchronized environmental reviews and authorizations: www.permits.performance.gov/permitting-projects/us-route-58220-bypass-north-carolina-state-line-limited-access-study.

Martinsville Southern Connector Study

Route 220 Environmental Impact Statement

Figure 1-1: Study Area



The study area boundary for the Martinsville Southern Connector Study has been developed to assist with data collection efforts and the evaluation of the alternatives retained for evaluation. The study area covers 12,873 acres and generally encompasses a one-half-mile buffer around the portion of existing Route 220, between the North Carolina state line and Route 58, and each alternative carried forward for evaluation. The study area was used in various instances during preliminary research and to establish an understanding of the potentially affected natural, cultural, and social resources that may be impacted by the improvements evaluated in the Draft EIS.

Within the study area, Route 220 consists of three distinct segments identified as Segment A, Segment B, and Segment C (see **Figure 1-2**). Each segment has unique traffic and roadway characteristics, which are relevant to the **Traffic and Transportation Technical Report** supporting the Martinsville Southern Connector Study. The three segments that comprise Route 220 are described below from south to north.

Segment A – North Carolina Line to Ridgeway

Segment A includes the southern section of Route 220 from the North Carolina state line to north of the Route 688 (Lee Ford Camp Road)/Church Street intersection, south of Ridgeway. There are no traffic signals through this section; however, there are eight intersecting streets, eight median crossovers, and 44 driveways that connect to the roadway. The posted speed limit is 55 miles per hour (mph). The northernmost intersection in this segment is Lee Ford Camp Road/Church Street, with Church Street providing direct access to Ridgeway. The Norfolk Southern railroad runs parallel to Route 220 on the west side through this segment.

Segment B – Area Near Ridgeway

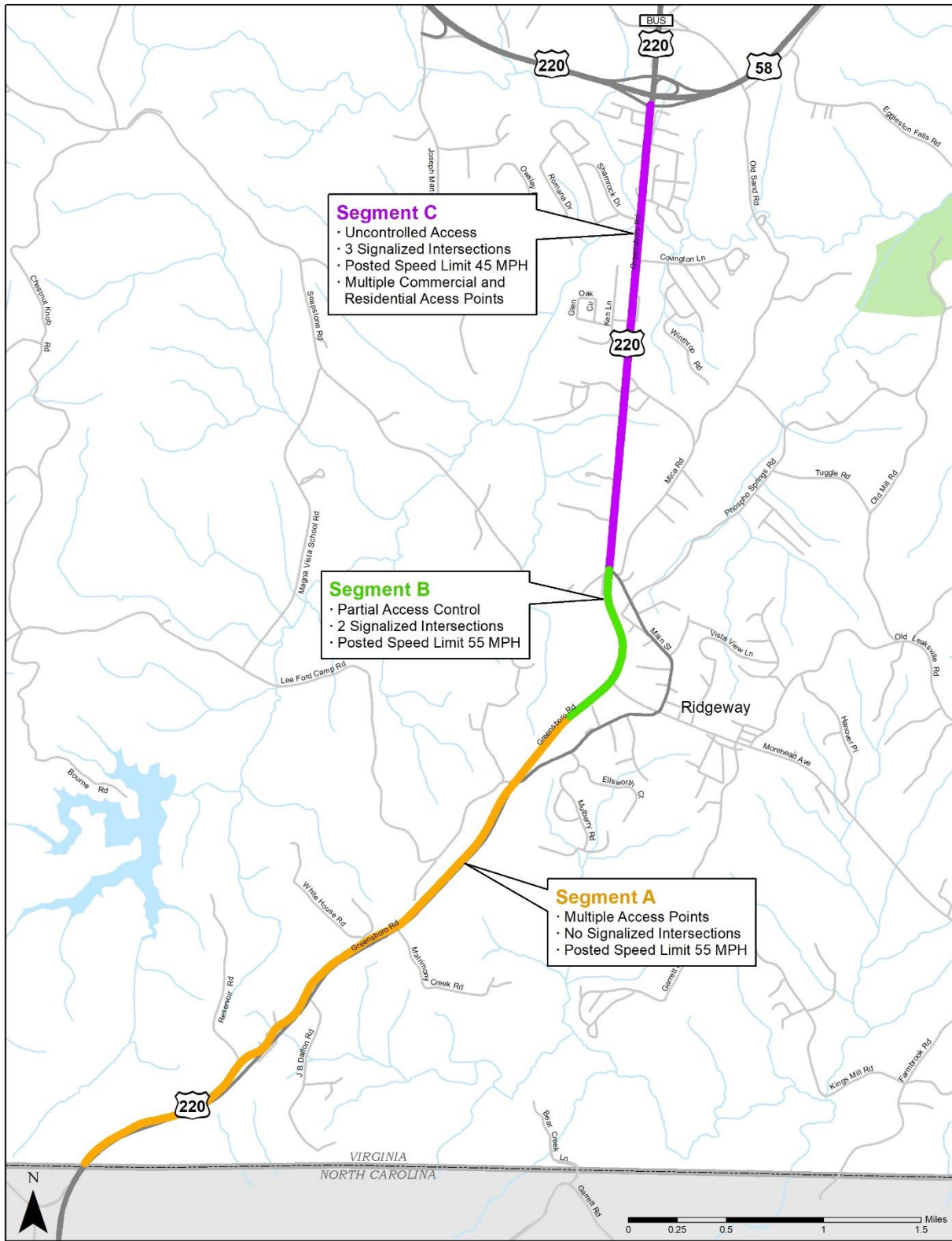
Segment B covers the center of Route 220 in the study area, extending from north of Church Street to north of the Main Street/Soapstone Road intersection near Ridgeway. The only access points to and from Route 220 are at signalized intersections with Route 87 (Morehead Avenue) and Main Street/Soapstone Road, and the posted speed limit is 55 mph. The signal at Morehead Avenue is the first traffic signal that northbound drivers traveling on existing Route 220 encounter for 28 miles, as all the major crossroads in North Carolina to Interstate 73 in Greensboro have been replaced with interchanges. North of Morehead Avenue, the Norfolk Southern railroad crosses under Route 220 and continues on the east side of Route 220 through the northern part of the study area.

Segment C – Ridgeway to Route 58

Segment C includes the northern segment of Route 220, extending from north of Main Street/Soapstone Road, just north of Ridgeway, to the interchange with Route 58. This section of Route 220 has a posted speed limit of 45 mph and includes three signalized intersections, nine intersecting side streets, two entrances to the Drewry Mason Elementary School, as well as 55 commercial and residential driveways. Two of the signalized intersections are the on- and off-ramps at the interchange with Route 58 and the other is at Water Plant Road/Mica Road. Access is provided to Route 220 at nine unsignalized side street intersections. The properties in Segment C often have multiple entrances from the roadway and, in some cases, the entire frontage of the property along Route 220 is one large driveway entrance.

The purpose of this **Traffic and Transportation Technical Report** is to provide relevant traffic data and analyses related to the Draft EIS for the Martinsville Southern Connector Study. This report compiles all relevant traffic data collected and developed for existing conditions, as well as future No-Build and future Build Alternatives evaluations.

Figure 1-2: Existing Route 220 Study Intersection and Segment Map



1.1 PURPOSE AND NEED

Working with FHWA and the Cooperating and Participating Agencies, the Purpose and Need for the study was concurred upon in November 2018. The purpose of the Martinsville Southern Connector Study is to enhance mobility for both local and regional traffic traveling along Route 220 between the North Carolina state line and Route 58 near the City of Martinsville, Virginia.

The Martinsville Southern Connector Study addresses the following needs:

- **Accommodate Regional Traffic** – current inconsistencies in access, travel speeds, and corridor composition along Route 220 inhibits mobility and creates unsafe conditions considering the high volume of truck and personal vehicle traffic traveling through the corridor to origins and destinations north and south of the study area;
- **Accommodate Local Traffic** – numerous, uncontrolled access configurations along Route 220, combined with high through traffic movement create traffic delays and contribute to high crash rates for travelers within the corridor accessing residences, commercial buildings, and schools; and
- **Address Geometric Deficiencies and Inconsistencies** – current geometric conditions along Route 220, such as lane widths, horizontal curves, and stopping sight distances, are below current design standards and vary along the length of the corridor, resulting in safety concerns for all users.

1.2 ALTERNATIVES CARRIED FORWARD FOR EVALUATION

1.2.1 Alternatives Retained

VDOT, in coordination with FHWA, the Cooperating and Participating Agencies, and the general public, initially considered a broad range of alignment options to address the established Purpose and Need of the Martinsville Southern Connector Study. A number of these alignment options were not carried forward based on their inability to meet the Purpose and Need. Other alignment options were developed into alternatives for evaluation, but were not retained based on anticipated impacts to private property. As part of the public involvement process during the development of the Draft EIS, additional alternatives were suggested for evaluation. These options were similar to the alignment options initially considered and were not carried forward for evaluation based on their inability to address the identified Purpose and Need for the study.

The alternatives carried forward for evaluation and retained for detailed study in the Draft EIS are listed below:

- No-Build Alternative;
- Alternative A – New access-controlled alignment west of existing Route 220 with a new interchange with Route 58 to the west of Route 641 (Joseph Martin Highway) and reconstruction of the existing Route 220 alignment for approximately 0.5 miles from the North Carolina state line;
- Alternative B – New access-controlled alignment west of existing Route 220 and west of Magna Vista High School with reconstruction of the Joseph Martin Highway interchange at Route 58 and reconstruction of the existing Route 220 alignment for approximately 0.5 miles from the North Carolina state line; and
- Alternative C – New access-controlled alignment west of existing Route 220 and east of Magna Vista High School with reconstruction of the Joseph Martin Highway interchange at Route 58 and reconstruction of the existing Route 220 alignment for approximately 0.5 miles from the North Carolina state line.

These alternatives are described in the sections that follow. Additional information is included in the Draft EIS and supporting **Alternatives Analysis Technical Report** (VDOT, 2020a), including the process used to identify and screen alignment options, alternatives carried forward, and alternatives retained for detailed study.

Based on the detailed study of the alternatives retained for evaluation, Alternative C has been identified in the Draft EIS as the Preferred Alternative.

1.2.1.1 No-Build Alternative

In accordance with the regulations for implementing NEPA [40 CFR §1502.14(d)], the No-Build Alternative has been included for evaluation as a basis for the comparison of future conditions and impacts. The No-Build Alternative would retain the Route 220 roadway and associated intersections and interchanges in their present configuration, allowing for routine maintenance and safety upgrades.

This alternative assumes no major improvements within the study area, except for previously committed projects that are currently programmed and funded in VDOT's *Six Year Improvement Plan for Fiscal Year (FY) 2020-2025* (VDOT, 2019) and Henry County's *Budget for FY 2019-2020* (Henry County, 2019). As these other projects are independent of the evaluated alternatives, they are not evaluated as part of the Draft EIS and supporting documentation.

1.2.1.2 Alternative A

Alternative A would consist of a new roadway alignment that is primarily to the west of existing Route 220. Under Alternative A, access would be controlled and provided at three new interchanges. It is assumed that interchanges would be provided at both ends of the facility and one would be located along the corridor. For the purposes of the analyses in the Draft EIS and supporting documentation, it is assumed this third interchange would occur at Route 687 (Soapstone Road). The reconstructed portion of Route 220, along with the new alignment, would incorporate full access control.

Beginning at the North Carolina state line, Alternative A would reconstruct Route 220 for approximately one mile, where it would shift eastward on a new alignment before turning to the north to cross over the Norfolk Southern railroad. The wide curve in this location would allow for an adequate turning radius to meet design standards for the arterial facility with a 60 mph design speed and minimize potential impacts to residents in the vicinity of J.B. Dalton Road. A new interchange to access a realigned existing Route 220 would be constructed near Route 689 (Reservoir Road) and Route 971 (J.B. Dalton Road). After crossing the railroad, the new alignment would parallel White House Road along its south side and then shift to the northwest crossing Patterson Branch. The alignment would then shift to the north, following a small ridge between Patterson Branch and a tributary to Marrowbone Creek, before crossing Marrowbone Creek east of Marrowbone Dam. The alignment would continue north and to the west of a large farm/open field, crossing tributaries of Marrowbone Creek. The alignment would shift eastward and cross over Route 688 (Lee Ford Camp Road), Stillhouse Run, and a floodplain. After crossing Stillhouse Run, the alignment would shift northward and continue for approximately one mile. The alignment would then continue north reaching Soapstone Road, where a new interchange would be provided, west of the intersection with Joseph Martin Highway. An interchange with Alternative A is proposed at Soapstone Road. The alignment would then turn to the northeast to cross three minor tributaries to Marrowbone Creek. The alignment continues in a northerly direction with a new interchange at Route 58, west of the interchange at Joseph Martin Highway.

1.2.1.3 Alternative B

Alternative B would consist of a new roadway alignment that is primarily to the west of existing Route 220. Under Alternative B, access would be controlled and provided at two new interchanges and a modified interchange at Route 58 and the Joseph Martin Highway. For the purpose of this study, it is assumed that new interchanges would be provided at the southern end of the facility and at Soapstone Road. If this alternative were to advance to a phase of more detailed design, the final interchange locations and configurations would be refined. The reconstructed portion of Route 220, along with the new alignment, would incorporate access control.

Beginning at the North Carolina state line, Alternative B would reconstruct Route 220 for approximately one mile, where it would shift eastward before turning to the north to cross over the Norfolk Southern railroad. The wide horizontal curve in this location would allow for an adequate turning radius to meet design standards for the arterial facility with a 60 mph design speed, as well as minimize potential impacts to residents in the vicinity of J.B. Dalton Road. A new interchange to access a realigned existing Route 220 would be constructed near Reservoir Road and J.B. Dalton Road. After crossing the railroad, the new alignment would parallel White House Road along its south side and then shift to the northwest prior to crossing Patterson Branch. The alignment would then gradually shift from the northwest to the northeast and cross three tributaries to Marrowbone Creek. The alignment would continue in a northeasterly direction over Lee Ford Camp Road, where it would pass to the east of the Marrowbone Plantation, shifting northwest to cross Marrowbone Creek. After crossing Marrowbone Creek, Alternative B would continue to the northwest, crossing Magna Vista School Road south of Magna Vista High School, then paralleling Magna Vista School Road west of the high school up to a new interchange with Soapstone Road. The new interchange at Soapstone Road would require the relocation of a portion of Magna Vista School Road. From the Soapstone Road interchange, the alignment would continue to the northeast and cross two minor tributaries before shifting to the north. The alignment would then shift to the northeast to cross Little Marrowbone Creek and tie in with Joseph Martin Highway at its interchange with Route 58, requiring modifications to the existing interchange configuration to provide a more direct connection between Route 58 and the new roadway. The reconstructed portion of Route 220 at the southern end, along with the new alignment, would be an access-controlled facility.

1.2.1.4 Alternative C (Preferred Alternative)

Alternative C would consist of a new roadway alignment that is primarily to the west of existing Route 220. Alternative C was developed as a modification of the initially considered Alignment Option 4C based on agency comments, with the primary changes occurring north of Soapstone Road. Alignment Option 4C originally included an interchange between Joseph Martin Highway and Route 220; however, adequate spacing could not be provided to accommodate all movements. Therefore, the alignment was shifted to tie in at the location of the existing Joseph Martin Highway interchange. Under Alternative C, access would be controlled and provided at two new interchanges and a modified interchange at Route 220/Route 58 and Joseph Martin Highway. For the purposes of the analyses in the Draft EIS, it is assumed that new interchanges would be provided at the southern end of the facility and at Soapstone Road. If this alternative were to advance to a phase of more detailed design, the final interchange locations and configuration would be refined. The reconstructed portion of Route 220, along with the new alignment, would incorporate access control.

Beginning at the North Carolina state line, Alternative C would reconstruct Route 220 for approximately one mile, where it would shift eastward on a new alignment before turning to the north to cross over the Norfolk Southern railroad. The wide curve in this location would allow for an adequate turning radius to meet design standards for the arterial facility with a 60 mph design speed, and minimize potential impacts to residents in the vicinity of J.B. Dalton Road. A new interchange to access a realigned existing Route 220 would be constructed near Reservoir Road and J.B. Dalton Road. After crossing the railroad, the new alignment would continue northward for approximately 1.5 miles, crossing White House Road and a tributary to Marrowbone Creek. The alignment would then shift to the northeast to cross Lee Ford Camp Road. Alternative C would then shift northward and continue east of Magna Vista High School and Marrowbone Creek and parallel the Pace Airport to the east. After passing Pace airport, the alignment would shift to the northeast and cross Soapstone Road to the east of Marrowbone Creek. A new interchange with Alternative C would be constructed at Soapstone Road. North of Soapstone Road, the alignment would shift west and cross Joseph Martin Highway. The alignment would continue to the northwest and cross two tributaries before shifting to the north. The alignment would then shift to the northeast to cross Little Marrowbone Creek and tie in with Joseph Martin Highway at the existing interchange location with Route 58. This would require modifications to the existing interchange to provide a more direct connection between Route 58 and the new roadway.

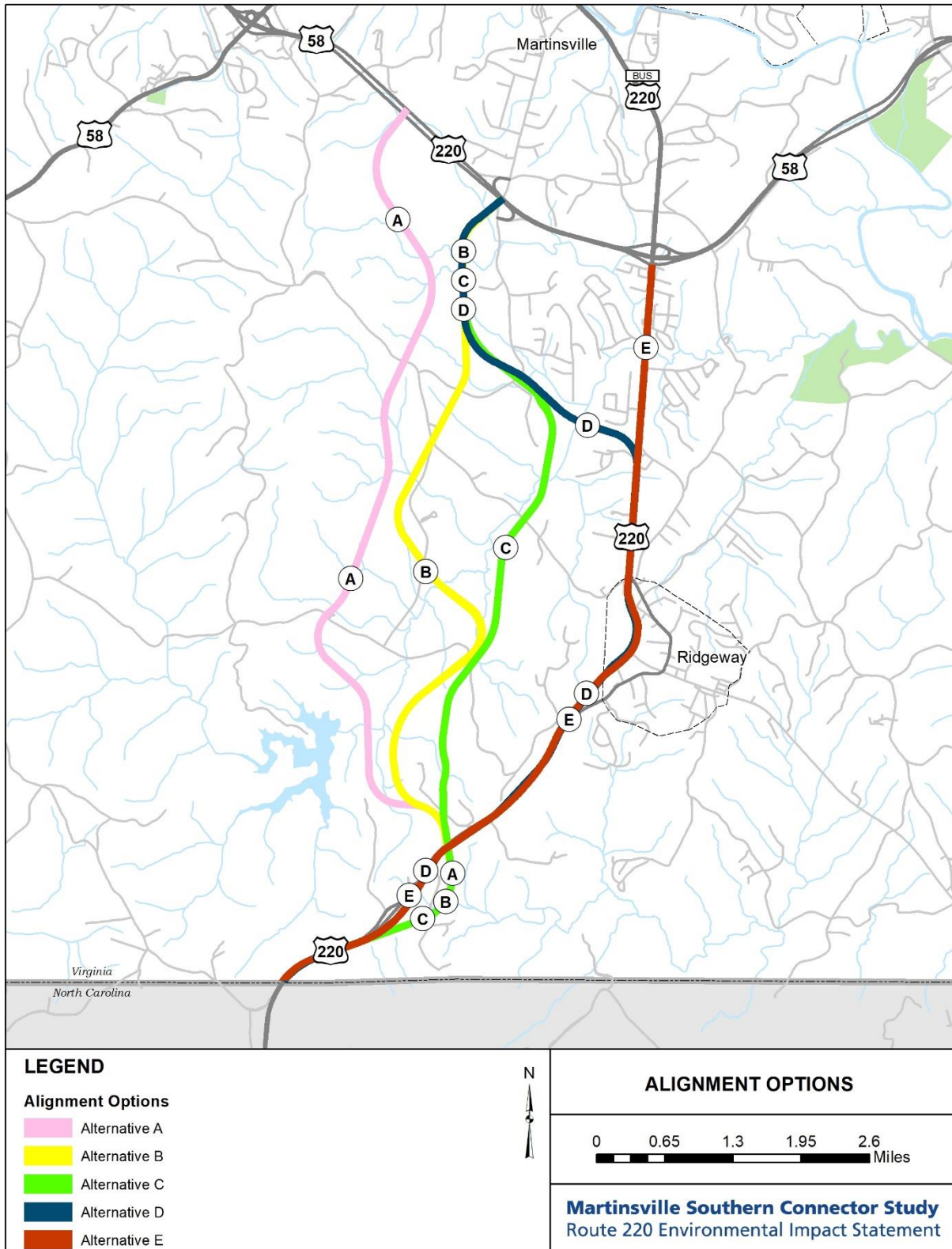
1.2.2 Alternatives Not Retained

As part of the alternatives development process for the Draft EIS, the following alternatives were carried forward for evaluation, but have not been retained for detailed study in the Draft EIS, based on their anticipated impacts to private properties. However, these alternatives were evaluated to a sufficient level of detail to eliminate them from further consideration and detailed study in the Draft EIS. In order to inform the alternatives development process for the Draft EIS, these alternatives have been included as part of the analysis included in this ***Traffic and Transportation Technical Report*** and are summarized in the sections that follow.

- Alternative D – Reconstruct Route 220 as an access-controlled roadway, with a spur on new alignment north of Ridgeway and reconstruct the Joseph Martin interchange at Route 58; and
- Alternative E – Reconstruct Route 220 as an access-controlled roadway, consolidating access to interchanges at select locations.

These alternatives, as well as those previously described that have been retained for detailed analysis in the Draft EIS, are illustrated on **Figure 1-3**.

Figure 1-3: Route 220 Alternative Alignment Map



1.2.2.1 Alternative D

Alternative D would consist of reconstructing existing Route 220 as an access-controlled roadway for approximately 5.6 miles from the North Carolina state line where it would then divert to the west on a new access-controlled roadway just north of Water Plant Road. Under Alternative D, access would be controlled and provided at three new interchanges and a modified interchange at Route 58 and the Joseph Martin Highway. South of Water Plant Road, access to the new roadway would be made via frontage roads and new interchanges near Reservoir Road and at Morehead Avenue. A new structure providing access to Route 220 would be located at Lee Ford Camp Road/Church Street. At Water Plant Road an interchange is suggested where the new roadway branches from Route 220 to provide direct access between the new roadway and Route 220 to the north. From this interchange, the new alignment would proceed northwest, crossing Marrowbone Creek and then parallels a tributary of Marrowbone Creek to beyond Joseph Martin Highway. The alignment then shifts northward and follows the same alignments as Alternatives B and C just north of the Radial warehouse site to the tie-in location with Route 58. Modifications to the existing interchange at Route 58 and Joseph Martin Highway would be required with this alternative. The reconstructed portion of Route 220, along with the new alignment, would incorporate access control.

1.2.2.2 Alternative E

Alternative E would consist of fully reconstructing existing Route 220 as an access-controlled roadway between the North Carolina state line and Route 58, removing all direct connections of existing driveways and side streets to Route 220.

Under Alternative E, access would be controlled and provided only at interchanges at various locations in the corridor. Existing residential and commercial driveways would be directed to frontage roads that parallel the roadway, ultimately connecting to Route 220 at interchanges. New interchanges to provide frontage road access to Route 220 are located at Reservoir Road and at Morehead Avenue. Structures over or under the new Route 220 roadway are included at Lee Ford Camp Road/Church Street and Soapstone Road/Main Street to provide east-west connectivity. The Route 220 interchange at Route 58 would be modified to provide direct access between the new roadway, Route 58, and Business Route 220 to the north.

2. DATA COLLECTION

2.1 TRAFFIC COUNTS

Machine counts were collected over 48 hours at two locations in the study area that included volume, vehicle classification and speed data. This data was collected along Route 220 just north of the North Carolina state line and along Route 58 just west of Route 220. **Table 2-1** provides a summary of the volume data.

Table 2-1: Machine Count Daily Volume Summary

| Location | | Total Volume (Auto + Truck) | Truck Volume | |
|---|--------|--------------------------------|--------------|---------|
| | | | 2-Axle | 3+ Axle |
| Route 220 North of North Carolina Border | | | | |
| Northbound | Lane 1 | 1278 | 22 | 119 |
| | | 1363 | 27 | 105 |
| | Lane 2 | 4319 | 104 | 987 |
| | | 4443 | 116 | 964 |
| Southbound | Lane 1 | 1760 | 20 | 240 |
| | | 1926 | 34 | 219 |
| | Lane 2 | 2988 | 96 | 1018 |
| | | 4146 | 107 | 1031 |
| Route 58 Bypass West of Route 220 | | | | |
| Eastbound | Lane 1 | 1432 | 19 | 128 |
| | | 1549 | 23 | 149 |
| | Lane 2 | 7263 | 209 | 1563 |
| | | 7590 | 193 | 1614 |
| Westbound | Lane 1 | 2375 | 39 | 203 |
| | | 2585 | 44 | 199 |
| | Lane 2 | 6100 | 180 | 1329 |
| | | 6173 | 173 | 1306 |

In addition, 12-hour (6:00am – 6:00pm) turning movement counts were collected during a typical weekday while schools were in session. The machine and turning movement counts were collected during May and early June of 2018 and included heavy vehicle counts. Turning movement counts were collected at the following 13 intersections:

1. Route 220 (Greensboro Road) at Route 58 (William F. Stone Highway) Westbound Interchange Ramp and Intersection – Signalized intersection
2. Route 220 (Greensboro Road) at Route 58 (William F. Stone Highway) Eastbound Interchange Ramps and Intersection – Signalized intersection
3. Route 220 (Greensboro Road) at Route 1314 (Kilarney Court)/ Route 1303 (Villa Road) – Unsignalized intersection
4. Route 220 (Greensboro Road) at Route 1307 (Marrowbone Circle) – Unsignalized intersection
5. Route 220 (Greensboro Road) at Route 1313 (Shamrock Drive) – Unsignalized intersection
6. Route 220 (Greensboro Road) at Route 1310 (Covington Lane) – Unsignalized intersection
7. Route 220 (Greensboro Road) at Route 1301 (Steve Drive/ Drewry Mason School Road) – Unsignalized intersection
8. Route 220 (Greensboro Road) at Route 1360 (Water Plant Road)/ Route 902 (Mica Road) – Signalized intersection
9. Route 220 (Greensboro Road) at Route 687 (Soapstone Road)/ Route 220 Business (Main Street) – Signalized intersection
10. Route 220 (Greensboro Road) at Route 87 (Morehead Avenue) – Signalized intersection
11. Route 220 (Greensboro Road) at Route 688 (Lee Ford Camp Road) – Unsignalized intersection
12. Route 641 (Joseph Martin Highway) at Route 58 (William F. Stone Highway) Eastbound

Ramp Intersection – Unsignalized intersection

13. Route 685 (Joseph Martin Highway)/ Route 641 (Fisher Farm Road) at Route 58 (William F. Stone Highway) Westbound Ramp Intersection – Unsignalized intersection

The 11 Route 220 intersections were used for the analyses of existing conditions, as well as future No-Build and future Build Alternatives evaluations. Machine count worksheets are included in **Appendix A**, and turning movement count worksheets are included in **Appendix B**.

2.2 TRAVEL TIMES

Travel times were collected in the field on February 5 and 6, 2019 along the corridor. Five runs were completed along Route 220 both northbound and southbound between the North Carolina state line and the interchange with Route 58. **Table 2-2** lists the travel times in seconds for each run as well as the average travel time in each direction during each peak hour.

Table 2-2: Measured Travel Times

| Travel Run | AM | | PM | |
|----------------|------------|------------|------------|------------|
| | Northbound | Southbound | Northbound | Southbound |
| 1 | 576 | 539 | 615 | 489 |
| 2 | 561 | 516 | 623 | 547 |
| 3 | 504 | 598 | 550 | 538 |
| 4 | 561 | 532 | 535 | 480 |
| 5 | 537 | 487 | 556 | 512 |
| Average | 548 | 534 | 576 | 513 |

3. TRAVEL DEMAND MODELING

3.1 SUBAREA MODEL

Martinsville is an independent city in southern central Virginia. Located in Henry County, near the North Carolina border, Martinsville is not included within a planning district or Metropolitan Planning areas that maintain a travel demand model. Martinsville is represented within the Virginia Statewide Travel Demand Model, Version 1.0 (VSTM), as shown in **Figure 3-1**. The VSTM was the basis for the development of the initial subarea travel demand model for the Martinsville Southern Connector Study.

Figure 3-1: Martinsville within the Statewide Model



The Martinsville Southern Connector Study subarea model includes Route 220 from the North Carolina state line to Route 58 including one interchange or intersection from the mainline corridor, as shown in orange in **Figure 3-2**. Note that the solid grey lines are not part of the network in the travel demand model but are Tiger Line files of roads in Henry County and the City of Martinsville. The blue lines are links in the VSTM network, the red dots are the Traffic Analysis Zone (TAZ) centroids, and the dashed lines are the centroid connectors. Because the VSTM only includes facilities of significance, the subarea network was edited to include minor (county) roads important to the study and expanded in detail substantially, as shown in **Figure 3-3**, to account for potential bypass options to the east and west. In addition, zones were added to represent different loading patterns from the observed data (shown in red dots in **Figure 3-3**). The subarea travel demand model was developed using CUBE transportation planning software, the same as used for the VSTM. Utilizing traffic counts and available StreetLight data for the similar time period as the traffic counts (available from VDOT's contract) an Origin-Destination Matrix Estimation (ODME) technique was applied to develop the base year trip tables, while existing VSTM information such as zone-to-zone travel information, and socio-economic data available in the VSTM such as population and employment was applied to develop the future year trip tables.

Figure 3-2: Martinsville Southern Connector Modeling Subarea (Before Edits)

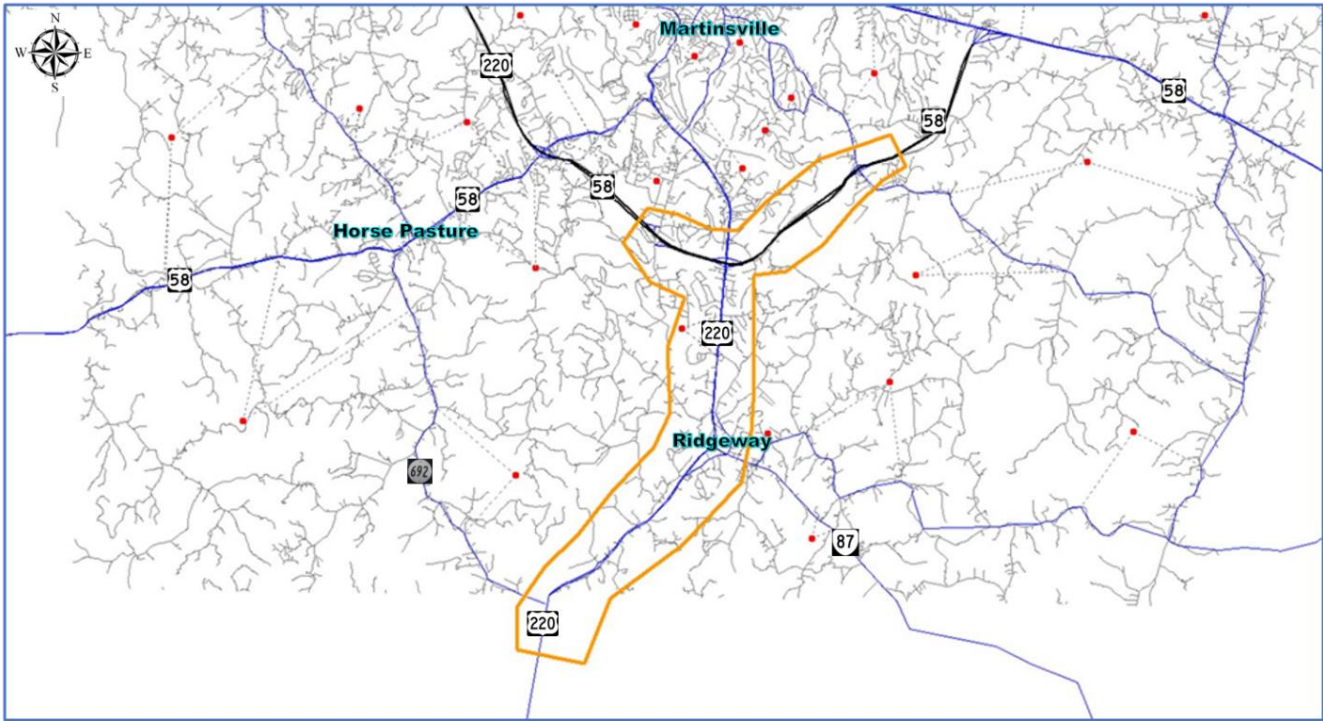
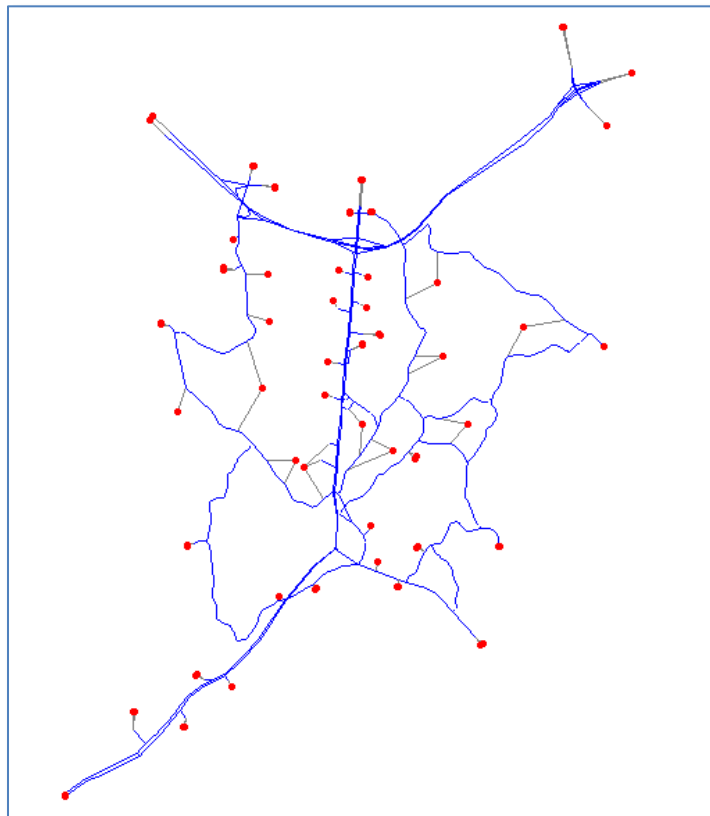


Figure 3-3: Martinsville Southern Connector Modeling Subarea



3.2 FORECASTING PROCESS AND MODEL CALIBRATION

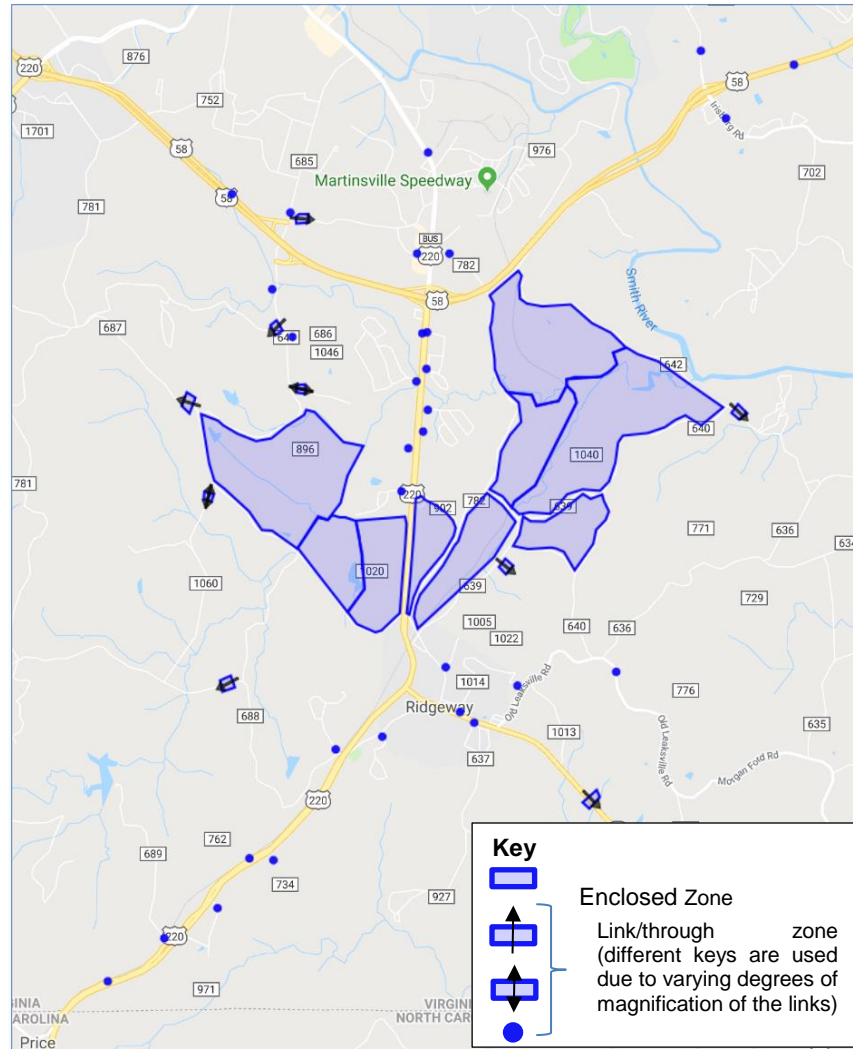
The overall implementation of the forecasting process can be divided into the following categories:

Network Definitions and TAZ Refinements: Because the VSTM did not have the detail in the highway network definition or TAZs in the Martinsville area, these model inputs were expanded to develop a more robust local area network and traffic movements. Specifically, local roads previously missing from the VSTM were added to enhance the subarea network. In addition, the number of TAZs covering the subarea was expanded from one to 78.

Traffic Count Database: Traffic counts collected as part of the data collection effort described in **Section 2.1** were used to develop a comprehensive count database that was subsequently used to development the base trip tables for auto and truck.

Base Year (2018) Trip Table Development: Preliminary auto and truck trip tables, commonly known as seed matrices, were developed for the subarea using the StreetLight data and traffic counts. Since the VSTM does not include the level of detail as that of the subarea travel demand model developed for the Martinsville Southern Connector Study, the StreetLight and traffic count data were used for seed matrices instead of the VSTM trip tables. StreetLight count/zone locations are shown in **Figure 3-4**. The StreetLight data, given in an index format, were used to determine time of day specific origin and destination (OD) trip patterns. The count volumes located near the network boundary were used to convert the StreetLight OD patterns to OD matrices. The count volumes located within the network were used to aid the subarea model ODME process. The ODME process, involves evaluating the ratios of assigned trips to counts, modifying the input matrix, and reassigning the modified matrix an iterative process. This procedure is documented in the *Cube Analyst Drive: Reference Guide* (Citilabs, 2018). The process continues until user specified convergence criteria has been reached. In this study, maximum number of iterations was used as a convergence criteria. Due to the size of the study area, the convergence process was relatively fast (it took less than 40 iterations to obtain a converged model that performed acceptably).

Figure 3-4: StreetLight Data Count/Zone Locations



Traffic Assignments: The estimated trip tables were assigned to the enhanced subarea network for three time periods: AM Peak (6:00am-9:00am), PM Peak (3:30pm-6:30pm), and daily. Because time of day information is not developed in the VSTM process, AM and PM peak periods were defined using observed traffic count information and were held constant between base (2018) and future years (2025 and 2040) alternatives (No-Build and up to five future year Build Alternatives).

Performance Measures and Evaluation: VDOT's *Travel Demand Modeling Policies and Procedures* (Version 2.0) recommends that percent root mean square error (%RMSE) be calculated to check the performance of modeled link volumes against observed volumes (VDOT, 2014). The formula used to calculate %RMSE is shown in **Figure 3-5**, and VDOT's %RMSE guidelines are shown in **Table 3-1**. The observed count locations are shown in **Figure 3-6**. **Tables 3-2 to 3-4** summarize observed link counts vs. modeled volumes and %RMSE for daily total, daily auto, and daily truck, respectively. Similar summaries for total, auto, and truck AM peak are presented in **Tables 3-5 to 3-7**, and the PM peak results are presented in **Tables 3-8 to 3-10**. Except for total daily and auto daily traffic, all the link volumes are less than 5,000. The %RMSE guideline for such link volumes is less than or equal to 100% and, as can be observed from the

tables, all the calculated %RMSE statistics are well below 100%, except AM truck volumes on minor collectors (count data was available for only three minor collectors and the values ranged from two to 39 trucks). Therefore, it is reasonable to conclude that the performance of the subarea travel demand model was acceptable and consistent compared to observed data. For total daily and auto daily, the guideline for Route 58 and Route 220 link volumes is less than or equal to 35% and the calculated statistics were 3.4% and 4.1%, again indicating very good model performance. This is further demonstrated by the scatterplots of modeled volumes versus observed counts and calculated %RMSE, as presented in **Figures 3-7 to 3-15**.

Figure 3-5: %RMSE Calculation Formula

(Source: Equations 10-1 and 10-2, VDOT Travel Demand Modeling Policies and Procedures)

$$RMSE = \sqrt{\frac{\sum_{i=1}^N [(Count_i - Model_i)^2]}{N}}$$

(10-1)

$$\%RMSE = \frac{RMSE}{\left(\frac{\sum_{i=1}^N Count_i}{N} \right)} \times 100$$

(10-2)

Where:

$Count_i$ = The observed traffic count for link i ;

$Model_i$ = The modeled traffic volume for link i ; and

N = The number of links in the group of links, including link i .

Table 3-1: Percent RMSE Guidelines

(Source: Table 10.5, VDOT Travel Demand Modeling Policies and Procedures)

| Volume Range | %RMSE Guideline |
|---------------------|-----------------|
| Less than 5,000 | 100% |
| 5,000-9,999 | 45% |
| 10,000-14,999 | 35% |
| 15,000-19,999 | 30% |
| 20,000-29,999 | 27% |
| 30,000-49,999 | 25% |
| 50,000-59,999 | 20% |
| Greater than 60,000 | 19% |
| Areawide (daily) | 40% |

Figure 3-6: Count Locations on the Network

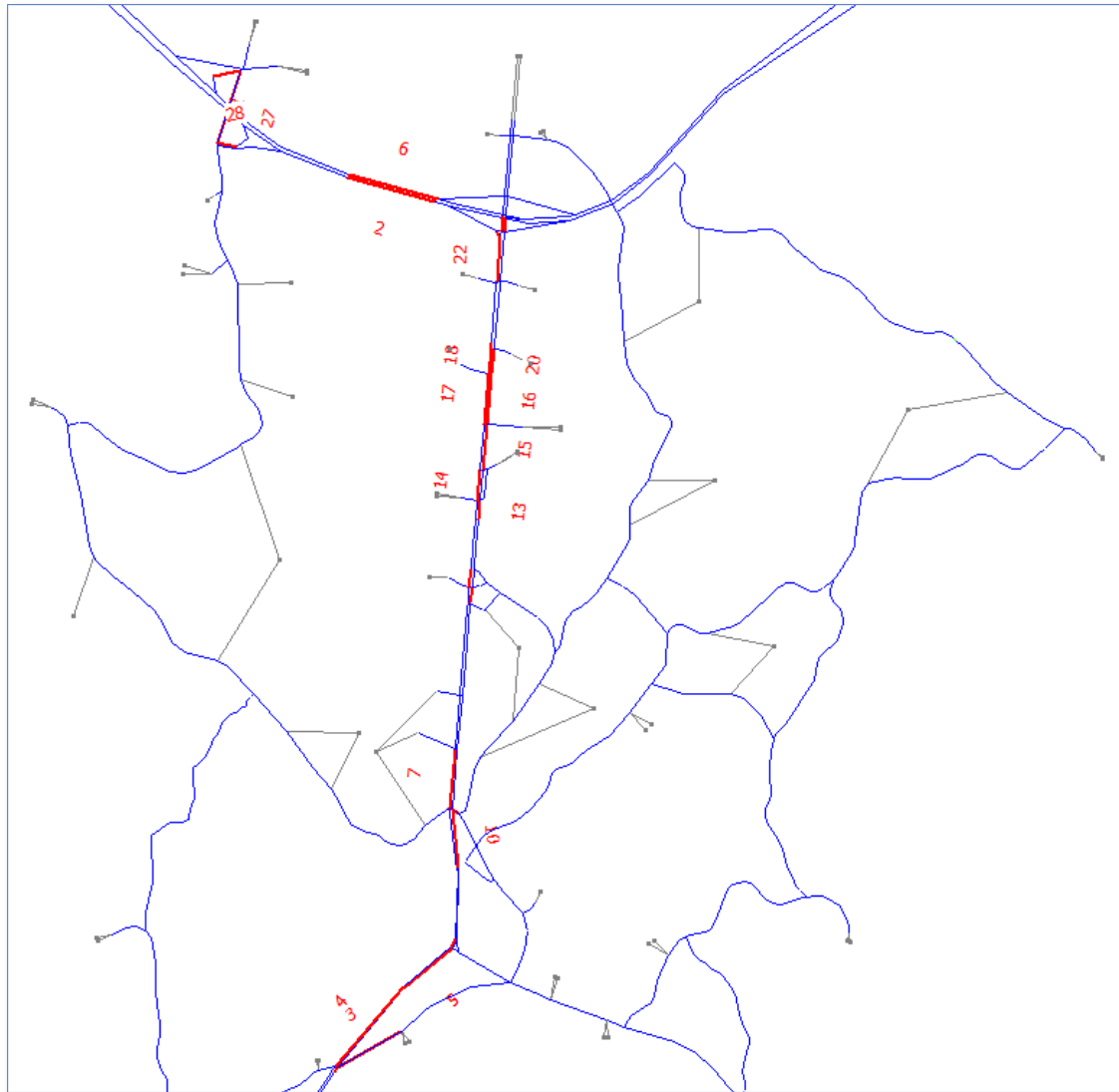


Table 3-2: Percent RMSE – Total Daily

| Count ID | Road | Direction | Link Volume (Total Vehicles) | 2018 Count (Total Vehicles) | Difference |
|---|-----------------------|-----------|------------------------------|-----------------------------|---------------|
| Route 220 and Route 58 | | | | | |
| 1 | Greensboro Rd | NB | 5,830 | 5,584 | 246 |
| 4 | Greensboro Rd | SB | 5,169 | 5,763 | -594 |
| 5 | Greensboro Rd | NB | 4,903 | 5,197 | -294 |
| 8 | Greensboro Rd | SB | 8,248 | 8,306 | -58 |
| 10 | Greensboro Rd | NB | 7,370 | 7,484 | -114 |
| 7 | Greensboro Rd | SB | 9,207 | 9,602 | -395 |
| 11 | Greensboro Rd | NB | 9,287 | 9,828 | -541 |
| 12 | Greensboro Rd | SB | 9,578 | 9,787 | -209 |
| 13 | Greensboro Rd | NB | 9,861 | 10,069 | -208 |
| 14 | Greensboro Rd | SB | 10,825 | 10,845 | -20 |
| 15 | Greensboro Rd | NB | 10,236 | 10,542 | -306 |
| 17 | Greensboro Rd | SB | 10,841 | 11,004 | -163 |
| 16 | Greensboro Rd | NB | 10,104 | 10,474 | -370 |
| 18 | Greensboro Rd | SB | 10,886 | 10,926 | -40 |
| 20 | Greensboro Rd | NB | 11,779 | 12,121 | -342 |
| 19 | Greensboro Rd | SB | 12,442 | 12,601 | -159 |
| 23 | Greensboro Rd | NB | 12,505 | 12,862 | -357 |
| 22 | Greensboro Rd | SB | 12,604 | 12,775 | -171 |
| 25 | Greensboro Rd | NB | 12,420 | 12,853 | -433 |
| 24 | Greensboro Rd | SB | 9,302 | 9,264 | 38 |
| 2 | William F Stone Hwy | EB | 8,995 | 8,917 | 78 |
| 6 | William F Stone Hwy | WB | 7,866 | 8,617 | -751 |
| RMSE | | | | | 328.1 |
| % RMSE (Guideline: %RMSE ≤ 35%) | | | | | 3.40% |
| Ramps | | | | | |
| 21 | Route 58 EB Exit Ramp | EB | 5,697 | 5,324 | 373 |
| 26 | Route 58 Bypass Ramps | WB | 1,051 | 926 | 125 |
| 28 | Route 58 Bypass Ramps | EB | 1,712 | 743 | 969 |
| RMSE | | | | | 603.89 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 25.90% |
| Minor Collectors | | | | | |
| 3 | Church St | SB | 1,007 | 461 | 546 |
| 9 | Main St | NB | 2,252 | 2,377 | -125 |
| 27 | Joseph Martin Hwy | NE/B | 2,241 | 2,215 | 26 |
| RMSE | | | | | 323.96 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 19.20% |

Martinsville Southern Connector Study

Route 220 Environmental Impact Statement

Table 3-3: Percent RMSE – Auto Daily

| Count ID | Road | Direction | Link Volume (Auto) | 2018 Count (Auto) | Difference |
|---|-----------------------|-----------|--------------------|-------------------|---------------|
| Route 220 and Route 58 | | | | | |
| 1 | Greensboro Rd | NB | 4,580 | 4,345 | 235 |
| 4 | Greensboro Rd | SB | 3,899 | 4,471 | -572 |
| 5 | Greensboro Rd | NB | 3,683 | 3,986 | -303 |
| 8 | Greensboro Rd | SB | 6,698 | 6,766 | -68 |
| 10 | Greensboro Rd | NB | 5,800 | 5,992 | -192 |
| 7 | Greensboro Rd | SB | 7,447 | 7,860 | -413 |
| 11 | Greensboro Rd | NB | 7,647 | 8,103 | -456 |
| 12 | Greensboro Rd | SB | 7,858 | 8,003 | -145 |
| 13 | Greensboro Rd | NB | 8,316 | 8,507 | -191 |
| 14 | Greensboro Rd | SB | 9,045 | 9,187 | -142 |
| 15 | Greensboro Rd | NB | 8,671 | 8,996 | -325 |
| 17 | Greensboro Rd | SB | 9,121 | 9,381 | -260 |
| 16 | Greensboro Rd | NB | 8,579 | 8,857 | -278 |
| 18 | Greensboro Rd | SB | 9,031 | 8,983 | 48 |
| 20 | Greensboro Rd | NB | 10,339 | 10,855 | -516 |
| 19 | Greensboro Rd | SB | 10,487 | 10,751 | -264 |
| 23 | Greensboro Rd | NB | 10,675 | 10,882 | -207 |
| 22 | Greensboro Rd | SB | 10,469 | 10,620 | -151 |
| 25 | Greensboro Rd | NB | 10,690 | 11,087 | -397 |
| 24 | Greensboro Rd | SB | 8,467 | 8,443 | 24 |
| 2 | William F Stone Hwy | EB | 7,035 | 6,947 | 88 |
| 6 | William F Stone Hwy | WB | 6,056 | 6,865 | -809 |
| RMSE | | | | | 333.45 |
| % RMSE (Guideline: %RMSE ≤ 35%) | | | | | 4.10% |
| Ramps | | | | | |
| 21 | Route 58 EB Exit Ramp | EB | 4,217 | 3,866 | 351 |
| 26 | Route 58 Bypass Ramps | WB | 981 | 852 | 129 |
| 28 | Route 58 Bypass Ramps | EB | 1,632 | 671 | 961 |
| RMSE | | | | | 595.45 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 33.10% |
| Minor Collectors | | | | | |
| 3 | Church St | SB | 1,007 | 445 | 562 |
| 9 | Main St | NB | 2,167 | 2,276 | -109 |
| 27 | Joseph Martin Hwy | NE/B | 2,141 | 2,103 | 38 |
| RMSE | | | | | 331.46 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 20.60% |

Table 3-4: Percent RMSE – Truck Daily

| Count ID | Road | Direction | Link Volume (Truck) | 2018 Count (Truck) | Difference |
|---|-----------------------|-----------|---------------------|--------------------|---------------|
| Route 220 and Route 58 | | | | | |
| 1 | Greensboro Rd | NB | 1,250 | 1,239 | 11 |
| 4 | Greensboro Rd | SB | 1,270 | 1,292 | -22 |
| 5 | Greensboro Rd | NB | 1,220 | 1,211 | 9 |
| 8 | Greensboro Rd | SB | 1,550 | 1,540 | 10 |
| 10 | Greensboro Rd | NB | 1,570 | 1,492 | 78 |
| 7 | Greensboro Rd | SB | 1,760 | 1,742 | 18 |
| 11 | Greensboro Rd | NB | 1,640 | 1,725 | -85 |
| 12 | Greensboro Rd | SB | 1,720 | 1,784 | -64 |
| 13 | Greensboro Rd | NB | 1,545 | 1,562 | -17 |
| 14 | Greensboro Rd | SB | 1,780 | 1,658 | 122 |
| 15 | Greensboro Rd | NB | 1,565 | 1,546 | 19 |
| 17 | Greensboro Rd | SB | 1,720 | 1,623 | 97 |
| 16 | Greensboro Rd | NB | 1,525 | 1,617 | -92 |
| 18 | Greensboro Rd | SB | 1,855 | 1,943 | -88 |
| 20 | Greensboro Rd | NB | 1,440 | 1,266 | 174 |
| 19 | Greensboro Rd | SB | 1,955 | 1,850 | 105 |
| 23 | Greensboro Rd | NB | 1,830 | 1,980 | -150 |
| 22 | Greensboro Rd | SB | 2,135 | 2,155 | -20 |
| 25 | Greensboro Rd | NB | 1,730 | 1,766 | -36 |
| 24 | Greensboro Rd | SB | 835 | 821 | 14 |
| 2 | William F Stone Hwy | EB | 1,960 | 1,970 | -10 |
| 6 | William F Stone Hwy | WB | 1,810 | 1,752 | 58 |
| RMSE | | | | | 76.52 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 4.70% |
| Ramps | | | | | |
| 21 | Route 58 EB Exit Ramp | EB | 1,480 | 1,458 | 22 |
| 26 | Route 58 Bypass Ramps | WB | 70 | 74 | -4 |
| 28 | Route 58 Bypass Ramps | EB | 80 | 72 | 8 |
| RMSE | | | | | 13.71 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 2.60% |
| Minor Collectors | | | | | |
| 3 | Church St | SB | 0 | 16 | -16 |
| 9 | Main St | NB | 85 | 101 | -16 |
| 27 | Joseph Martin Hwy | NE/B | 100 | 112 | -12 |
| RMSE | | | | | 14.79 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 19.40% |

Table 3-5: Percent RMSE – Total AM Peak (6:00am-9:00am)

| Count ID | Road | Direction | Link Volume (Total Vehicles) | 2018 Count (Total Vehicles) | Difference |
|---|-----------------------|-----------|------------------------------|-----------------------------|---------------|
| Route 220 and Route 58 | | | | | |
| 1 | Greensboro Rd | NB | 930 | 955 | -25 |
| 4 | Greensboro Rd | SB | 885 | 893 | -8 |
| 5 | Greensboro Rd | NB | 930 | 911 | 19 |
| 8 | Greensboro Rd | SB | 1,330 | 1,309 | 21 |
| 10 | Greensboro Rd | NB | 1,560 | 1,493 | 67 |
| 7 | Greensboro Rd | SB | 1,480 | 1,498 | -18 |
| 11 | Greensboro Rd | NB | 1,760 | 1,843 | -83 |
| 12 | Greensboro Rd | SB | 1,590 | 1,537 | 53 |
| 13 | Greensboro Rd | NB | 1,950 | 1,949 | 1 |
| 14 | Greensboro Rd | SB | 1,660 | 1,745 | -85 |
| 15 | Greensboro Rd | NB | 1,990 | 1,964 | 26 |
| 17 | Greensboro Rd | SB | 1,780 | 1,705 | 75 |
| 16 | Greensboro Rd | NB | 2,020 | 1,900 | 120 |
| 18 | Greensboro Rd | SB | 1,820 | 1,609 | 211 |
| 20 | Greensboro Rd | NB | 2,340 | 2,429 | -89 |
| 19 | Greensboro Rd | SB | 1,840 | 2,061 | -221 |
| 23 | Greensboro Rd | NB | 2,450 | 2,433 | 17 |
| 22 | Greensboro Rd | SB | 2,010 | 2,087 | -77 |
| 25 | Greensboro Rd | NB | 2,470 | 2,474 | -4 |
| 24 | Greensboro Rd | SB | 1,360 | 1,360 | 0 |
| 2 | William F Stone Hwy | EB | 1,710 | 1,691 | 19 |
| 6 | William F Stone Hwy | WB | 1,690 | 1,648 | 42 |
| RMSE | | | | | 83.55 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 4.90% |
| Ramps | | | | | |
| 21 | Route 58 EB Exit Ramp | EB | 1,020 | 1,023 | -3 |
| 26 | Route 58 Bypass Ramps | WB | 260 | 271 | -11 |
| 28 | Route 58 Bypass Ramps | EB | 260 | 252 | 8 |
| RMSE | | | | | 8.04 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 1.60% |
| Minor Collectors | | | | | |
| 3 | Church St | SB | 95 | 96 | -1 |
| 9 | Main St | NB | 0 | 423 | -423 |
| 27 | Joseph Martin Hwy | NE/B | 430 | 425 | 5 |
| RMSE | | | | | 244.24 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 77.60% |

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Table 3-6: Percent RMSE – Auto AM Peak (6:00am-9:00am)

| Count ID | Road | Direction | Link Volume (Auto) | 2018 Count (Auto) | Difference |
|---|-----------------------|-----------|--------------------|-------------------|---------------|
| Route 220 and Route 58 | | | | | |
| 1 | Greensboro Rd | NB | 710 | 729 | -19 |
| 4 | Greensboro Rd | SB | 725 | 723 | 2 |
| 5 | Greensboro Rd | NB | 710 | 698 | 12 |
| 8 | Greensboro Rd | SB | 1,100 | 1,072 | 28 |
| 10 | Greensboro Rd | NB | 1,300 | 1,246 | 54 |
| 7 | Greensboro Rd | SB | 1,210 | 1,208 | 2 |
| 11 | Greensboro Rd | NB | 1,490 | 1,578 | -88 |
| 12 | Greensboro Rd | SB | 1,330 | 1,273 | 57 |
| 13 | Greensboro Rd | NB | 1,680 | 1,668 | 12 |
| 14 | Greensboro Rd | SB | 1,400 | 1,487 | -87 |
| 15 | Greensboro Rd | NB | 1,700 | 1,698 | 2 |
| 17 | Greensboro Rd | SB | 1,520 | 1,445 | 75 |
| 16 | Greensboro Rd | NB | 1,720 | 1,621 | 99 |
| 18 | Greensboro Rd | SB | 1,520 | 1,319 | 201 |
| 20 | Greensboro Rd | NB | 1,990 | 2,081 | -91 |
| 19 | Greensboro Rd | SB | 1,520 | 1,786 | -266 |
| 23 | Greensboro Rd | NB | 2,070 | 2,048 | 22 |
| 22 | Greensboro Rd | SB | 1,690 | 1,736 | -46 |
| 25 | Greensboro Rd | NB | 2,150 | 2,146 | 4 |
| 24 | Greensboro Rd | SB | 1,200 | 1,200 | 0 |
| 2 | William F Stone Hwy | EB | 1,350 | 1,338 | 12 |
| 6 | William F Stone Hwy | WB | 1,340 | 1,314 | 26 |
| RMSE | | | | | 85.61 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 6.00% |
| Ramps | | | | | |
| 21 | Route 58 EB Exit Ramp | EB | 800 | 807 | -7 |
| 26 | Route 58 Bypass Ramps | WB | 260 | 259 | 1 |
| 28 | Route 58 Bypass Ramps | EB | 240 | 234 | 6 |
| RMSE | | | | | 5.35 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 1.20% |
| Minor Collectors | | | | | |
| 3 | Church St | SB | 95 | 94 | 1 |
| 9 | Main St | NB | 0 | 384 | -384 |
| 27 | Joseph Martin Hwy | NE/B | 410 | 402 | 8 |
| RMSE | | | | | 221.75 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 75.60% |

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Table 3-7: Percent RMSE – Truck AM Peak (6:00am-9:00am)

| Count ID | Road | Direction | Link Volume (Truck) | 2018 Count (Truck) | Difference |
|---|-----------------------|-----------|---------------------|--------------------|----------------|
| Route 220 and Route 58 | | | | | |
| 1 | Greensboro Rd | NB | 220 | 226 | -6 |
| 4 | Greensboro Rd | SB | 160 | 170 | -10 |
| 5 | Greensboro Rd | NB | 220 | 213 | 7 |
| 8 | Greensboro Rd | SB | 230 | 237 | -7 |
| 10 | Greensboro Rd | NB | 260 | 247 | 13 |
| 7 | Greensboro Rd | SB | 270 | 290 | -20 |
| 11 | Greensboro Rd | NB | 270 | 265 | 5 |
| 12 | Greensboro Rd | SB | 260 | 264 | -4 |
| 13 | Greensboro Rd | NB | 270 | 281 | -11 |
| 14 | Greensboro Rd | SB | 260 | 258 | 2 |
| 15 | Greensboro Rd | NB | 290 | 266 | 24 |
| 17 | Greensboro Rd | SB | 260 | 260 | 0 |
| 16 | Greensboro Rd | NB | 300 | 279 | 21 |
| 18 | Greensboro Rd | SB | 300 | 290 | 10 |
| 20 | Greensboro Rd | NB | 350 | 348 | 2 |
| 19 | Greensboro Rd | SB | 320 | 275 | 45 |
| 23 | Greensboro Rd | NB | 380 | 385 | -5 |
| 22 | Greensboro Rd | SB | 320 | 351 | -31 |
| 25 | Greensboro Rd | NB | 320 | 328 | -8 |
| 24 | Greensboro Rd | SB | 160 | 160 | 0 |
| 2 | William F Stone Hwy | EB | 360 | 353 | 7 |
| 6 | William F Stone Hwy | WB | 350 | 334 | 16 |
| RMSE | | | | | 15.77 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 5.70% |
| Ramps | | | | | |
| 21 | Route 58 EB Exit Ramp | EB | 220 | 216 | 4 |
| 26 | Route 58 Bypass Ramps | WB | 0 | 12 | -12 |
| 28 | Route 58 Bypass Ramps | EB | 20 | 18 | 2 |
| RMSE | | | | | 7.39 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 9.00% |
| Minor Collectors | | | | | |
| 3 | Church St | SB | 0 | 2 | -2 |
| 9 | Main St | NB | 0 | 39 | -39 |
| 27 | Joseph Martin Hwy | NE/B | 20 | 23 | -3 |
| RMSE | | | | | 22.61 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 106.00% |

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Table 3-8: Percent RMSE – Total PM Peak (3:30pm-6:30pm)

| Count ID | Road | Direction | Link Volume (Total Vehicles) | 2018 Count (Total Vehicles) | Difference |
|---|-----------------------|-----------|------------------------------|-----------------------------|---------------|
| Route 220 and Route 58 | | | | | |
| 1 | Greensboro Rd | NB | 1,120 | 1,080 | 40 |
| 4 | Greensboro Rd | SB | 1,060 | 1,062 | -2 |
| 5 | Greensboro Rd | NB | 1,116 | 1,078 | 38 |
| 8 | Greensboro Rd | SB | 1,841 | 1,898 | -57 |
| 10 | Greensboro Rd | NB | 1,700 | 1,643 | 57 |
| 7 | Greensboro Rd | SB | 2,144 | 2,263 | -119 |
| 11 | Greensboro Rd | NB | 2,190 | 2,215 | -25 |
| 12 | Greensboro Rd | SB | 2,261 | 2,420 | -159 |
| 13 | Greensboro Rd | NB | 2,101 | 1,996 | 105 |
| 14 | Greensboro Rd | SB | 2,273 | 2,440 | -167 |
| 15 | Greensboro Rd | NB | 2,271 | 2,343 | -72 |
| 17 | Greensboro Rd | SB | 2,481 | 2,599 | -118 |
| 16 | Greensboro Rd | NB | 2,241 | 2,169 | 72 |
| 18 | Greensboro Rd | SB | 2,611 | 2,593 | 18 |
| 20 | Greensboro Rd | NB | 2,401 | 2,517 | -116 |
| 19 | Greensboro Rd | SB | 2,791 | 2,964 | -173 |
| 23 | Greensboro Rd | NB | 2,771 | 2,818 | -47 |
| 22 | Greensboro Rd | SB | 2,921 | 3,014 | -93 |
| 25 | Greensboro Rd | NB | 2,803 | 2,806 | -3 |
| 24 | Greensboro Rd | SB | 2,306 | 2,389 | -83 |
| 2 | William F Stone Hwy | EB | 1,837 | 1,844 | -7 |
| 6 | William F Stone Hwy | WB | 1,820 | 1,816 | 4 |
| RMSE | | | | | 88.88 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 4.10% |
| Ramps | | | | | |
| 21 | Route 58 EB Exit Ramp | EB | 1,136 | 1,134 | 2 |
| 26 | Route 58 Bypass Ramps | WB | 170 | 179 | -9 |
| 28 | Route 58 Bypass Ramps | EB | 130 | 142 | -12 |
| RMSE | | | | | 8.72 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 1.80% |
| Minor Collectors | | | | | |
| 3 | Church St | SB | 0 | 83 | -83 |
| 9 | Main St | NB | 560 | 603 | -43 |
| 27 | Joseph Martin Hwy | NE/B | 630 | 607 | 23 |
| RMSE | | | | | 55.58 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 12.90% |

Table 3-9: Percent RMSE – Auto PM Peak (3:30pm-6:30pm)

| Count ID | Road | Direction | Link Volume (Auto) | 2018 Count (Auto) | Difference |
|---|-----------------------|-----------|--------------------|-------------------|---------------|
| Route 220 and Route 58 | | | | | |
| 1 | Greensboro Rd | NB | 960 | 929 | 31 |
| 4 | Greensboro Rd | SB | 900 | 892 | 8 |
| 5 | Greensboro Rd | NB | 976 | 946 | 30 |
| 8 | Greensboro Rd | SB | 1,621 | 1,677 | -56 |
| 10 | Greensboro Rd | NB | 1,490 | 1,459 | 31 |
| 7 | Greensboro Rd | SB | 1,924 | 2,038 | -114 |
| 11 | Greensboro Rd | NB | 1,920 | 1,930 | -10 |
| 12 | Greensboro Rd | SB | 2,031 | 2,153 | -122 |
| 13 | Greensboro Rd | NB | 1,901 | 1,812 | 89 |
| 14 | Greensboro Rd | SB | 2,043 | 2,202 | -159 |
| 15 | Greensboro Rd | NB | 2,051 | 2,133 | -82 |
| 17 | Greensboro Rd | SB | 2,251 | 2,390 | -139 |
| 16 | Greensboro Rd | NB | 2,041 | 1,959 | 82 |
| 18 | Greensboro Rd | SB | 2,331 | 2,292 | 39 |
| 20 | Greensboro Rd | NB | 2,401 | 2,517 | -116 |
| 19 | Greensboro Rd | SB | 2,531 | 2,693 | -162 |
| 23 | Greensboro Rd | NB | 2,521 | 2,573 | -52 |
| 22 | Greensboro Rd | SB | 2,631 | 2,716 | -85 |
| 25 | Greensboro Rd | NB | 2,563 | 2,573 | -10 |
| 24 | Greensboro Rd | SB | 2,226 | 2,297 | -71 |
| 2 | William F Stone Hwy | EB | 1,567 | 1,579 | -12 |
| 6 | William F Stone Hwy | WB | 1,580 | 1,588 | -8 |
| RMSE | | | | | 84.2 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 4.30% |
| Ramps | | | | | |
| 21 | Route 58 EB Exit Ramp | EB | 916 | 919 | -3 |
| 26 | Route 58 Bypass Ramps | WB | 170 | 169 | 1 |
| 28 | Route 58 Bypass Ramps | EB | 120 | 132 | -12 |
| RMSE | | | | | 7.21 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 1.80% |
| Minor Collectors | | | | | |
| 3 | Church St | SB | 0 | 81 | -81 |
| 9 | Main St | NB | 560 | 590 | -30 |
| 27 | Joseph Martin Hwy | NE/B | 610 | 590 | 20 |
| RMSE | | | | | 51.19 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 12.20% |

Table 3-10: Percent RMSE – Truck PM Peak (3:30pm-6:30pm)

| Count ID | Road | Direction | Link Volume (Truck) | 2018 Count (Truck) | Difference |
|---|-----------------------|-----------|---------------------|--------------------|---------------|
| Route 220 and Route 58 | | | | | |
| 1 | Greensboro Rd | NB | 160 | 151 | 9 |
| 4 | Greensboro Rd | SB | 160 | 170 | -10 |
| 5 | Greensboro Rd | NB | 140 | 132 | 8 |
| 8 | Greensboro Rd | SB | 220 | 221 | -1 |
| 10 | Greensboro Rd | NB | 210 | 184 | 26 |
| 7 | Greensboro Rd | SB | 220 | 225 | -5 |
| 11 | Greensboro Rd | NB | 270 | 285 | -15 |
| 12 | Greensboro Rd | SB | 230 | 267 | -37 |
| 13 | Greensboro Rd | NB | 200 | 184 | 16 |
| 14 | Greensboro Rd | SB | 230 | 238 | -8 |
| 15 | Greensboro Rd | NB | 220 | 210 | 10 |
| 17 | Greensboro Rd | SB | 230 | 209 | 21 |
| 16 | Greensboro Rd | NB | 200 | 210 | -10 |
| 18 | Greensboro Rd | SB | 280 | 301 | -21 |
| 19 | Greensboro Rd | SB | 260 | 271 | -11 |
| 23 | Greensboro Rd | NB | 250 | 245 | 5 |
| 22 | Greensboro Rd | SB | 290 | 298 | -8 |
| 25 | Greensboro Rd | NB | 240 | 233 | 7 |
| 24 | Greensboro Rd | SB | 80 | 92 | -12 |
| 2 | William F Stone Hwy | EB | 270 | 265 | 5 |
| 6 | William F Stone Hwy | WB | 240 | 228 | 12 |
| RMSE | | | | | 14.66 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 6.70% |
| Ramps | | | | | |
| 21 | Route 58 EB Exit Ramp | EB | 220 | 215 | 5 |
| 26 | Route 58 Bypass Ramps | WB | 0 | 10 | -10 |
| 28 | Route 58 Bypass Ramps | EB | 10 | 10 | 0 |
| RMSE | | | | | 6.45 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 8.20% |
| Minor Collectors | | | | | |
| 3 | Church St | SB | 0 | 2 | -2 |
| 9 | Main St | NB | 0 | 13 | -13 |
| 27 | Joseph Martin Hwy | NE/B | 20 | 17 | 3 |
| RMSE | | | | | 7.79 |
| % RMSE (Guideline: %RMSE ≤ 100%) | | | | | 73.00% |

Figure 3-7: Link Volume vs. Count – Total Daily

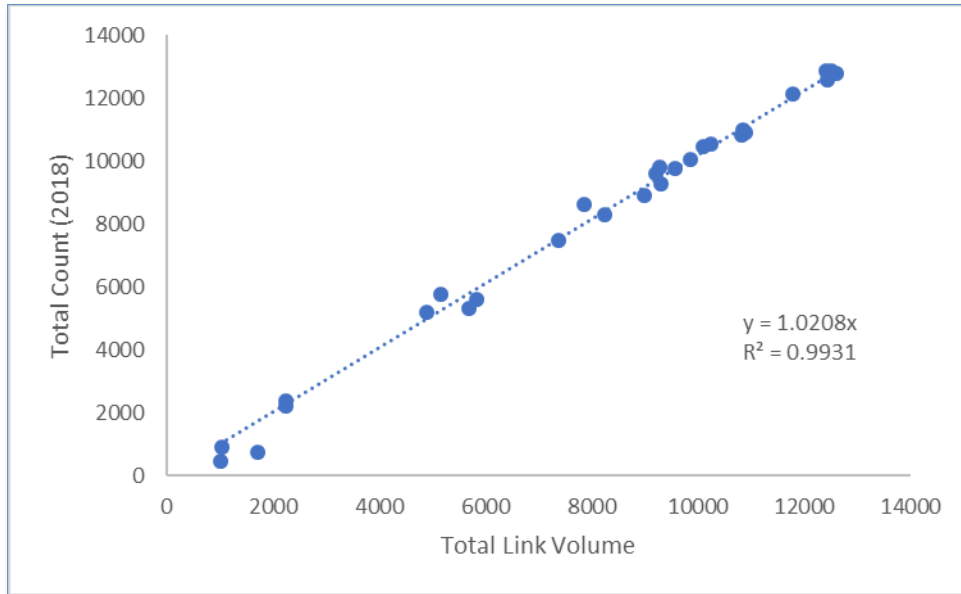


Figure 3-8: Link Volume vs. Count – Auto Daily

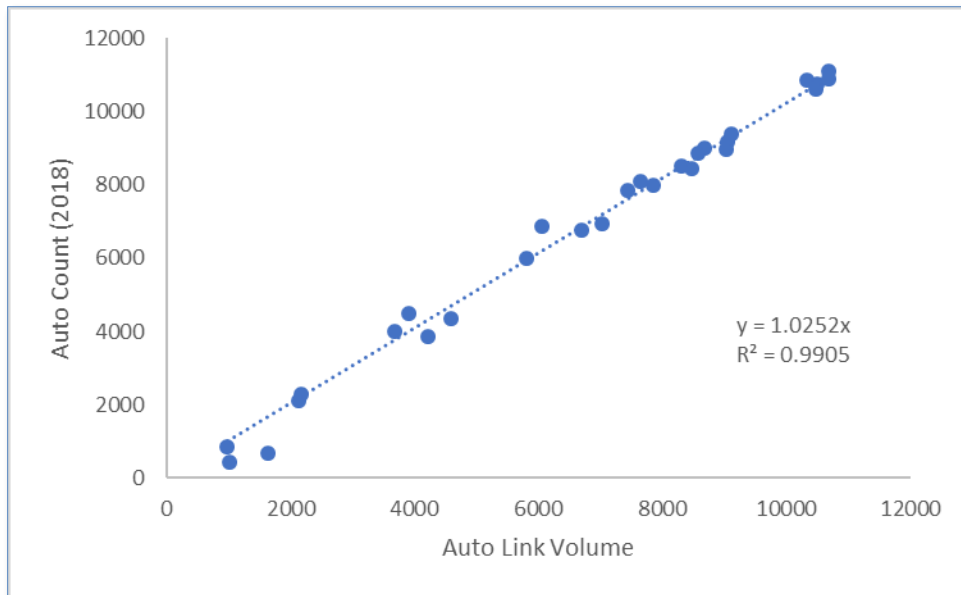


Figure 3-9: Link Volume vs. Count – Truck Daily

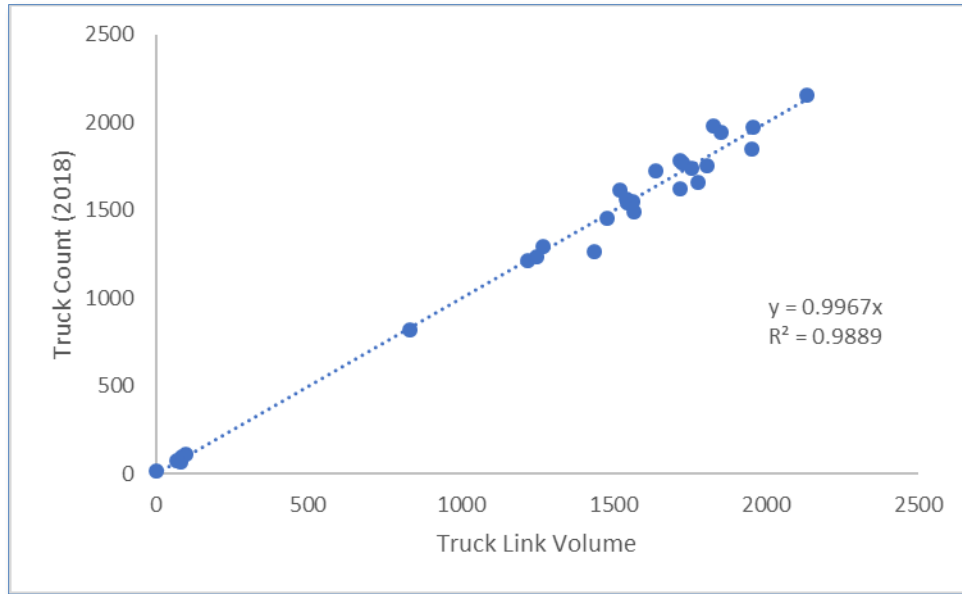


Figure 3-10: Link Volume vs. Count – Total AM Peak

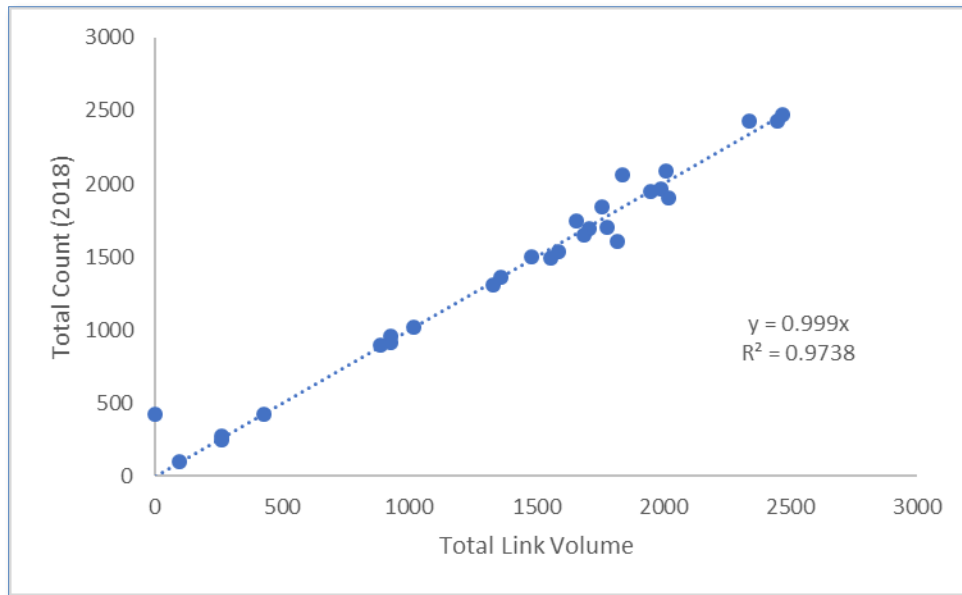


Figure 3-11: Link Volume vs. Count – Auto AM Peak

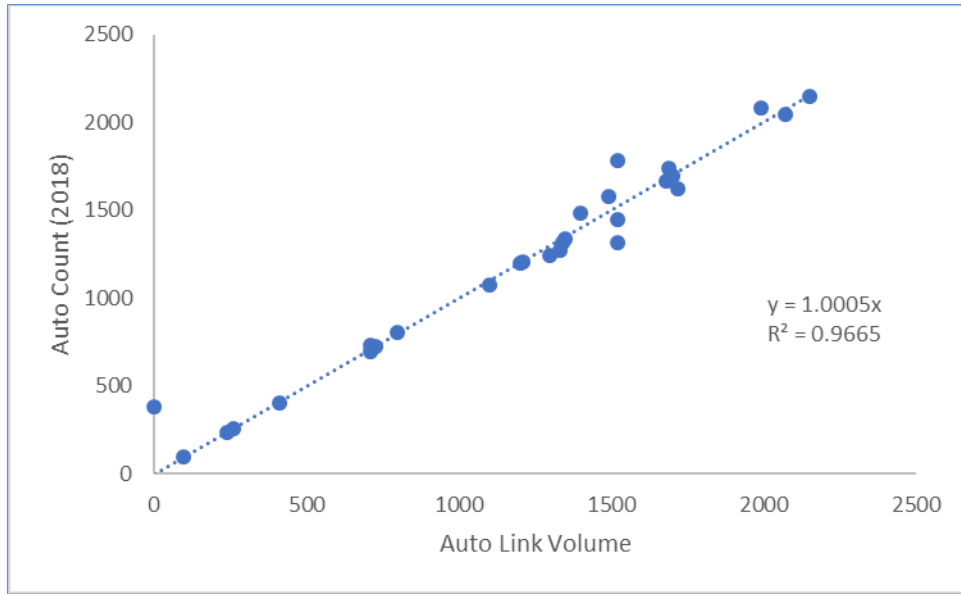


Figure 3-12: Link Volume vs. Count – Truck AM Peak

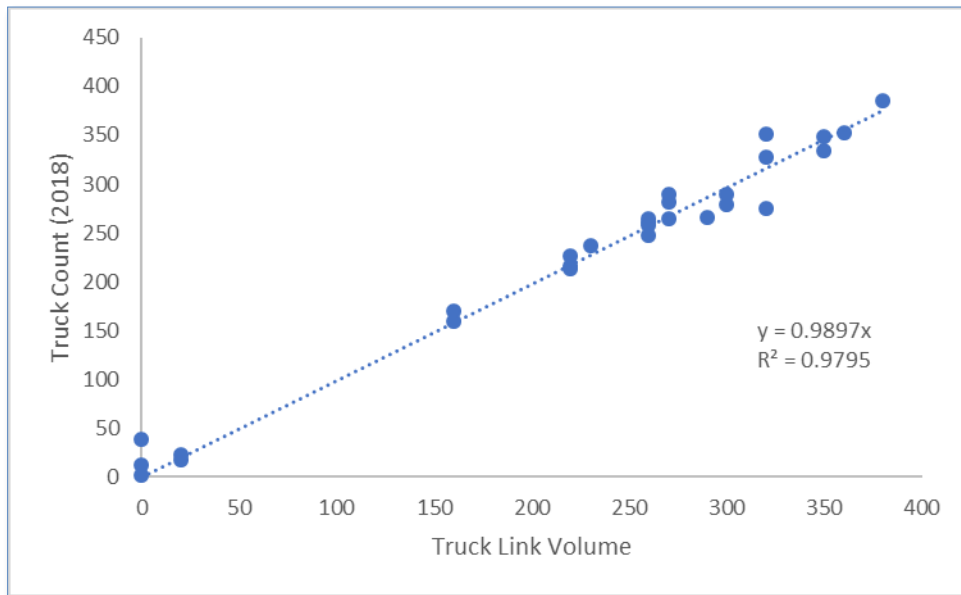


Figure 3-13: Link Volume vs. Count – Total PM Peak

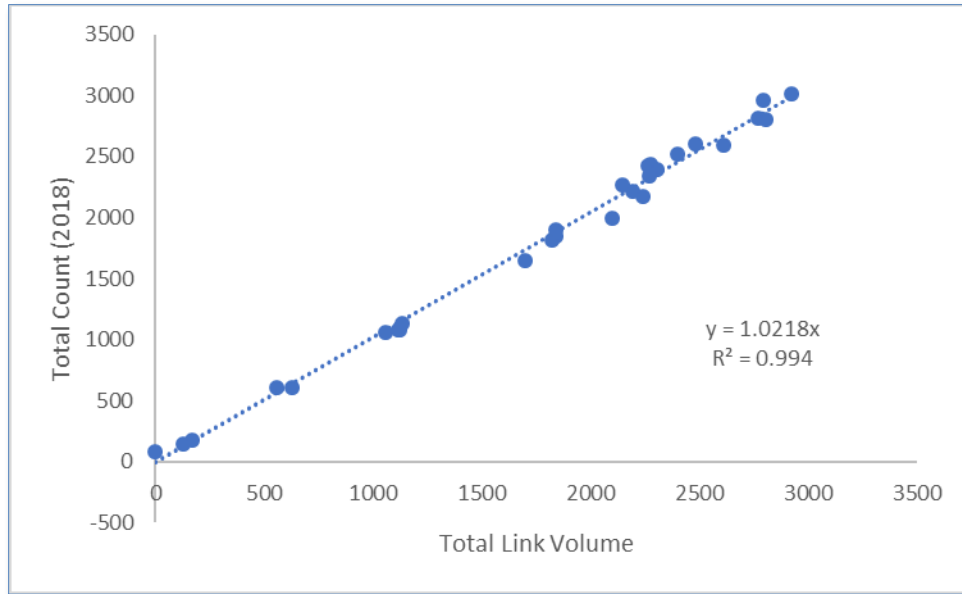


Figure 3-14: Link Volume vs. Count – Auto PM Peak

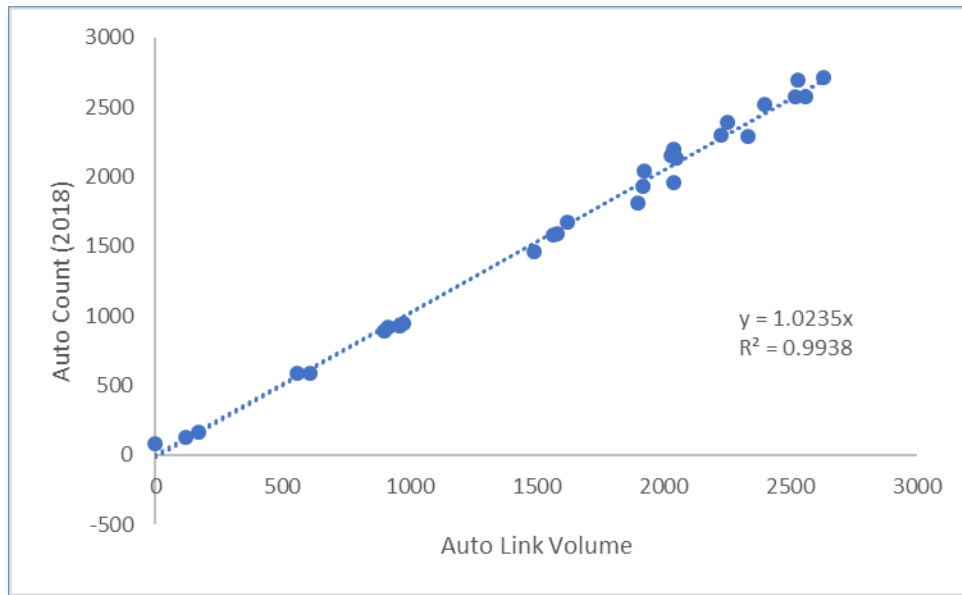
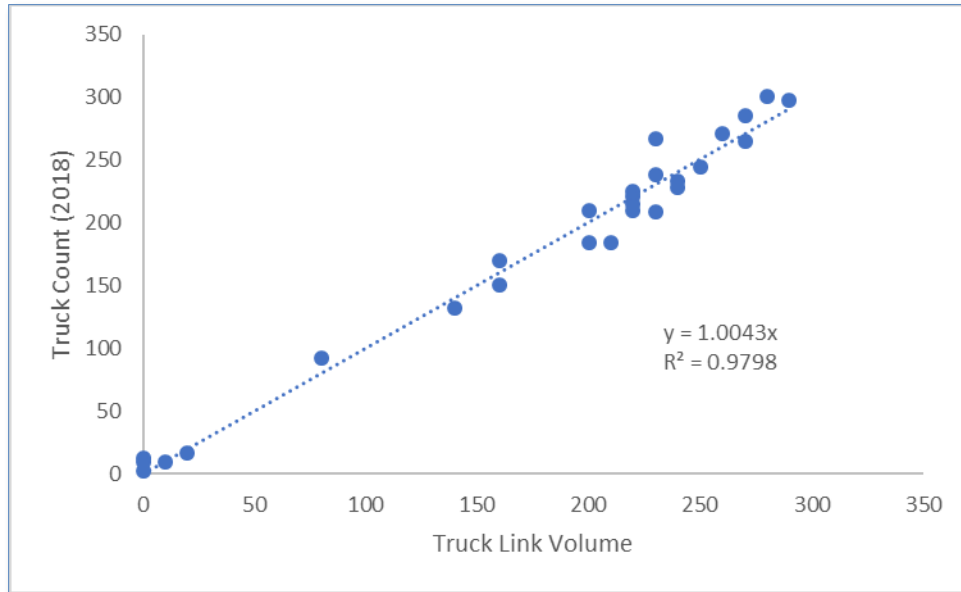


Figure 3-15: Link Volume vs. Count – Truck PM Peak



Forecast Year (2040) Trip Table Development: The 2040 No-Build auto and truck trip tables were developed based on the VSTM, Version 1.0 growth rate in the corridor. For this, the subarea matrices were extracted from the 2015 and the 2040 Statewide models to calculate study area specific growth rates. Specifically, the SOV, HOV2, and HOV3+ matrices were used to calculate auto growth rate (2018-2040), while the truck matrices were used to calculate truck growth rate. The growth rates are summarized in **Table 3-11**.

Table 3-11: Auto and Truck Growth Rates (derived from the Statewide models)

| Mode | 2018-2040 |
|-------|-----------|
| Auto | 1.1054 |
| Truck | 1.1126 |

In addition to overall growth rates, trips likely to be generated in the future by Commonwealth Crossing Industrial Park (CCIP) development were taken into consideration. The CCIP development site is shown in **Figure 3-16**. Though this is a 700+ acres park, currently only 175 acres are ready for development. To develop CCIP specific trip matrices (i.e., trips to and from other zones and the CCIP development zone), VDOT consulted with the Chamber of Commerce and the Martinsville-Henry County Economic Development Corporation, examined the published trip rates in the Institute of Transportation Engineers (ITE, 10th edition), and considered trip generation rates and other characteristics of a number of industrial parks in Virginia. To obtain the 2040 No-Build matrices, the CCIP matrices were added to the appropriate base year (2018) matrices after applying the relevant growth factor.

Figure 3-16: Commonwealth Crossing Industrial Park Development Site



Once the growth rate from the VSTM and expected trips resulting from the CCIP development were added to the forecasted trip tables, the potential for induced travel demand resulting from the Build Alternatives retained for evaluation was considered. A review of existing land cover data maintained by the U.S. Geological Survey's National Landcover Dataset in addition to existing zoning data from Henry County, Virginia, and Rockingham, North Carolina, indicates land available for development in proximity to each Build Alternative. Given the proximity and operational characteristics of each Build Alternative, the potential for induced land development is expected to be similar for each Build Alternative but would vary from the future land use scenario associated with the No-Build. Additional information regarding the potential for induced land development is discussed in the *Indirect and Cumulative Effects Technical Report* (VDOT, 2020j).

As the implementation of each Build Alternative would likely result in induced development, travel demand along each corridor would also be expected to grow. In order to account for the potential for induced growth, trip production was increased in each traffic analysis zone adjacent to or intersected by the Build Alternatives. In a study, Hartgen and Kim (1998) found that when a new road is opened or an existing one is upgraded, people and developments tend to relocate to take advantage of the accessibility benefits created³. Thus, the 2040 No-Build trip tables were not held constant and were applied across the Build Alternatives based on the assumption that local land use patterns and economic growth for the Build Alternative scenarios are likely to be different from the No-Build land use scenario. This assumption resulted in the development of new trip tables for the Build Alternative alignments. Specifically, in the absence of the complex sets of inputs required to indicate how the new transportation infrastructure would shape the land use

³ Hartgen, D.T. and Kim, J.Y., 1998. Commercial development at rural and small-town interstate exits. *Transportation Research Record*, 1649(1), 95-104.

development of the surrounding areas, induced travel demand was considered in the development of Build Alternative-specific trip tables.

There are no standard tools or methods that are used industry-wide to account for induced traffic in project-level forecasting. Further, there is no consensus among industry experts on the magnitude of induced traffic. For instance, Noland and Lem (2001) analyzed traffic growth in the Mid-Atlantic region and found that average elasticities of vehicle miles traveled (VMT) with respect to lane miles are 0.2 to 0.6⁴. In their study, Schiffer *et al.*, (2005) found that short-term elasticities of VMT with respect to lane miles are almost zero to 0.4 while the long-term values are 0.5 to 1.0⁵. NCHRP Report 765 notes that elasticities of VMT with respect to capacity could vary from 0.1 to 0.9 and could be used to account for induced traffic. In this study, total traffic from zones that were intersected or adjacent to the Build Alternative under evaluation was increased by 5% after considering the following: (a) the range of elasticities identified through a thorough literature review, (b) under the No-Build condition, between 2018 and 2040, the overall traffic growth in the study area is about 11%, and (c) in the absence of detailed information on how the local land use patterns would change once the project was operational, it was assumed that enhancements in network accessibility would induce land use changes in zones that were adjacent to the Build Alternative.

3.3 FORECASTED YEARS (2025 and 2040) TRAFFIC VOLUMES

The 2025 auto traffic volumes on selected road segments (as identified by number 1 to 10 in **Figure 3-17**) are summarized in **Tables 3-12, 3-14, and 3-16**, while the corresponding 2040 auto volumes are summarized in **Tables 3-13, 3-15, and 3-17** (for ease of comparison, both 2025 and 2040 tables include base year traffic volumes). Similarly, the 2025 truck traffic volumes are presented in **Tables 3-18, 3-20, and 3-22**, while the 2040 volumes are provided in **Tables 3-19, 3-21, and 3-23**. The model results indicate that Alternative E (reconstructing existing Route 220 as an access-controlled roadway) would likely to lead to an increase in traffic volume along Route 58. For Route 220, while there is an increase in traffic volume both at the northern end (north of the Route 220/Route 58 interchange) and at the southern end (near the North Carolina state line) of the study area, the section of the Build Alternative just south of the Route 220/Route 58 interchange shows a decrease in total trips. This is because the frontage road system has been designed in such a way that traffic from areas south of Route 220/Route 58 interchange cannot travel to north or west without a detour, usually via Old Sand Road.

Similar to Alternative E, Alternatives A, B, C, and D are also likely to lead to an increase in traffic along Route 58, west of the Route 58/Joseph Martin Highway interchange. Though, east of the Joseph Martin Highway interchange, traffic along Route 58 can be expected to decrease significantly as the new roadway would provide a better alternative route for northbound/southbound traffic. This would lead to a notable decrease in traffic along the parts of the existing Route 220 where the new alignment(s) diverge from the existing roadway alignment. Near the North Carolina border where the two alignments (i.e., the existing Route 220 and the Build Alternatives) merge, some increase in traffic can be expected. Maps produced by the model, including three-hour auto and truck volumes as well as daily auto and truck volumes are available in **Appendix C**.

⁴ Noland, Robert and Lem, L. (2001). A review of the evidence for induced travel and changes in transportation and environmental policy in the United States and the United Kingdom. *Transportation Research: Transport and Environment*, 7, 1-26.

⁵ Schiffer, Robert G., M. Walter Steinvorh, and Ronald T. Milam. (2005). Comparative Evaluations on the Elasticity of Travel Demand. 84th Annual Meeting of the Transportation Research Board, Washington, DC.

3.4 POST-PROCESSING FOR EXISTING, FUTURE NO-BUILD AND FUTURE BUILD ALTERNATIVE VOLUMES

Following completion of the subarea travel demand modeling, the modeled traffic volumes for the existing condition as well as the forecasted 2025 and 2040 No-Build Alternative and 2025 and 2040 Build Alternatives traffic volumes were post-processed and balanced following the methods identified in the National Cooperative Highway Research Program's (NCHRP) Report 765: *Analytical Travel Forecasting Approaches for Project-Level Planning and Design*⁶. The traditional NCHRP 765 process includes both major link volume post processing using the *Factoring Procedure – Ratio Method*⁷ to develop turning movement volumes and balancing the corridor volumes and turning movements⁸ at each study intersection as needed. The major directional link volumes were taken directly from model output.

The subarea travel demand modeling was completed to determine vehicular volumes along the links of the streets of the network in each direction, where the balanced volumes were reported for three-hour peak periods. Peak hour volumes were developed based on proportion of the peak period count data (peak hour to peak period). Any new intersection that did not have existing peak hour to peak period ratio was given the average of each directional peak ratio along the corridor. This was applied for each approach of new intersections and then applying turning movement ratios.

Utilizing the existing peak hour turning movements ratios at each appropriate intersection, volumes from the subarea travel demand model output links were converted to turning movements for each of the alternatives carried forward for evaluation using the NCHRP 765 *Factoring Procedure – Ratio Method*⁹. The NCHRP report methodologies were utilized to then balance volumes by adding or subtracting based on the appropriate approaches and ratio for each intersection. All ratio of turning volumes for new intersections were determined based on existing subarea travel demand model output link volumes and the flow ratios between the links to be calculated.

Daily link and peak hour turning movement volumes for the No-Build Alternative and each Build Alternative, under the existing, 2025, and 2040 conditions, are summarized respectively in **Sections 4.1** through **10.1**.

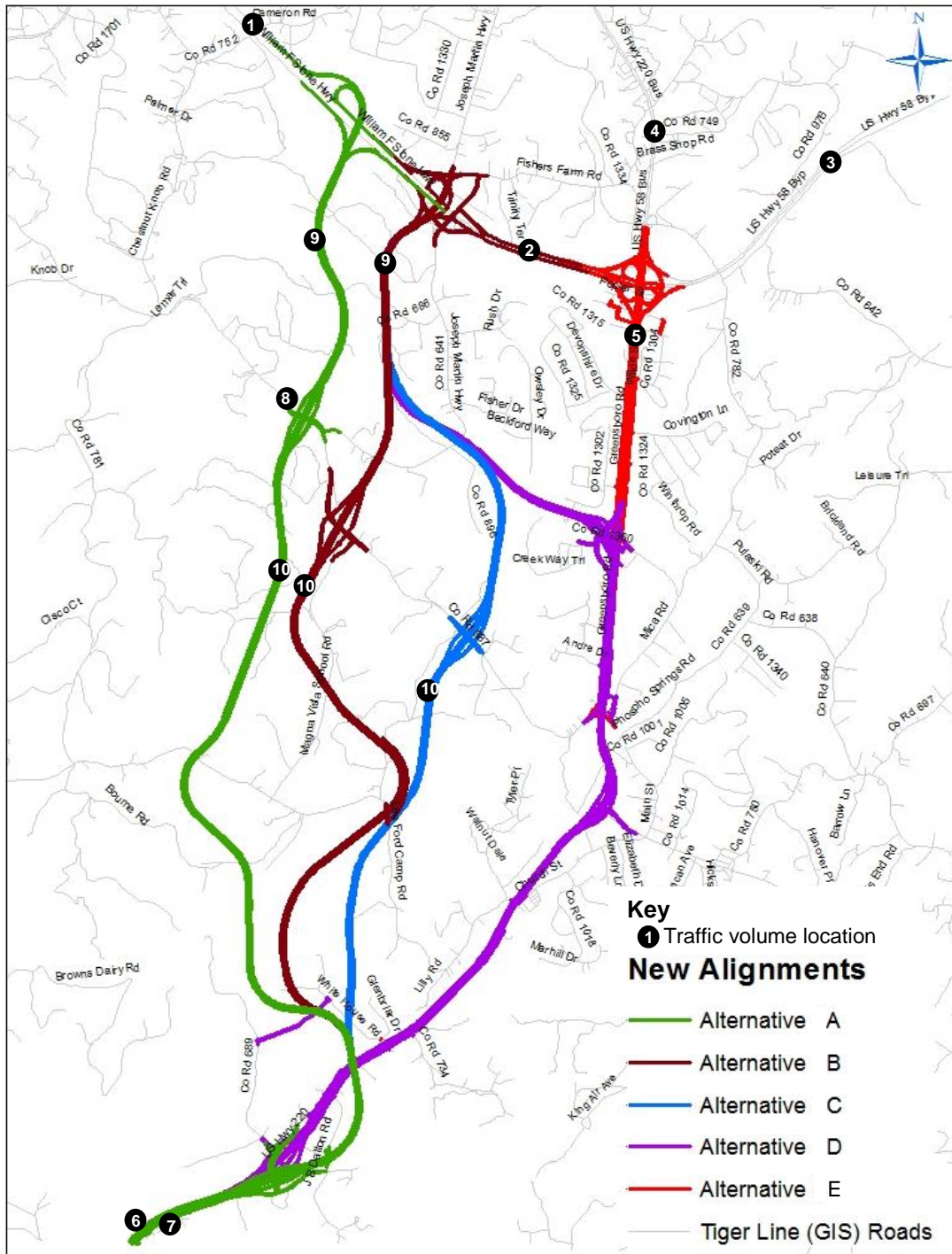
⁶ Transportation Research Board (2014). NCHRP Report 765: *Analytical Travel Forecasting Approaches for Project-Level Planning and Design*.

⁷ Ibid. Section 6.2: Factoring Procedure—Ratio Method.

⁸ Ibid. Section 6.9: Balancing Volumes in a Corridor

⁹ Ibid. Section 6.2: Factoring Procedure—Ratio Method.

Figure 3-17: Alignment Alternatives Considered



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Table 3-12: Traffic Volumes on Selected Road Segments – Auto Daily (2025)

| No. | Segment | Auto - Daily | | | | | | |
|-----|--|--------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2025 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 5,680 | 6,020 | 6,195 | 6,195 | 6,195 | 6,060 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 6,690 | 7,030 | 7,122 | 7,123 | 7,135 | 7,152 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 7,035 | 7,519 | 5,212 | 5,248 | 5,046 | 7,533 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 6,056 | 6,512 | 4,512 | 4,751 | 4,173 | 6,698 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 5,120 | 5,550 | 5,566 | 5,566 | 5,569 | 5,657 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 5,780 | 6,210 | 6,210 | 6,210 | 6,210 | 6,210 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 8,230 | 8,550 | 8,588 | 8,589 | 8,599 | 8,659 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 6,640 | 6,910 | 6,910 | 6,910 | 6,910 | 7,059 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 10,777 | 11,773 | 7,837 | 7,947 | 7,353 | 6,639 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 10,469 | 11,393 | 6,962 | 6,891 | 6,688 | 6,700 |
| 6 | Route 220 (North of NC border) | NB | 4,200 | 4,650 | 4,114 | 4,114 | 4,000 | 4,000 |
| 6 | Route 220 (North of NC border) | SB | 4,730 | 5,210 | 4,585 | 4,585 | 4,595 | 4,539 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | 635 | 635 | 748 | 748 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | 705 | 705 | 707 | 698 |
| 8 | Soapstone Road | EB | 440 | 460 | 474 | 474 | 460 | 460 |
| 8 | Soapstone Road | WB | 490 | 500 | 500 | 500 | 504 | 504 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | 4,873 | 5,006 | 4,758 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | 4,902 | 5,240 | 4,952 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | 4,380 | 4,264 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | 4,755 | 4,833 | - | - |

Table 3-13: Traffic Volumes on Selected Road Segments – Auto Daily (2040)

| No. | Segment | Auto - Daily | | | | | | |
|-----|--|--------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2040 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 5,680 | 6,870 | 7,272 | 7,272 | 7,272 | 6,920 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 6,690 | 7,980 | 8,191 | 8,192 | 8,221 | 8,258 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 7,035 | 8,221 | 6,250 | 6,270 | 5,440 | 8,488 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 6,056 | 7,386 | 5,029 | 5,451 | 4,828 | 7,866 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 5,120 | 6,610 | 6,678 | 6,678 | 6,683 | 6,902 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 5,780 | 7,310 | 7,310 | 7,310 | 7,310 | 7,310 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 8,230 | 9,220 | 9,322 | 9,324 | 9,348 | 9,506 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 6,640 | 7,500 | 7,500 | 7,500 | 7,500 | 7,883 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 10,777 | 13,871 | 9,749 | 10,001 | 9,612 | 8,027 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 10,469 | 13,233 | 9,186 | 9,140 | 8,526 | 8,203 |
| 6 | Route 220 (North of NC border) | NB | 4,200 | 5,870 | 4,850 | 5,034 | 5,031 | 5,031 |
| 6 | Route 220 (North of NC border) | SB | 4,730 | 6,460 | 5,370 | 5,370 | 5,224 | 5,353 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | 1,318 | 1,134 | 1,136 | 1,136 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | 1,343 | 1,343 | 1,519 | 1,218 |
| 8 | Soapstone Road | EB | 440 | 500 | 527 | 527 | 500 | 500 |
| 8 | Soapstone Road | WB | 490 | 550 | 550 | 550 | 561 | 562 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | 5,152 | 5,225 | 4,901 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | 5,094 | 5,426 | 5,478 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | 4,589 | 4,455 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | 4,915 | 4,807 | - | - |

*Note: Alignment C volumes have been adjusted as part of the post processing effort

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Table 3-14: Traffic Volumes on Selected Road Segments – Auto AM Peak Period (2025)

| No. | Segment | Auto - AM Peak | | | | | | |
|-----|--|----------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2025 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 1,330 | 1,390 | 1,437 | 1,437 | 1,437 | 1,400 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 1,230 | 1,260 | 1,291 | 1,291 | 1,293 | 1,293 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 1,350 | 1,425 | 929 | 1,115 | 621 | 1,470 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 1,340 | 1,370 | 1,150 | 1,150 | 760 | 1,480 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 850 | 880 | 891 | 891 | 890 | 893 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 1,000 | 1,120 | 1,120 | 1,120 | 1,120 | 1,120 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 1,390 | 1,420 | 1,428 | 1,429 | 1,427 | 1,437 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 1,210 | 1,250 | 1,250 | 1,250 | 1,250 | 1,285 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 2,140 | 2,205 | 1,888 | 1,713 | 1,606 | 1,818 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 1,690 | 1,860 | 1,261 | 1,271 | 1,063 | 1,580 |
| 6 | Route 220 (North of NC border) | NB | 680 | 800 | 820 | 820 | 819 | 819 |
| 6 | Route 220 (North of NC border) | SB | 870 | 890 | 902 | 902 | 902 | 895 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | 0 | 0 | 0 | 0 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | 0 | 0 | 0 | 0 |
| 8 | Soapstone Road | EB | 230 | 240 | 248 | 248 | 240 | 240 |
| 8 | Soapstone Road | WB | 190 | 190 | 194 | 194 | 194 | 192 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | 555 | 731 | 640 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | 846 | 836 | 851 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | 317 | 433 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | 582 | 572 | - | - |

Table 3-15: Traffic Volumes on Selected Road Segments – Auto AM Peak Period (2040)

| No. | Segment | Auto - AM Peak | | | | | | |
|-----|--|----------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2040 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 1,330 | 1,640 | 1,736 | 1,736 | 1,736 | 1,650 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 1,230 | 1,360 | 1,404 | 1,404 | 1,411 | 1,409 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 1,350 | 1,665 | 1,002 | 1,207 | 663 | 1,710 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 1,340 | 1,495 | 1,210 | 1,210 | 800 | 1,589 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 850 | 940 | 963 | 963 | 958 | 966 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 1,000 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 1,390 | 1,520 | 1,537 | 1,538 | 1,536 | 1,561 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 1,210 | 1,360 | 1,360 | 1,360 | 1,360 | 1,433 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 2,140 | 2,385 | 2,070 | 1,876 | 1,768 | 2,012 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 1,690 | 2,345 | 1,608 | 1,618 | 1,383 | 2,095 |
| 6 | Route 220 (North of NC border) | NB | 680 | 1,140 | 1,200 | 1,200 | 1,199 | 1,199 |
| 6 | Route 220 (North of NC border) | SB | 870 | 980 | 1,010 | 1,010 | 1,010 | 989 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | 0 | 0 | 0 | 0 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | 0 | 0 | 0 | 0 |
| 8 | Soapstone Road | EB | 230 | 250 | 265 | 265 | 250 | 250 |
| 8 | Soapstone Road | WB | 190 | 200 | 207 | 207 | 207 | 203 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | 601 | 796 | 705 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | 1,075 | 1,065 | 1,094 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | 357 | 487 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | 798 | 788 | - | - |

*Note: Alignment C volumes have been adjusted as part of the post processing effort

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Table 3-16: Traffic Volumes on Selected Road Segments – Auto PM Peak Period (2025)

| No. | Segment | Auto - PM Peak | | | | | | |
|-----|--|----------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2025 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 1,580 | 1,640 | 1,709 | 1,709 | 1,709 | 1,660 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 1,660 | 1,770 | 1,800 | 1,805 | 1,804 | 1,806 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 1,567 | 1,638 | 1,374 | 1,621 | 756 | 1,664 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 1,580 | 1,689 | 1,127 | 1,352 | 946 | 1,727 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 1,130 | 1,220 | 1,236 | 1,236 | 1,237 | 1,241 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 1,470 | 1,510 | 1,510 | 1,510 | 1,510 | 1,510 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 1,570 | 1,670 | 1,680 | 1,683 | 1,684 | 1,694 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 1,650 | 1,700 | 1,700 | 1,700 | 1,700 | 1,747 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 2,531 | 2,689 | 2,157 | 1,885 | 2,038 | 2,403 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 2,631 | 2,731 | 2,478 | 2,223 | 2,081 | 2,571 |
| 6 | Route 220 (North of NC border) | NB | 920 | 970 | 998 | 998 | 998 | 998 |
| 6 | Route 220 (North of NC border) | SB | 790 | 920 | 931 | 931 | 931 | 931 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | 0 | 0 | 0 | 0 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | 0 | 0 | 0 | 0 |
| 8 | Soapstone Road | EB | 300 | 320 | 331 | 331 | 320 | 320 |
| 8 | Soapstone Road | WB | 290 | 310 | 313 | 316 | 318 | 315 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | 968 | 1,210 | 803 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | 543 | 776 | 980 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | 687 | 879 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | 430 | 666 | - | - |

Table 3-17: Traffic Volumes on Selected Road Segments – Auto PM Peak Period (2040)

| No. | Segment | Auto - PM Peak | | | | | | |
|-----|--|----------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2040 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 1,580 | 1,810 | 1,927 | 1,927 | 1,927 | 1,830 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 1,660 | 2,040 | 2,101 | 2,110 | 2,110 | 2,115 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 1,567 | 1,835 | 1,787 | 1,900 | 869 | 1,864 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 1,580 | 1,952 | 1,340 | 1,599 | 1,063 | 2,033 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 1,130 | 1,630 | 1,673 | 1,673 | 1,674 | 1,684 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 1,470 | 1,700 | 1,700 | 1,700 | 1,700 | 1,700 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 1,570 | 1,820 | 1,840 | 1,844 | 1,847 | 1,864 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 1,650 | 1,850 | 1,850 | 1,850 | 1,850 | 1,948 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 2,531 | 3,005 | 2,383 | 2,234 | 2,476 | 3,017 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 2,631 | 2,913 | 2,460 | 2,422 | 2,245 | 2,943 |
| 6 | Route 220 (North of NC border) | NB | 920 | 1,110 | 1,170 | 1,170 | 1,170 | 1,170 |
| 6 | Route 220 (North of NC border) | SB | 790 | 1,310 | 1,351 | 1,351 | 1,351 | 1,351 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | 0 | 0 | 0 | 0 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | 0 | 0 | 0 | 0 |
| 8 | Soapstone Road | EB | 300 | 350 | 370 | 370 | 350 | 350 |
| 8 | Soapstone Road | WB | 290 | 330 | 335 | 339 | 344 | 340 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | 1,477 | 1,596 | 1,074 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | 778 | 1,058 | 1,200 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | 1,154 | 1,193 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | 652 | 941 | - | - |

*Note: Alignment C volumes have been adjusted as part of the post processing effort

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Table 3-18: Traffic Volumes on Selected Road Segments – Truck Daily (2025)

| No. | Segment | Truck - Daily | | | | | | |
|-----|--|---------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2025 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 1,840 | 1,940 | 1,991 | 1,991 | 1,991 | 1,940 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 1,920 | 1,990 | 2,009 | 2,009 | 2,010 | 2,011 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 1,960 | 2,080 | 1,345 | 1,345 | 808 | 2,095 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 1,810 | 1,890 | 1,120 | 1,120 | 900 | 1,914 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 820 | 880 | 894 | 894 | 894 | 896 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 1,170 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 750 | 790 | 801 | 802 | 800 | 805 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 520 | 530 | 530 | 530 | 530 | 548 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 1,890 | 2,000 | 1,214 | 1,215 | 1,055 | 1,660 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 2,135 | 2,265 | 1,503 | 1,503 | 1,028 | 2,080 |
| 6 | Route 220 (North of NC border) | NB | 1,480 | 1,550 | 1,588 | 1,588 | 1,588 | 1,588 |
| 6 | Route 220 (North of NC border) | SB | 1,550 | 1,650 | 1,675 | 1,676 | 1,678 | 1,666 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | - | 0 | 0 | 0 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | - | 0 | 0 | 0 |
| 8 | Soapstone Road | EB | 10 | 10 | 11 | 11 | 10 | 10 |
| 8 | Soapstone Road | WB | 10 | 10 | 11 | 11 | 11 | 10 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | - | 848 | 1,007 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | - | 828 | 1,292 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | - | 786 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | - | 817 | - | - |

Table 3-19: Traffic Volumes on Selected Road Segments – Truck Daily (2040)

| No. | Segment | Truck - Daily | | | | | | |
|-----|--|---------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2040 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 1,840 | 2,140 | 2,253 | 2,253 | 2,253 | 2,140 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 1,920 | 2,190 | 2,244 | 2,244 | 2,244 | 2,242 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 1,960 | 2,270 | 1,459 | 1,624 | 867 | 2,290 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 1,810 | 2,070 | 1,190 | 1,190 | 960 | 2,127 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 820 | 1,010 | 1,042 | 1,042 | 1,042 | 1,041 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 1,170 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 750 | 860 | 881 | 882 | 879 | 886 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 520 | 600 | 600 | 600 | 600 | 633 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 1,890 | 2,270 | 1,386 | 1,223 | 1,217 | 1,923 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 2,135 | 2,555 | 1,686 | 1,686 | 1,172 | 2,293 |
| 6 | Route 220 (North of NC border) | NB | 1,480 | 1,780 | 1,873 | 1,873 | 1,873 | 1,873 |
| 6 | Route 220 (North of NC border) | SB | 1,550 | 1,880 | 1,945 | 1,946 | 1,953 | 1,921 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | 0 | 0 | 0 | 0 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | 0 | 0 | 0 | 0 |
| 8 | Soapstone Road | EB | 10 | 20 | 22 | 22 | 20 | 20 |
| 8 | Soapstone Road | WB | 10 | 20 | 22 | 22 | 22 | 20 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | 999 | 1,164 | 1,156 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | 967 | 977 | 1,484 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | 925 | 1,090 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | 955 | 955 | - | - |

*Note: Alignment C volumes have been adjusted as part of the post processing effort

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Table 3-20: Traffic Volumes on Selected Road Segments – Truck AM Peak Period (2025)

| No. | Segment | Truck - AM Peak | | | | | | |
|-----|--|-----------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2025 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 310 | 330 | 343 | 343 | 343 | 330 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 380 | 390 | 395 | 395 | 396 | 400 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 360 | 380 | 323 | 312 | 217 | 380 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 350 | 360 | 290 | 290 | 261 | 371 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 250 | 260 | 268 | 268 | 269 | 269 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 240 | 240 | 240 | 240 | 240 | 240 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 150 | 150 | 152 | 152 | 153 | 155 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 120 | 130 | 130 | 130 | 130 | 139 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 370 | 380 | 315 | 315 | 290 | 326 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 320 | 340 | 276 | 265 | 172 | 344 |
| 6 | Route 220 (North of NC border) | NB | 350 | 380 | 396 | 396 | 396 | 396 |
| 6 | Route 220 (North of NC border) | SB | 280 | 310 | 316 | 316 | 317 | 316 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | - | 0 | 0 | 0 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | - | 0 | 0 | 0 |
| 8 | Soapstone Road | EB | 40 | 40 | 44 | 44 | 40 | 40 |
| 8 | Soapstone Road | WB | 20 | 20 | 20 | 20 | 20 | 21 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | - | 106 | 104 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | - | 103 | 176 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | - | 73 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | - | 83 | - | - |

Table 3-21: Traffic Volumes on Selected Road Segments – Truck AM Peak Period (2040)

| No. | Segment | Truck - AM Peak | | | | | | |
|-----|--|-----------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2040 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 310 | 370 | 392 | 392 | 392 | 370 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 380 | 410 | 417 | 417 | 418 | 423 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 360 | 400 | 338 | 327 | 220 | 400 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 350 | 380 | 300 | 300 | 271 | 394 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 250 | 270 | 281 | 281 | 282 | 281 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 240 | 290 | 290 | 290 | 290 | 290 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 150 | 180 | 183 | 183 | 184 | 187 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 120 | 130 | 130 | 130 | 130 | 141 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 370 | 410 | 337 | 337 | 312 | 360 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 320 | 370 | 299 | 288 | 183 | 376 |
| 6 | Route 220 (North of NC border) | NB | 350 | 410 | 435 | 435 | 435 | 435 |
| 6 | Route 220 (North of NC border) | SB | 280 | 340 | 352 | 352 | 354 | 352 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | 0 | 0 | 0 | 0 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | 0 | 0 | 0 | 0 |
| 8 | Soapstone Road | EB | 40 | 40 | 44 | 44 | 40 | 40 |
| 8 | Soapstone Road | WB | 20 | 20 | 20 | 20 | 20 | 21 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | 128 | 117 | 115 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | 115 | 115 | 200 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | 84 | 84 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | 95 | 95 | - | - |

*Note: Alignment C volumes have been adjusted as part of the post processing effort

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Table 3-22: Traffic Volumes on Selected Road Segments – Truck PM Peak Period (2025)

| No. | Segment | Truck - PM Peak | | | | | | |
|-----|--|-----------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2025 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 260 | 270 | 280 | 280 | 280 | 270 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 280 | 280 | 285 | 285 | 283 | 287 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 270 | 280 | 239 | 188 | 125 | 280 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 240 | 240 | 160 | 160 | 130 | 247 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 90 | 90 | 91 | 91 | 91 | 93 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 140 | 150 | 150 | 150 | 150 | 150 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 160 | 160 | 162 | 162 | 162 | 164 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 100 | 100 | 100 | 100 | 100 | 108 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 270 | 270 | 192 | 192 | 162 | 279 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 290 | 310 | 266 | 215 | 152 | 315 |
| 6 | Route 220 (North of NC border) | NB | 240 | 260 | 272 | 272 | 272 | 272 |
| 6 | Route 220 (North of NC border) | SB | 240 | 270 | 275 | 275 | 276 | 275 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | - | 0 | 0 | 0 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | - | 0 | 0 | 0 |
| 8 | Soapstone Road | EB | 60 | 60 | 62 | 62 | 60 | 60 |
| 8 | Soapstone Road | WB | 10 | 10 | 10 | 10 | 10 | 10 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | - | 104 | 112 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | - | 102 | 165 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | - | 62 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | - | 102 | - | - |

Table 3-23: Traffic Volumes on Selected Road Segments – Truck PM Peak Period (2040)

| No. | Segment | Truck - PM Peak | | | | | | |
|-----|--|-----------------|-----------|---------------|-------------|----------------|-------------|-------------|
| | | Direction | 2018 Base | 2040 No-Build | Alignment A | Alignment B/C* | Alignment D | Alignment E |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | EB | 260 | 310 | 329 | 329 | 329 | 310 |
| 1 | Route 58 (West of Route 58/Joseph Martin Hwy Interchange) | WB | 280 | 300 | 308 | 308 | 306 | 309 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | EB | 270 | 320 | 265 | 212 | 138 | 320 |
| 2 | Route 58 (East of Route 58/Joseph Martin Hwy Interchange) | WB | 240 | 260 | 170 | 170 | 140 | 269 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | EB | 90 | 110 | 113 | 113 | 113 | 114 |
| 3 | Route 58 (East of Route 58/Route 220 Interchange) | WB | 140 | 180 | 180 | 180 | 180 | 180 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | NB | 160 | 180 | 182 | 182 | 182 | 185 |
| 4 | Route 220 (North Route 58/Route 220 Interchange) | SB | 100 | 110 | 110 | 110 | 110 | 118 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | NB | 270 | 300 | 213 | 213 | 183 | 313 |
| 5 | Route 220 (South of Route 220/Route 58 Interchange) | SB | 290 | 360 | 300 | 247 | 173 | 365 |
| 6 | Route 220 (North of NC border) | NB | 240 | 270 | 286 | 286 | 286 | 286 |
| 6 | Route 220 (North of NC border) | SB | 240 | 300 | 311 | 311 | 313 | 308 |
| 7 | New Frontage Rd (North of NC border) | NB | - | - | 0 | 0 | 0 | 0 |
| 7 | New Frontage Rd (North of NC border) | SB | - | - | 0 | 0 | 0 | 0 |
| 8 | Soapstone Road | EB | 60 | 60 | 64 | 64 | 60 | 60 |
| 8 | Soapstone Road | WB | 10 | 10 | 10 | 10 | 10 | 10 |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | NB | - | - | 169 | 116 | 124 | - |
| 9 | New Alignment (North of New Interchange with Soapstone Rd) | SB | - | - | 127 | 127 | 201 | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | NB | - | - | 74 | 74 | - | - |
| 10 | New Alignment (South of New Interchange with Soapstone Rd) | SB | - | - | 127 | 127 | - | - |

*Note: Alignment C volumes have been adjusted as part of the post processing effort

4. EXISTING CONDITIONS ANALYSES

Existing condition traffic data was analyzed. This included daily and peak hour traffic volumes, through trips vs. local trips, crash data, speed data, and operational analyses.

4.1 VOLUME SUMMARY

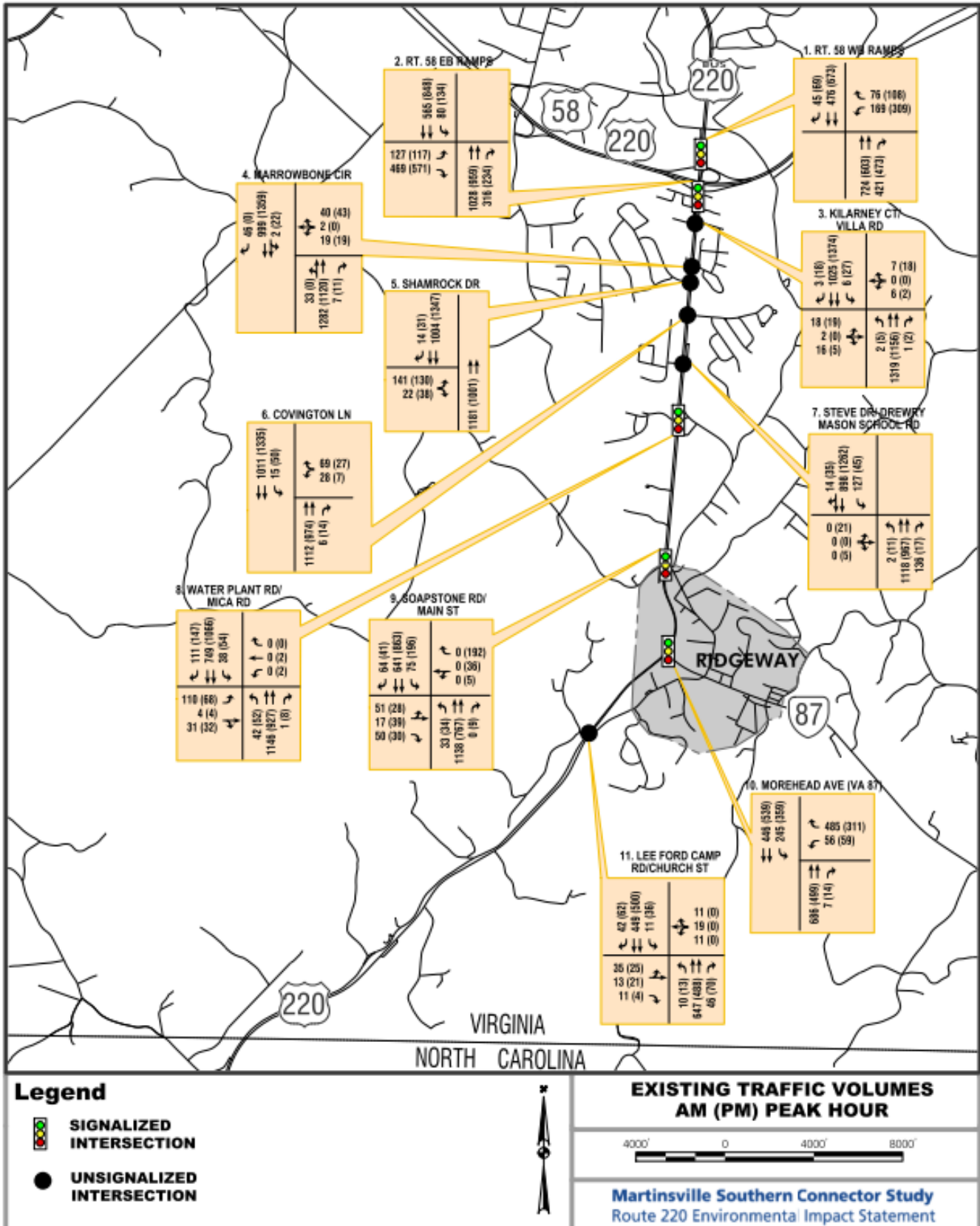
4.1.1 Daily Volumes

Daily link volumes for auto and truck traffic by direction were developed from the travel demand subarea model for existing 2018. These volumes for each segment along the Route 220 study corridor limits are summarized in **Figures 5-1** and **5-2** with the future No-Build volumes in Section 5.1.1.

4.1.2 Peak Hour Volumes

AM and PM peak hour volumes for existing 2018 conditions for each Route 220 study intersection were developed with the travel demand subarea model post-processing efforts, which are shown in **Figure 4-1**.

Figure 4-1: Existing (2018) Peak Hour Intersection Volumes



4.1.3 Through Trips

There is a substantial amount of through traffic along the Route 220 corridor in the study area, much of it traveling to and from the south toward Route 58 to the west. In addition, there is local traffic that uses this corridor to access residential, school, and commercial uses. One purpose of the relocating of this corridor is to separate through and local trips.

The number of trips and percentage of trips that are through trips and local trips were calculated by the travel demand subarea model. **Table 4-1** summarizes this information for auto (non-truck) traffic and **Table 4-2** summarizes this information for truck traffic along various segments of the roadway network.

Table 4-1: Existing Through Traffic vs. Local Traffic (Auto)

| SEGMENT | Direction | Auto | | | | | Direction | Auto | | | | |
|---------------------------------|-----------|---------------|--------------|---------------|--------------|---------------|-----------|---------------|--------------|---------------|--------------|---------------|
| | | Local | % | Through | % | Total | | Local | % | Through | % | Total |
| Route 58 to the West | EB | 2,210 | 38.9% | 3,470 | 61.1% | 5,680 | WB | 2,440 | 36.5% | 4,250 | 63.5% | 6,690 |
| Route 220 to the South | NB | 890 | 21.2% | 3,310 | 78.8% | 4,200 | SB | 960 | 20.3% | 3,770 | 79.7% | 4,730 |
| VA 87, Morehead Avenue | EB | 4,829 | 100.0% | 0 | 0.0% | 4,829 | WB | 2,003 | 63.4% | 1,157 | 36.6% | 3,160 |
| Route 58 to the East | EB | 0 | 0.0% | 5,120 | 100.0% | 5,120 | WB | 2,400 | 41.5% | 3,380 | 58.5% | 5,780 |
| Route 220, South of 220/58 Int. | NB | 94 | 0.9% | 10,683 | 99.1% | 10,777 | SB | 7,251 | 69.3% | 3,218 | 30.7% | 10,469 |
| Route 220 to the North | NB | 6,000 | 72.9% | 2,230 | 27.1% | 8,230 | SB | 2,400 | 36.1% | 4,240 | 63.9% | 6,640 |
| Lee Ford Camp Road | EB | 90 | 42.9% | 120 | 57.1% | 210 | WB | 140 | 63.6% | 80 | 36.4% | 220 |
| Soapstone Road | EB | 290 | 65.9% | 150 | 34.1% | 440 | WB | 490 | 100.0% | 0 | 0.0% | 490 |
| Old Leaksville Road | EB | 461 | 45.7% | 549 | 54.3% | 1,010 | WB | 834 | 99.8% | 1 | 0.2% | 835 |
| Eggleston Falls Road | EB | 656 | 96.9% | 21 | 3.1% | 677 | WB | 67 | 8.1% | 767 | 91.9% | 834 |
| Total | | 15,521 | 37.7% | 25,653 | 62.3% | 41,173 | | 18,985 | 47.6% | 20,863 | 52.4% | 39,849 |

Table 4-2: Existing Through Traffic vs. Local Traffic (Truck)

| SEGMENT | Direction | Truck | | | | | Direction | Truck | | | | |
|---------------------------------|-----------|--------------|--------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|--------------|
| | | Local | % | Through | % | Total | | Local | % | Through | % | Total |
| Route 58 to the West | EB | 630 | 34.2% | 1,210 | 65.8% | 1,840 | WB | 360 | 18.8% | 1,560 | 81.3% | 1,920 |
| Route 220 to the South | NB | 230 | 15.5% | 1,250 | 84.5% | 1,480 | SB | 320 | 20.6% | 1,230 | 79.4% | 1,550 |
| VA 87, Morehead Avenue | EB | 740 | 100.0% | 0 | 0.0% | 740 | WB | 80 | 18.6% | 1,507 | 350.5% | 430 |
| Route 58 to the East | EB | 0 | 0.0% | 820 | 100.0% | 820 | WB | 180 | 15.4% | 990 | 84.6% | 1,170 |
| Route 220, South of 220/58 Int. | NB | 0 | 0.0% | 1,890 | 100.0% | 1,890 | SB | 1,135 | 53.2% | 1,000 | 46.8% | 2,135 |
| Route 220 to the North | NB | 330 | 44.0% | 420 | 56.0% | 750 | SB | 170 | 32.7% | 350 | 67.3% | 520 |
| Lee Ford Camp Road | EB | 0 | 0.0% | 30 | 100.0% | 30 | WB | 0 | 0.0% | 20 | 100.0% | 20 |
| Soapstone Road | EB | 10 | 100.0% | 0 | 0.0% | 10 | WB | 0 | 0.0% | 10 | 100.0% | 10 |
| Old Leaksville Road | EB | 0 | N/A | 0 | N/A | 0 | WB | 0 | N/A | 0 | N/A | 0 |
| Eggleston Falls Road | EB | 0 | N/A | 0 | N/A | 0 | WB | 15 | 100.0% | 0 | 0.0% | 15 |
| Total | | 1,940 | 25.7% | 5,620 | 74.3% | 7,560 | | 2,260 | 29.1% | 5,510 | 70.9% | 7,770 |

4.2 OPERATIONAL ANALYSES

4.2.1 Methodology

Traffic operational analyses was performed for the Existing Conditions to determine the performance measures of effectiveness and to evaluate capacity and operations along each segment of Route 220.

Synchro 10 was used to analyze AM and PM peak hour traffic conditions. Traffic operational analysis have been conducted in conformance with the VDOT Traffic Operations and Safety Analysis Manual, Version 1.1 (TOSAM). Proposed measures of effectiveness for intersections include:

- Signalized – Overall and approach delays [seconds per vehicle(sec/veh)]
- Unsignalized – Side street stop or yield condition approach delays (sec/veh)
- Queues – 95th percentile (feet)

The Transportation Research Board’s *Highway Capacity Manual* (Sixth Edition) methodologies were used for signalized and unsignalized analysis. **Table 4-3** details the criteria for each level of service (LOS) threshold. LOS greater than D are considered excessive.

Table 4-3: Level of Service Criteria

| LOS | Signalized Control Delay (sec/veh) | Stop/ Roundabout Control Delay (sec/veh) | Characteristics |
|----------|------------------------------------|--|---|
| A | <= 10.0 | <= 10.0 | Free traffic flow with high level of maneuverability |
| B | 10.1 – 20.0 | 10.1 – 15.0 | Stable traffic flow with maneuverability affected by other users within traffic stream |
| C | 20.1 – 35.0 | 15.1 – 25.0 | Stable traffic flow with maneuverability affected by other users within traffic stream |
| D | 35.1 – 55.0 | 25.1 – 35.0 | High density but stable traffic flow with speed and freedom to maneuver in traffic stream severely restricted |
| E | 55.1 – 80.0 | 35.1 – 50.0 | Unstable traffic flow with freedom to maneuver in traffic stream very difficult |
| F | > 80.0 | > 50.0 | Breakdown in traffic flow with queues forming and operations within traffic stream characterized by stop and go |

Signal timings for the existing five signalized intersection were obtained from VDOT to use for the analyses in Synchro and SimTraffic. The timings outputs in Synchro are included in **Appendix D**.

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4.2.2 Capacity Results

Table 4-4 summarizes the levels of service, delays, and queues by lane group, approach, and overall intersection (for signalized intersections). Detailed Synchro worksheets are included in Appendix E.

Table 4-4: Existing (2018) Capacity Analysis Summary

| Intersection | Movement | AM | | | PM | | |
|---|----------|-----|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 1. Route 58 WB Ramp | Overall | B | 12.7 | - | B | 16.7 | - |
| | WB | D | 38.7 | - | D | 50.1 | - |
| | WBL/T | D | 42.6 | 209.0 | E | 57.5 | 305.0 |
| | WBR | C | 28.6 | 32.0 | C | 27.8 | 40.0 |
| | NB | A | 7.2 | 126.0 | A | 6.7 | 84.0 |
| | SB | A | 6.2 | - | A | 7.3 | - |
| | SBT | A | 6.2 | 70.0 | A | 7.4 | 123.0 |
| 2. Route 58 EB Ramp | SBR | A | 5.2 | 8.0 | A | 5.7 | 14.0 |
| | Overall | D | 44.9 | - | F | 176.8 | - |
| | EB | F | 129.9 | - | F | 580.8 | - |
| | EBL | E | 59.1 | 175.0 | D | 50.4 | 135.0 |
| | EBR | F | 155.1 | 455.0 | F | 682.0 | 797.0 |
| | NB | B | 19.4 | - | B | 19.8 | - |
| | NBT | C | 20.3 | 420.0 | C | 20.6 | 241.0 |
| 3. Kilarney Court/Villa Road | NBR | B | 16.4 | 156.0 | B | 17.1 | 115.0 |
| | SB | B | 14.0 | - | B | 16.4 | - |
| | SBL | E | 62.6 | 112.0 | E | 62.4 | 179.0 |
| | SBT | A | 6.4 | 99.0 | A | 7.0 | 161.0 |
| | EB | F | 192.7 | 97.5 | F | 173.5 | 30.0 |
| | WB | F | 132.6 | 45.0 | E | 39.6 | 15.0 |
| | NB | A | 0.0 | - | A | 0.2 | - |
| 4. Marrowbone Circle | NBL | B | 10.9 | 0.0 | B | 13.6 | 2.5 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.2 | - | A | 0.3 | - |
| | SBL | B | 12.3 | 2.5 | B | 11.3 | 5.0 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 5. Shamrock Drive | WB | F | 1042.6 | 382.5 | F | 440.9 | 230.0 |
| | NB | A | 2.7 | - | A | 0.0 | - |
| | NBL/T | B | 12.2 | 7.5 | A | 0.0 | - |
| | NBT | A | 2.4 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.0 | - |
| | SBL/T | B | 12.4 | 0.0 | B | 11.2 | 5.0 |
| 6. Covington Lane | SBT | A | 0.0 | - | A | 0.0 | - |
| | EB | F | 557.2 | 450.0 | F | 162.7 | 852.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | SBL | B | 12.2 | 2.5 | B | 10.4 | 7.5 |
| 7. Steve Drive/Drewry Mason School Road | SBT | A | 0.0 | - | A | 0.0 | - |
| | EB | A | 0.0 | - | F | 338.9 | 102.5 |
| | NB | A | 0.0 | - | A | 0.3 | - |
| | NBL | B | 10.6 | 0.0 | B | 13.3 | 2.5 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 1.8 | - | A | 0.5 | - |
| 8. Water Plant Road | SBL | C | 15.4 | 30.0 | B | 11.4 | 10.0 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | Overall | B | 15.6 | - | B | 21.5 | - |
| | EB | D | 43.4 | - | D | 50.0 | - |
| | EBL | D | 45.5 | 132.0 | D | 52.4 | 99.0 |
| | EBT/R | D | 39.0 | 0.0 | D | 46.3 | 18.0 |
| 9. Soapstone Road/Main Street | WB | A | 0.0 | - | D | 50.3 | - |
| | WBL | A | 0.0 | 0.0 | D | 50.0 | 4.0 |
| | WBT | A | 0.0 | 0.0 | D | 50.5 | 5.0 |
| | WBR | A | 0.0 | 0.0 | A | A | 0.0 |
| | NB | B | 14.5 | - | B | 18.3 | - |
| | NBL | D | 51.4 | 62.0 | E | 61.5 | 37.0 |
| | NBT | B | 12.9 | 420.0 | B | 15.4 | 166.0 |
| 10. Morehead Avenue (VA 87) | NBR | A | 6.8 | 0.0 | B | 10.5 | 0.0 |
| | SB | B | 11.5 | - | C | 20.6 | - |
| | SBL | D | 49.2 | 60.0 | E | 56.9 | 48.0 |
| | SBT | A | 9.9 | 239.0 | B | 19.6 | 304.0 |
| | SBR | A | 7.8 | 11.0 | B | 11.3 | 0.0 |
| | Overall | C | 28.9 | - | D | 45.4 | - |
| | EB | E | 62.0 | - | D | 80.0 | - |
| 11. Lee Ford Camp Road/Chruh Street | EBL/T | E | 63.3 | 121.0 | F | 82.7 | 140.0 |
| | EBR | E | 60.2 | 0.0 | E | 75.5 | 0.0 |
| | WB | E | 75.2 | - | F | 87.8 | - |
| | WBL/T | E | 60.6 | 15.0 | E | 60.2 | 81.0 |
| | WBR | E | 78.8 | 0.0 | F | 97.6 | 77.0 |
| | NB | C | 29.2 | - | D | 36.2 | - |
| | NBL | F | 112.7 | 63.0 | F | 90.6 | 74.0 |
| 11. Lee Ford Camp Road/Chruh Street | NBT | C | 26.3 | 623.0 | C | 33.3 | 348.0 |
| | NBR | A | 0.0 | 0.0 | C | 25.3 | 0.0 |
| | SB | B | 19.4 | - | D | 97.5 | - |
| | SBL | E | 68.8 | 124.0 | F | 37.2 | 310.0 |
| | SBT | B | 13.4 | 279.0 | C | 21.1 | 385.0 |
| | SBR | B | 11.8 | 0.0 | B | 15.4 | 0.0 |
| | Overall | E | 74.8 | - | C | 31.1 | - |
| 11. Lee Ford Camp Road/Chruh Street | WB | F | 203.7 | - | E | 55.0 | - |
| | WBL | C | 34.4 | 70.0 | D | 37.7 | 68.0 |
| | WBR | F | 227.9 | 206.0 | E | 59.2 | 55.0 |
| | NB | C | 28.1 | - | C | 31.4 | - |
| | NBT | C | 28.2 | 311.0 | C | 31.6 | 201.0 |
| | NBR | C | 21.2 | 3.0 | C | 23.8 | 12.0 |
| | SB | B | 15.4 | - | C | 22.2 | - |
| 11. Lee Ford Camp Road/Chruh Street | SBL | C | 21.9 | 141.0 | D | 37.2 | 238.0 |
| | SBT | B | 11.7 | 120.0 | B | 11.3 | 148.0 |
| | EB | D | 27.1 | 1.1 | D | 28.2 | 25.0 |
| | WB | D | 26.1 | 0.7 | A | 0.0 | - |
| | NB | A | 0.1 | - | A | 0.2 | - |
| | NBL | A | 8.5 | 0.0 | A | 8.8 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| 11. Lee Ford Camp Road/Chruh Street | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.2 | - | A | 0.5 | - |
| | SBL | A | 9.3 | 0.0 | A | 8.7 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |

There are some Route 220 intersections, approaches and lane groups that operate at levels of service below capacity which are listed below.

Route 58 Eastbound Ramps: The overall intersection operates below capacity during the PM peak hour, and the eastbound approaches have excessive delays during both peak hours. The eastbound right-turn operates with excessive delays and queues as well.

Kilarney Court/Villa Road: The eastbound and westbound approaches of Kilarney Court and Villa Road operate with excessive delays during both peak hours.

Marrowbone Circle: The westbound approach of Marrowbone Circle operates at with excessive delays during both peak hours.

Shamrock Drive: The eastbound approach of Shamrock Drive operates with excessive delays and queues during both peak hours.

Covington Lane: The westbound approach operates with excessive delays during the PM peak hour only.

Steve Drive: The eastbound approach of Steve Drive operates with excessive delays during the PM peak hour only.

Soapstone Road/Main Street: The eastbound and westbound minor street approaches and mainline left-turn movements experience excessive delays during both peak hours.

Morehead Avenue: There are excessive delays along the westbound approach during both peak hours from the right-turn movement.

4.2.3 Travel Time Results

Travel times along the corridor were measured in the field February 5-6, 2019 during the peak hours. Five travel time runs were completed during each peak hour both northbound and southbound. In addition, travel times along the Route 220 were also computed using SimTraffic. **Table 4-5** summarizes the average travel time results in seconds.

The field-measured existing northbound travel times are almost identical to the modeled existing travel times. The field-measured existing southbound travel times during the AM peak hour are approximately 7% higher than the model, while the field-measured travel times during the PM peak hour are approximately 6% lower. These are both within the 20% threshold that the VDOT TOSAM requires for simulation calibration along freeways.

Table 4-5: Existing Conditions Travel Times

| Direction | Field Measurements | | SimTraffic Model | |
|------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| | Existing AM Travel Time (sec) | Existing PM Travel Time (sec) | Existing AM Travel Time (sec) | Existing PM Travel Time (sec) |
| Northbound | 537 | 576 | 539.4 | 576 |
| Southbound | 536 | 512 | 495.9 | 542.5 |

4.3 SPEED DATA

As part of the data collection effort, speed information was collected along Route 220, just north of the North Carolina border. This information was collected both northbound and southbound in each lane over two days (Wednesday, May 9, 2018 and Thursday, May 10, 2018). **Table 4-6** summarizes the speed data, including the average speed, 85th percentile speed, and the 10 mph pace speed, which is the 10 mph range with the most vehicles. This data was collected in 5 mph increments, so the 10 mph will be within an even 5 mph range. The data also includes the percentage within the pace speed as well as the percentage over 65 mph. The speed limit in this area is 55 mph. The speed limit drops to 45 mph just south of the Water Plant Road/ Mica Road intersection to the Route 58 interchange.

As seen in the table, the average speeds are over 60 mph along the inside lanes in both directions and along the northbound outside lane. The average speed, pace speed and 85th percentile speed are over 5 mph slower along the southbound outside lane. The percentage of traffic over 65 mph is substantially lower in this lane compared to other three lanes as well. The southbound lanes

are along the original alignment of the two-lane Route 220 and have substantially more geometric changes along the alignment, including both horizontal and vertical curves that do are not as pronounced along the more recently constructed northbound lanes. This is likely a cause of the slower traffic. In addition, as seen in the following section, truck traffic is much higher along the outside lanes of both the northbound and southbound lanes, and truck traffic may travel slower than other vehicular traffic.

Table 4-6: 2018 Route 220 Speed Data Summary

| Lane | Average Speed (MPH) | 85th Percentile Speed (MPH) | 10 MPH Pace Speed | % Within MPH Pace Speed | % Over 65 MPH |
|-------------------------------|---------------------|-----------------------------|-------------------|-------------------------|---------------|
| Wednesday, May 9, 2018 | | | | | |
| Northbound Outside Lane | 62.3 | 67.6 | 60 -70 | 74.8% | 31.2% |
| Northbound Inside Lane | 64.3 | 68.7 | 60-70 | 87.1% | 55.4% |
| Southbound Outside Lane | 57.9 | 63.8 | 55-65 | 63.1% | 8.5% |
| Southbound Inside Lane | 62.3 | 67.6 | 60-70 | 76.0% | 30.6% |
| Thursday, May 10, 2018 | | | | | |
| Northbound Outside Lane | 62.6 | 67.8 | 60 -70 | 77.2% | 33.4% |
| Northbound Inside Lane | 64.2 | 68.7 | 60-70 | 86.2% | 57.3% |
| Southbound Outside Lane | 57.2 | 63.4 | 55-65 | 59.9% | 7.0% |
| Southbound Inside Lane | 61.9 | 67.3 | 60-70 | 70.3% | 27.3% |

4.4 CRASH DATA

Crash data was analyzed using VDOT maintained data for the study area, along Route 220, from the North Carolina state line to north of the interchange with Route 58. Reported crash data was available for the years 2011-2017. **Table 4-7** summarizes the number of crashes for each segment by year. The number of crashes has increased since 2012, with Segment C experiencing the most crashes. Detailed crash information by intersection is included in **Appendix F**.

Table 4-7: Route 220 Crashes by Year

| Location | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total | Total % |
|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|
| Segment A | 15 | 9 | 14 | 22 | 15 | 17 | 16 | 108 | 35.9% |
| Segment B | 8 | 11 | 9 | 8 | 17 | 16 | 19 | 88 | 29.2% |
| Segment C | 21 | 10 | 15 | 10 | 16 | 17 | 16 | 105 | 34.9% |
| Total | 44 | 30 | 38 | 40 | 48 | 50 | 51 | 301 | 100.0% |
| Total % | 14.6% | 10.0% | 12.6% | 13.3% | 15.9% | 16.6% | 16.9% | 100.0% | 100.0% |

Table 4-8 summarizes the types of crashes by collision type. The three most prevalent types of crashes were angle, rear end, and fixed object collisions; which represented approximately 87% of the total crashes in the study area. Fixed object crashes were most prevalent in Segment A, where there are no signalized intersections and more changes to horizontal and vertical geometry along Route 220, especially along the southbound lanes. Angle crashes were also prevalent as there are multiple driveways and entrances. Rear end and angle crashes were the most common type along Segment B, primarily at the Route 220 signalized intersections at Morehead Avenue and Soapstone Road/Main Street. Rear end and angle crashes were also more prevalent along Segment C, where multiple access points exist, as well as signalized and unsignalized intersections.

Table 4-8: Route 220 Crashes by Type

| Location | Angle | Rear End | Fixed Object | Deer | Sideswipe | Head On | Non-Coll. | Other | Ped | Total |
|----------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
| Segment A | 34 | 8 | 50 | 6 | 4 | 2 | 3 | 0 | 1 | 108 |
| Segment B | 29 | 38 | 9 | 5 | 3 | 2 | 0 | 2 | 0 | 88 |
| Segment C | 38 | 43 | 13 | 5 | 6 | 0 | 0 | 0 | 0 | 105 |
| Total | 101 | 89 | 72 | 16 | 13 | 4 | 3 | 2 | 1 | 301 |
| Total % | 33.6% | 29.6% | 23.9% | 5.3% | 4.3% | 1.3% | 1.0% | 0.7% | 0.3% | 100.0% |

Table 4-9 summarizes the crash severity for each segment. There were three fatalities along the study corridor, all in Segment A. Two were collisions with fixed objects, while one was a head-on collision. Injury crashes accounted for over 40% of all non-fatal crashes, and Segment A had the highest number of injury crashes.

Table 4-9: Route 220 Crash Severity

| Location | Property Damage | Injury | Fatality | Total |
|----------------|-----------------|--------------|-------------|---------------|
| Segment A | 58 | 47 | 3 | 108 |
| Segment B | 49 | 39 | 0 | 88 |
| Segment C | 73 | 32 | 0 | 105 |
| Total | 180 | 118 | 3 | 301 |
| Total % | 59.8% | 39.2% | 1.0% | 100.0% |

Table 4-10 summarizes the number of crashes by direction along Route 220. Northbound crashes were more prevalent along Segments B and C, while southbound crashes were more prevalent in Segment A.

Table 4-10: Route 220 Crashes by Location (NB vs. SB)

| Location | NB | | SB | | Total |
|--------------|------------|--------------|------------|--------------|------------|
| | Crashes | % | Crashes | % | |
| Segment A | 44 | 40.7% | 64 | 59.3% | 108 |
| Segment B | 51 | 58.0% | 37 | 42.0% | 88 |
| Segment C | 62 | 59.0% | 43 | 41.0% | 105 |
| Total | 157 | 52.2% | 144 | 47.8% | 301 |

Table 4-11 summarizes the number of crashes that were intersection-related. More crashes were at intersections along the corridor, though Segment A has notably more non-intersection crashes. Most of the crashes in Segment B occurred near the intersections at Morehead Avenue and Soapstone/Main Street. Segment C had almost three-quarters of all crashes occur at intersections, including rear-end collisions caused by stopped/queued vehicles at intersections.

Table 4-11: Route 220 Crashes by Intersection vs. Non-Intersection

| Location | Int.-Related | | Non Int.-Related | | Total |
|--------------|--------------|--------------|------------------|--------------|------------|
| | Crashes | % | Crashes | % | |
| Segment A | 33 | 30.6% | 75 | 69.4% | 108 |
| Segment B | 47 | 53.4% | 41 | 46.6% | 88 |
| Segment C | 77 | 73.3% | 28 | 26.7% | 105 |
| Total | 157 | 52.2% | 144 | 47.8% | 301 |

There are a few areas where crashes are especially high:

- Route 220 at Lee Ford Camp Road (unsignalized) and Morehead Avenue (signalized) - There were 28 and 27 crashes respectively at these locations, with angle crashes making up the majority at both intersections.
- Route 220 at Soapstone Road/Main Street - There were 36 crashes at the signalized intersection, with rear end and angle collisions comprising most of the total number of crashes.
- Route 220 at Water Plant Road - There were 18 crashes at the signalized intersection, all either angle or rear end crashes.
- Route 220 at Route 58 Eastbound Ramps - There were 37 crashes at this signalized intersection, with all either rear end or angle crashes.
- Route 220 at Route 58 Westbound Ramps - There were only 9 crashes at this signalized intersection.

Along Route 220 south of Lee Ford Camp Road to the North Carolina border, there were a total of 73 crashes, with over half of the crashes were fixed objects collisions, typically single vehicle crashes. These may be due to the roadway geometry, as more crashes occurred southbound where horizontal and vertical curvature varies more than along northbound. In addition, there were six deer-related crashes along this stretch of road.

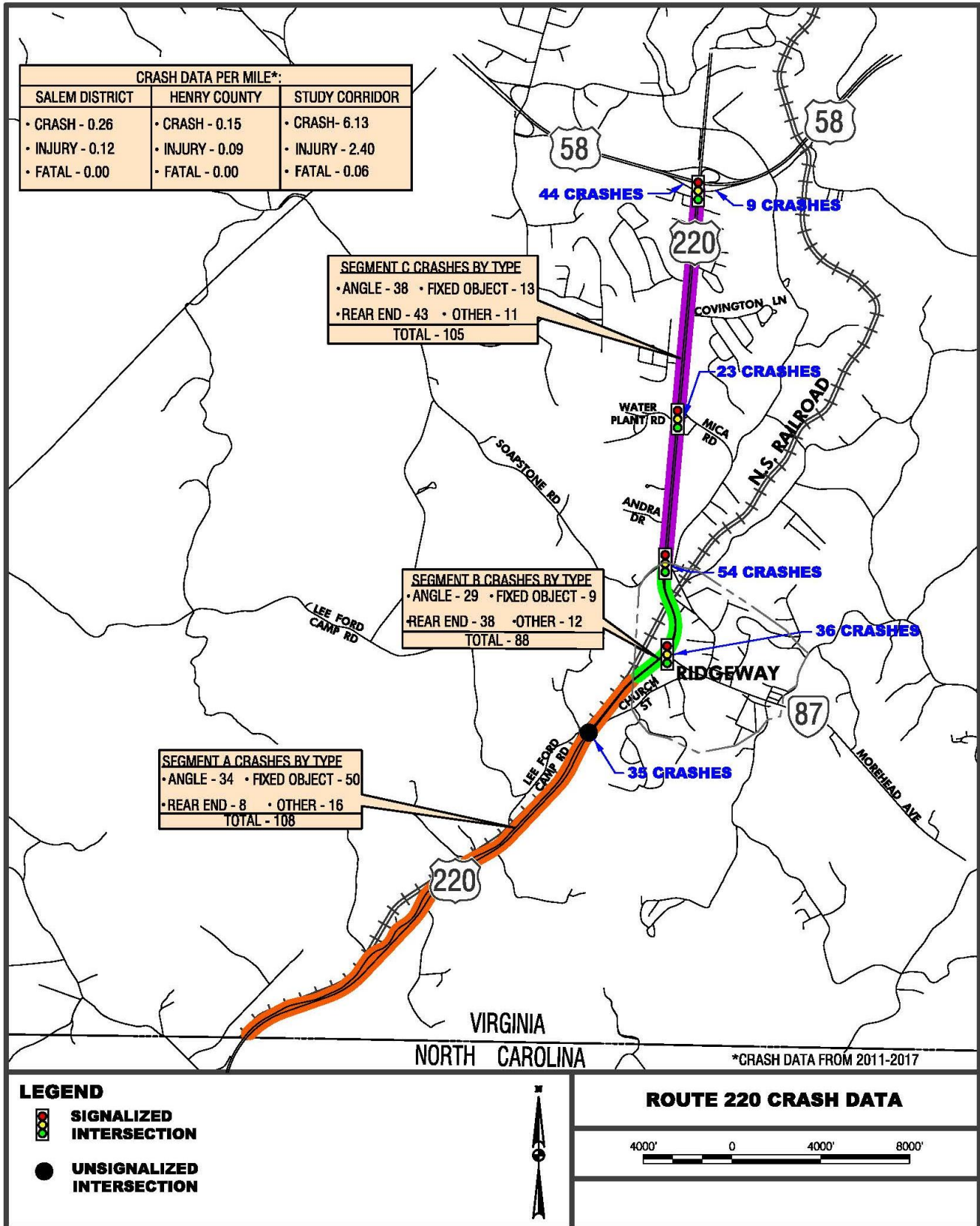
Information was not readily available concerning how many crashes included trucks as reports generally did not include whether a large truck was involved. One crash did report that one vehicle involved was a school bus.

Crash frequencies were calculated based on number of reported crashes per miles of roadway from 2013-2017 Virginia Statewide, Salem District and Henry County. The state, district (based on the average of all county and city averages within the District) and county averages were based on available data found on the VDOT website. The crash frequencies for the Route 220 study corridor were also calculated based on the crash data from 2013-2017. **Table 4-12** summarizes the average annual number of crashes and crash rates, including injury and fatal crash data (**Figure 4-2**). The crash frequencies for the Route 220 study corridor far exceed the regional rates in total and in all three segments.

Table 4-12: Average Crashes and Frequencies by Region

| Location | Ave No. Crashes Per Year | | | Roadway Miles | Crash Frequency Per Mile | | |
|-----------------------|--------------------------|--------|-------|---------------|--------------------------|--------|-------|
| | Total | Injury | Fatal | | Total | Injury | Fatal |
| Statewide | 124749 | 65225 | 760 | 70105 | 1.78 | 0.93 | 0.01 |
| Salem District | 1869 | 908 | 20 | 7314.49 | 0.26 | 0.12 | 0.00 |
| Henry County | 128 | 77 | 3 | 837.24 | 0.15 | 0.09 | 0.00 |
| Study Corridor | 43.0 | 16.9 | 0.4 | 7.02 | 6.13 | 2.40 | 0.06 |
| <i>Segment A</i> | 15.4 | 6.7 | 0.4 | 3.20 | 4.82 | 2.10 | 0.13 |
| <i>Segment B</i> | 12.6 | 5.6 | 0.0 | 1.16 | 10.84 | 4.80 | 0.00 |
| <i>Segment C</i> | 15.0 | 4.6 | 0.0 | 2.66 | 5.64 | 1.72 | 0.00 |

Figure 4-2: Route 220 Crash Data



5. FUTURE NO-BUILD CONDITION ANALYSES

5.1 VOLUME SUMMARY

5.1.1 Daily Volumes

Table 5-1 summarizes the expected daily traffic in 2018, 2025 and 2040 according the model results. Daily traffic along Route 220 is expected to increase between 2018 and 2040 (about 1.0% annually) along the length of the study area, including increases of close to 50% (1.8% annually) just south of Morehead Avenue.

Table 5-1: Route 220 Average Daily Traffic Summary

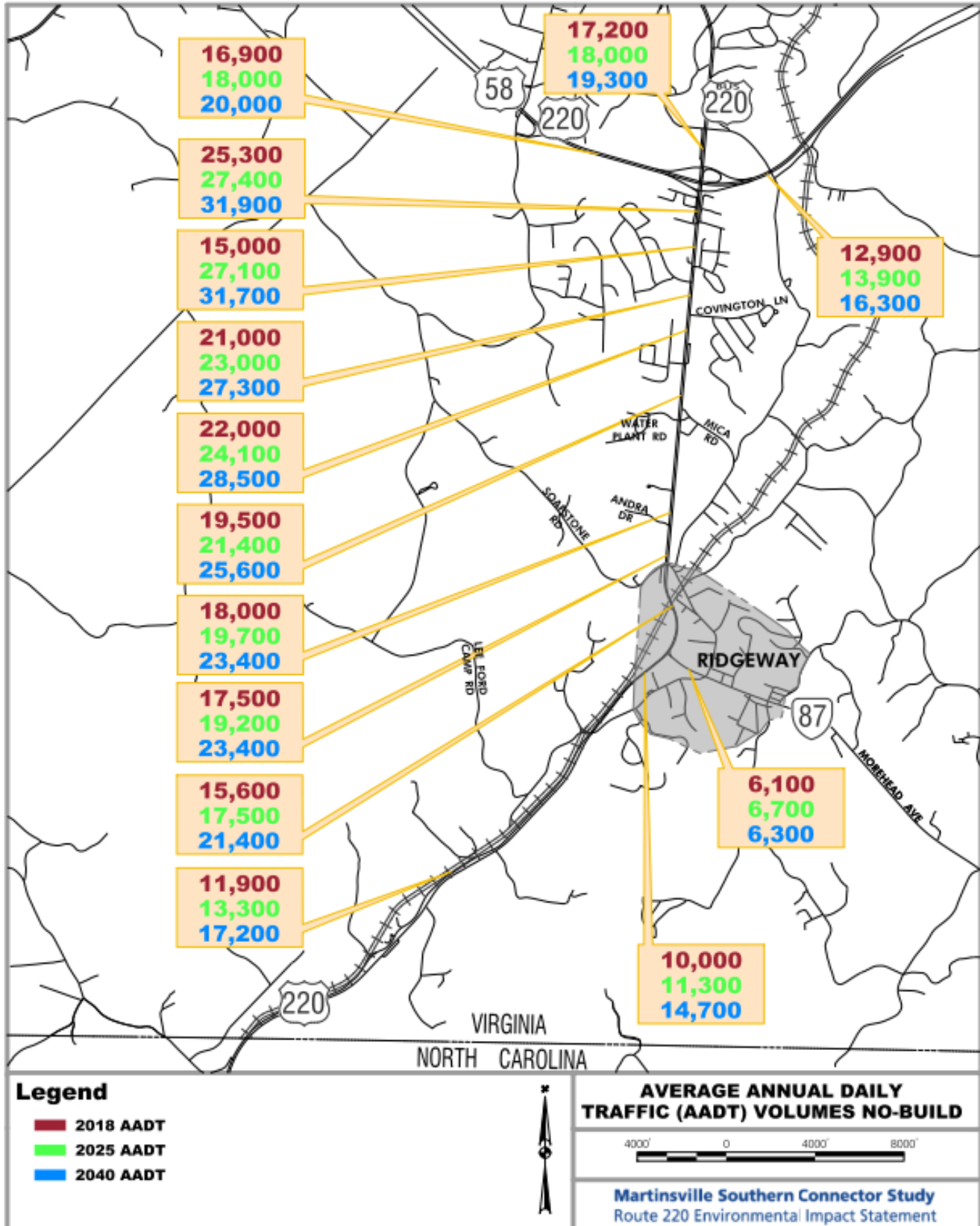
| Location | 2018 (Model) | 2025 (Model) | 2040 (Model) | % Increase (2018- 2025) | % Increase (2018- 2040) | VDOT Published 2017 Counts | % Difference |
|------------------------------------|-----------------|-----------------|-----------------|----------------------------------|----------------------------------|-------------------------------------|-----------------|
| Segment A | 11900 | 13300 | 17200 | 11.8% | 44.5% | 11000 | 8.2% |
| Segment B South of Morehead Avenue | 10000 | 11300 | 14700 | 13.0% | 47.0% | 11000 | -9.1% |
| Segment B North of Morehead Avenue | 17500 | 19200 | 23400 | 9.7% | 33.7% | 19000 | -7.9% |
| Segment C North of Soapstone Road | 18000 | 19700 | 23400 | 9.4% | 30.0% | 19000 | -5.3% |
| Segment C South of US 58 Bypass | 25300 | 27400 | 31900 | 8.3% | 26.1% | 19000 | 33.2% |

Daily traffic volumes are shown for 2018, 2025 No-Build, and 2040 No-Build in **Figure 5-1**. Truck percentages for 2018, 2015 No-Build, and 2040 No-Build are shown in **Figure 5-2**.

5.1.2 Peak Hour Volumes

AM and PM peak hour volumes for 2025 and 2040 No-Build conditions for each Route 220 study intersection were developed with the travel demand subarea model post-processing efforts, which are shown in **Figure 5-3** for 2025 and in **Figure 5-4** for 2040.

Figure 5-1: 2018, 2025, and 2040 Route 220 Average Annual Daily Traffic (AADT)



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Figure 5-2: 2018, 2025, and 2040 Route 220 Truck AADT and Percentages

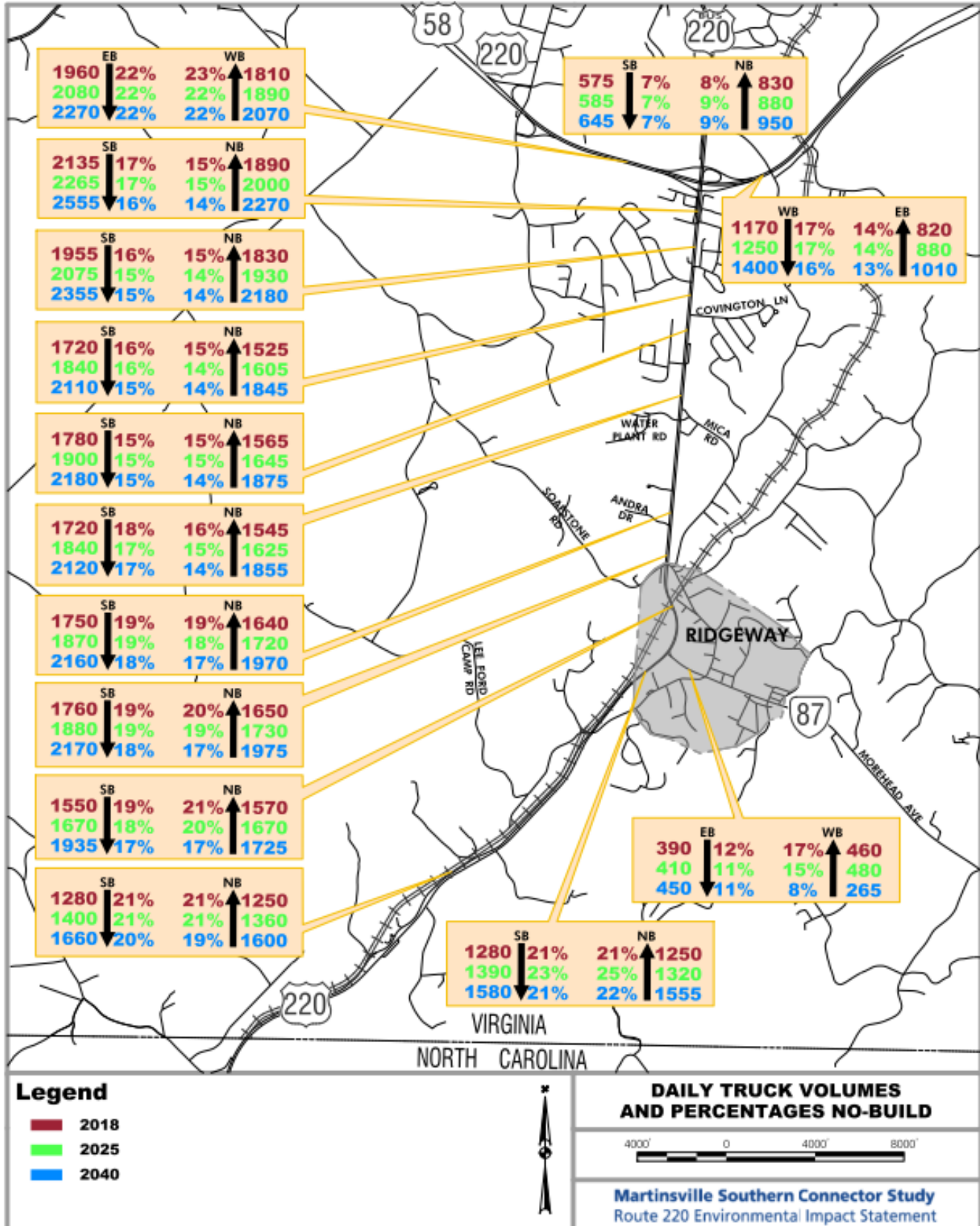


Figure 5-3: 2025 No-Build Peak Hour Intersection Volumes

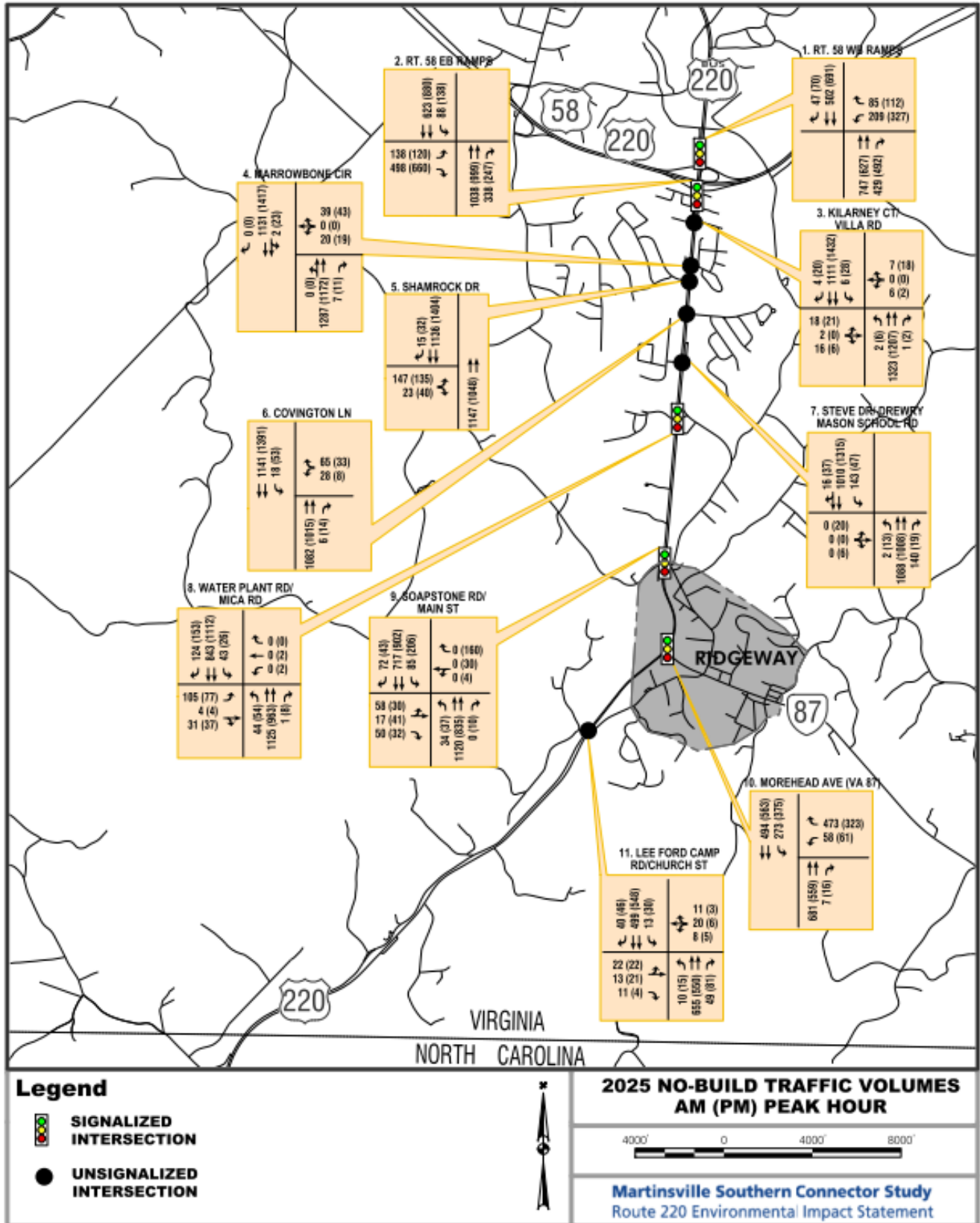
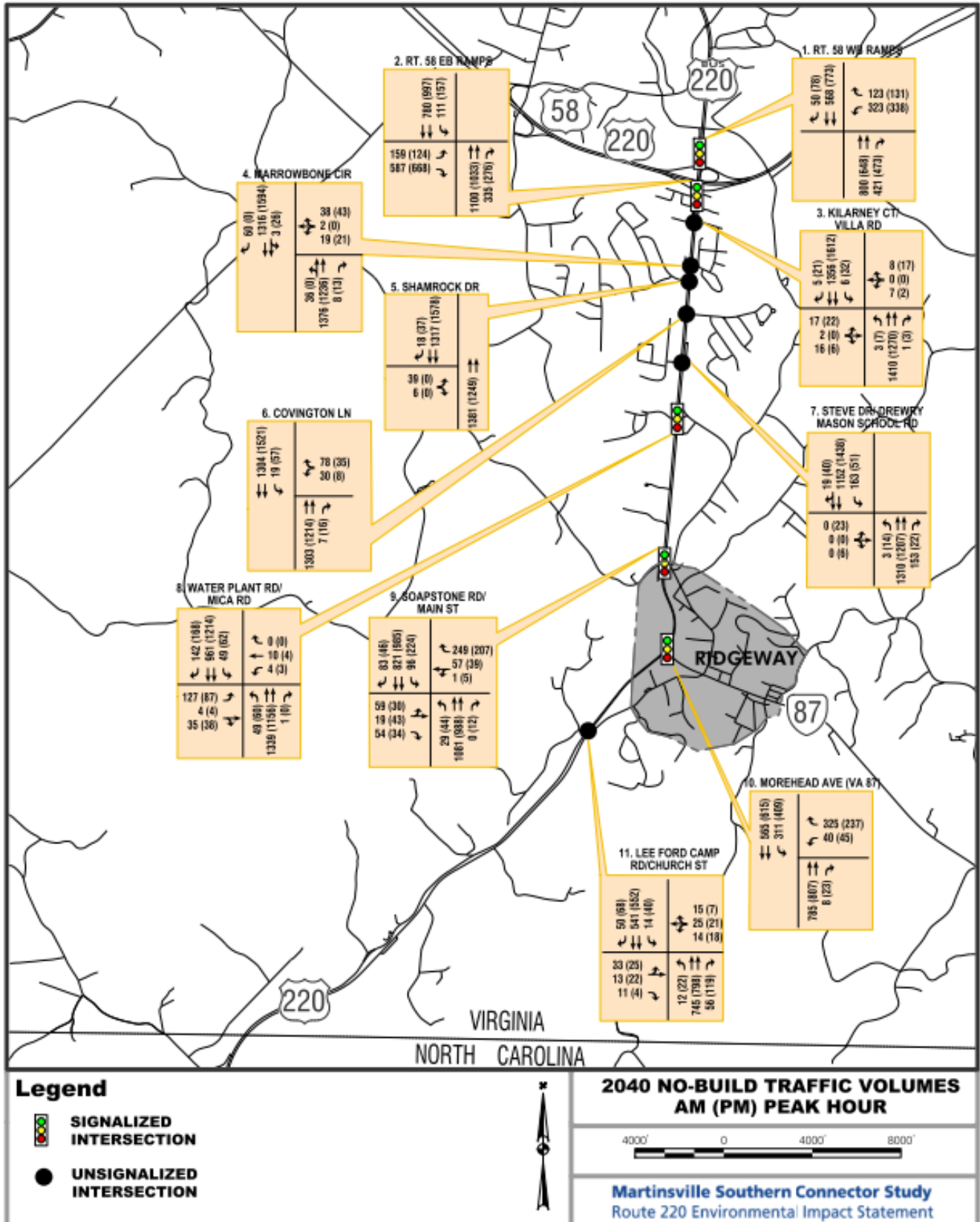


Figure 5-4: 2040 No-Build Peak Hour Intersection Volumes



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5.1.1 Through Trips

The number of future trips and percentage of trips that are through trips and local trips were calculated by the subarea travel demand model. **Table 5-2** summarizes this information for auto (non-truck) traffic and **Table 5-3** summarizes this information for truck traffic along various segments of the roadway network.

Table 5-2: 2040 Through Traffic vs. Local Traffic (Auto)

| SEGMENT | Direction | Auto | | | | | Direction | Auto | | | | |
|---------------------------------|-----------|--------|--------|---------|--------|--------|-----------|--------|--------|---------|-------|--------|
| | | Local | % | Through | % | Total | | Local | % | Through | % | Total |
| Route 58 to the West | EB | 3,030 | 44.1% | 3,840 | 55.9% | 6,870 | WB | 3,290 | 41.2% | 4,690 | 58.8% | 7,980 |
| Route 220 to the South | NB | 2,210 | 37.6% | 3,660 | 62.4% | 5,870 | SB | 2,280 | 35.3% | 4,180 | 64.7% | 6,460 |
| VA 87, Morehead Avenue | EB | 5,228 | 100.0% | 0 | 0.0% | 5,228 | WB | 2,371 | 62.6% | 1,419 | 37.4% | 3,791 |
| Route 58 to the East | EB | 0 | 0.0% | 6,610 | 100.0% | 6,610 | WB | 3,580 | 49.0% | 3,730 | 51.0% | 7,310 |
| Route 220, South of 220/58 Int. | NB | 107 | 0.8% | 13,765 | 99.2% | 13,871 | SB | 9,584 | 72.4% | 3,649 | 27.6% | 13,233 |
| Route 220 to the North | NB | 6,780 | 73.5% | 2,440 | 26.5% | 9,220 | SB | 2,810 | 37.5% | 4,690 | 62.5% | 7,500 |
| Lee Ford Camp Road | EB | 100 | 43.5% | 130 | 56.5% | 230 | WB | 150 | 65.2% | 80 | 34.8% | 230 |
| Soapstone Road | EB | 330 | 66.0% | 170 | 34.0% | 500 | WB | 550 | 100.0% | 0 | 0.0% | 550 |
| Old Leaksville Road | EB | 327 | 37.1% | 553 | 62.9% | 879 | WB | 1,049 | 100.0% | 0 | 0.0% | 1,049 |
| Eggleston Falls Road | EB | 699 | 100.0% | 0 | 0.0% | 699 | WB | 50 | 7.9% | 587 | 92.1% | 637 |
| Total | | 18,811 | 37.6% | 31,167 | 62.4% | 49,978 | | 25,715 | 52.8% | 23,025 | 47.2% | 48,739 |

Table 5-3: 2040 Through Traffic vs. Local Traffic (Truck)

| SEGMENT | Direction | Truck | | | | | Direction | Truck | | | | |
|---------------------------------|-----------|-------|--------|---------|--------|-------|-----------|-------|--------|---------|--------|-------|
| | | Local | % | Through | % | Total | | Local | % | Through | % | Total |
| Route 58 to the West | EB | 790 | 36.9% | 1,350 | 63.1% | 2,140 | WB | 470 | 21.5% | 1,720 | 78.5% | 2,190 |
| Route 220 to the South | NB | 400 | 22.5% | 1,380 | 77.5% | 1,780 | SB | 510 | 27.1% | 1,370 | 72.9% | 1,880 |
| VA 87, Morehead Avenue | EB | 860 | 100.0% | 0 | 0.0% | 860 | WB | 110 | 22.4% | 380 | 77.6% | 490 |
| Route 58 to the East | EB | 0 | 0.0% | 1,010 | 100.0% | 1,010 | WB | 310 | 22.1% | 1,090 | 77.9% | 1,400 |
| Route 220, South of 220/58 Int. | NB | 10 | 0.4% | 2,260 | 99.6% | 2,270 | SB | 1,445 | 56.6% | 1,110 | 43.4% | 2,555 |
| Route 220 to the North | NB | 390 | 45.3% | 470 | 54.7% | 860 | SB | 210 | 35.0% | 390 | 65.0% | 600 |
| Lee Ford Camp Road | EB | 0 | 0.0% | 30 | 100.0% | 30 | WB | 0 | 0.0% | 20 | 100.0% | 20 |
| Soapstone Road | EB | 10 | 50.0% | 10 | 50.0% | 20 | WB | 0 | 0.0% | 20 | 100.0% | 20 |
| Old Leaksville Road | EB | 0 | N/A | 0 | N/A | 0 | WB | 0 | N/A | 0 | N/A | 0 |
| Eggleston Falls Road | EB | 10 | N/A | 0 | N/A | 10 | WB | 15 | 100.0% | 0 | 0.0% | 15 |
| Total | | 2,470 | 27.5% | 6,510 | 72.5% | 8,980 | | 3,070 | 33.5% | 6,100 | 66.5% | 9,170 |

5.2 OPERATIONAL ANALYSES

5.2.1 Capacity Results

Capacity analysis was computed using Synchro 10 using existing signal timings. **Table 5-4** and **Table 5-5** summarize the levels of service, delays, and queues for the No-Build condition for 2025 and 2040, respectively. Synchro worksheets are included in **Appendix G**. There are some intersections, approaches and lane groups that would operate with excessive delays and/or queues, which are listed below.

Table 5-4: 2025 Capacity Analysis Summary

| Intersection | Movement | AM | | | PM | | |
|---|------------------------------|---------|-------------|------------|-------|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 1. Route 58 WB Ramp | Overall | B | 14.3 | - | D | 38.7 | - |
| | WB | D | 43.5 | - | F | 131.5 | - |
| | WBL/T | D | 49.3 | 259.0 | F | 164.5 | 456.0 |
| | WBR | C | 28.1 | 34.0 | C | 27.7 | 37.0 |
| | NB | A | 7.6 | 129.0 | A | 7.5 | 106.0 |
| | SB | A | 6.7 | - | A | 7.8 | - |
| | SBT | A | 6.8 | 67.0 | A | 8.0 | 119.0 |
| | SBR | A | 5.5 | 0.0 | A | 5.9 | 14.0 |
| 2. Route 58 EB Ramp | Overall | E | 63.7 | - | F | 185.7 | - |
| | EB | F | 211.6 | - | F | 681.9 | - |
| | EBL | E | 61.6 | 184.0 | E | 55.6 | 161.0 |
| | EBR | F | 266.8 | 568.0 | F | 832.7 | 1082.0 |
| | NB | C | 20.5 | - | C | 24.4 | - |
| | NBT | C | 21.5 | 441.0 | C | 25.7 | 479.0 |
| | NBR | B | 17.7 | 179.0 | B | 19.4 | 146.0 |
| | SB | B | 14.3 | - | B | 16.1 | - |
| | SBL | E | 62.9 | 125.0 | E | 63.9 | 175.0 |
| | SBT | A | 6.8 | 117.0 | A | 8.0 | 182.0 |
| | SBR | A | 6.8 | 117.0 | A | 8.0 | 182.0 |
| | 3. Kilarney Court/Villa Road | Overall | F | 284.1 | 115.0 | F | 846.9 |
| WB | | F | 188.4 | 52.5 | E | 47.0 | 27.5 |
| NB | | A | 0.0 | - | A | 0.1 | - |
| NBL | | B | 11.5 | 0.0 | B | 14.2 | 2.5 |
| NBT | | A | 0.0 | - | A | 0.0 | - |
| NBR | | A | 0.0 | - | A | 0.0 | - |
| SB | | A | 0.2 | - | A | 0.6 | - |
| SBL | | B | 12.6 | 2.5 | B | 12.9 | 15.0 |
| SBT | | A | 0.0 | - | A | 0.0 | - |
| SBR | | A | 0.0 | - | A | 0.0 | - |
| SBR | | A | 0.0 | - | A | 0.0 | - |
| 4. Marrowbone Circle | | Overall | F | 468.0 | 292.5 | F | 874.1 |
| | WB | F | 468.0 | 292.5 | F | 874.1 | 370.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL/T | A | 0.0 | 0.0 | A | 0.0 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.7 | - |
| | SBL/T | B | 12.7 | 2.5 | B | 13.3 | 15.0 |
| 5. Shamrock Drive | Overall | F | 932.7 | 570.0 | F | 1311.9 | 685.0 |
| | WB | F | 932.7 | 570.0 | F | 1311.9 | 685.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 6. Covington Lane | Overall | F | 155.6 | 202.5 | E | 47.5 | 52.5 |
| | WB | F | 155.6 | 202.5 | E | 47.5 | 52.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.3 | - | A | 0.7 | - |
| | SBL | B | 12.3 | 5.0 | B | 12.8 | 12.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 7. Steve Drive/Drewry Mason School Road | Overall | A | 0.0 | 0.0 | F | 337.5 | 97.5 |
| | WB | A | 0.0 | 0.0 | F | 337.5 | 97.5 |
| | NB | A | 0.0 | - | A | 0.3 | - |
| | NBL | B | 11.4 | 0.0 | B | 14.3 | 5.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 1.9 | - | A | 0.4 | - |
| | SBL | C | 16.1 | 37.5 | B | 11.4 | 7.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 8. Water Plant Road | Overall | B | 15.7 | - | C | 20.2 | - |
| | EB | D | 43.5 | - | D | 49.8 | - |
| | EBL | D | 45.8 | 126.0 | D | 51.0 | 113.0 |
| | EBT/R | D | 39.1 | 0.0 | D | 48.4 | 0.0 |
| | WB | A | 0.0 | - | D | 53.2 | - |
| | WBL | A | 0.0 | 0.0 | D | 54.2 | 8.0 |
| | WBT | A | 0.0 | 0.0 | D | 51.9 | 8.0 |
| | WBR | A | 0.0 | 0.0 | A | 0.0 | 0.0 |
| | NB | B | 14.9 | - | B | 17.9 | - |
| | NBL | D | 52.2 | 63.0 | E | 60.8 | 83.0 |
| | NBT | B | 13.2 | 425.0 | B | 15.3 | 419.0 |
| | NBR | A | 6.8 | 0.0 | A | 9.3 | 0.0 |
| SB | B | 12.0 | - | D | 18.5 | - | |
| SBL | D | 49.8 | 65.0 | B | 54.1 | 51.0 | |
| SBT | B | 10.2 | 281.0 | B | 18.6 | 576.0 | |
| SBR | A | 7.9 | 18.0 | B | 11.8 | 39.0 | |
| 9. Soapstone Road/Main Street | Overall | C | 21.6 | - | E | 58.3 | - |
| | EB | D | 54.9 | - | F | 84.3 | - |
| | EBL/T | E | 56.7 | 116.0 | F | 88.0 | 133.0 |
| | EBR | D | 52.3 | 0.0 | E | 76.2 | 0.0 |
| | WB | A | 0.0 | - | F | 100.5 | - |
| | WBL/T | A | 0.0 | 0.0 | E | 61.8 | 82.0 |
| | WBR | A | 0.0 | 0.0 | F | 111.1 | 8.0 |
| | NB | C | 21.4 | - | D | 54.2 | - |
| | NBL | F | 103.9 | 59.0 | F | 130.0 | 78.0 |
| | NBT | B | 18.5 | 511.0 | D | 50.5 | 517.0 |
| | NBR | A | 0.0 | 0.0 | C | 29.1 | 0.0 |
| | SB | B | 14.8 | - | D | 49.2 | - |
| SBL | E | 61.6 | 123.0 | F | 134.7 | 365.0 | |
| SBT | A | 9.1 | 248.0 | C | 26.9 | 499.0 | |
| SBR | A | 7.9 | 0.0 | C | 20.2 | 0.0 | |
| 10. Morehead Avenue (VA 87) | Overall | F | 89.1 | - | D | 41.0 | - |
| | WB | F | 248.7 | - | F | 98.1 | - |
| | WBL | D | 35.5 | 76.0 | D | 38.1 | 80.0 |
| | WBR | F | 280.0 | 255.0 | F | 111.7 | 43.0 |
| | NB | C | 29.1 | - | C | 29.9 | - |
| | NBT | C | 29.3 | 311.0 | C | 30.2 | 212.0 |
| | NBR | C | 21.9 | 3.0 | C | 24.6 | 0.0 |
| | SB | B | 16.7 | - | C | 21.3 | - |
| | SBL | C | 25.1 | 160.0 | C | 34.9 | 174.0 |
| | SBT | B | 11.8 | 136.0 | B | 11.7 | 117.0 |
| | EB | D | 28.6 | 22.5 | E | 35.8 | 30.0 |
| | WB | D | 29.0 | 20.0 | D | 26.6 | 7.5 |
| NB | A | 0.1 | - | A | 0.2 | - | |
| NBL | A | 8.7 | 0.0 | A | 8.9 | 2.5 | |
| NBT | A | 0.0 | - | A | 0.0 | - | |
| NBR | A | 0.0 | - | A | 0.0 | - | |
| SB | A | 0.2 | - | A | 0.4 | - | |
| SBL | A | 9.3 | 2.5 | A | 9.1 | 2.5 | |
| SBT | A | 0.0 | - | A | 0.0 | - | |
| SBR | A | 0.0 | - | A | 0.0 | - | |
| 11. Lee Ford Camp Road/Church Street | Overall | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.2 | - | A | 0.4 | - |
| | SBL | A | 9.3 | 2.5 | A | 9.1 | 2.5 |
| SBR | A | 0.0 | - | A | 0.0 | - | |

Route 58 Westbound Ramps: The westbound approach would operate with excessive delays during the PM peak hour.

Route 58 Eastbound Ramps: The overall intersection would operate over capacity during both peak hours. During both peak hours, there would be extensive delays and queues eastbound. The southbound left-turn also would experience extensive delays during both peak hours.

Kilarney Court/Villa Road: The eastbound and westbound approaches both would operate with extensive delays during both peak hours.

Marrowbone Circle: The westbound approach of Marrowbone Circle would operate with extensive delays during the both peak hours.

Shamrock Drive: The eastbound approach of Shamrock Drive would operate with extensive delays and queues during both peak hours.

Covington Lane: The westbound approach of Covington Lane would operate with extensive delays during both peak hours.

Steve Drive: The eastbound approach of Steve Drive would experience extensive delays during the PM peak hour only.

Water Plant Road: The northbound left-turn would experience extensive delays during the PM peak hour only.

Soapstone Road/Main Street: The eastbound, northbound left and southbound left would experience extensive delays during both peak hours. The westbound approach would experience long delays during the PM peak hour.

Morehead Avenue: The westbound approach would experience extensive delays during both peak hours.

Lee Ford Camp Road: The eastbound approach would experience extensive delays during the PM peak hour only.

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Table 5-5: 2040 Capacity Analysis Summary

| Intersection | Movement | AM | | | PM | | | |
|---|----------------------|------|-------------|------------|-------|-------------|------------|-------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) | |
| 1. Route 58 WB Ramp | Overall | B | 12.8 | - | B | 15.5 | - | |
| | WB | D | 36.8 | - | D | 46.5 | - | |
| | WBL/T | D | 40.6 | 286.0 | D | 50.8 | 340.0 | |
| | WBR | C | 26.9 | 64.0 | C | 33.4 | 46.0 | |
| | NB | A | 1.5 | 22.0 | A | 0.8 | 8.0 | |
| | SB | A | 9.0 | - | B | 11.7 | - | |
| | SBT | A | 9.1 | 145.0 | B | 11.9 | 265.0 | |
| | SBR | A | 7.5 | 18.0 | A | 8.9 | 24.0 | |
| 2. Route 58 EB Ramp | Overall | E | 55.8 | - | E | 75.7 | - | |
| | EB | F | 94.9 | - | F | 139.3 | - | |
| | EBL | B | 19.9 | 127.0 | C | 25.0 | 114.0 | |
| | EBR | F | 115.1 | 677.0 | F | 160.4 | 866.0 | |
| | NB | D | 54.0 | - | E | 75.2 | - | |
| | NBT | E | 62.2 | 564.0 | F | 86.6 | 713.0 | |
| | NBR | C | 27.1 | 192.0 | C | 33.0 | 230.0 | |
| | SB | C | 24.2 | - | C | 33.9 | - | |
| | SBL | F | 112.2 | 193.0 | F | 144.7 | 292.0 | |
| | SBT | B | 11.7 | 153.0 | B | 16.4 | 265.0 | |
| 3. Kilarney Court/Villa Road | EB | F | 388.8 | 102.5 | F | 1202.4 | 115.0 | |
| | WB | F | 193.2 | 40.0 | F | 55.1 | 20.0 | |
| | NB | A | 0.0 | - | A | 0.1 | - | |
| | NBL | B | 13.1 | 0.0 | C | 15.2 | 2.5 | |
| | NBT | A | 0.0 | - | A | 0.0 | - | |
| | NBR | A | 0.0 | - | A | 0.0 | - | |
| | SB | A | 0.1 | - | A | 0.3 | - | |
| | SBL | B | 13.5 | 0.0 | B | 14.2 | 7.5 | |
| | SBT | A | 0.0 | - | A | 0.0 | - | |
| | SBR | A | 0.0 | - | A | 0.0 | - | |
| | 4. Marrowbone Circle | WB | F | 1162.5 | 202.5 | F | 698.1 | 202.5 |
| | | NB | A | 4.7 | - | A | 0.0 | - |
| NBL/T | | B | 14.7 | 7.5 | A | 0.0 | - | |
| NBT | | A | 4.5 | - | A | 0.0 | - | |
| NBR | | A | 0.0 | - | A | 0.0 | - | |
| SB | | A | 0.0 | - | A | 0.2 | - | |
| SBL/T | | B | 13.2 | 0.0 | B | 13.8 | 5.0 | |
| 5. Shamrock Drive | SBT | A | 0.0 | - | A | 0.0 | - | |
| | SBR | A | 0.0 | - | A | 0.0 | - | |
| | EB | F | 1445.2 | 497.5 | F | 2105.8 | 565.0 | |
| | NB | A | 0.0 | - | A | 0.0 | - | |
| | SB | A | 0.0 | - | A | 0.0 | - | |
| 6. Covington Lane | SBT | A | 0.0 | - | A | 0.0 | - | |
| | SBR | A | 0.0 | - | A | 0.0 | - | |
| | WB | F | 145.0 | 155.0 | F | 59.2 | 40.0 | |
| | NB | A | 0.0 | - | A | 0.0 | - | |
| | NBT | A | 0.0 | - | A | 0.0 | - | |
| | NBR | A | 0.0 | - | A | 0.0 | - | |
| 7. Steve Drive/Drewry Mason School Road | SB | A | 0.2 | - | A | 0.5 | - | |
| | SBL | B | 12.2 | 2.5 | B | 13.2 | 10.0 | |
| | SBT | A | 0.0 | - | A | 0.0 | - | |
| | EB | A | 0.0 | 0.0 | F | 356.8 | 80.0 | |
| | NB | A | 0.0 | - | A | 0.2 | - | |
| | NBL | B | 11.8 | 0.0 | B | 14.4 | 2.5 | |
| | NBT | A | 0.0 | - | A | 0.0 | - | |
| | NBR | A | 0.0 | - | A | 0.0 | - | |
| | SB | A | 2.4 | - | A | 0.4 | - | |
| | SBL | C | 19.5 | 52.5 | B | 13.4 | - | |
| 8. Water Plant Road | SBT | A | 0.0 | - | A | 0.0 | - | |
| | SBR | A | 0.0 | - | A | 0.0 | - | |
| | Overall | B | 10.9 | - | C | 24.1 | - | |
| | EB | C | 31.7 | - | D | 50.6 | - | |
| | EBL | C | 33.2 | 104.0 | E | 56.8 | 125.0 | |
| | EBT/R | C | 27.2 | 26.0 | D | 39.3 | 35.0 | |
| | WB | A | 0.0 | - | D | 43.3 | - | |
| | WBL | A | 0.0 | 0.0 | D | 42.9 | 14.0 | |
| | WBT | A | 0.0 | 0.0 | D | 43.7 | 18.0 | |
| | WBR | A | 0.0 | 0.0 | A | 0.0 | 0.0 | |
| | NB | B | 10.3 | - | C | 24.1 | - | |
| 9. Soapstone Road/Main Street | NBL | D | 39.1 | 66.0 | E | 61.7 | 113.0 | |
| | NBT | A | 9.2 | 329.0 | C | 22.0 | 470.0 | |
| | NBR | A | 4.3 | 0.0 | B | 10.6 | 0.0 | |
| | SB | A | 8.8 | - | C | 21.8 | - | |
| | SBL | D | 38.2 | 66.0 | D | 46.9 | 94.0 | |
| | SBT | A | 7.8 | 233.0 | C | 21.8 | 500.0 | |
| | SBR | A | 5.2 | 25.0 | B | 12.4 | 13.0 | |
| | Overall | B | 11.3 | - | D | 48.3 | - | |
| | EB | D | 51.0 | - | E | 61.4 | - | |
| | EBL/T | D | 51.8 | 96.0 | E | 63.7 | 60.0 | |
| | EBR | D | 50.0 | 6.0 | E | 56.4 | 0.0 | |
| | WB | E | 56.1 | - | F | 116.5 | - | |
| | WBL/T | D | 48.5 | 17.0 | D | 45.1 | 44.0 | |
| WBR | E | 58.1 | 0.0 | F | 132.6 | 0.0 | | |
| 10. Morehead Avenue | NB | A | 10.0 | 0.0 | D | 37.2 | - | |
| | NBL | A | 4.9 | 8.0 | E | 66.7 | 64.0 | |
| | NBT | B | 10.1 | 531.0 | D | 36.1 | 660.0 | |
| | NBR | A | 0.0 | - | C | 20.8 | 0.0 | |
| | SB | A | 6.7 | - | D | 41.2 | - | |
| | SBL | A | 8.5 | 42.0 | F | 126.2 | 322.0 | |
| | SBT | A | 6.6 | 231.0 | C | 23.0 | 476.0 | |
| | SBR | A | 5.1 | 15.0 | B | 15.3 | 0.0 | |
| | Overall | E | 55.1 | - | D | 47.2 | - | |
| | WB | F | 161.8 | - | F | 182.8 | - | |
| | WBL | C | 26.1 | 68.0 | D | 43.5 | 89.0 | |
| | WBR | F | 179.1 | 185.0 | F | 209.6 | 89.0 | |
| 11. Lee Ford Camp Road/Chruch Street | NB | C | 23.4 | - | C | 23.7 | - | |
| | NBT | C | 23.5 | 315.0 | C | 23.9 | 379.0 | |
| | NBR | B | 16.4 | 11.0 | B | 17.1 | 22.0 | |
| | SB | B | 13.9 | - | B | 14.6 | - | |
| | SBL | C | 21.3 | 9.0 | C | 25.5 | 64.0 | |
| | SBT | A | 9.9 | 6.0 | A | 7.3 | 3.0 | |
| | EB | E | 49.2 | 52.5 | F | 71.3 | 57.5 | |
| | WB | E | 44.0 | 42.5 | F | 50.0 | 7.5 | |
| | NB | A | 0.1 | - | A | 0.2 | - | |
| | NBL | A | 9.1 | 0.0 | A | 9.2 | 2.5 | |
| NBT | A | 0.0 | - | A | 0.0 | - | | |
| NBR | A | 0.0 | - | A | 0.0 | - | | |
| SB | A | 0.2 | - | A | 0.6 | - | | |
| SBL | A | 9.7 | 2.5 | B | 10.4 | 5.0 | | |
| SBT | A | 0.0 | - | A | 0.0 | - | | |
| SBR | A | 0.0 | - | A | 0.0 | - | | |

Route 58 Eastbound Ramps: During both peak hours, there would be extensive delays and queues eastbound. The northbound through and southbound left-turn would also experience extensive delays during both peak hours.

Kilarney Court/Villa Road: The eastbound and westbound approaches would both operate with extensive delays during both peak hours.

Marrowbone Circle: The westbound approach of Marrowbone Circle would operate with extensive delays during the both peak hours.

Shamrock Drive: The eastbound approach of Shamrock Drive would operate with extensive delays and queues during both peak hours.

Covington Lane: The westbound approach of Covington Lane would operate with extensive delays during both peak hours.

Steve Drive: The eastbound approach of Steve Drive would experience extensive delays during the PM peak hour only.

Water Plant Road: The eastbound and northbound left-turns would experience extensive delays during the PM peak hour only.

Soapstone Road/Main Street: The eastbound, northbound left and southbound left would experience extensive delays during the PM peak hour. The westbound approach would experience long delays during both peak hours.

Morehead Avenue: The westbound approach would experience extensive delays during both peak hours.

Lee Ford Camp Road: The eastbound and westbound approaches would experience extensive delays during both peak hours.

5.2.1 Travel Times and Distances

The total distance between the various entry and exit locations of the study area and the travel time needed to travel between the two points using the fastest path were evaluated for each alternative. The distances and travel times between the study area entry and exit points for the No-Build Alternative are shown in **Table 5-6**.

Table 5-6: Distances and Travel Times Between Study Area Entrances and Exits – No-Build Alternative

| Origin/Destination | Route 58/Route 220 @ Cameron Road | Joseph Martin Highway @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | VA Route 87 @ Farmbrook Road | Route 220 @ North Carolina State Line |
|--|-----------------------------------|--|------------------------------------|-------------------------------|------------------------------|---------------------------------------|
| Route 58/Route 220 @ Cameron Road | | 2.1 miles (2:50) | 3.1 miles (4:05) | 4.8 miles (4:50) | 8.2 miles (12:35) | 9.5 miles (11:30) |
| Joseph Martin Highway @ Fisher Farm Road | 1.4 miles (1:35) | | 1.3 miles (2:15) | 3.6 miles (4:15) | 7.1 miles (12:45) | 8.4 miles (11:30) |
| Business Route 220 @ Old Sand Road | 3.0 miles (3:25) | 1.3 miles (2:15) | | 2.4 miles (3:20) | 5.9 miles (10:40) | 7.2 miles (9:35) |
| Route 58 @ Smith River Bridge | 4.8 miles (4:50) | 3.5 miles (4:00) | 2.3 miles (2:55) | | 7.7 miles (12:30) | 9.0 miles (11:50) |
| VA Route 87 @ Farmbrook Road | 8.4 miles (13:00) | 7.2 miles (12:15) | 5.9 miles (10:20) | 7.6 miles (11:15) | | 6.1 miles (9:10) |
| Route 220 @ North Carolina State Line | 9.7 miles (11:45) | 8.5 miles (11:00) | 7.2 miles (9:45) | 8.9 miles (11:20) | 6.1 miles (8:55) | |

During the initial scoping, a survey was distributed to local residents and business owners to gauge public opinion on the strengths, weaknesses, opportunities, and threats within the study area. The ability to directly connect to Route 220 and the ease of traveling to a variety of nearby locations was one of the few positive comments made by the respondents. A measure of ease of travel is the travel distance between several points of interest and services within the study area, as well as the entry and exit points for the study area. The distances for several points of interest in the study area are provided in **Table 5-7**.

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Table : Travel Distances Between Points of Interest in the Study Area –No-Build Alternative

| Origin/Destination | Route 58/220 @ Cameron Road | Joseph Martin Hwy @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | Soapstone Road @ Joseph Martin Hwy | Magna Vista High School | Kilamey Court @ Route 220 | Villa Road @ Route 220 | Marrowbone Circle @ Route 220 | Shamrock Drive @ Route 220 | Covington Lane @ Route 220 | Steve Drive @ Route 220 | Drewry Mason Elementary School | Mica Road @ Route 220 | Water Plant Road @ Route 220 | Andra Drive @ Route 220 | Soapstone Road @ Route 220 | Main Street @ Route 220 | VA Route 87 @ Main Street | VA Route 87 @ Farmbrook Road | Lee Ford Camp Road @ Blackfeather Trl | Church Street @ Route 220 | Matrimony Creek Road @ Route 220 | Reservoir Road @ Route 220 | J.B. Dalton Road @ Route 220 | Route 220 @ North Carolina State Line |
|---------------------------------------|-----------------------------|--------------------------------------|------------------------------------|-------------------------------|------------------------------------|-------------------------|---------------------------|------------------------|-------------------------------|----------------------------|----------------------------|-------------------------|--------------------------------|-----------------------|------------------------------|-------------------------|----------------------------|-------------------------|---------------------------|------------------------------|---------------------------------------|---------------------------|----------------------------------|----------------------------|------------------------------|---------------------------------------|
| Route 58/220 @ Cameron Road | 2.1 | 3.1 | 4.8 | 3.9 | 5.2 | 2.9 | 2.9 | 3.2 | 3.3 | 3.5 | 3.8 | 3.8 | 4.2 | 4.2 | 4.8 | 5.1 | 5.1 | 6.0 | 8.2 | 6.5 | 6.4 | 7.9 | 8.5 | 8.6 | 9.5 | |
| Joseph Martin Hwy @ Fisher Farm Road | 1.4 | 1.3 | 3.6 | 2.5 | 3.8 | 1.8 | 1.8 | 2.1 | 2.2 | 2.4 | 2.7 | 2.7 | 3.1 | 3.1 | 3.7 | 4.0 | 4.0 | 4.9 | 7.1 | 5.4 | 5.3 | 6.8 | 7.4 | 7.5 | 8.4 | |
| Business Route 220 @ Old Sand Road | 3.0 | 1.3 | 2.4 | 4.2 | 5.5 | 0.6 | 0.6 | 0.9 | 1.0 | 1.2 | 1.5 | 1.5 | 1.9 | 1.9 | 2.5 | 2.8 | 2.8 | 3.7 | 5.9 | 4.2 | 4.1 | 5.6 | 6.2 | 6.3 | 7.2 | |
| Route 58 @ Smith River Bridge | 4.8 | 3.5 | 2.3 | 6.0 | 7.3 | 2.4 | 2.4 | 2.7 | 2.8 | 3.0 | 3.3 | 3.3 | 3.7 | 3.7 | 4.3 | 4.6 | 4.6 | 5.5 | 7.7 | 6.0 | 5.9 | 7.4 | 8.0 | 8.1 | 9.0 | |
| Soapstone Road @ Joseph Martin Hwy | 3.9 | 2.5 | 3.8 | 5.4 | 1.3 | 3.6 | 3.6 | 3.9 | 4.0 | 4.2 | 3.9 | 3.9 | 3.5 | 3.5 | 2.9 | 2.6 | 2.6 | 3.5 | 5.7 | 4.0 | 3.9 | 5.4 | 6.0 | 6.1 | 7.0 | |
| Magna Vista High School | 5.2 | 3.8 | 5.1 | 6.7 | 1.3 | 4.9 | 4.9 | 4.7 | 4.6 | 4.3 | 4.0 | 4.0 | 3.6 | 3.6 | 3.0 | 2.7 | 2.7 | 3.6 | 5.8 | 3.3 | 3.4 | 4.9 | 5.5 | 5.6 | 6.5 | |
| Kilamey Court @ Route 220 | 3.1 | 1.9 | 0.6 | 2.3 | 3.6 | 4.9 | 0.02 | 0.3 | 0.4 | 0.6 | 0.9 | 0.9 | 1.3 | 1.3 | 1.9 | 2.2 | 2.2 | 3.1 | 5.3 | 3.6 | 3.5 | 5.0 | 5.6 | 5.7 | 6.6 | |
| Villa Road @ Route 220 | 3.1 | 1.9 | 0.6 | 2.3 | 3.6 | 4.9 | 0.02 | 0.3 | 0.4 | 0.6 | 0.9 | 0.9 | 1.3 | 1.3 | 1.9 | 2.2 | 2.2 | 3.1 | 5.3 | 3.6 | 3.5 | 5.0 | 5.6 | 5.7 | 6.6 | |
| Marrowbone Circle @ Route 220 | 3.4 | 2.2 | 0.9 | 2.6 | 3.9 | 4.7 | 0.3 | 0.3 | 0.1 | 0.3 | 0.6 | 0.6 | 1.0 | 1.0 | 1.6 | 1.9 | 1.9 | 2.8 | 5.0 | 3.3 | 3.2 | 4.7 | 5.3 | 5.4 | 6.3 | |
| Shamrock Drive @ Route 220 | 3.5 | 2.3 | 1.0 | 2.7 | 4.0 | 4.6 | 0.4 | 0.4 | 0.1 | 0.2 | 0.5 | 0.5 | 0.9 | 0.9 | 1.5 | 1.8 | 1.8 | 2.7 | 4.9 | 3.2 | 3.1 | 4.6 | 5.2 | 5.3 | 6.2 | |
| Covington Lane @ Route 220 | 3.7 | 2.5 | 1.2 | 2.9 | 4.2 | 4.3 | 0.6 | 0.6 | 0.3 | 0.2 | 0.3 | 0.3 | 0.7 | 0.7 | 1.3 | 1.6 | 1.6 | 2.5 | 4.7 | 3.0 | 2.9 | 4.4 | 5.0 | 5.1 | 6.0 | |
| Steve Drive @ Route 220 | 4.0 | 2.8 | 1.5 | 3.2 | 3.9 | 4.0 | 0.9 | 0.9 | 0.6 | 0.5 | 0.3 | 0.02 | 0.4 | 0.4 | 1.0 | 1.3 | 1.3 | 2.2 | 4.4 | 2.7 | 2.6 | 4.1 | 4.7 | 4.8 | 5.7 | |
| Drewry Mason Elementary School | 4.0 | 2.8 | 1.5 | 3.2 | 3.9 | 4.0 | 0.9 | 0.9 | 0.6 | 0.5 | 0.3 | 0.02 | 0.4 | 0.4 | 1.0 | 1.3 | 1.3 | 2.2 | 4.4 | 2.7 | 2.6 | 4.1 | 4.7 | 4.8 | 5.7 | |
| Mica Road @ Route 220 | 4.4 | 3.2 | 1.9 | 3.6 | 3.5 | 3.6 | 1.3 | 1.3 | 1.0 | 0.9 | 0.7 | 0.4 | 0.4 | 0.02 | 0.6 | 0.9 | 0.9 | 1.8 | 4.0 | 2.3 | 2.2 | 3.7 | 4.3 | 4.4 | 5.3 | |
| Water Plant Road @ Route 220 | 4.4 | 3.2 | 1.9 | 3.6 | 3.5 | 3.6 | 1.3 | 1.3 | 1.0 | 0.9 | 0.7 | 0.4 | 0.4 | 0.02 | 0.6 | 0.9 | 0.9 | 1.8 | 4.0 | 2.3 | 2.2 | 3.7 | 4.3 | 4.4 | 5.3 | |
| Andra Drive @ Route 220 | 5.0 | 3.8 | 2.5 | 4.2 | 2.9 | 3.0 | 1.9 | 1.9 | 1.6 | 1.5 | 1.3 | 1.0 | 1.0 | 0.6 | 0.6 | 0.3 | 0.3 | 1.2 | 3.4 | 1.7 | 1.6 | 3.1 | 3.7 | 3.8 | 4.7 | |
| Soapstone Road @ Route 220 | 5.3 | 4.1 | 2.8 | 4.5 | 2.6 | 2.7 | 2.2 | 2.2 | 1.9 | 1.8 | 1.6 | 1.3 | 1.3 | 0.9 | 0.9 | 0.3 | 0.02 | 0.9 | 3.1 | 1.4 | 1.3 | 2.8 | 3.4 | 3.5 | 4.4 | |
| Main Street @ Route 220 | 5.3 | 4.1 | 2.8 | 4.5 | 2.6 | 2.7 | 2.2 | 2.2 | 1.9 | 1.8 | 1.6 | 1.3 | 1.3 | 0.9 | 0.9 | 0.3 | 0.02 | 0.9 | 3.1 | 1.4 | 1.3 | 2.8 | 3.4 | 3.5 | 4.4 | |
| VA Route 87 @ Main Street | 6.2 | 5.0 | 3.7 | 5.4 | 3.5 | 3.6 | 3.1 | 3.1 | 2.8 | 2.7 | 2.5 | 2.2 | 2.2 | 1.8 | 1.8 | 1.2 | 0.9 | 0.9 | 2.2 | 0.9 | 0.8 | 2.3 | 2.9 | 3.0 | 3.9 | |
| VA Route 87 @ Farmbrook Road | 8.4 | 7.2 | 5.9 | 7.6 | 5.7 | 5.8 | 5.3 | 5.3 | 5.0 | 4.9 | 4.7 | 4.4 | 4.4 | 4.0 | 4.0 | 3.4 | 3.1 | 3.1 | 2.2 | 3.1 | 3.0 | 4.5 | 5.1 | 5.2 | 6.1 | |
| Lee Ford Camp Road @ Blackfeather Trl | 6.7 | 5.5 | 4.2 | 5.9 | 4.0 | 3.3 | 3.6 | 3.6 | 3.3 | 3.2 | 3.0 | 2.7 | 2.7 | 2.3 | 2.3 | 1.7 | 1.4 | 1.4 | 0.9 | 3.1 | 0.1 | 1.6 | 2.2 | 2.3 | 3.2 | |
| Church Street @ Route 220 | 6.6 | 5.4 | 4.1 | 5.8 | 4.1 | 3.4 | 3.5 | 3.5 | 3.2 | 3.1 | 2.9 | 2.6 | 2.6 | 2.2 | 2.2 | 1.6 | 1.3 | 1.3 | 0.8 | 3.0 | 0.1 | 1.5 | 2.1 | 2.2 | 3.1 | |
| Matrimony Creek Road @ Route 220 | 7.6 | 6.4 | 5.1 | 6.8 | 5.1 | 4.4 | 4.5 | 4.5 | 4.2 | 4.1 | 3.9 | 3.6 | 3.6 | 3.2 | 3.2 | 2.6 | 2.3 | 2.3 | 1.8 | 4.0 | 1.1 | 1.0 | 1.5 | 1.6 | 2.5 | |
| Reservoir Road @ Route 220 | 9.0 | 7.8 | 6.5 | 8.2 | 6.5 | 5.8 | 5.9 | 5.9 | 5.6 | 5.5 | 5.3 | 5.0 | 5.0 | 4.6 | 4.6 | 4.0 | 3.7 | 3.7 | 3.2 | 5.4 | 2.5 | 2.4 | 1.4 | 0.8 | 0.9 | |
| J.B. Dalton Road @ Route 220 | 8.2 | 7.0 | 5.7 | 7.4 | 5.7 | 5.0 | 5.1 | 5.1 | 4.8 | 4.7 | 4.5 | 4.2 | 4.2 | 3.8 | 3.8 | 3.2 | 2.9 | 2.9 | 2.4 | 4.6 | 1.7 | 1.6 | 0.6 | 0.9 | 1.8 | |
| Route 220 @ North Carolina State Line | 9.7 | 8.5 | 7.2 | 8.9 | 7.2 | 6.5 | 6.6 | 6.6 | 6.3 | 6.2 | 6.0 | 5.7 | 5.7 | 5.3 | 5.3 | 4.7 | 4.4 | 4.4 | 3.9 | 6.1 | 3.2 | 3.1 | 2.1 | 2.4 | 1.5 | |

5.2.2 Overall Travel Time Results

Calculated average travel times in seconds along the existing corridor between the North Carolina state line and the Route 58 interchange are shown in **Table 5-7**. These were computed using SimTraffic, with the average of five travel runs, using a 10-minute seeding time and a 60-minute run time.

Table 5-7: No-Build Condition Travel Times

| Year | Southbound | | Northbound | |
|------|------------|-------|------------|-------|
| | AM | PM | AM | PM |
| 2025 | 478.7 | 581.0 | 577.2 | 582.1 |
| 2040 | 507.7 | 457.8 | 595.3 | 567.2 |

6. FUTURE BUILD ALTERNATIVE A ANALYSIS

Alternative A would construct a new four-lane divided roadway for Route 220 west of the current corridor, with a new interchange along the southern portion of existing Route 220 at Reservoir Road, an interchange along the new alignment at Soapstone Road, and a new interchange along Route 58 west of the existing interchange with Joseph Martin Highway.

6.1 VOLUME SUMMARY

6.1.1 Daily Volumes

AADT volumes for Alternative A for both 2025 and 2040 are shown in **Figure 6-1** for the existing Route 220 corridor and in **Figure 6-2** for the new alignment. Truck percentages along the roadway network are shown for the existing alignment in **Figure 6-3** and along the new alignment in **Figure 6-4**.

6.1.2 Peak Hour Volumes

AM and PM peak hour volumes for 2025 and 2040 Alternative A for each Route 220 study intersection were developed with the subarea travel demand model post-processing efforts, which are shown in **Figure 6-5** for 2025 and **Figure 6-6** for 2040.

Figure 6-1: Alternative A AADT (Existing Alignment)

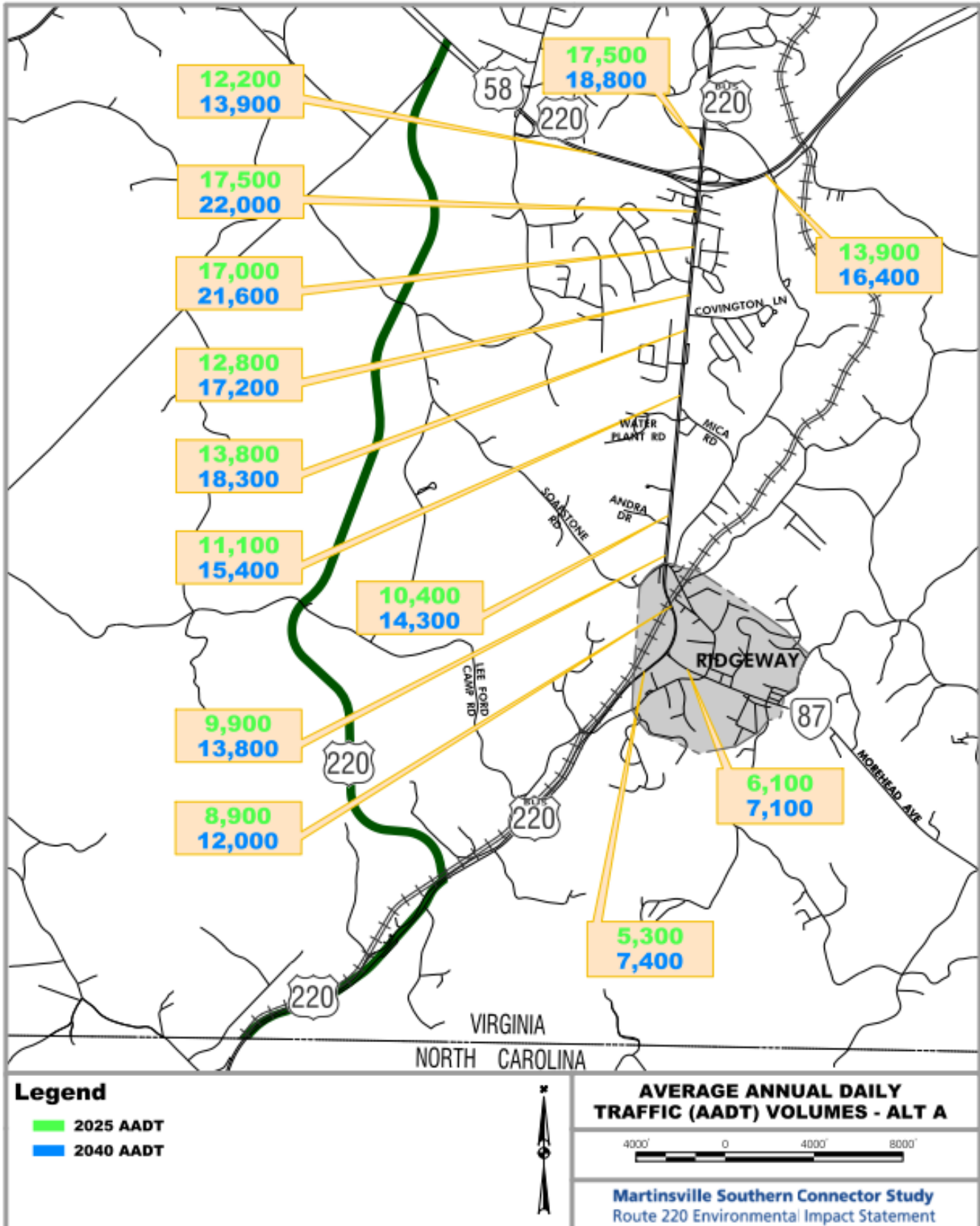


Figure 6-2: Alternative A ADT (Proposed Alignment)

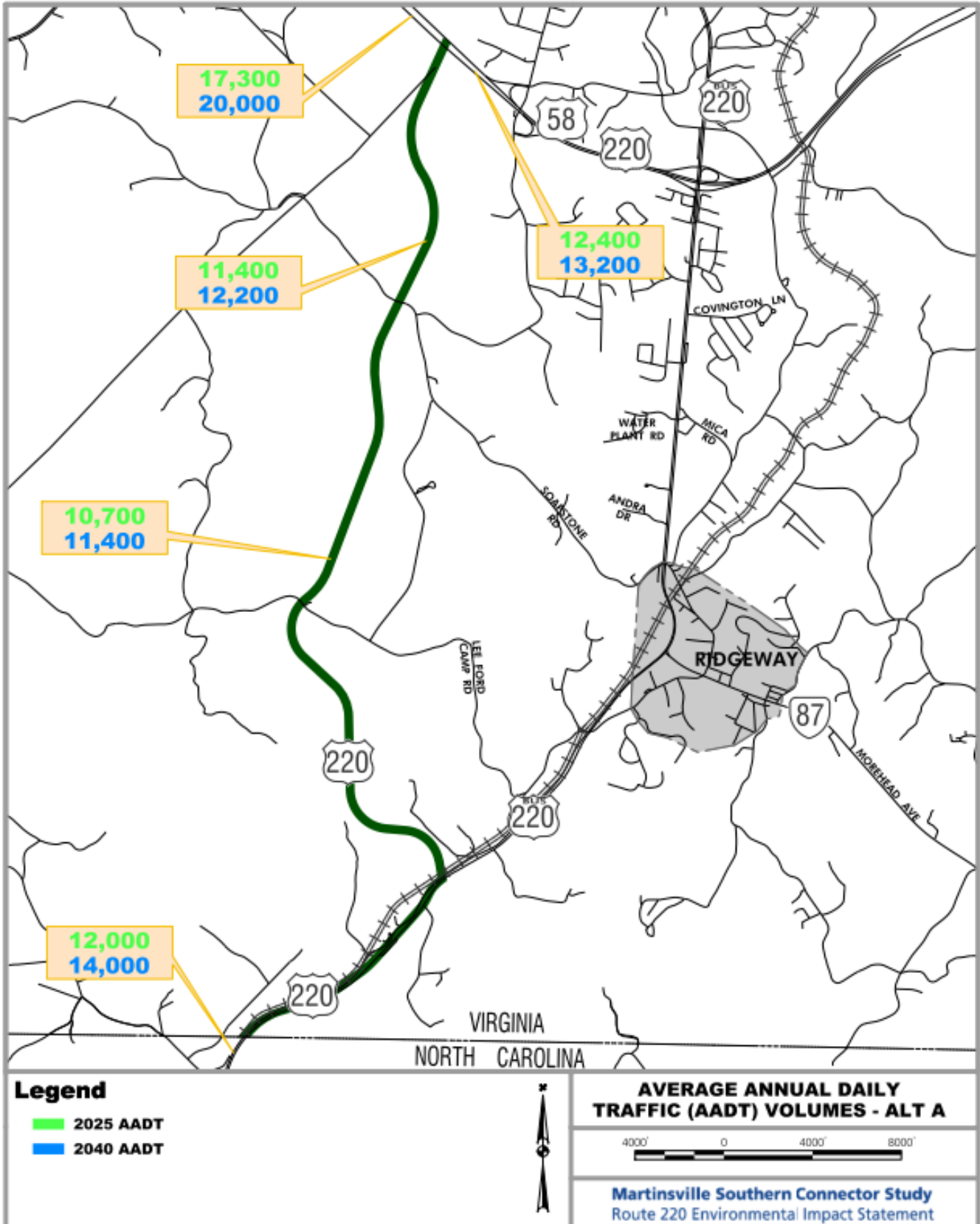


Figure 6-3: Alternative A Truck ADT and Percentages (Existing Alignment)

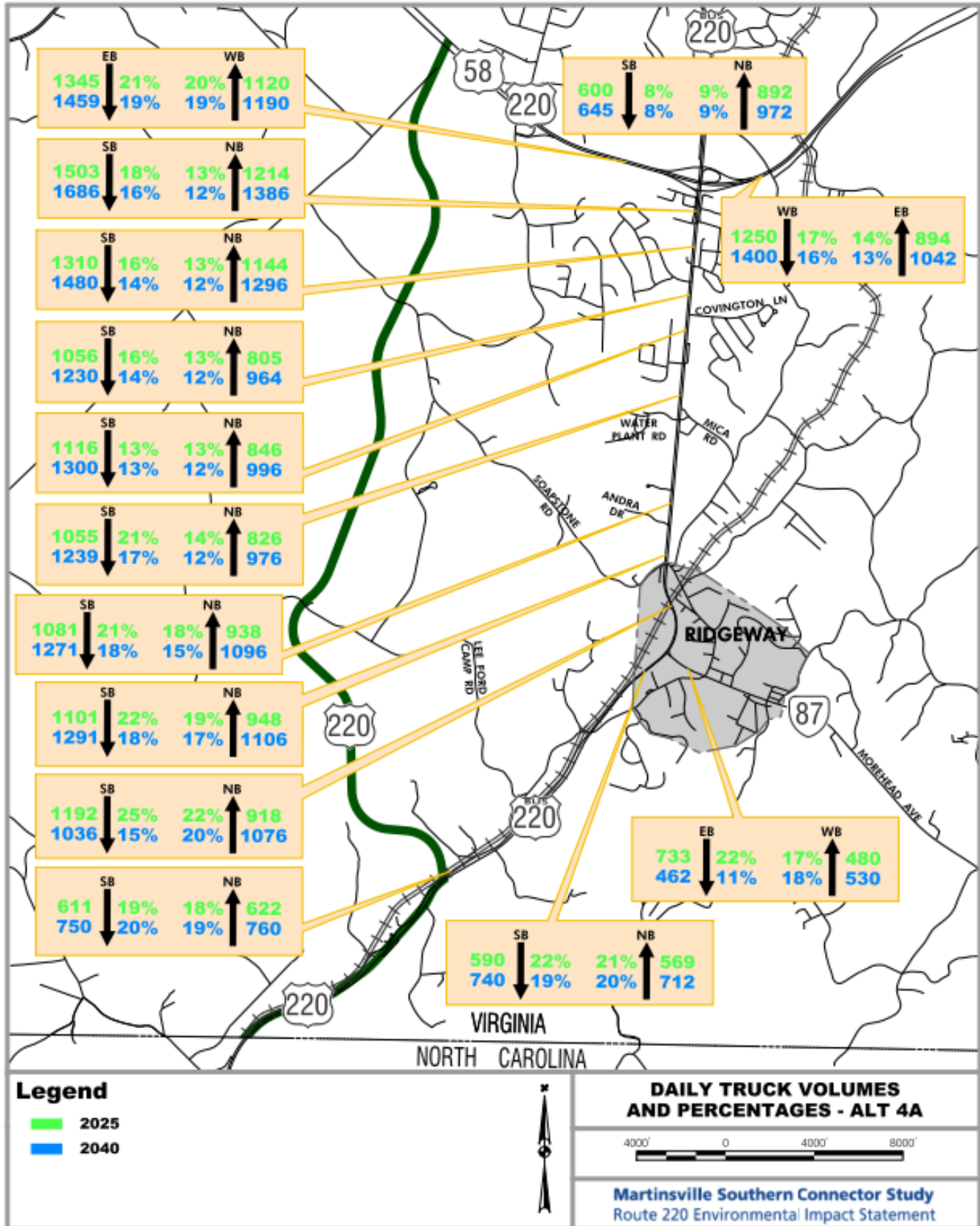


Figure 6-4: Alternative A Truck Percentages (New Alignment)

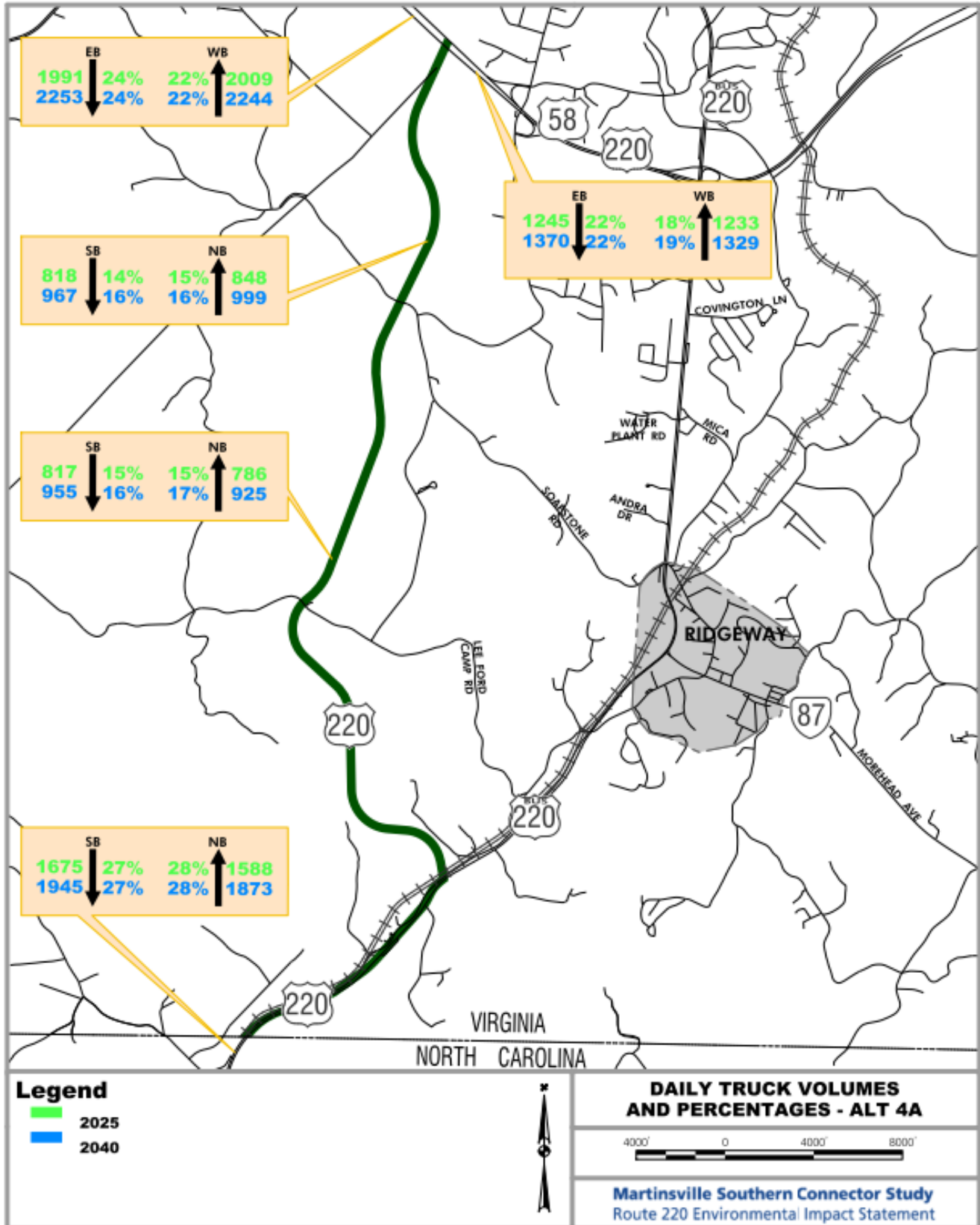


Figure 6-5: Alternative A 2025 Peak Hour Intersection Volumes

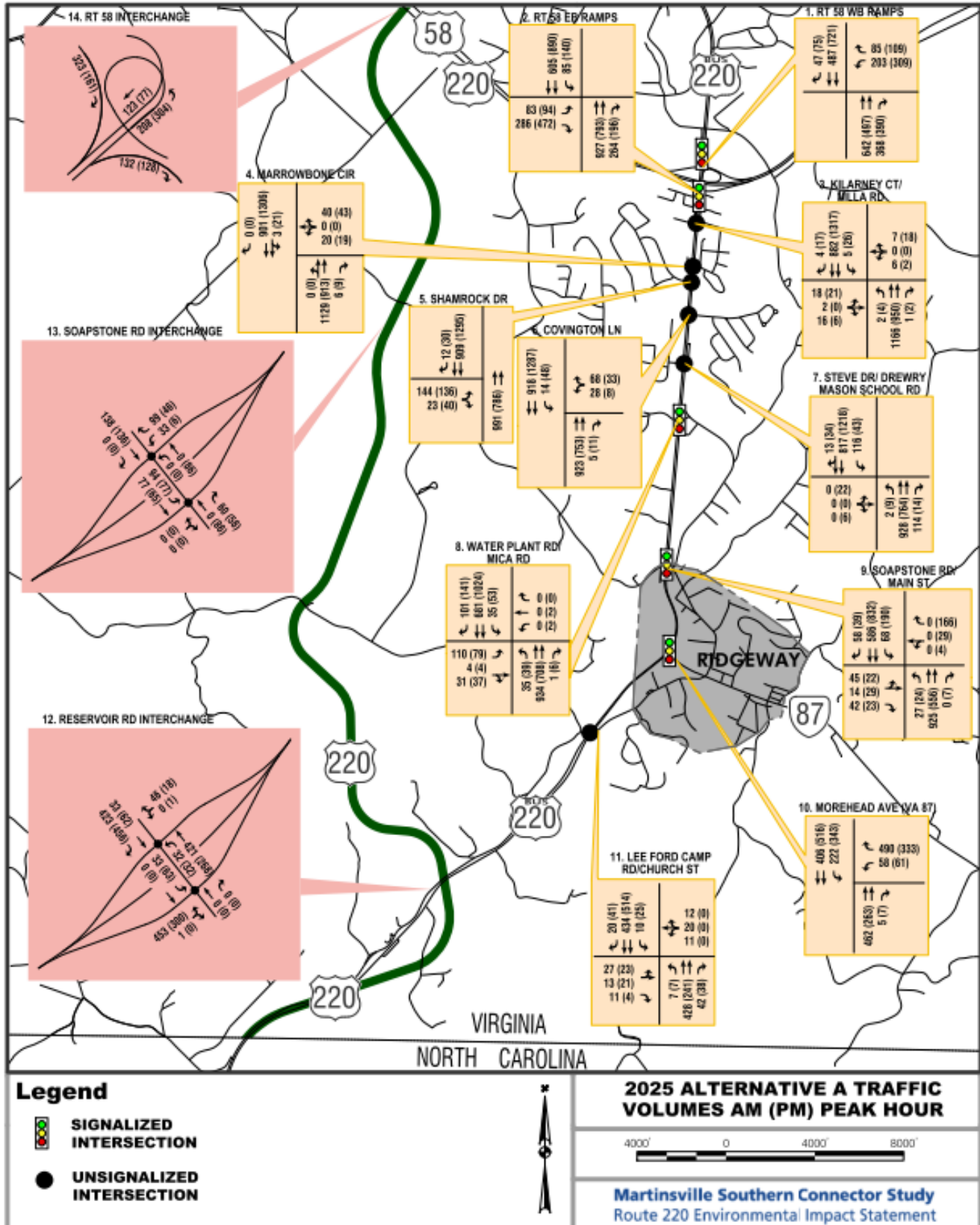
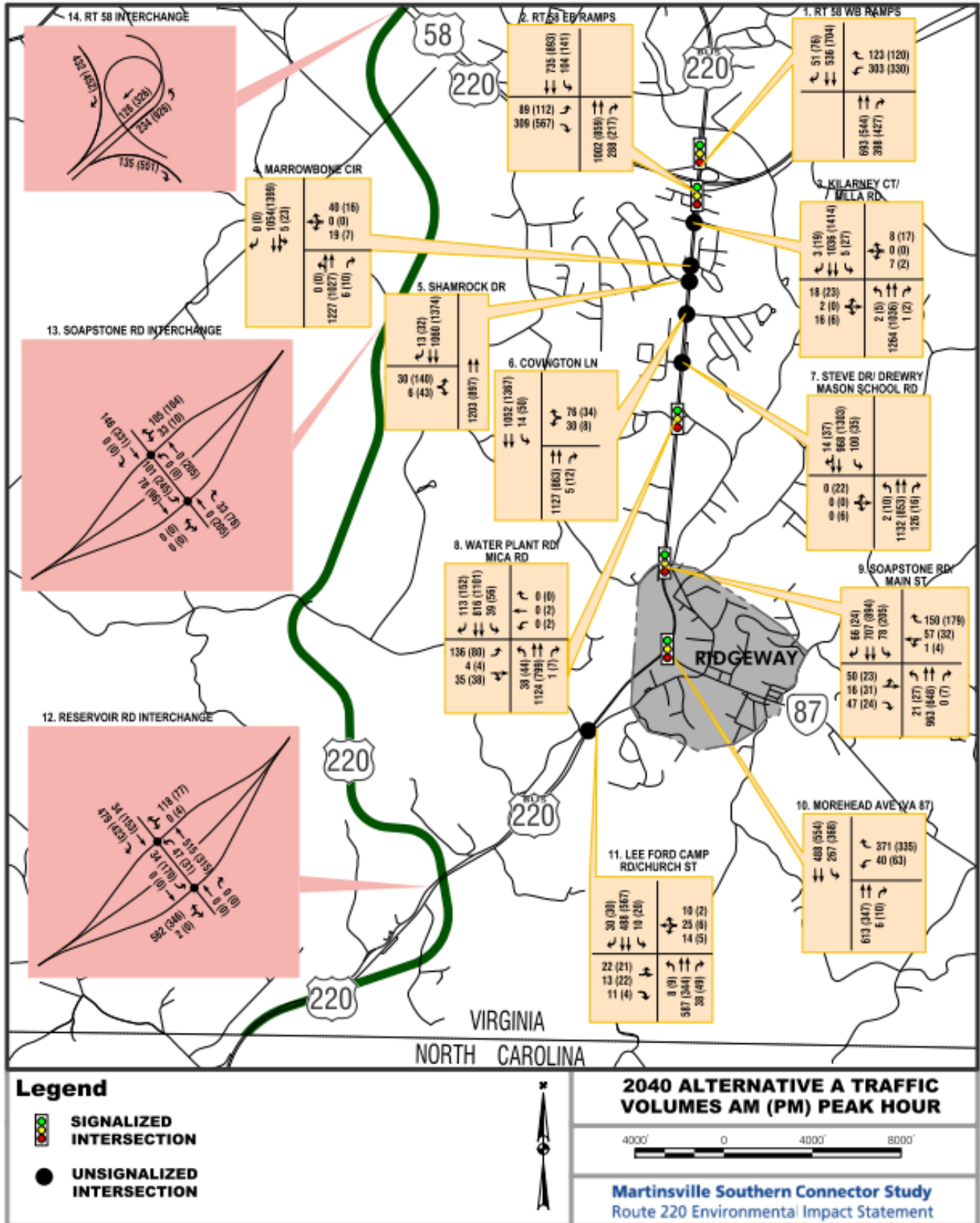


Figure 6-6: Alternative A 2040 Peak Hour Intersection Volumes



6.2 OPERATIONAL ANALYSES

6.2.1 Capacity Results

Capacity analysis was computed using Synchro 10. Signal timings along the corridor were optimized for future conditions. **Table 6-1** and **Table 6-2** summarize the levels of service, delays, and queues for the Alternative A build conditions for 2025, and **Table 6-3** and **Table 6-4** summarizes these values for 2040. Synchro worksheets are included in **Appendix H**. There are some intersections, approaches and lane groups that would operate with excessive delays and/or queues, which are listed below.

Table 6-1: Alternative A 2025 Capacity Analysis Summary (1)

| Intersection | Movement | AM | | | PM | | |
|---|----------|-----|-------------|------------|------|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 1. Route 58 WB Ramp | Overall | A | 9.1 | - | B | 13.0 | - |
| | WB | C | 26.8 | - | C | 29.1 | - |
| | WBL/T | C | 29.1 | 136.0 | C | 31.8 | 209.0 |
| | WBR | C | 21.4 | 28.0 | C | 21.6 | 30.0 |
| | NB | A | 2.3 | 20.0 | A | 2.9 | 21.0 |
| | SB | A | 7.6 | - | B | 10.9 | - |
| | SBT | A | 7.7 | 102.0 | B | 11.2 | 195.0 |
| | SBR | A | 6.3 | 10.0 | A | 8.2 | 22.0 |
| | Overall | B | 16.1 | - | C | 34.5 | - |
| | EB | C | 29.7 | - | E | 57.1 | - |
| 2. Route 58 EB Ramp | EBL | C | 27.8 | 73.0 | B | 19.4 | 73.0 |
| | EBR | C | 30.3 | 123.0 | E | 64.6 | 402.0 |
| | NB | B | 16.3 | - | D | 37.0 | - |
| | NBT | B | 75.5 | 263.0 | D | 40.8 | 328.0 |
| | NBR | B | 11.9 | 56.0 | C | 21.7 | 67.0 |
| | SB | A | 8.7 | - | B | 19.8 | - |
| | SBL | D | 42.4 | 88.0 | E | 62.4 | 180.0 |
| | SBT | A | 3.9 | 62.0 | B | 13.0 | 222.0 |
| | Overall | F | 70.0 | 45.0 | F | 297.4 | 80.0 |
| | WB | F | 56.8 | 15.0 | C | 22.8 | 10.0 |
| 3. Kilarney Court/Villa Road | NB | A | 0.0 | - | A | 0.1 | - |
| | NBL | B | 10.2 | 0.0 | B | 13.2 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.2 | - |
| | SBL | B | 11.9 | 0.0 | B | 10.8 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | Overall | F | 66.7 | 1687.5 | F | 63.1 | 67.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| 4. Marrowbone Circle | NBL/T | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.2 | - |
| | SBL/T | B | 11.7 | 0.0 | B | 10.6 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 5. Shamrock Drive | EB | F | 421.7 | 367.5 | F | 873.2 | 487.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 6. Covington Lane | WB | E | 35.2 | 60.0 | C | 21.9 | 15.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.2 | - | A | 0.4 | - |
| 7. Steve Drive/Drewry Mason School Road | SBL | B | 10.5 | 0.1 | A | 9.9 | 5.0 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | EB | A | 0.0 | 0.0 | F | 102.4 | 47.5 |
| | NB | A | 0.0 | - | A | 0.1 | - |
| | NBL | A | 9.9 | 0.0 | B | 12.6 | 2.5 |
| 8. Water Plant Road | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 1.6 | - | A | 0.3 | - |
| | SBL | B | 13.0 | 22.5 | A | 10.0 | 0.2 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| SBR | A | 0.0 | - | A | 0.0 | - | |
| 9. Soapstone Road/Main Street | Overall | B | 14.5 | - | C | 21.2 | - |
| | EB | C | 33.4 | - | D | 40.2 | - |
| | EBL | D | 35.9 | 111.0 | D | 44.1 | 112.0 |
| | EBT/R | C | 25.6 | 25.0 | C | 32.8 | 32.0 |
| | WB | A | 0.0 | - | D | 41.7 | - |
| | WBL | A | 0.0 | 0.0 | D | 42.0 | 8.0 |
| | WBT | A | 0.0 | 0.0 | D | 41.3 | 8.0 |
| | WBR | A | 0.0 | 0.0 | A | 17.3 | 0.0 |
| | NB | B | 14.1 | - | B | 17.3 | - |
| | NBL | C | 33.0 | 41.0 | D | 38.9 | 52.0 |
| 10. Morehead Avenue (VA 87) | NBT | B | 13.4 | 231.0 | B | 16.1 | 214.0 |
| | NBR | A | 7.7 | 0.0 | B | 11.2 | 0.0 |
| | SB | B | 11.6 | - | C | 21.7 | - |
| | SBL | C | 31.6 | 41.0 | D | 37.3 | 64.0 |
| | SBT | B | 11.0 | 156.0 | C | 22.2 | 408.0 |
| | SBR | A | 8.4 | 0.0 | B | 12.5 | 0.0 |
| | Overall | B | 13.9 | - | C | 33.0 | - |
| | EB | C | 27.2 | - | D | 38.0 | - |
| | EBL/T | C | 27.5 | 55.0 | D | 38.8 | 60.0 |
| | EBR | C | 26.9 | 0.0 | D | 36.3 | 0.0 |
| 11. Lee Ford Camp Road/Chruh Street | WB | A | 0.0 | - | D | 38.2 | - |
| | WBL/T | A | 0.0 | 0.0 | C | 29.8 | 46.0 |
| | WBR | A | 0.0 | 0.0 | D | 39.9 | 6.0 |
| | NB | B | 14.4 | - | C | 30.9 | - |
| | NBL | C | 31.5 | 34.0 | D | 42.1 | 38.0 |
| | NBT | B | 13.9 | 238.0 | C | 30.6 | 214.0 |
| | NBR | A | 0.0 | 0.0 | C | 21.1 | 0.0 |
| | SB | B | 11.3 | - | C | 32.8 | - |
| | SBL | C | 30.6 | 66.0 | D | 47.6 | 211.0 |
| | SBT | A | 9.4 | 134.0 | C | 30.2 | 351.0 |
| SBR | A | 7.3 | 0.0 | B | 16.5 | 0.0 | |
| 11. Lee Ford Camp Road/Chruh Street | Overall | F | 123.3 | - | E | 56.8 | - |
| | WB | F | 337.8 | - | F | 188.0 | - |
| | WBL | C | 20.4 | 47.0 | C | 22.8 | 51.0 |
| | WBR | F | 375.4 | 202.0 | F | 218.9 | 58.0 |
| | NB | C | 23.6 | - | B | 19.2 | - |
| | NBT | C | 23.7 | 131.0 | B | 19.3 | 73.0 |
| | NBR | B | 16.4 | 7.0 | B | 16.5 | 8.0 |
| | SB | B | 10.0 | - | A | 9.7 | - |
| | SBL | B | 14.5 | 78.0 | B | 14.0 | 116.0 |
| | SBT | A | 7.6 | 64.0 | A | 6.9 | 76.0 |
| 11. Lee Ford Camp Road/Chruh Street | EB | C | 21.0 | 20.0 | C | 21.5 | 17.5 |
| | WB | C | 19.7 | 15.0 | A | 0.0 | - |
| | NB | A | 0.1 | - | A | 0.2 | - |
| | NBL | A | 8.5 | 0.0 | A | 8.8 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.2 | - | A | 0.3 | - |
| | SBL | A | 8.5 | 0.0 | A | 8.0 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |

Table 6-2: Alternative A 2025 Capacity Analysis Summary (2)

| Intersection | Movement | AM | | | PM | | |
|-------------------------------------|-----------|----------|-------------|------------|----------|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 12.1. Reservoir Interchange WB Ramp | WB | B | 11.7 | - | B | 10.2 | - |
| | WBL | A | 0.0 | - | B | 14.3 | 0.0 |
| | WBR | B | 11.7 | 7.5 | B | 10.0 | 2.5 |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 12.2. Reservoir Interchange EB Ramp | EB | A | 0.0 | - | B | 12.1 | - |
| | EBL | B | 14.5 | 95.0 | B | 12.1 | 50.0 |
| | EBT/R | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBL | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 13.1. Soapstone Interchange WB Ramp | EB | A | 0.0 | - | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | EBR | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBL | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 8.9 | - | A | 9.0 | - |
| | SBL | A | 9.5 | 2.5 | A | 9.9 | 0.0 |
| | SBR | A | 8.7 | 7.5 | A | 8.9 | 5.0 |
| 13.2. Soapstone Interchange EB Ramp | EB | A | 4.3 | - | A | 5.6 | - |
| | EBL | A | 7.5 | 5.0 | A | 7.7 | 7.5 |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | WBR | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |

Route 58 Eastbound Ramps: The eastbound right-turn and southbound left-turn would experience extensive delays during the PM peak hour only.

Kilarney Court/Villa Road: Eastbound Kilarney Court would experience extensive delays during both peak hours, and westbound Villa Road would experience extensive delays during the AM peak hour only.

Marrowbone Circle: The westbound approach of Marrowbone Circle would experience extensive delays during both peak hours.

Shamrock Drive: The eastbound approach of Shamrock Drive would experience extensive delays and queues during both peak hours.

Steve Drive: The eastbound approach of Steve Drive would experience extensive delays during the PM peak hour only.

Morehead Avenue: The westbound approach would experience extensive delays during both peak hours.

Martinsville Southern Connector Study

Route 220 Environmental Impact Statement

Table 6-3: Alternative A 2040 Capacity Analysis Summary (1)

| Intersection | Movement | AM | | | PM | | |
|---|-----------------------------|---------|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 1. Route 58 WB Ramp | Overall | B | 11.3 | - | B | 16.6 | - |
| | WB | C | 25.5 | - | D | 39.7 | - |
| | WBL/T | C | 28.4 | 181.0 | D | 44.1 | 298.0 |
| | WBR | B | 18.4 | 46.0 | C | 27.5 | 35.0 |
| | NB | A | 3.1 | 22.0 | A | 1.9 | 18.0 |
| | SB | B | 10.7 | - | B | 13.5 | - |
| | SBT | B | 10.9 | 135.0 | B | 13.8 | 245.0 |
| | SBR | A | 8.7 | 14.0 | B | 10.4 | 25.0 |
| | Overall | C | 21.6 | - | D | 51.8 | - |
| 2. Route 58 EB Ramp | EB | D | 47.4 | - | E | 77.5 | - |
| | EBL | C | 26.4 | 78.0 | C | 21.0 | 96.0 |
| | EBR | D | 53.5 | 207.0 | F | 88.6 | 656.0 |
| | NB | B | 18.7 | - | E | 56.8 | - |
| | NBT | C | 20.4 | 295.0 | E | 63.3 | 482.0 |
| | NBR | B | 12.9 | 66.0 | C | 31.3 | 135.0 |
| | SB | B | 13.6 | - | C | 29.7 | - |
| | SBL | E | 62.3 | 117.0 | F | 98.4 | 238.0 |
| | SBT | A | 6.7 | 139.0 | B | 18.9 | 286.0 |
| 3. Kilarney Court/Villa Road | EB | F | 134.6 | 27.8 | F | 491.0 | 100.0 |
| | WB | F | 89.1 | 25.0 | D | 27.3 | 10.0 |
| | NB | A | 0.0 | - | A | 0.1 | - |
| | NBL | B | 11.0 | 0.0 | B | 14.0 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.2 | - |
| | SBL | B | 12.6 | 0.0 | B | 11.3 | 5.0 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 4. Marrowbone Circle | WB | F | 109.4 | 82.5 | F | 56.7 | 25.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL/T | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.2 | - |
| | SBL/T | B | 12.4 | 0.0 | B | 11.3 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 5. Shamrock Drive | EB | F | 102.1 | 60.0 | F | 1253.4 | 550.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 6. Covington Lane | WB | F | 82.5 | 122.5 | D | 26.7 | 20.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.2 | - | A | 0.4 | - |
| 7. Steve Drive/Drewry Mason School Road | SBL | B | 11.8 | 2.5 | B | 10.8 | 7.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | EB | A | 0.0 | 0.0 | F | 150.3 | 60.0 |
| | NB | A | 0.0 | - | A | 0.2 | - |
| | NBL | B | 10.7 | 0.0 | B | 13.3 | 2.5 |
| 8. Water Plant Road | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 1.4 | - | A | 0.3 | - |
| | SBL | C | 15.2 | 22.5 | B | 10.5 | 5.0 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 9. Soapstone Road/Main Street | SBR | A | 0.0 | - | A | 0.0 | - |
| | Overall | C | 29.0 | - | C | 33.4 | - |
| | EB | D | 52.1 | - | D | 52.0 | - |
| | EBL/T | D | 53.3 | 94.0 | D | 53.6 | 79.0 |
| | EBR | D | 50.3 | 0.0 | D | 48.5 | 0.0 |
| | WB | D | 52.8 | - | E | 59.7 | - |
| | WBL/T | D | 40.5 | 85.0 | D | 38.2 | 59.0 |
| | WBR | E | 57.6 | 59.0 | E | 64.0 | 43.0 |
| | NB | C | 26.6 | - | C | 30.5 | - |
| | NBL | D | 54.5 | 44.0 | D | 54.5 | 51.0 |
| | NBT | C | 26.0 | 423.0 | C | 29.5 | 298.0 |
| | NBR | A | 0.0 | 0.0 | C | 21.1 | 0.0 |
| | SB | C | 22.8 | - | C | 29.0 | - |
| | SBL | E | 65.4 | 132.0 | E | 56.9 | 227.0 |
| | SBT | B | 18.9 | 247.0 | C | 23.2 | 357.0 |
| | SBR | B | 13.9 | 0.0 | B | 14.5 | 0.0 |
| | 10. Morehead Avenue (VA 87) | Overall | D | 48.3 | - | C | 34.2 |
| WB | | F | 146.4 | - | F | 91.1 | - |
| WBL | | C | 23.3 | 41.0 | C | 23.6 | 60.0 |
| WBR | | F | 159.6 | 82.0 | F | 103.9 | 61.0 |
| NB | | C | 26.8 | - | C | 26.4 | - |
| 11. Lee Ford Camp Road/Chruch Street | NBT | C | 26.9 | 206.0 | C | 26.6 | 82.0 |
| | NBR | B | 17.3 | 8.0 | C | 21.0 | 0.0 |
| | SB | B | 12.5 | - | B | 12.6 | - |
| | SBL | C | 20.2 | 112.0 | B | 18.1 | 152.0 |
| | SBT | A | 8.4 | 88.0 | A | 8.8 | 103.0 |
| | EB | D | 27.9 | 0.0 | D | 26.8 | 22.5 |
| | WB | D | 30.7 | 27.5 | C | 20.6 | - |
| | NB | A | 0.1 | - | A | 0.2 | - |
| | NBL | A | 8.7 | 0.0 | A | 9.0 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| SB | A | 0.2 | - | A | 0.3 | - | |
| SBL | A | 9.1 | 0.0 | A | 8.3 | 2.5 | |
| SBT | A | 0.0 | - | A | 0.0 | - | |
| SBR | A | 0.0 | - | A | 0.0 | - | |

Table 6-4: Alternative A 2040 Capacity Analysis Summary (2)

| Intersection | Movement | AM | | | PM | | |
|--|----------|-----|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 12.1. Reservoir Interchange WB Ramp | Overall | | | | | | |
| | WB | B | 14.5 | - | B | 11.3 | - |
| | WBL | A | 0.0 | - | C | 16.4 | 0 |
| | WBR | B | 14.5 | 25 | B | 11 | 10 |
| | NB | A | 0.7 | - | A | 0.8 | - |
| | NBL | A | 8.8 | 5 | A | 9.0 | 2.5 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0 | - | A | 0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 12.2. Reservoir Interchange EB Ramp | Overall | | | | | | |
| | EB | A | 0 | - | C | 21.0 | - |
| | EBL | C | 18.9 | 162.5 | C | 21.0 | 117.5 |
| | EBT/R | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0 | - | A | 0 | - |
| | SB | A | 0 | - | A | 0 | - |
| | SBL | A | 0 | - | A | 0 | - |
| 13.1. Soapstone Interchange WB Ramp | EB | A | 0.0 | - | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | EBR | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBL | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 8.9 | - | B | 10.5 | - |
| | SBL | A | 9.6 | 2.5 | B | 13.1 | 2.5 |
| | SBR | A | 8.7 | 10.0 | B | 10.2 | 12.5 |
| 13.2. Soapstone Interchange EB Ramp | EB | A | 4.2 | - | A | 6.3 | - |
| | EBL | A | 7.5 | 5.0 | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | WBR | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |

Route 58 Eastbound Ramps: The eastbound right-turn and northbound through would experience extensive delays during the PM peak hour only. The southbound left-turn would experience extensive delays during both peak hours.

Kilarney Court/Villa Road: Eastbound and westbound approaches would experience extensive delays during both peak hours.

Marrowbone Circle: The westbound approach of Marrowbone Circle would experience extensive delays during both peak hours.

Shamrock Drive: The eastbound approach of Shamrock Drive would experience extensive delays and queues during both peak hours, especially the PM peak hour.

Covington Lane: The westbound approach would experience extensive delays during both peak hours.

Steve Drive: The eastbound approach of Steve Drive would experience extensive delays during the PM peak hour only.

Soapstone Drive/ Main Street: The westbound right-turn and southbound left-turn would experience extensive delays during both peak hours.

Morehead Avenue: The westbound approach would experience extensive delays during both peak hours.

6.2.2 Travel Times and Distances

Alternative A would improve travel time between the western boundary of the study area on Route 220/Route 58 and the southern project limit at the North Carolina state line, as shown in **Table 6-5**. Dark green boxes represent an improvement to both the travel time and a reduction in travel distance when compared to the No-Build Alternative. Light green indicates that either the travel time or distance would be improved. A dark red box means that both the travel time and distance between a destination pair would be longer than the No-Build Alternative; a light red box indicates that either the travel time or the distance would be increased over the No-Build Alternative.

Table 6-5: Distances and Travel Times Between Study Area Entrances and Exits –Alternative A

| Origin/Destination | Route 58/Route 220 @ Cameron Road | Joseph Martin Highway @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | VA Route 87 @ Farmbrook Road | Route 220 @ North Carolina State Line |
|--|-----------------------------------|--|------------------------------------|-------------------------------|------------------------------|---------------------------------------|
| Route 58/Route 220 @ Cameron Road | | 2.1 miles (2:50) | 3.1 miles (4:00) | 4.8 miles (4:50) | 7.9 miles (12:30) | 9.1 miles (9:30) |
| Joseph Martin Highway @ Fisher Farm Road | 1.4 miles (1:35) | | 1.3 miles (2:15) | 3.6 miles (4:15) | 7.1 miles (12:30) | 8.4 miles (10:15) |
| Business Route 220 @ Old Sand Road | 3.0 miles (3:20) | 1.3 miles (2:15) | | 2.4 miles (3:15) | 5.9 miles (10:20) | 7.2 miles (9:15) |
| Route 58 @ Smith River Bridge | 4.8 miles (4:50) | 3.5 miles (4:00) | 2.3 miles (2:50) | | 7.7 miles (12:10) | 9.0 miles (11:25) |
| VA Route 87 @ Farmbrook Road | 8.4 miles (12:50) | 7.2 miles (12:05) | 5.9 miles (10:10) | 7.6 miles (11:05) | | 6.1 miles (8:50) |
| Route 220 @ North Carolina State Line | 9.3 miles (10:00) | 8.5 miles (10:45) | 7.2 miles (9:35) | 8.9 miles (11:00) | 6.1 miles (8:40) | |

Alternative A would result in a trip time savings of 2 minutes over the No-Build Alternative in the southbound direction and a savings of 1 minute and 45 seconds northbound for vehicles traveling between the southern and western limits of the study area. The travel distance between these two points would also be reduced by 0.4 miles.

Alternative A would maintain many of the existing connections between points of interest in the study area, as shown in **Table 6-6**. Green boxes indicate that the distance between those origins and destinations would decrease with this alternative; red boxes indicate an increase in travel distance.

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Table 6-6: Travel Distances Between Points of Interest in the Study Area – Alternative A

| Origin/Destination | Route 58/220 @ Cameron Road | Joseph Martin Hwy @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | Soapstone Road @ Joseph Martin Hwy | Magna Vista High School | Kilamey Court @ Route 220 | Villa Road @ Route 220 | Marrowbone Circle @ Route 220 | Shamrock Drive @ Route 220 | Covington Lane @ Route 220 | Steve Drive @ Route 220 | Drewry Mason Elementary School | Mica Road @ Route 220 | Water Plant Road @ Route 220 | Andra Drive @ Route 220 | Soapstone Road @ Route 220 | Main Street @ Route 220 | VA Route 87 @ Main Street | VA Route 87 @ Farmbrook Road | Lee Ford Camp Road @ Blackfeather Trl | Church Street @ Route 220 | Matrimony Creek Road @ Route 220 | Reservoir Road @ Route 220 | J.B. Dalton Road @ Route 220 | Route 220 @ North Carolina State Line |
|---------------------------------------|-----------------------------|--------------------------------------|------------------------------------|-------------------------------|------------------------------------|-------------------------|---------------------------|------------------------|-------------------------------|----------------------------|----------------------------|-------------------------|--------------------------------|-----------------------|------------------------------|-------------------------|----------------------------|-------------------------|---------------------------|------------------------------|---------------------------------------|---------------------------|----------------------------------|----------------------------|------------------------------|---------------------------------------|
| Route 58/220 @ Cameron Road | 2.1 | 3.1 | 4.8 | 2.7 | 4.0 | 2.9 | 2.9 | 3.2 | 3.3 | 3.5 | 3.8 | 3.8 | 4.2 | 4.2 | 4.8 | 4.8 | 4.8 | 5.7 | 7.9 | 6.2 | 6.1 | 7.9 | 8.0 | 8.3 | 9.1 | |
| Joseph Martin Hwy @ Fisher Farm Road | 1.4 | 1.3 | 3.6 | 2.5 | 3.8 | 1.8 | 1.8 | 2.1 | 2.2 | 2.4 | 2.7 | 2.7 | 3.1 | 3.1 | 3.7 | 4.0 | 4.0 | 4.9 | 7.1 | 5.4 | 5.3 | 6.8 | 7.4 | 7.5 | 8.4 | |
| Business Route 220 @ Old Sand Road | 3.0 | 1.3 | 2.4 | 4.2 | 5.5 | 0.6 | 0.6 | 0.9 | 1.0 | 1.2 | 1.5 | 1.5 | 1.9 | 1.9 | 2.5 | 2.8 | 2.8 | 3.7 | 5.9 | 4.2 | 4.1 | 5.6 | 6.2 | 6.3 | 7.2 | |
| Route 58 @ Smith River Bridge | 4.8 | 3.5 | 2.3 | 6.0 | 7.3 | 2.4 | 2.4 | 2.7 | 2.8 | 3.0 | 3.3 | 3.3 | 3.7 | 3.7 | 4.3 | 4.6 | 4.6 | 5.5 | 7.7 | 6.0 | 5.9 | 7.4 | 8.0 | 8.1 | 9.0 | |
| Soapstone Road @ Joseph Martin Hwy | 3.1 | 2.5 | 3.8 | 5.4 | 1.3 | 3.6 | 3.6 | 3.9 | 4.0 | 4.2 | 3.9 | 3.9 | 3.5 | 3.5 | 2.9 | 2.6 | 2.6 | 3.5 | 5.7 | 4.0 | 3.9 | 5.4 | 5.6 | 6.0 | 6.4 | |
| Magna Vista High School | 4.4 | 3.8 | 5.1 | 6.7 | 1.3 | 4.9 | 4.9 | 4.7 | 4.6 | 4.3 | 4.0 | 4.0 | 3.6 | 3.6 | 3.0 | 2.7 | 2.7 | 3.6 | 5.8 | 3.3 | 3.4 | 4.9 | 5.5 | 5.6 | 6.5 | |
| Kilamey Court @ Route 220 | 3.1 | 1.9 | 0.6 | 2.3 | 3.6 | 4.9 | 0.02 | 0.3 | 0.4 | 0.6 | 0.9 | 0.9 | 1.3 | 1.3 | 1.9 | 2.2 | 2.2 | 3.1 | 5.3 | 3.6 | 3.5 | 5.0 | 5.6 | 5.7 | 6.6 | |
| Villa Road @ Route 220 | 3.1 | 1.9 | 0.6 | 2.3 | 3.6 | 4.9 | 0.02 | 0.3 | 0.4 | 0.6 | 0.9 | 0.9 | 1.3 | 1.3 | 1.9 | 2.2 | 2.2 | 3.1 | 5.3 | 3.6 | 3.5 | 5.0 | 5.6 | 5.7 | 6.6 | |
| Marrowbone Circle @ Route 220 | 3.4 | 2.2 | 0.9 | 2.6 | 3.9 | 4.7 | 0.3 | 0.3 | 0.1 | 0.3 | 0.6 | 0.6 | 1.0 | 1.0 | 1.6 | 1.9 | 1.9 | 2.8 | 5.0 | 3.3 | 3.2 | 4.7 | 5.3 | 5.4 | 6.3 | |
| Shamrock Drive @ Route 220 | 3.5 | 2.3 | 1.0 | 2.7 | 4.0 | 4.6 | 0.4 | 0.4 | 0.1 | 0.2 | 0.5 | 0.5 | 0.9 | 0.9 | 1.5 | 1.8 | 1.8 | 2.7 | 4.9 | 3.2 | 3.1 | 4.6 | 5.2 | 5.3 | 6.2 | |
| Covington Lane @ Route 220 | 3.7 | 2.5 | 1.2 | 2.9 | 4.2 | 4.3 | 0.6 | 0.6 | 0.3 | 0.2 | 0.3 | 0.3 | 0.7 | 0.7 | 1.3 | 1.6 | 1.6 | 2.5 | 4.7 | 3.0 | 2.9 | 4.4 | 5.0 | 5.1 | 6.0 | |
| Steve Drive @ Route 220 | 4.0 | 2.8 | 1.5 | 3.2 | 3.9 | 4.0 | 0.9 | 0.9 | 0.6 | 0.5 | 0.3 | 0.02 | 0.4 | 0.4 | 1.0 | 1.3 | 1.3 | 2.2 | 4.4 | 2.7 | 2.6 | 4.1 | 4.7 | 4.8 | 5.7 | |
| Drewry Mason Elementary School | 4.0 | 2.8 | 1.5 | 3.2 | 3.9 | 4.0 | 0.9 | 0.9 | 0.6 | 0.5 | 0.3 | 0.02 | 0.4 | 0.4 | 1.0 | 1.3 | 1.3 | 2.2 | 4.4 | 2.7 | 2.6 | 4.1 | 4.7 | 4.8 | 5.7 | |
| Mica Road @ Route 220 | 4.4 | 3.2 | 1.9 | 3.6 | 3.5 | 3.6 | 1.3 | 1.3 | 1.0 | 0.9 | 0.7 | 0.4 | 0.4 | 0.02 | 0.6 | 0.9 | 0.9 | 1.8 | 4.0 | 2.3 | 2.2 | 3.7 | 4.3 | 4.4 | 5.3 | |
| Water Plant Road @ Route 220 | 4.4 | 3.2 | 1.9 | 3.6 | 3.5 | 3.6 | 1.3 | 1.3 | 1.0 | 0.9 | 0.7 | 0.4 | 0.4 | 0.02 | 0.6 | 0.9 | 0.9 | 1.8 | 4.0 | 2.3 | 2.2 | 3.7 | 4.3 | 4.4 | 5.3 | |
| Andra Drive @ Route 220 | 5.0 | 3.8 | 2.5 | 4.2 | 2.9 | 3.0 | 1.9 | 1.9 | 1.6 | 1.5 | 1.3 | 1.0 | 1.0 | 0.6 | 0.6 | 0.3 | 0.3 | 1.2 | 3.4 | 1.7 | 1.6 | 3.1 | 3.7 | 3.8 | 4.7 | |
| Soapstone Road @ Route 220 | 5.3 | 4.1 | 2.8 | 4.5 | 2.6 | 2.7 | 2.2 | 2.2 | 1.9 | 1.8 | 1.6 | 1.3 | 1.3 | 0.9 | 0.9 | 0.3 | 0.02 | 0.9 | 3.1 | 1.4 | 1.3 | 2.8 | 3.4 | 3.5 | 4.4 | |
| Main Street @ Route 220 | 5.3 | 4.1 | 2.8 | 4.5 | 2.6 | 2.7 | 2.2 | 2.2 | 1.9 | 1.8 | 1.6 | 1.3 | 1.3 | 0.9 | 0.9 | 0.3 | 0.02 | 0.9 | 3.1 | 1.4 | 1.3 | 2.8 | 3.4 | 3.5 | 4.4 | |
| VA Route 87 @ Main Street | 6.2 | 5.0 | 3.7 | 5.4 | 3.5 | 3.6 | 3.1 | 3.1 | 2.8 | 2.7 | 2.5 | 2.2 | 2.2 | 1.8 | 1.8 | 1.2 | 0.9 | 0.9 | 2.2 | 0.9 | 0.8 | 2.3 | 2.9 | 3.0 | 3.9 | |
| VA Route 87 @ Farmbrook Road | 8.4 | 7.2 | 5.9 | 7.6 | 5.7 | 5.8 | 5.3 | 5.3 | 5.0 | 4.9 | 4.7 | 4.4 | 4.4 | 4.0 | 4.0 | 3.4 | 3.1 | 3.1 | 2.2 | 3.1 | 3.0 | 4.5 | 5.1 | 5.2 | 6.1 | |
| Lee Ford Camp Road @ Blackfeather Trl | 6.7 | 5.5 | 4.2 | 5.9 | 4.0 | 3.3 | 3.6 | 3.6 | 3.3 | 3.2 | 3.0 | 2.7 | 2.7 | 2.3 | 2.3 | 1.7 | 1.4 | 1.4 | 0.9 | 3.1 | 0.1 | 1.6 | 2.2 | 2.3 | 3.2 | |
| Church Street @ Route 220 | 6.6 | 5.4 | 4.1 | 5.8 | 4.1 | 3.4 | 3.5 | 3.5 | 3.2 | 3.1 | 2.9 | 2.6 | 2.6 | 2.2 | 2.2 | 1.6 | 1.3 | 1.3 | 0.8 | 3.0 | 0.1 | 1.5 | 2.1 | 2.2 | 3.1 | |
| Matrimony Creek Road @ Route 220 | 7.6 | 6.4 | 5.1 | 6.8 | 5.1 | 4.4 | 4.5 | 4.5 | 4.2 | 4.1 | 3.9 | 3.6 | 3.6 | 3.2 | 3.2 | 2.6 | 2.3 | 2.3 | 1.8 | 4.0 | 1.1 | 1.0 | 1.5 | 1.6 | 2.4 | |
| Reservoir Road @ Route 220 | 8.5 | 7.5 | 6.2 | 7.9 | 6.2 | 5.5 | 5.6 | 5.6 | 5.3 | 5.2 | 5.0 | 4.7 | 4.7 | 4.3 | 4.3 | 3.7 | 3.4 | 3.4 | 2.9 | 5.1 | 2.2 | 2.1 | 1.1 | 0.5 | 1.0 | |
| J.B. Dalton Road @ Route 220 | 8.2 | 7.0 | 5.7 | 7.4 | 5.7 | 5.0 | 5.1 | 5.1 | 4.8 | 4.7 | 4.5 | 4.2 | 4.2 | 3.8 | 3.8 | 3.2 | 2.9 | 2.9 | 2.4 | 4.6 | 1.7 | 1.6 | 0.6 | 0.9 | 1.9 | |
| Route 220 @ North Carolina State Line | 9.3 | 8.5 | 7.2 | 8.9 | 6.3 | 6.5 | 6.6 | 6.6 | 6.3 | 6.2 | 6.0 | 5.7 | 5.7 | 5.3 | 5.3 | 4.7 | 4.4 | 4.4 | 3.9 | 6.1 | 3.2 | 3.1 | 2.1 | 2.4 | 1.5 | |

6.2.3 Overall Travel Time Results

Calculated average travel times using SimTraffic along the existing corridor between the North Carolina state line and the Route 58 interchange as well as between the border at the new interchange that the new alignment creates with Route 58 are shown in **Table 6-7**. Travel times generally would increase slightly from 2025 to 2040 along both corridors.

Table 6-7: Alternative A Travel Times (Seconds)

| Year | Southbound | | Northbound | |
|---------------------------|------------|-------|------------|-------|
| | AM | PM | AM | PM |
| Existing Alignment | | | | |
| 2025 | 480.6 | 517.2 | 489.2 | 491.8 |
| 2040 | 521.6 | 521.7 | 519.8 | 517.3 |
| New Alignment | | | | |
| 2025 | 338.7 | 336.3 | 384.1 | 364.1 |
| 2040 | 343.6 | 348.6 | 363.5 | 380.5 |

7. FUTURE BUILD ALTERNATIVE B ANALYSIS

Alternative B would construct a new four-lane divided roadway for Route 220 west of the current corridor, with a new interchange along the southern portion of existing Route 220 at Reservoir Road, an interchange along the new alignment at Soapstone Road, and tie into a reconstructed existing interchange along Route 58 at Joseph Martin Highway.

7.1 VOLUME SUMMARY

7.1.1 Daily Volumes

AADT volumes are shown for Alternative B for both 2025 and 2040 in **Figure 7-1** for the existing alignment and in **Figure 7-2** for the new alignment. Truck volumes and percentages along the roadway network are shown for the existing alignment in **Figure 7-3** and along the new alignment in **Figure 7-4**.

7.1.2 Peak Hour Volumes

AM and PM peak hour volumes for 2025 and 2040 Alternative B for each Route 220 study intersection were developed with the subarea travel demand model post-processing efforts, which are shown in **Figure 7-5** for 2025 and **Figure 7-6** for 2040.

Figure 7-1: Alternative B AADT (Existing Alignment)

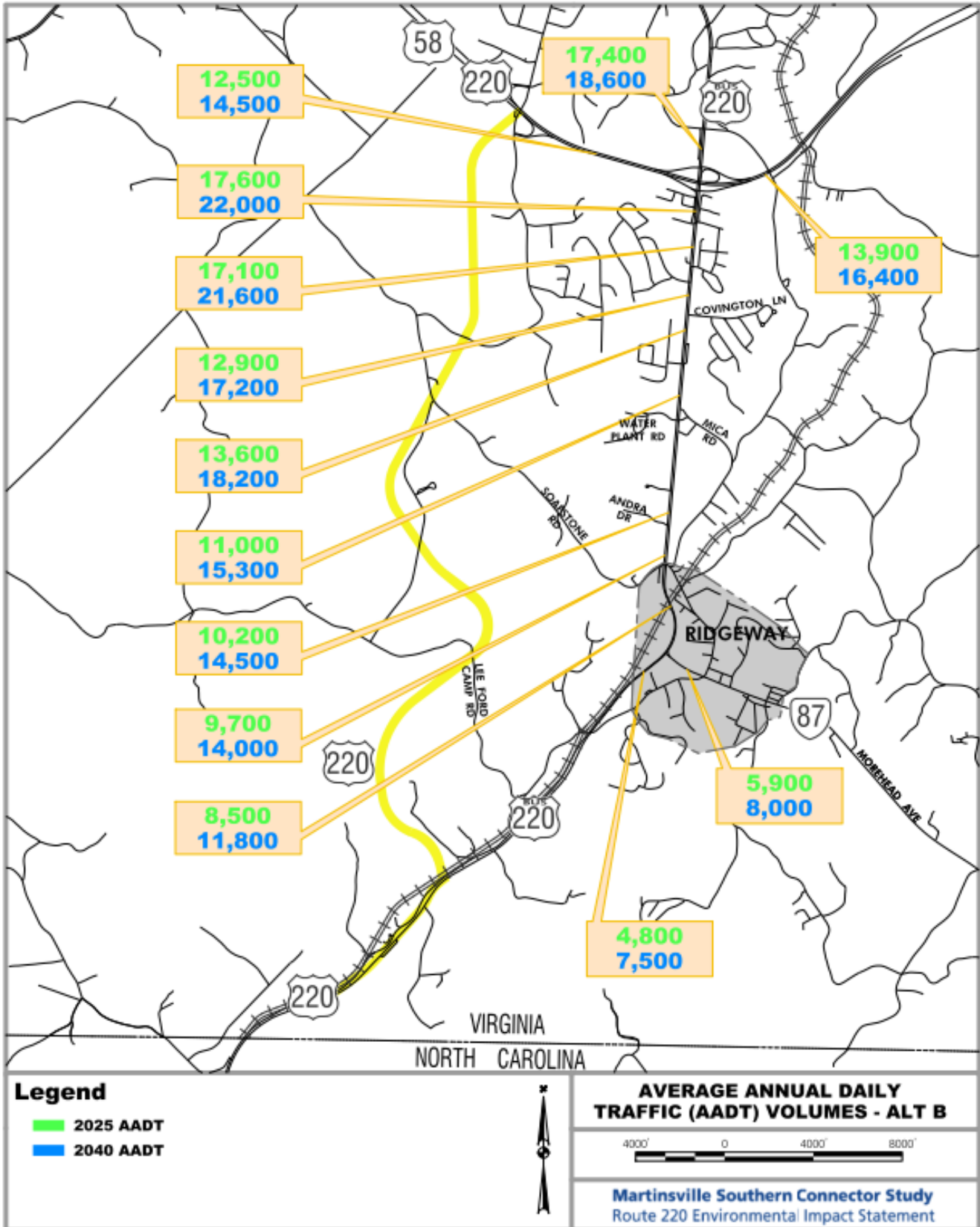


Figure 7-2: Alternative B AADT (New Alignment)

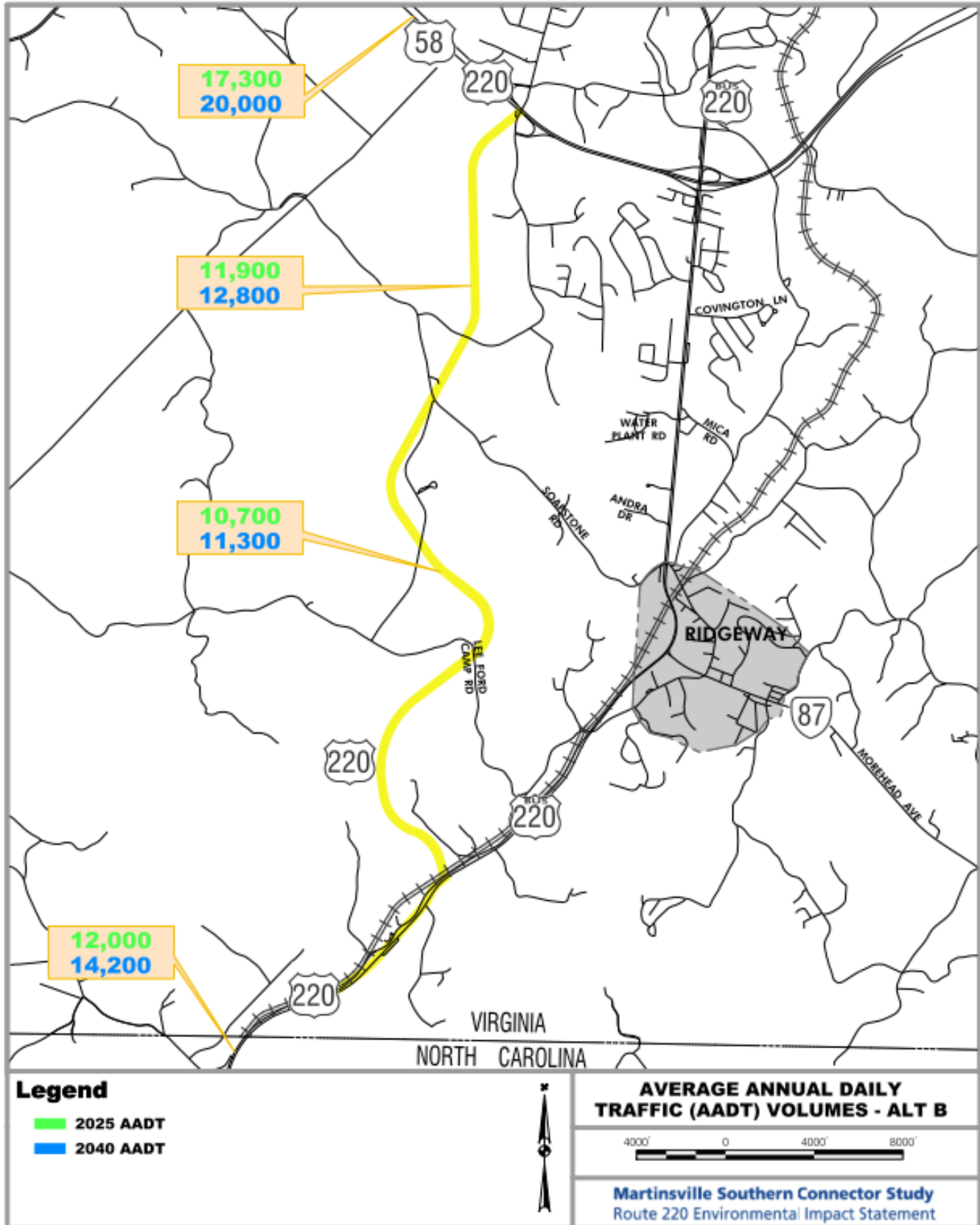


Figure 7-3: Alternative B Truck Percentages (Existing Alignment)

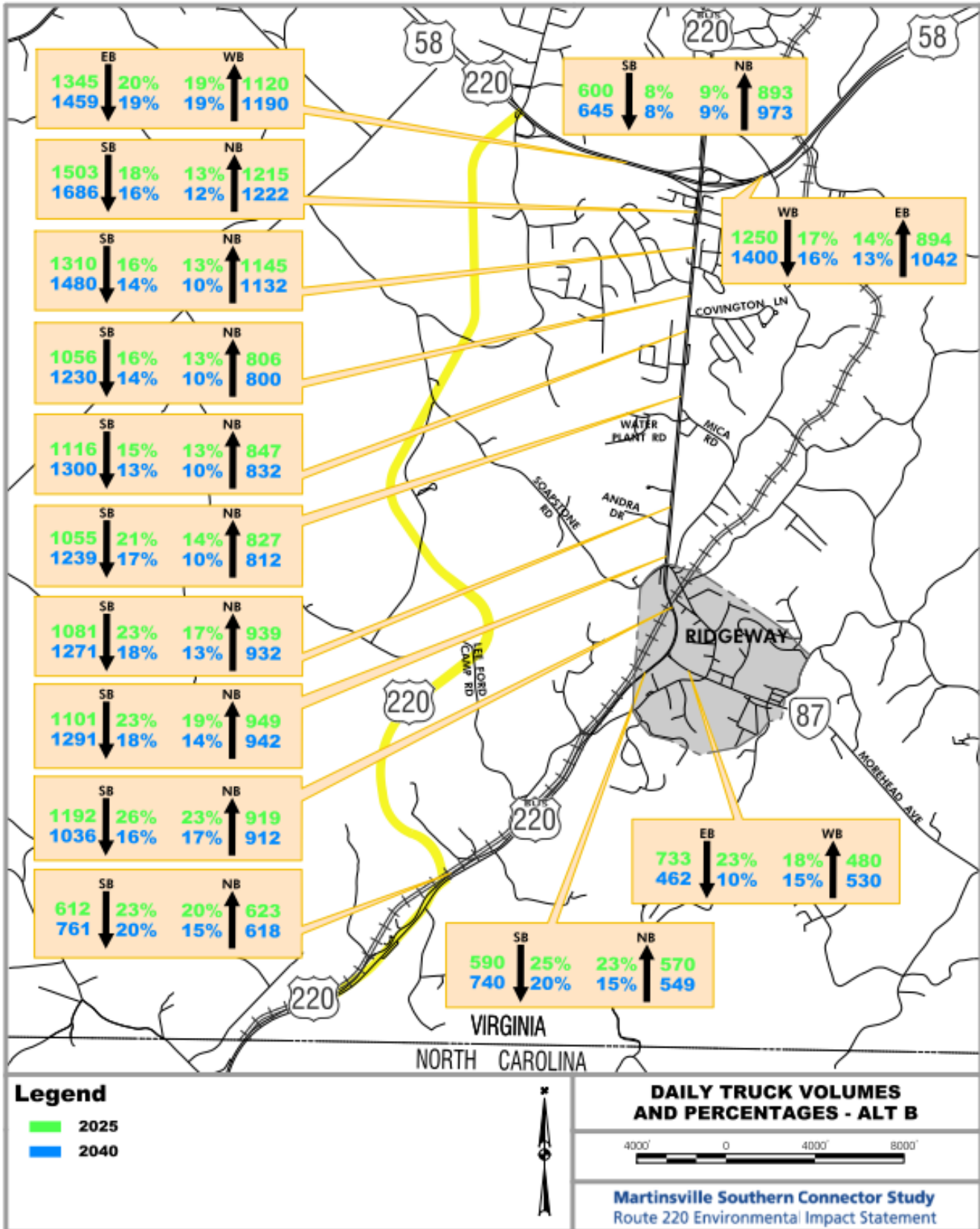


Figure 7-4: Alternative B Truck Percentages (New Alignment)

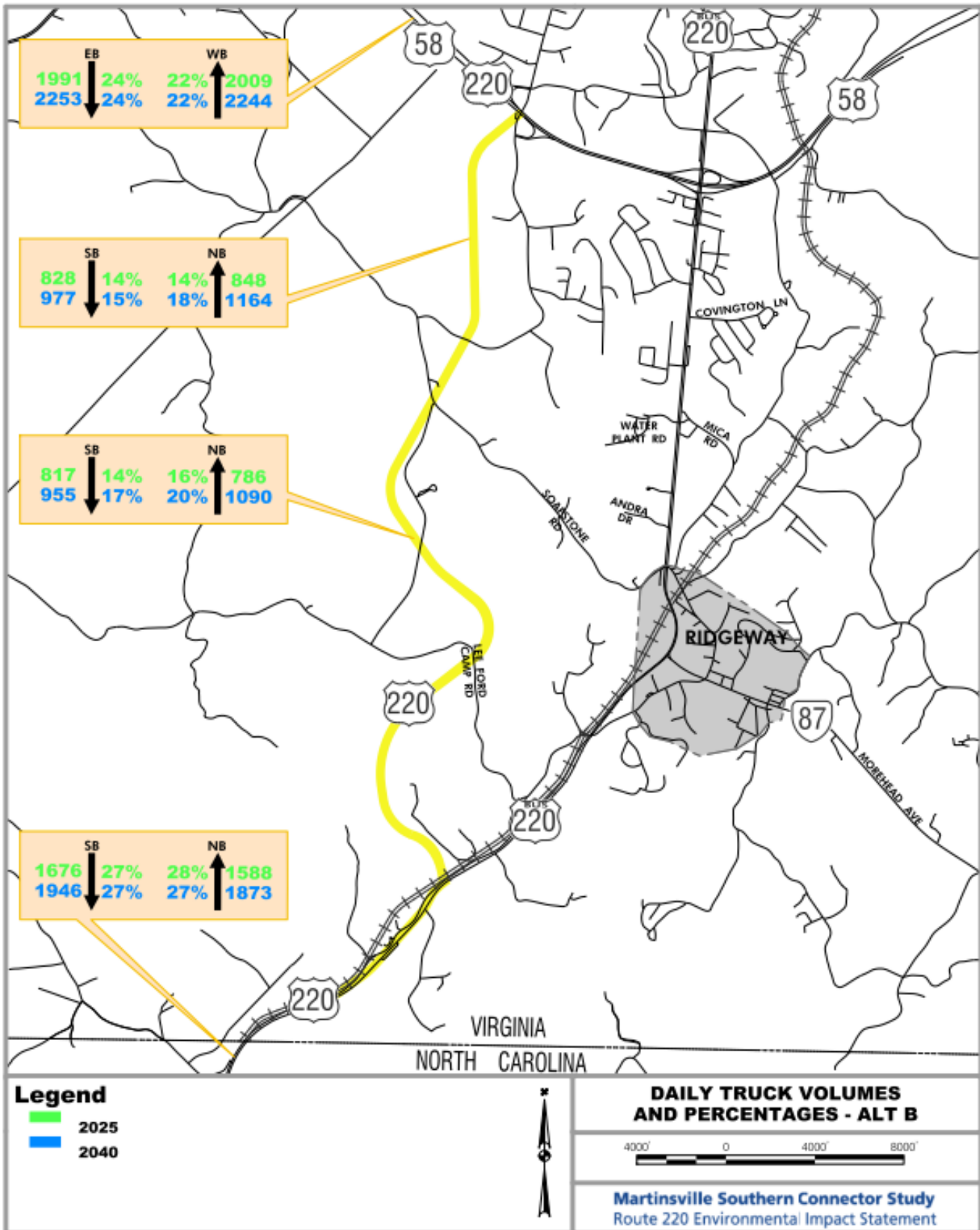
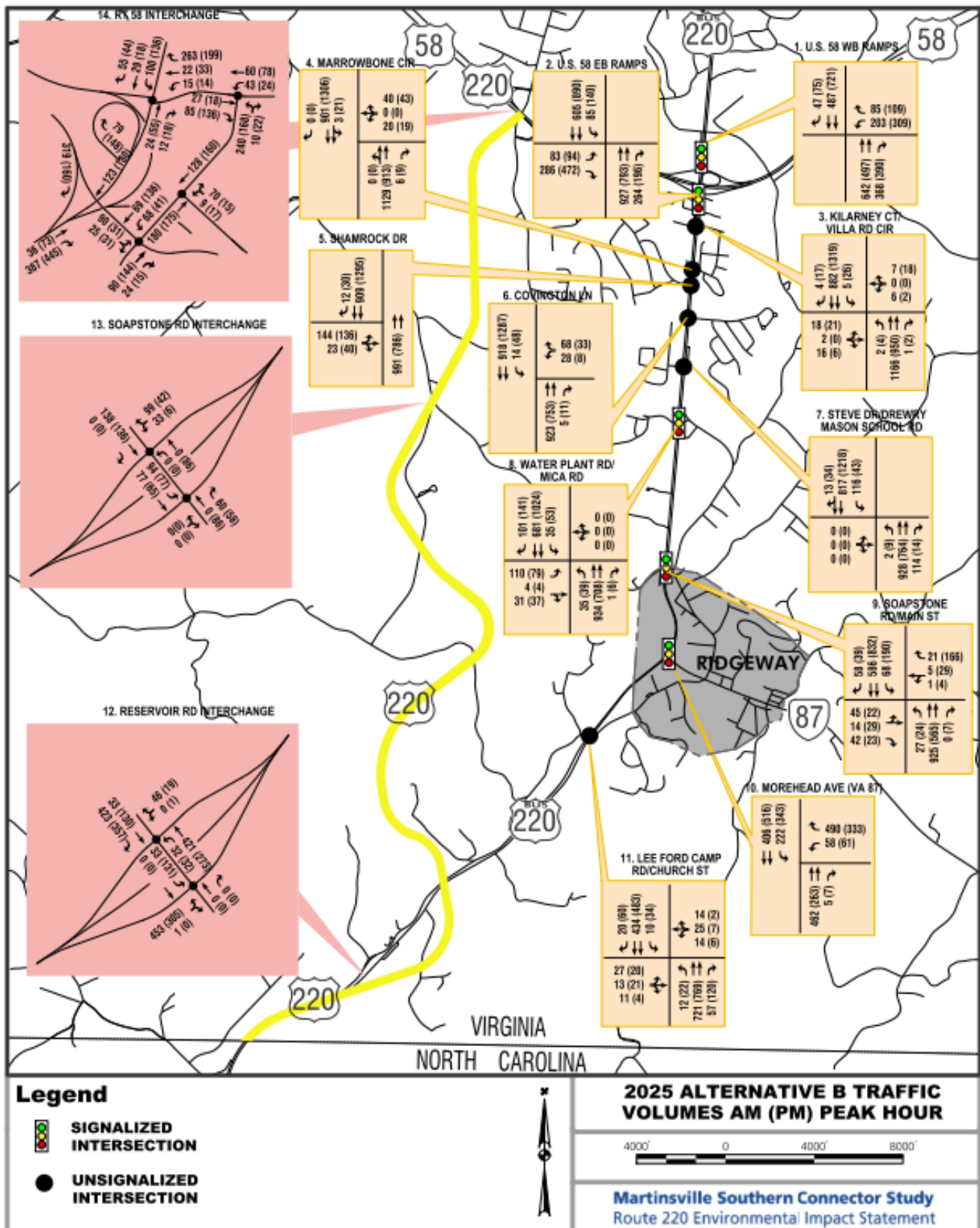


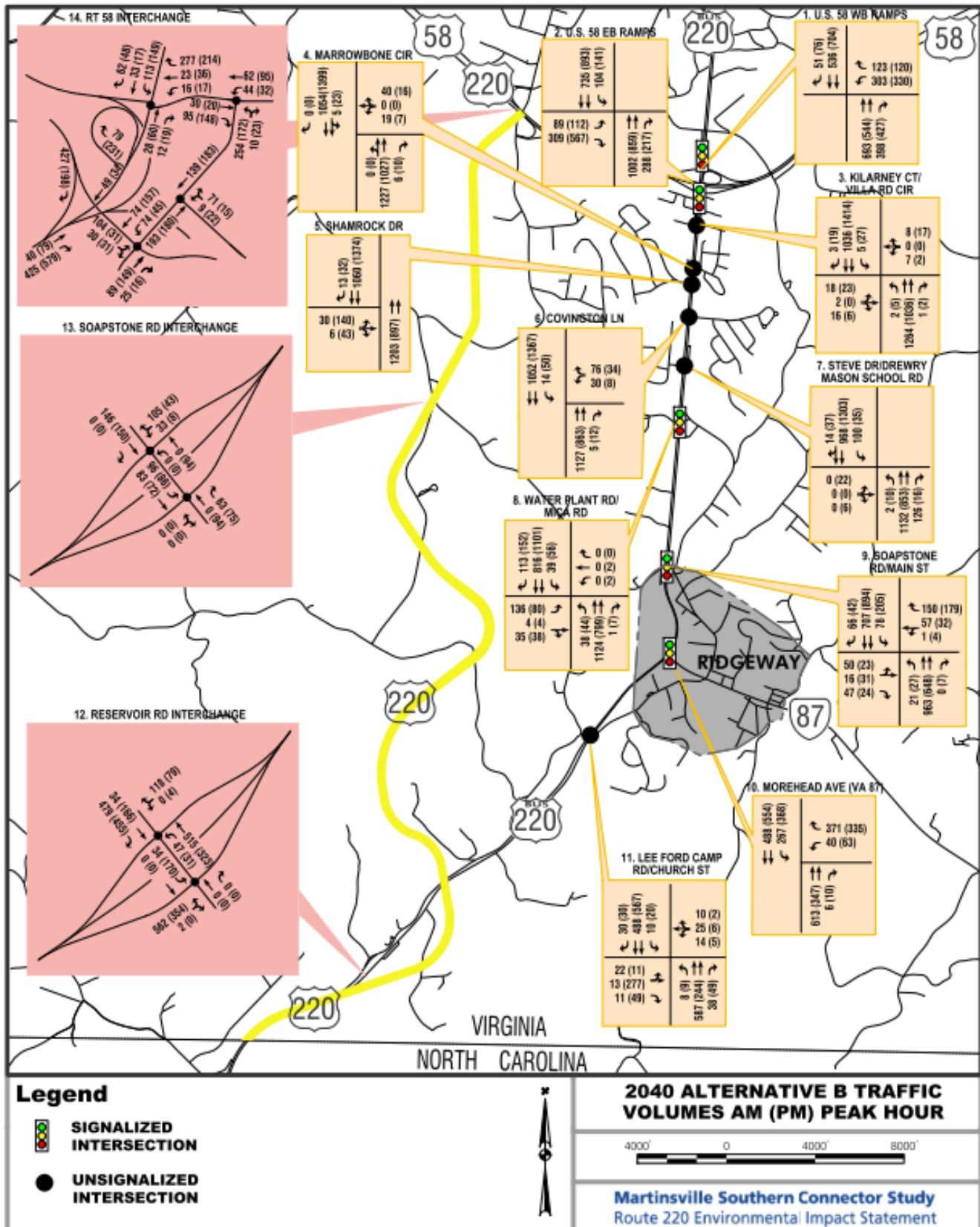
Figure 7-5: Alternative B 2025 Peak Hour Intersection Volumes



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Figure 7-6: Alternative B 2040 Peak Hour Intersection Volumes



7.2 OPERATIONAL ANALYSES

7.2.1 Capacity Results

Capacity analysis was computed using Synchro 10. Signal timings along the corridor were optimized for future conditions. **Table 7-1** and **Table 7-2** summarizes the levels of service, delays, and queues for the No-Build condition for 2025, and **Table 7-3** and **Table 7-4** summarizes these values for 2040. Synchro worksheets are included in **Appendix I**.

There are some intersections, approaches and lane groups that would operate with excessive delays and/or queues, which are listed below.

Table 7-1: Alternative B 2025 Capacity Analysis Summary (1)

| Intersection | Movement | AM | | | PM | | |
|---|----------|-----|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 1. Route 58 WB Ramp | Overall | A | 9.1 | - | B | 13.7 | - |
| | WB | C | 26.8 | - | C | 29.4 | - |
| | WBL/T | C | 29.1 | 136.0 | C | 32.6 | 208.0 |
| | WBR | C | 21.4 | 28.0 | C | 20.3 | 29.0 |
| | NB | A | 2.3 | 20.0 | A | 3.1 | 18.0 |
| | SB | A | 7.6 | - | B | 12.1 | - |
| | SBT | A | 7.7 | 102.0 | B | 12.4 | 207.0 |
| | SBR | A | 6.3 | 10.0 | A | 9.1 | 23.0 |
| 2. Route 58 EB Ramp | Overall | B | 16.1 | - | D | 35.7 | - |
| | EB | C | 29.7 | - | E | 61.2 | - |
| | EBL | C | 27.8 | 73.0 | B | 19.4 | 73.0 |
| | EBR | C | 30.3 | 123.0 | E | 69.5 | 407.0 |
| | NB | B | 16.3 | - | D | 37.0 | - |
| | NBT | B | 17.5 | 263.0 | D | 40.8 | 328.0 |
| | NBR | B | 11.9 | 56.0 | C | 21.7 | 67.0 |
| | SB | A | 8.7 | - | C | 20.3 | - |
| 3. Kilamey Court/Villa Road | Overall | F | 70.0 | 45.0 | F | 297.4 | 80.0 |
| | WB | F | 56.8 | 25.6 | C | 22.8 | 10.0 |
| | NB | A | 0.0 | - | A | 0.1 | - |
| | NBL | B | 10.2 | 0.0 | B | 13.2 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.2 | - |
| | SBL | B | 11.9 | 0.0 | B | 10.8 | 2.5 |
| 4. Marrowbone Circle | Overall | F | 66.7 | 67.5 | F | 63.1 | 67.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL/T | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.2 | - |
| | SBL/T | B | 11.7 | 0.0 | B | 10.6 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 5. Shamrock Drive | Overall | F | 421.7 | 367.5 | F | 873.2 | 487.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | WB | E | 35.2 | 60.0 | C | 21.9 | 15.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| 6. Covington Lane | Overall | A | 0.2 | - | A | 0.4 | - |
| | SB | A | 0.2 | - | A | 0.4 | - |
| | SBL | B | 10.5 | 2.5 | A | 9.9 | 5.0 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL | A | 9.9 | 0.0 | B | 12.6 | 2.5 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| 7. Steve Drive/Drewry Mason School Road | Overall | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.1 | - |
| | NBL | A | 9.9 | 0.0 | B | 12.6 | 2.5 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 1.6 | - | A | 0.3 | - |
| | SBL | B | 13.0 | 22.5 | A | 10.1 | 5.0 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 8. Water Plant Road | Overall | B | 14.4 | - | B | 13.4 | - |
| | EB | C | 33.4 | - | D | 36.4 | - |
| | EBL | D | 35.9 | 111.0 | D | 38.6 | 83.0 |
| | EBT/R | C | 25.6 | 25.0 | C | 32.3 | 30.0 |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBL | A | 0.0 | 0.0 | A | 0.0 | 0.0 |
| | WBT | A | 0.0 | 0.0 | A | 0.0 | 0.0 |
| | WBR | A | 0.0 | 0.0 | A | 0.0 | 0.0 |
| 9. Soapstone Road/Main Street | Overall | B | 13.9 | - | B | 11.2 | - |
| | NB | B | 13.9 | - | B | 11.2 | - |
| | NBL | C | 33.0 | 41.0 | D | 38.4 | 50.0 |
| | NBT | B | 13.2 | 228.0 | A | 9.7 | 166.0 |
| | NBR | A | 7.7 | 0.0 | A | 6.9 | 0.0 |
| | SB | B | 11.6 | - | B | 12.5 | - |
| | SBL | C | 31.6 | 41.0 | D | 36.8 | 60.0 |
| | SBT | B | 11.0 | 156.0 | B | 11.9 | 261.0 |
| 10. Morehead Avenue (VA 87) | Overall | B | 14.0 | - | C | 30.9 | - |
| | EB | C | 27.2 | - | D | 50.7 | - |
| | EBL/T | C | 27.5 | 55.0 | D | 52.1 | 75.0 |
| | EBR | C | 26.9 | 0.0 | D | 47.7 | 0.0 |
| | WB | A | 0.0 | - | E | 56.8 | - |
| | WBL/T | A | 0.0 | 0.0 | D | 38.3 | 55.0 |
| | WBR | A | 0.0 | 0.0 | E | 60.5 | 32.0 |
| | NB | B | 14.7 | - | C | 27.5 | - |
| 11. Lee Ford Camp Road/Church Street | Overall | F | 123.0 | - | C | 25.0 | - |
| | WB | F | 337.8 | - | D | 48.7 | - |
| | WBL | C | 20.8 | 48.0 | C | 21.3 | 57.0 |
| | WBR | F | 375.4 | 203.0 | D | 53.7 | 59.0 |
| | NB | C | 22.8 | - | C | 27.3 | - |
| | NBT | C | 22.9 | 130.0 | C | 23.3 | 105.0 |
| | NBR | B | 16.4 | 7.0 | C | 17.9 | 11.0 |
| | SB | A | 9.9 | - | B | 13.5 | - |
| 11. Lee Ford Camp Road/Church Street | Overall | F | 123.0 | - | C | 25.0 | - |
| | WB | F | 337.8 | - | D | 48.7 | - |
| | WBL | C | 20.8 | 48.0 | C | 21.3 | 57.0 |
| | WBR | F | 375.4 | 203.0 | D | 53.7 | 59.0 |
| | NB | C | 22.8 | - | C | 27.3 | - |
| | NBT | C | 22.9 | 130.0 | C | 23.3 | 105.0 |
| | NBR | B | 16.4 | 7.0 | C | 17.9 | 11.0 |
| | SB | A | 9.9 | - | B | 13.5 | - |

Table 7-2: Alternative B 2025 Capacity Analysis Summary (2)

| Intersection | Movement | AM | | | PM | | |
|--|----------|-----|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 12.1. Reservoir Interchange WB Ramp | WB | B | 11.7 | - | B | 10.3 | - |
| | WBL | A | 0.0 | - | B | 14.7 | 0.0 |
| | WBR | B | 11.7 | 7.5 | B | 10.1 | 2.5 |
| | NB | A | 0.6 | - | A | 0.9 | - |
| | NBL | A | 0.0 | - | A | 8.7 | 2.5 |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 12.2. Reservoir Interchange EB Ramp | SBR | A | 0.0 | - | A | 0.0 | - |
| | EB | A | 0.0 | - | C | 16.1 | - |
| | EBL | B | 14.3 | 95.0 | C | 16.1 | 0.1 |
| | EBT/R | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| 13.1. Soapstone Interchange WB Ramp | SBL | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | EB | A | 0.0 | - | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | EBR | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBL | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 8.9 | - | A | 9.1 | - |
| 13.2. Soapstone Interchange EB Ramp | SBL | A | 9.5 | 2.5 | A | 9.9 | 0.0 |
| | SBR | A | 8.7 | 7.5 | A | 9.0 | 5.0 |
| | EB | E | 4.1 | - | A | 4.2 | - |
| | EBL | A | 7.5 | 5.0 | A | 7.7 | 5.0 |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | WBR | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL | A | 0.0 | - | A | 0.0 | - |
| 14.1. Route 58 Interchange Southern | NBR | A | 0.0 | - | A | 0.0 | - |
| | WB | B | 10.1 | - | B | 10.1 | - |
| | WBL | B | 11.0 | 2.5 | B | 12.1 | 2.5 |
| | WBT/R | B | 10.0 | 32.5 | B | 10.0 | 27.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL | A | 0.0 | - | A | 0.0 | - |
| | NBT/R | - | - | - | - | - | - |
| | SB | A | 4.1 | - | A | 5.3 | - |
| 14.2. Fisher Farm Road/Fisher Farm Road | SBL | A | 7.5 | 5.0 | A | 7.6 | 7.5 |
| | SBT/R | - | - | - | - | - | - |
| | EB | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 3.2 | - | A | 1.8 | - |
| 14.3. Fisher Farm Road/Route 58 WB Ramp | WBL | A | 7.6 | 2.5 | A | 7.6 | 2.5 |
| | WBT/R | A | 0.0 | - | A | 0.0 | - |
| | NB | B | 13.1 | 47.5 | B | 11.7 | 30.0 |
| | WB | B | 10.0 | 10.0 | B | 10.4 | 5.0 |
| 14.4. Fisher Farm Road/Route 58 EB Ramp | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | EB | B | 11.7 | 17.5 | B | 10.8 | 7.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 3.8 | - | A | 1.8 | - |
| | SBL | A | 7.6 | 5.0 | A | 7.7 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |

Route 58 Eastbound Ramps: The eastbound right-turn and southbound left-turn would experience extensive delays during the PM peak hour only.

Kilarney Court/Villa Road: Eastbound Kilarney Court would experience extensive delays during both peak hours, and westbound Villa Road would experience extensive delays during the AM peak hour only.

Marrowbone Circle: The westbound approach of Marrowbone Circle would experience extensive delays during both peak hours.

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Shamrock Drive: The eastbound approach of Shamrock Drive would experience extensive delays and queues during both peak hours.

Covington Lane: Westbound approach would experience extensive delays during the AM peak hour only.

Steve Drive: The eastbound approach of Steve Drive would experience extensive delays during the PM peak hour only.

Soapstone Road/ Main Street: The westbound right-turn would experience extensive delays during the PM peak hour only.

Morehead Avenue: The westbound right-turn would experience extensive delays during the AM peak hour only.

Table 7-3: Alternative B 2040 Capacity Results (1)

| Intersection | Movement | AM | | | PM | | |
|---|----------|-----|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 1. Route 58 WB Ramp | Overall | B | 15.9 | - | B | 10.7 | - |
| | WB | D | 40.4 | - | C | 25.0 | - |
| | WBL/T | D | 44.2 | 178.0 | C | 27.3 | 301.0 |
| | WBR | C | 29.6 | 47.0 | B | 19.4 | 37.0 |
| | NB | A | 1.7 | 21.0 | A | 2.7 | 19.0 |
| | SB | B | 11.6 | - | A | 9.7 | - |
| | SBT | B | 11.9 | 128.0 | A | 9.9 | 224.0 |
| | SBR | A | 9.2 | 14.0 | A | 8.0 | 23.0 |
| | Overall | D | 47.7 | - | D | 47.7 | - |
| 2. Route 58 EB Ramp | EB | E | 72.3 | - | E | 72.3 | - |
| | EBL | C | 21.0 | 78.0 | C | 21.0 | 96.0 |
| | EBR | F | 82.4 | 205.0 | F | 82.4 | 649.0 |
| | NB | D | 50.8 | - | D | 50.8 | - |
| | NBT | E | 55.7 | 287.0 | E | 55.7 | 468.0 |
| | NBR | C | 31.3 | 66.0 | C | 31.3 | 135.0 |
| | SB | C | 28.4 | - | C | 28.4 | - |
| | SBL | F | 99.4 | 116.0 | F | 99.4 | 238.0 |
| | SBT | B | 17.2 | 115.0 | B | 17.2 | 240.0 |
| 3. Kilarney Court/Villa Road | EB | F | 134.6 | 70.0 | F | 491.0 | 100.0 |
| | WB | F | 89.1 | 25.0 | D | 27.3 | 10.0 |
| | NB | A | 0.0 | - | A | 0.1 | - |
| | NBL | B | 11.0 | 0.0 | B | 14.0 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.2 | - |
| | SBL | B | 12.6 | 0.0 | B | 11.3 | 5.0 |
| | SBT | 0.0 | 0.0 | - | A | 0.0 | - |
| 4. Marrowbone Circle | WB | F | 109.4 | 90.0 | F | 56.7 | 25.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL/T | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.2 | - |
| | SBL/T | B | 12.4 | 0.0 | B | 11.3 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | Overall | F | 102.1 | 60.0 | F | 1253.4 | 550.0 |
| 5. Shamrock Drive | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | WB | F | 82.5 | 122.5 | D | 26.7 | 20.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.2 | - | A | 0.4 | - |
| 6. Covington Lane | SBL | B | 11.4 | 2.5 | B | 10.6 | 0.3 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | EB | A | 0.0 | 0.0 | F | 150.3 | 2.4 |
| | NB | A | 0.0 | - | A | 0.2 | - |
| | NBL | B | 10.7 | 0.0 | B | 13.3 | 0.1 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 1.4 | - | A | 0.3 | - |
| | SBL | C | 15.2 | 22.5 | B | 10.5 | 0.2 |
| 7. Steve Drive/Drewry Mason School Road | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | Overall | C | 28.7 | - | C | 32.8 | - |
| | EB | D | 52.1 | - | D | 52.0 | - |
| | EBL/T | D | 53.3 | 94.0 | D | 53.6 | 79.0 |
| | EBR | D | 50.3 | 0.0 | D | 48.5 | 0.0 |
| | WB | D | 52.8 | - | E | 59.7 | - |
| | WBL/T | D | 40.5 | 85.0 | D | 38.2 | 59.0 |
| | WBR | E | 57.6 | 59.0 | E | 64.0 | 43.0 |
| 9. Soapstone Road/Main Street | NB | C | 26.6 | - | C | 30.5 | - |
| | NBL | D | 54.5 | 44.0 | D | 54.5 | 51.0 |
| | NBT | C | 26.0 | 423.0 | C | 29.5 | 298.0 |
| | NBR | A | 0.0 | 0.0 | C | 21.1 | 0.0 |
| | SB | C | 22.2 | - | C | 27.9 | - |
| | SBL | E | 65.4 | 132.0 | E | 56.9 | 227.0 |
| | SBT | B | 18.2 | 265.0 | C | 21.8 | 341.0 |
| | SBR | B | 13.9 | 0.0 | B | 14.5 | 0.0 |
| | Overall | D | 42.6 | - | C | 28.1 | - |
| 10. Morehead Avenue (VA 87) | WB | F | 123.3 | - | E | 61.4 | - |
| | WBL | C | 23.8 | 43.0 | C | 22.6 | 60.0 |
| | WBR | F | 133.9 | 82.0 | E | 68.8 | 6.0 |
| | NB | C | 25.7 | - | C | 28.2 | - |
| | NBT | C | 25.8 | 211.0 | C | 28.4 | 13.0 |
| | NBR | B | 17.9 | 9.0 | C | 23.0 | 12.0 |
| | SB | B | 12.6 | - | B | 13.7 | - |
| | SBL | B | 19.5 | 116.0 | B | 19.4 | 167.0 |
| | SBT | A | 8.8 | 93.0 | A | 9.9 | 111.0 |
| 11. Lee Ford Camp Road/Church Street | EB | D | 27.9 | 25.0 | F | 419.6 | 26.7 |
| | WB | D | 30.7 | 27.5 | A | 0.0 | - |
| | NB | A | 0.1 | - | A | 0.2 | - |
| | NBL | A | 8.7 | 0.0 | A | 9.0 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.2 | - | A | 0.3 | - |
| | SBL | A | 9.1 | 0.0 | A | 8.3 | 0.1 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| SBR | A | 0.0 | - | A | 0.0 | - | |

Table 7-4: Alternative B 2040 Capacity Results (2)

| Intersection | Movement | AM | | | PM | | |
|---|----------|-----|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 12.1. Reservoir Interchange WB Ramp | WB | B | 14.5 | - | B | 11.4 | - |
| | WBL | A | 0.0 | - | C | 17.1 | 0.0 |
| | WBR | B | 14.5 | 25.0 | B | 11.1 | 0.5 |
| | NB | A | 0.7 | - | A | 0.8 | - |
| | NBL | A | 8.8 | 5.0 | A | 9.2 | 0.1 |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 12.2. Reservoir Interchange EB Ramp | EB | A | 0.0 | - | C | 21.1 | - |
| | EBL | C | 17.1 | 145.0 | C | 21.1 | 4.8 |
| | EBT/R | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBL | A | 0.0 | - | A | 0.0 | - |
| 13.1. Soapstone Interchange WB Ramp | EB | A | 0.0 | - | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | EBR | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBL | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 8.9 | - | A | 9.2 | - |
| | SBL | A | 9.6 | 2.5 | B | 10.1 | 0.0 |
| | SBR | A | 8.7 | 10.0 | A | 9.0 | 0.2 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 13.2. Soapstone Interchange EB Ramp | EB | A | 4.0 | - | A | 4.2 | - |
| | EBL | A | 7.5 | 5.0 | A | 7.8 | 0.2 |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | WBR | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| 14.1. Route 58 Interchange Southern | WB | B | 10.3 | - | B | 10.4 | - |
| | WBL | B | 11.4 | 2.5 | B | 12.6 | 0.1 |
| | WBT/R | B | 10.2 | 37.5 | B | 10.2 | 1.2 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL | A | 0.0 | - | A | 0.0 | - |
| | NBT/R | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 4.1 | - | A | 5.4 | - |
| | SBL | A | 7.5 | 7.5 | A | 7.7 | 0.4 |
| | SBT/R | A | 0.0 | - | A | 0.0 | - |
| 14.2. Fisher Farm Road/Fisher Farm Road | EB | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 3.1 | - | A | 1.9 | - |
| | WBL | A | 7.6 | 2.5 | A | 7.7 | 0.1 |
| | WBT/R | A | 0.0 | - | A | 0.0 | - |
| 14.3. Fisher Farm Road/Route 58 WB Ramp | NB | B | 13.7 | 52.5 | B | 12.4 | 1.3 |
| | WB | B | 10.1 | 10.0 | B | 10.7 | 0.2 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| 14.4. Fisher Farm Road/Route 58 EB Ramp | SB | A | 0.0 | - | A | 0.0 | - |
| | EB | B | 12.2 | 22.5 | B | 11.1 | 0.4 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 3.8 | - | A | 1.7 | - |
| | SBL | A | 7.6 | 5.0 | A | 7.7 | 0.1 |
| SBT | A | 0.0 | - | A | 0.0 | - | |

Route 58 Eastbound Ramps: The eastbound right-turn, northbound through and southbound left-turn would experience extensive delays during both peak hours.

Kilarney Court/Villa Road: The eastbound approach would experience extensive delays during both peak hours and the westbound approach would experience extensive delays during the AM peak hour only.

Marrowbone Circle: The westbound approach of Marrowbone Circle would experience extensive delays during both peak hours.

Shamrock Drive: The eastbound approach of Shamrock Drive would experience extensive delays and queues during both peak hours, especially the PM peak hour.

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Covington Lane: The westbound approach would experience extensive delays during the AM peak hour only.

Steve Drive: The eastbound approach of Steve Drive would experience extensive delays during the PM peak hour only.

Soapstone Drive/ Main Street: The westbound right-turn and southbound left-turn would experience extensive delays during both peak hours.

Morehead Avenue: The westbound right-turn would experience extensive delays during both peak hours.

Lee Ford Camp Road: The eastbound approach would experience extensive delays during the PM peak hour only.

7.2.2 Travel Times and Distances

Alternative B would improve travel time between the western boundary of the study area on Route 220/Route 58 and the southern project limit at the North Carolina state line, as shown in **Table 7-5**. Dark green boxes represent an improvement to both the travel time and a reduction in travel distance when compared to the No-Build Alternative. Light green indicates that either the travel time or distance would be improved. A dark red box means that both the travel time and distance between a destination pair would be longer than the No-Build Alternative; a light red box indicates that either the travel time or the distance would be increased over the No-Build Alternative.

Alternative B would result in a trip time savings of 1 minute and 50 seconds over the No-Build Alternative in the southbound direction and a savings of 1 minute and 35 seconds northbound for vehicles traveling between the southern and western limits of the study area. The travel distance between these two points northbound would be reduced by 0.3 miles, and southbound would be reduced by 0.5 miles.

Table 7-5: Distances and Travel Times Between Study Area Entrances and Exits –Alternative B

| Origin/Destination | Route 58/Route 220 @ Cameron Road | Joseph Martin Highway @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | VA Route 87 @ Farmbrook Road | Route 220 @ North Carolina State Line |
|--|-----------------------------------|--|------------------------------------|-------------------------------|------------------------------|---------------------------------------|
| Route 58/Route 220 @ Cameron Road | | 2.1 miles (3:15) | 3.1 miles (4:00) | 4.8 miles (4:50) | 8.2 miles (12:30) | 9.1 miles (9:40) |
| Joseph Martin Highway @ Fisher Farm Road | 1.4 miles (1:40) | | 1.3 miles (2:15) | 3.6 miles (4:25) | 7.1 miles (12:35) | 7.9 miles (8:20) |
| Business Route 220 @ Old Sand Road | 3.0 miles (3:20) | 1.3 miles (2:15) | | 2.4 miles (3:15) | 5.9 miles (10:20) | 7.2 miles (9:15) |
| Route 58 @ Smith River Bridge | 4.8 miles (4:50) | 3.5 miles (4:10) | 2.3 miles (2:50) | | 7.7 miles (12:10) | 9.0 miles (11:25) |
| VA Route 87 @ Farmbrook Road | 8.4 miles (12:50) | 7.2 miles (12:05) | 5.9 miles (10:10) | 7.6 miles (11:05) | | 6.1 miles (8:50) |
| Route 220 @ North Carolina State Line | 9.4 miles (10:10) | 7.9 miles (8:20) | 7.2 miles (9:35) | 8.9 miles (11:00) | 6.1 miles (8:40) | |

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Alternative B would maintain many of the existing connections between points of interest in the study area, as shown in **Table 7-6**. Green boxes indicate that the distance between those origins and destinations would decrease with this alternative, red boxes indicate an increase in travel distance.

Table 7-6: Travel Distances Between Points of Interest in the Study Area – Alternative B

| Origin/Destination | Route 58/220 @ Cameron Road | Joseph Martin Hwy @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | Soapstone Road @ Joseph Martin Hwy | Magna Vista High School | Kilamey Court @ Route 220 | Villa Road @ Route 220 | Marrowbone Circle @ Route 220 | Shamrock Drive @ Route 220 | Covington Lane @ Route 220 | Steve Drive @ Route 220 | Drewry Mason Elementary School | Mica Road @ Route 220 | Water Plant Road @ Route 220 | Andra Drive @ Route 220 | Soapstone Road @ Route 220 | Main Street @ Route 220 | VA Route 87 @ Main Street | VA Route 87 @ Farmbrook Road | Lee Ford Camp Road @ Blackfeather Trl | Church Street @ Route 220 | Matrimony Creek Road @ Route 220 | Reservoir Road @ Route 220 | J.B. Dalton Road @ Route 220 | Route 220 @ North Carolina State Line |
|---------------------------------------|-----------------------------|--------------------------------------|------------------------------------|-------------------------------|------------------------------------|-------------------------|---------------------------|------------------------|-------------------------------|----------------------------|----------------------------|-------------------------|--------------------------------|-----------------------|------------------------------|-------------------------|----------------------------|-------------------------|---------------------------|------------------------------|---------------------------------------|---------------------------|----------------------------------|----------------------------|------------------------------|---------------------------------------|
| Route 58/220 @ Cameron Road | | 2.1 | 3.1 | 4.8 | 3.8 | 4.3 | 2.9 | 2.9 | 3.2 | 3.3 | 3.5 | 3.8 | 3.8 | 4.2 | 4.2 | 4.8 | 5.1 | 5.1 | 6.0 | 8.2 | 6.5 | 6.4 | 7.9 | 8.2 | 8.6 | 9.1 |
| Joseph Martin Hwy @ Fisher Farm Road | 1.4 | | 1.3 | 3.6 | 2.5 | 3.8 | 1.8 | 1.8 | 2.1 | 2.2 | 2.4 | 2.7 | 2.7 | 3.1 | 3.1 | 3.7 | 4.0 | 4.0 | 4.9 | 7.1 | 5.4 | 5.3 | 6.8 | 7.1 | 7.4 | 7.9 |
| Business Route 220 @ Old Sand Road | 3.0 | 1.3 | | 2.4 | 4.2 | 5.5 | 0.6 | 0.6 | 0.9 | 1.0 | 1.2 | 1.5 | 1.5 | 1.9 | 1.9 | 2.5 | 2.8 | 2.8 | 3.7 | 5.9 | 4.2 | 4.1 | 5.6 | 6.2 | 6.3 | 7.2 |
| Route 58 @ Smith River Bridge | 4.8 | 3.5 | 2.3 | | 6.0 | 7.3 | 2.4 | 2.4 | 2.7 | 2.8 | 3.0 | 3.3 | 3.3 | 3.7 | 3.7 | 4.3 | 4.6 | 4.6 | 5.5 | 7.7 | 6.0 | 5.9 | 7.4 | 8.0 | 8.1 | 9.0 |
| Soapstone Road @ Joseph Martin Hwy | 3.9 | 2.6 | 3.8 | 5.4 | | 1.3 | 3.6 | 3.6 | 3.9 | 4.0 | 4.2 | 3.9 | 3.9 | 3.5 | 3.5 | 2.9 | 2.6 | 2.6 | 3.5 | 5.7 | 4.0 | 3.9 | 5.4 | 5.4 | 5.8 | 6.3 |
| Magna Vista High School | 4.5 | 3.0 | 4.3 | 6.1 | 1.3 | | 4.3 | 4.3 | 4.6 | 4.6 | 4.3 | 4.0 | 4.0 | 3.6 | 3.6 | 3.0 | 2.7 | 2.7 | 3.6 | 5.8 | 3.3 | 3.4 | 4.9 | 5.5 | 5.6 | 6.5 |
| Kilamey Court @ Route 220 | 3.1 | 1.9 | 0.6 | 2.3 | 3.6 | 4.9 | | 0.02 | 0.3 | 0.4 | 0.6 | 0.9 | 0.9 | 1.3 | 1.3 | 1.9 | 2.2 | 2.2 | 3.1 | 5.3 | 3.6 | 3.5 | 5.0 | 5.6 | 5.7 | 6.6 |
| Villa Road @ Route 220 | 3.1 | 1.9 | 0.6 | 2.3 | 3.6 | 4.9 | 0.02 | | 0.3 | 0.4 | 0.6 | 0.9 | 0.9 | 1.3 | 1.3 | 1.9 | 2.2 | 2.2 | 3.1 | 5.3 | 3.6 | 3.5 | 5.0 | 5.6 | 5.7 | 6.6 |
| Marrowbone Circle @ Route 220 | 3.4 | 2.2 | 0.9 | 2.6 | 3.9 | 4.7 | 0.3 | 0.3 | | 0.1 | 0.3 | 0.6 | 0.6 | 1.0 | 1.0 | 1.6 | 1.9 | 1.9 | 2.8 | 5.0 | 3.3 | 3.2 | 4.7 | 5.3 | 5.4 | 6.3 |
| Shamrock Drive @ Route 220 | 3.5 | 2.3 | 1.0 | 2.7 | 4.0 | 4.6 | 0.4 | 0.4 | 0.1 | | 0.2 | 0.5 | 0.5 | 0.9 | 0.9 | 1.5 | 1.8 | 1.8 | 2.7 | 4.9 | 3.2 | 3.1 | 4.6 | 5.2 | 5.3 | 6.2 |
| Covington Lane @ Route 220 | 3.7 | 2.5 | 1.2 | 2.9 | 4.2 | 4.3 | 0.6 | 0.6 | 0.3 | 0.2 | | 0.3 | 0.3 | 0.7 | 0.7 | 1.3 | 1.6 | 1.6 | 2.5 | 4.7 | 3.0 | 2.9 | 4.4 | 5.0 | 5.1 | 6.0 |
| Steve Drive @ Route 220 | 4.0 | 2.8 | 1.5 | 3.2 | 3.9 | 4.0 | 0.9 | 0.9 | 0.6 | 0.5 | 0.3 | | 0.02 | 0.4 | 0.4 | 1.0 | 1.3 | 1.3 | 2.2 | 4.4 | 2.7 | 2.6 | 4.1 | 4.7 | 4.8 | 5.7 |
| Drewry Mason Elementary School | 4.0 | 2.8 | 1.5 | 3.2 | 3.9 | 4.0 | 0.9 | 0.9 | 0.6 | 0.5 | 0.3 | 0.02 | | 0.4 | 0.4 | 1.0 | 1.3 | 1.3 | 2.2 | 4.4 | 2.7 | 2.6 | 4.1 | 4.7 | 4.8 | 5.7 |
| Mica Road @ Route 220 | 4.4 | 3.2 | 1.9 | 3.6 | 3.5 | 3.6 | 1.3 | 1.3 | 1.0 | 0.9 | 0.7 | 0.4 | 0.4 | | 0.02 | 0.6 | 0.9 | 0.9 | 1.8 | 4.0 | 2.3 | 2.2 | 3.7 | 4.3 | 4.4 | 5.3 |
| Water Plant Road @ Route 220 | 4.4 | 3.2 | 1.9 | 3.6 | 3.5 | 3.6 | 1.3 | 1.3 | 1.0 | 0.9 | 0.7 | 0.4 | 0.4 | 0.02 | | 0.6 | 0.9 | 0.9 | 1.8 | 4.0 | 2.3 | 2.2 | 3.7 | 4.3 | 4.4 | 5.3 |
| Andra Drive @ Route 220 | 5.0 | 3.8 | 2.5 | 4.2 | 2.9 | 3.0 | 1.9 | 1.9 | 1.6 | 1.5 | 1.3 | 1.0 | 1.0 | 0.6 | 0.6 | | 0.3 | 0.3 | 1.2 | 3.4 | 1.7 | 1.6 | 3.1 | 3.7 | 3.8 | 4.7 |
| Soapstone Road @ Route 220 | 5.3 | 4.1 | 2.8 | 4.5 | 2.6 | 2.7 | 2.2 | 2.2 | 1.9 | 1.8 | 1.6 | 1.3 | 1.3 | 0.9 | 0.9 | 0.3 | | 0.02 | 0.5 | 3.1 | 1.4 | 1.3 | 2.8 | 3.4 | 3.5 | 4.4 |
| Main Street @ Route 220 | 5.3 | 4.1 | 2.8 | 4.5 | 2.6 | 2.7 | 2.2 | 2.2 | 1.9 | 1.8 | 1.6 | 1.3 | 1.3 | 0.9 | 0.9 | 0.3 | 0.02 | | 0.9 | 3.1 | 1.4 | 1.3 | 2.8 | 3.4 | 3.5 | 4.4 |
| VA Route 87 @ Main Street | 6.2 | 5.0 | 3.7 | 5.4 | 3.5 | 3.6 | 3.1 | 3.1 | 2.8 | 2.7 | 2.5 | 2.2 | 2.2 | 1.8 | 1.8 | 1.2 | 0.9 | 0.9 | | 2.2 | 0.9 | 0.8 | 2.3 | 2.9 | 3.0 | 3.9 |
| VA Route 87 @ Farmbrook Road | 8.4 | 7.2 | 5.9 | 7.6 | 5.7 | 5.8 | 5.3 | 5.3 | 5.0 | 4.9 | 4.7 | 4.4 | 4.4 | 4.0 | 4.0 | 3.4 | 3.1 | 3.1 | 2.2 | | 3.1 | 3.0 | 4.5 | 5.1 | 5.2 | 6.1 |
| Lee Ford Camp Road @ Blackfeather Trl | 6.7 | 5.5 | 4.2 | 5.9 | 4.0 | 3.3 | 3.6 | 3.6 | 3.3 | 3.2 | 3.0 | 2.7 | 2.7 | 2.3 | 2.3 | 1.7 | 1.4 | 1.4 | 0.9 | 3.1 | | 0.1 | 1.6 | 2.2 | 2.3 | 3.2 |
| Church Street @ Route 220 | 6.6 | 5.4 | 4.1 | 5.8 | 4.1 | 3.4 | 3.5 | 3.5 | 3.2 | 3.1 | 2.9 | 2.6 | 2.6 | 2.2 | 2.2 | 1.6 | 1.3 | 1.3 | 0.8 | 3.0 | 0.1 | | 1.5 | 2.1 | 2.2 | 3.1 |
| Matrimony Creek Road @ Route 220 | 7.6 | 6.4 | 5.1 | 6.8 | 5.1 | 4.4 | 4.5 | 4.5 | 4.2 | 4.1 | 3.9 | 3.6 | 3.6 | 3.2 | 3.2 | 2.6 | 2.3 | 2.3 | 1.8 | 4.0 | 1.1 | 1.0 | | 1.5 | 1.6 | 2.4 |
| Reservoir Road @ Route 220 | 8.7 | 7.2 | 6.2 | 7.9 | 6.2 | 5.5 | 5.6 | 5.6 | 5.3 | 5.2 | 5.0 | 4.7 | 4.7 | 4.3 | 4.3 | 3.7 | 3.4 | 3.4 | 2.9 | 5.1 | 2.2 | 2.1 | 1.1 | | 0.5 | 1.0 |
| J.B. Dalton Road @ Route 220 | 8.2 | 7.0 | 5.7 | 7.4 | 5.7 | 5.0 | 5.1 | 5.1 | 4.8 | 4.7 | 4.5 | 4.2 | 4.2 | 3.8 | 3.8 | 3.2 | 2.9 | 2.9 | 2.4 | 4.6 | 1.7 | 1.6 | 0.6 | 0.9 | | 1.9 |
| Route 220 @ North Carolina State Line | 9.4 | 7.9 | 7.2 | 8.9 | 6.3 | 6.5 | 6.6 | 6.6 | 6.3 | 6.2 | 6.0 | 5.7 | 5.7 | 5.3 | 5.3 | 4.7 | 4.4 | 4.4 | 3.9 | 6.1 | 3.2 | 3.1 | 2.1 | 2.4 | 1.5 | |

7.2.3 Overall Travel Time Results

Calculated average travel times using SimTraffic along the existing corridor between the North Carolina state line and the Route 58 interchange as well as between the border at the new interchange that the new alignment creates with Route 58 are shown in **Table 7-7**. Travel times generally would increase slightly from 2025 to 2040 along both corridors.

Table 7-7: Alternative B Travel Times (Seconds)

| Year | Southbound | | Northbound | |
|---------------------------|------------|-------|------------|-------|
| | AM | PM | AM | PM |
| Existing Alignment | | | | |
| 2025 | 500.3 | 399.2 | 493 | 513.8 |
| 2040 | 509.6 | 512.4 | 507.3 | 506.8 |
| New Alignment | | | | |
| 2025 | 399.2 | 399.4 | 385.3 | 387.1 |
| 2040 | 412.8 | 411.4 | 388.3 | 388.9 |

8. FUTURE BUILD ALTERNATIVE C ANALYSIS

Similar to Alternative B, Alternative C would construct a new four-lane divided roadway for Route 220 west of the current corridor, with a new interchange along the southern portion of existing Route 220 at Reservoir Road, an interchange along the new alignment at Soapstone Road, and tie into a reconstructed existing interchange along Route 58 at Joseph Martin Highway. The interchange with Soapstone Road would be to the east of its location under Alternative B.

8.1 VOLUME SUMMARY

8.1.1 Daily Volumes

AADT volumes are shown for Alternative C for both 2025 and 2040 in **Figure 8-1** for the existing alignment and in **Figure 8-2** for the new alignment. Truck volumes and percentages along the roadway network are shown for the existing alignment in **Figure 8-3** and along the new alignment in **Figure 8-4**.

8.1.2 Peak Hour Volumes

AM and PM peak hour volumes for 2025 and 2040 Alternative C for each Route 220 study intersection were developed with the subarea travel demand model post-processing efforts, which are shown in **Figure 8-5** for 2025 and **Figure 8-6** for 2040.

Figure 8-1: Alternative C AADT (Existing Alignment)

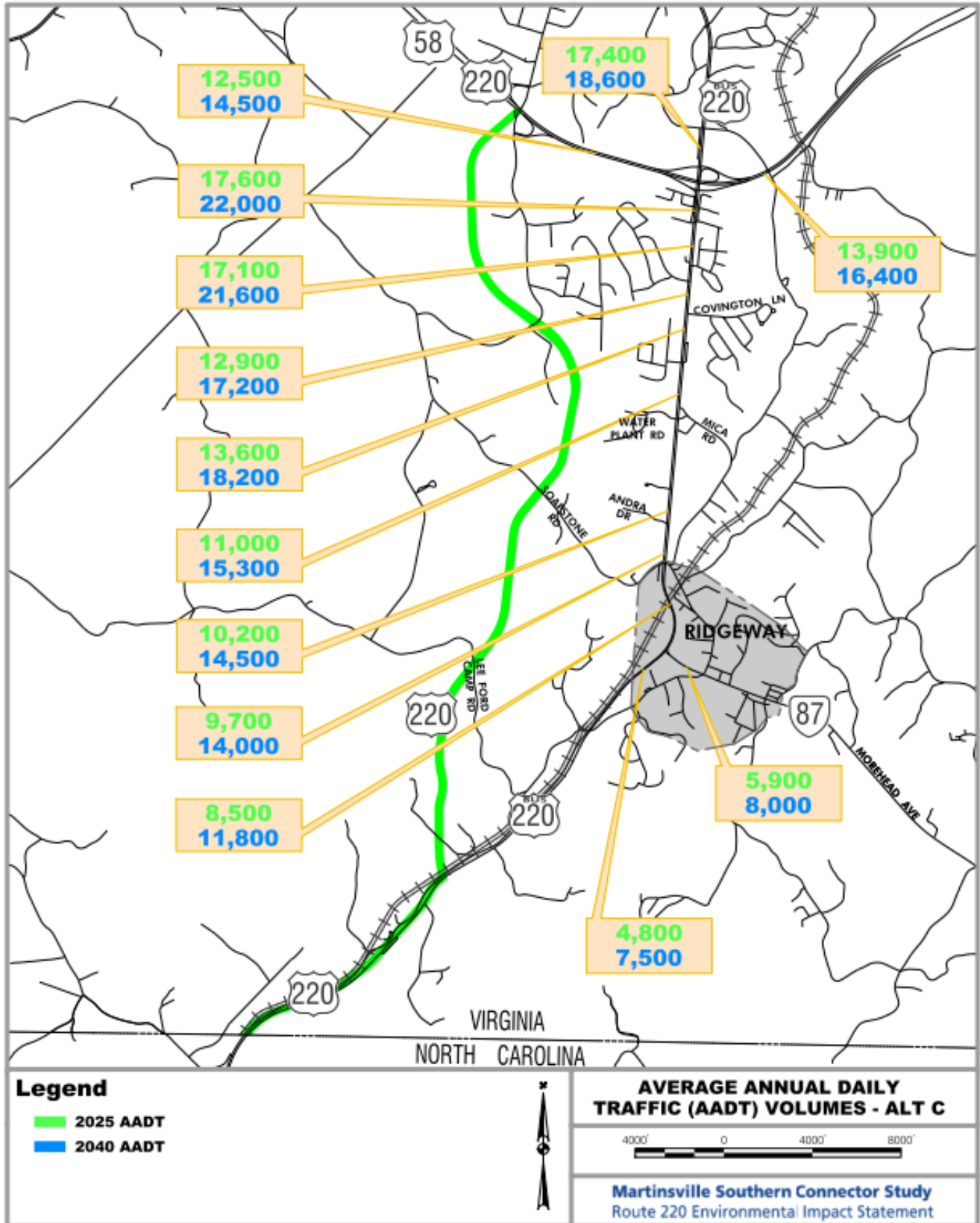


Figure 8-2: Alternative C AADT (New Alignment)

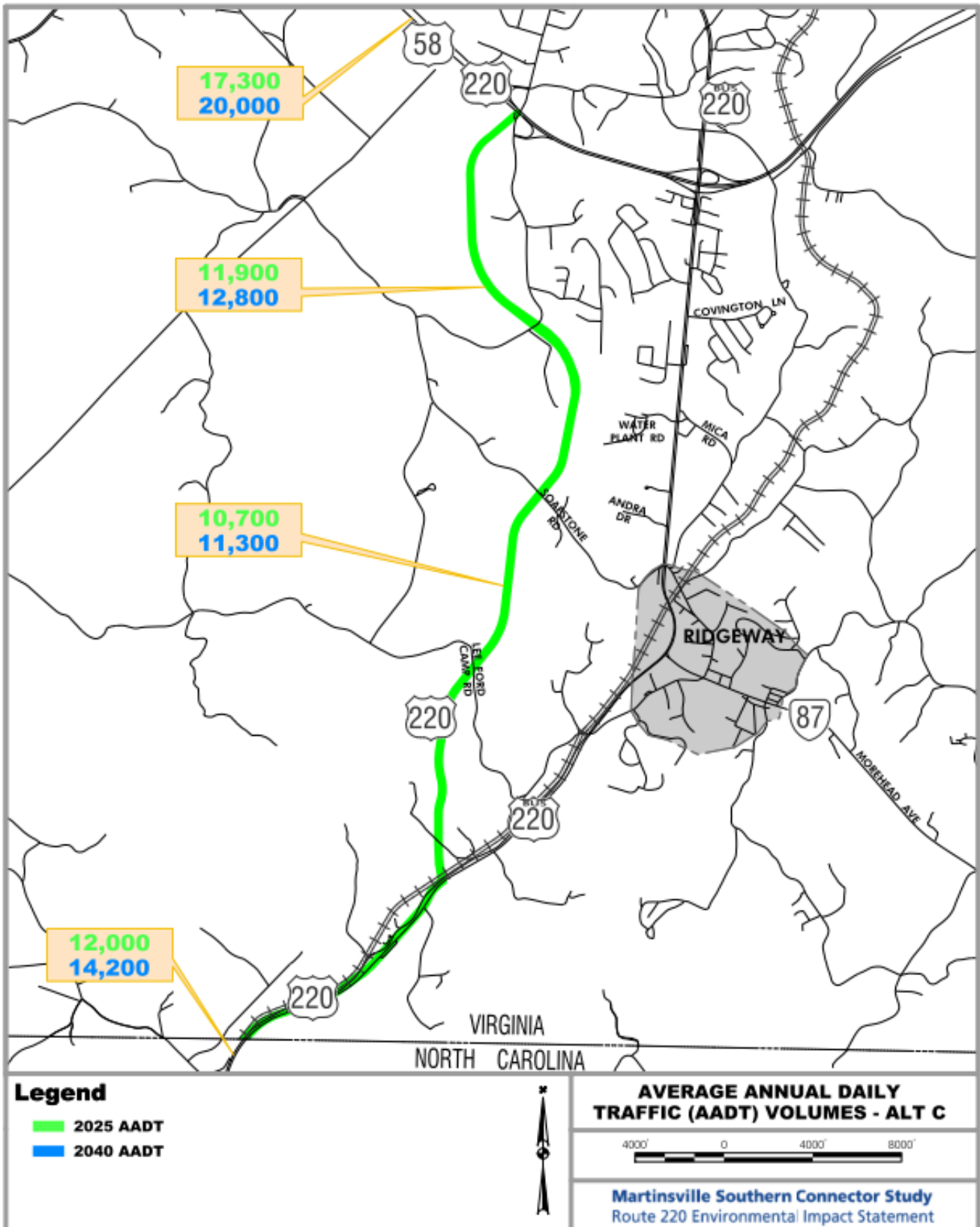


Figure 8-3: Alternative C Truck Percentages (Existing Alignment)

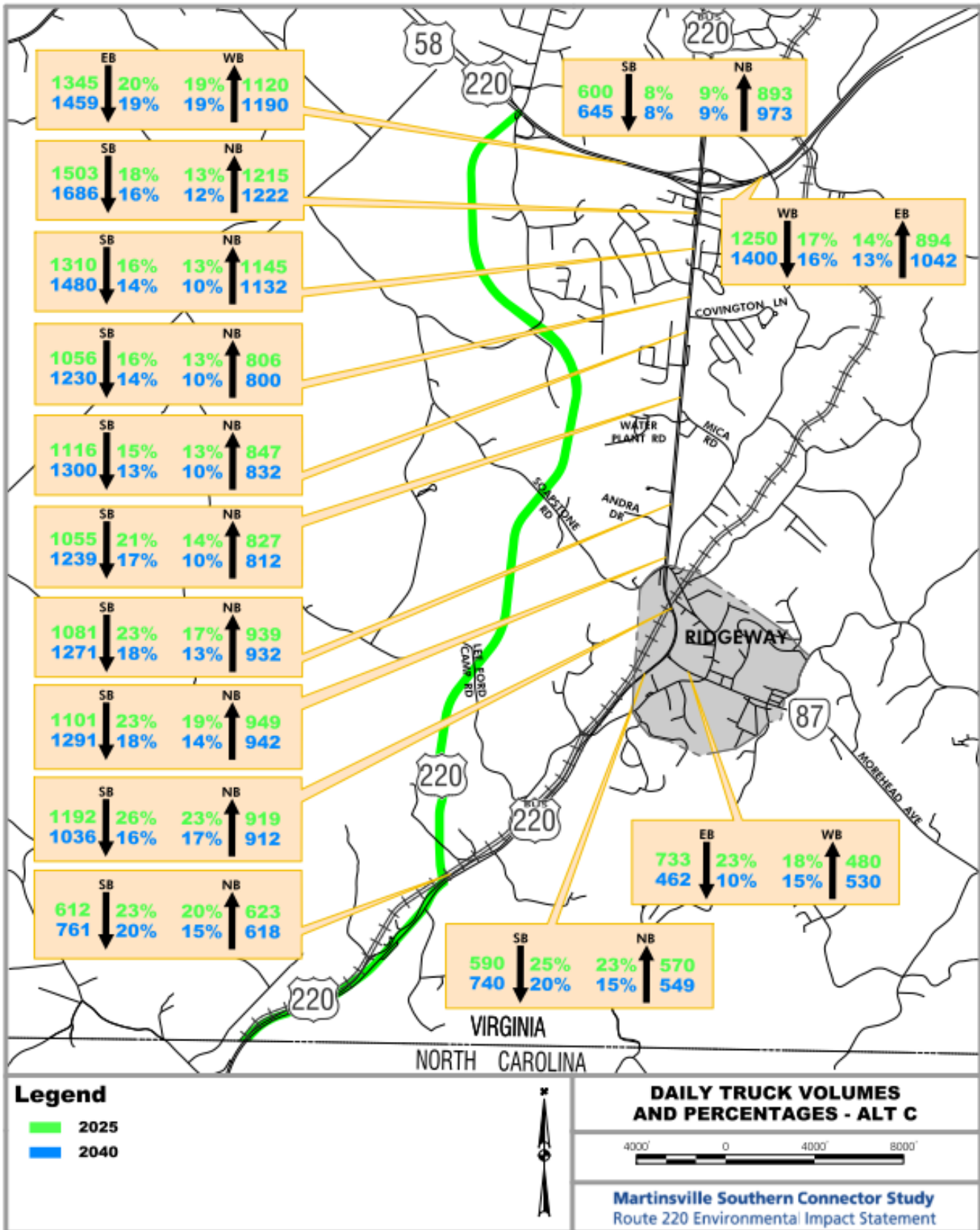


Figure 8-4: Alternative C Truck Percentages (New Alignment)

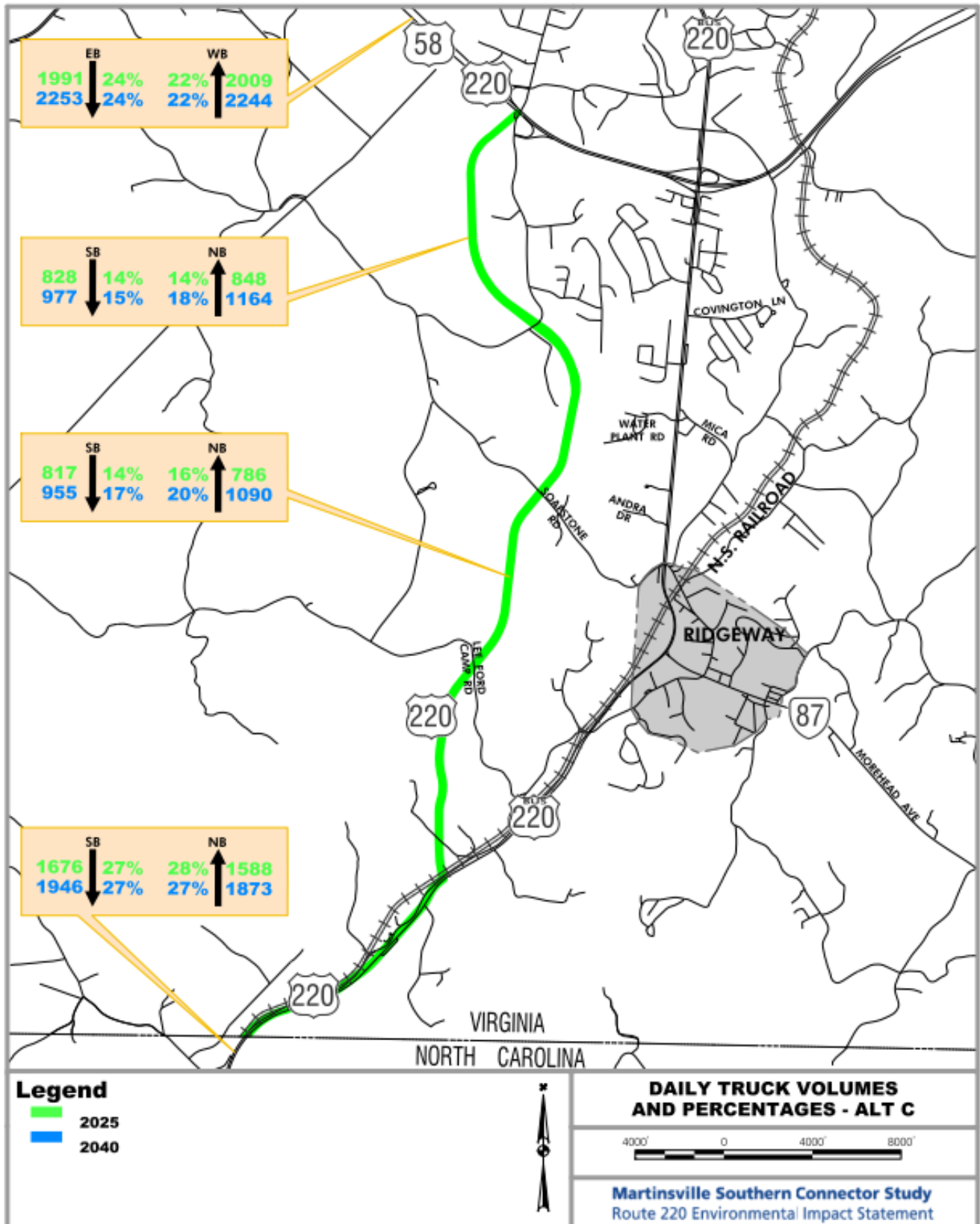


Figure 8-5: Alternative C 2025 Peak Hour Intersection Volumes

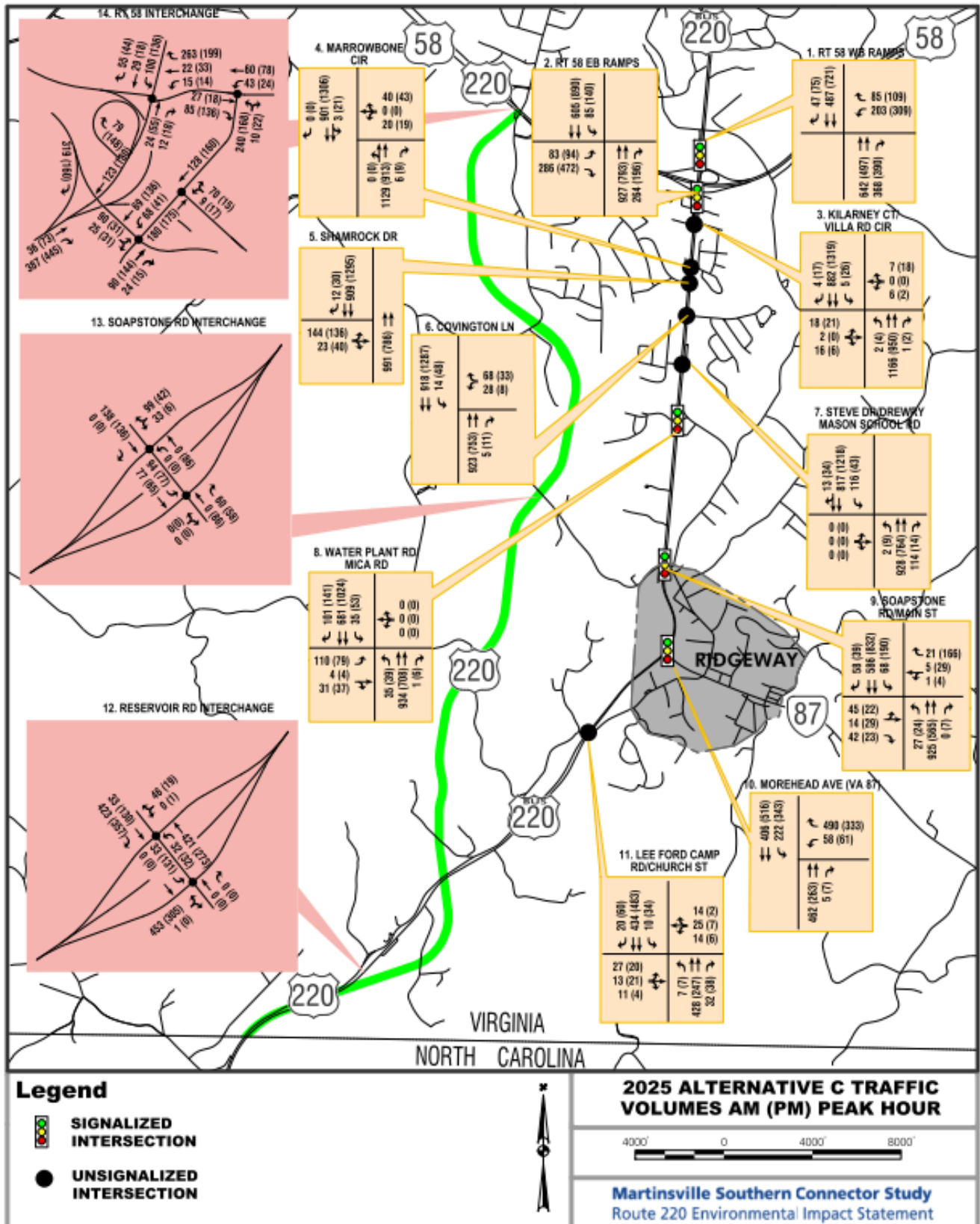
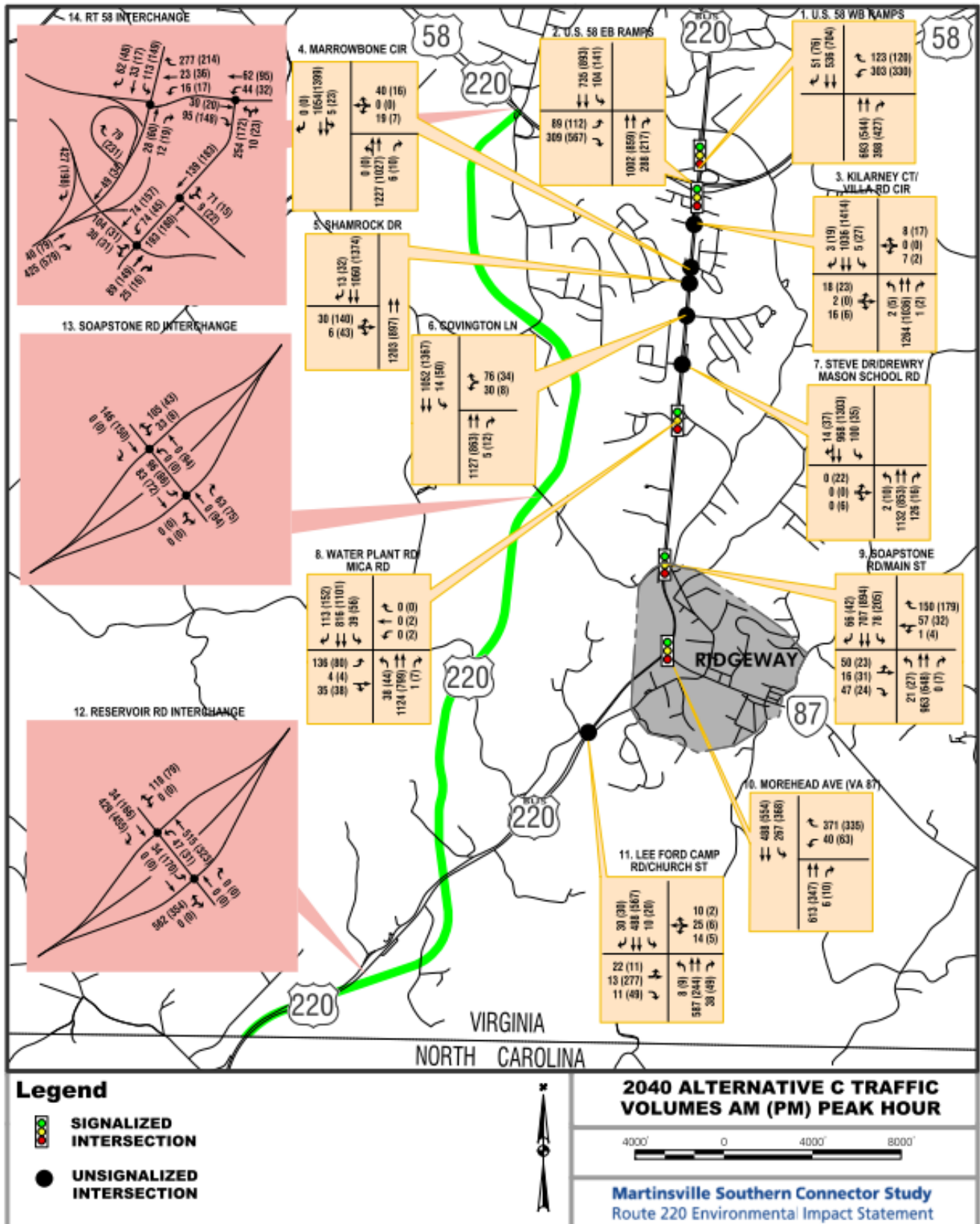


Figure 8-6: Alternative C 2040 Peak Hour Intersection Volumes



8.2 OPERATIONAL ANALYSES

8.2.1 Capacity Results

Capacity analysis was computed using Synchro 10. Signal timings along the corridor were optimized for future conditions. **Table 8-1** and **Table 8-2** summarize the levels of service, delays, and queues for the No-Build condition for 2025, and **Table 8-3** and **Table 8-4** summarize these values for 2040. Synchro worksheets are included in **Appendix J**.

There are some intersections, approaches and lane groups that would operate at levels of service under LOS D, which are listed below.

Table 8-1: Alternative C 2025 Capacity Analysis Summary (1)

| Intersection | Movement | AM | | | PM | | |
|---|----------|-----|-------------|------------|-------|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 1. Route 58 WB Ramp | Overall | A | 9.1 | - | B | 13.7 | - |
| | WB | C | 26.8 | - | 29.4 | C | - |
| | WBL/T | C | 29.1 | 136.0 | 32.6 | C | 208.0 |
| | WBR | C | 21.4 | 25.0 | 20.3 | C | 29.0 |
| | NB | A | 2.3 | 20.0 | 3.1 | A | 21.0 |
| | SB | A | 7.6 | - | 12.1 | B | - |
| | SBT | A | 7.7 | 102.0 | 124.0 | B | 207.0 |
| 2. Route 58 EB Ramp | SBR | A | 6.3 | 10.0 | 9.1 | A | 23.0 |
| | Overall | B | 16.1 | - | D | 35.7 | - |
| | EB | C | 29.7 | - | E | 61.2 | - |
| | EBL | C | 27.8 | 73.0 | B | 19.4 | 73.0 |
| | EBR | C | 30.3 | 123.0 | E | 69.5 | 407.0 |
| | NB | B | 16.3 | - | D | 37.0 | - |
| | NBT | B | 17.5 | 194.0 | D | 40.8 | 328.0 |
| 3. Kilarney Court/Villa Road | NBR | B | 11.9 | 15.0 | C | 21.7 | 67.0 |
| | SB | A | 8.7 | - | C | 20.3 | - |
| | SBL | D | 42.4 | 88.0 | E | 61.8 | 180.0 |
| | SBT | A | 3.9 | 62.0 | B | 13.8 | 244.0 |
| | EB | F | 70.0 | 45.0 | F | 297.4 | 80.0 |
| | WB | F | 56.8 | 15.0 | C | 22.8 | 7.5 |
| | NB | A | 0.0 | - | A | 0.1 | - |
| 4. Marrowbone Circle | NBL | B | 10.2 | 0.0 | B | 13.2 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.2 | - |
| | SBL | B | 11.9 | 0.0 | B | 10.8 | 10.8 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 5. Shamrock Drive | WB | F | 66.7 | 67.5 | F | 63.1 | 67.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL/T | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.2 | - |
| | SBL/T | B | 11.7 | 0.0 | B | 10.6 | 2.5 |
| 6. Covington Lane | SBT | - | - | - | - | - | |
| | EB | F | 421.7 | 367.5 | F | 873.2 | 19.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | WB | E | 35.2 | 60.0 | C | 21.9 | 15.0 |
| 7. Steve Drive/Drewry Mason School Road | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL | A | 9.9 | 0.0 | B | 12.6 | 2.5 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 1.6 | - | A | 0.3 | - |
| | SBL | B | 13.0 | 22.5 | B | 10.1 | 5.0 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 8. Water Plant Road | SBR | A | 0.0 | - | A | 0.0 | - |
| | Overall | B | 14.4 | - | B | 13.4 | - |
| | EB | C | 33.4 | - | D | 36.4 | - |
| | EBL | D | 35.9 | 111.0 | D | 38.6 | 83.0 |
| | EBT/R | C | 25.6 | 25.0 | C | 32.3 | 30.0 |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBL | A | 0.0 | - | A | 0.0 | - |
| 9. Soapstone Road/Main Street | WBT | A | 0.0 | - | A | 0.0 | - |
| | WBR | A | 0.0 | - | A | 0.0 | - |
| | NB | B | 13.9 | - | B | 11.2 | - |
| | NBL | C | 33.0 | 41.0 | D | 38.4 | 50.0 |
| | NBT | B | 13.2 | 156.0 | A | 9.7 | 261.0 |
| | NBR | A | 7.7 | 0.0 | A | 6.9 | 5.0 |
| | SB | B | 11.6 | - | B | 12.5 | - |
| 10. Morehead Avenue (VA 87) | SBL | C | 31.6 | 41.0 | D | 36.8 | 60.0 |
| | SBT | B | 11.0 | 152.0 | B | 11.9 | 251.0 |
| | SBR | A | 8.4 | 0.0 | A | 7.5 | 5.0 |
| | Overall | B | 14.0 | - | C | 31.6 | - |
| | EB | C | 27.2 | - | E | 57.2 | - |
| | EBL/T | C | 27.5 | 55.0 | E | 59.0 | 82.0 |
| | EBR | C | 26.9 | 0.0 | D | 53.2 | 0.0 |
| 11. Lee Ford Camp Road/Church Street | WB | A | 0.0 | - | E | 64.6 | - |
| | WBL/T | A | 0.0 | - | D | 42.5 | - |
| | WBR | A | 0.0 | - | E | 69.0 | - |
| | NB | B | 14.7 | - | C | 26.2 | - |
| | NBL | C | 31.5 | 34.0 | E | 55.9 | 60.0 |
| | NBT | B | 14.2 | 242.0 | C | 25.5 | 268.0 |
| | NBR | A | 0.0 | 66.0 | B | 20.0 | 0.0 |
| 11. Lee Ford Camp Road/Church Street | SB | B | 11.3 | - | C | 26.2 | - |
| | SBL | C | 30.6 | 66.0 | E | 55.9 | 221.0 |
| | SBT | A | 9.4 | 134.0 | B | 20.0 | 321.0 |
| | SBR | A | 7.3 | 0.0 | B | 13.3 | 0.0 |
| | Overall | F | 123.0 | - | C | 25.0 | - |
| | WB | F | 337.8 | - | D | 48.7 | - |
| | WBL | C | 20.8 | 48.0 | C | 21.5 | 58.0 |
| 11. Lee Ford Camp Road/Church Street | WBR | F | 375.4 | 203.0 | D | 53.7 | 59.0 |
| | NB | C | 22.8 | - | C | 27.2 | - |
| | NBT | C | 22.9 | 130.0 | C | 27.3 | 105.0 |
| | NBR | B | 16.4 | 7.0 | C | 23.3 | 11.0 |
| | SB | A | 9.9 | - | B | 13.5 | - |
| | SBL | B | 14.2 | 78.0 | B | 17.9 | 159.0 |
| | SBT | A | 7.6 | 65.0 | B | 10.6 | 108.0 |
| 11. Lee Ford Camp Road/Church Street | EB | C | 21.0 | 20.0 | C | 21.3 | 17.5 |
| | WB | C | 19.7 | 15.0 | A | 9.1 | 0.0 |
| | NB | A | 0.1 | - | A | 0.2 | - |
| | NBL | A | 8.5 | 0.0 | A | 8.8 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.2 | - | A | 0.5 | - |
| 11. Lee Ford Camp Road/Church Street | SBL | A | 8.5 | 0.0 | A | 8.0 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |

Table 8-2: Alternative C 2025 Capacity Analysis Summary (2)

| Intersection | Movement | AM | | | PM | | |
|--|----------|-----|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 12.1. Reservoir Interchange WB Ramp | WB | B | 11.7 | - | B | 10.3 | - |
| | WBL | A | 0.0 | - | B | 14.7 | 0.0 |
| | WBR | B | 11.7 | 7.5 | B | 10.1 | 2.5 |
| | NB | A | 0.6 | - | A | 0.9 | - |
| | NBL | A | 8.6 | 2.5 | A | 8.7 | 2.5 |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 12.2. Reservoir Interchange EB Ramp | EB | A | 0.0 | 95.0 | C | 16.1 | 75.0 |
| | EBL | B | 14.3 | 95.0 | C | 16.1 | 75.0 |
| | EBT/R | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBL | A | 0.0 | - | A | 0.0 | - |
| 13.1. Soapstone Interchange WB Ramp | EB | A | 0.0 | - | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | EBR | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBL | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 8.9 | - | A | 9.1 | - |
| | SBL | A | 9.5 | 2.5 | A | 9.9 | 0.0 |
| 13.2. Soapstone Interchange EB Ramp | SBR | A | 8.7 | 7.5 | A | 9.0 | 5.0 |
| | EB | A | 4.1 | - | A | 4.2 | - |
| | EBL | A | 7.5 | 5.0 | A | 7.7 | 5.0 |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | WBR | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| 14.1. Route 58 Interchange Southern | NBL | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | WB | B | 10.1 | - | B | 10.1 | - |
| | WBL | B | 11.0 | 2.5 | B | 12.1 | 2.5 |
| | WBT/R | B | 10.0 | 32.5 | B | 10.0 | 1.1 |
| | NB | A | 0.0 | - | A | 0.0 | 20.0 |
| | NBT/R | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 4.1 | - | A | 5.3 | - |
| 14.2. Fisher Farm Road/Fisher Farm Road | SBL | A | 7.5 | 5.0 | A | 7.6 | 0.8 |
| | SBT/R | A | 0.0 | - | A | 0.0 | - |
| | EB | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 3.2 | - | A | 1.8 | - |
| 14.3. Fisher Farm Road/Route 58 WB Ramp | WBL | A | 7.6 | 2.5 | A | 7.6 | 2.5 |
| | WBT/R | A | 0.0 | - | A | 0.0 | - |
| | NB | B | 13.1 | 47.5 | B | 11.8 | 30.0 |
| 14.4. Fisher Farm Road/Route 58 EB Ramp | WB | B | 10.0 | 10.0 | B | 1.4 | 5.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | EB | B | 1.1 | 20.0 | B | 11.1 | 10.0 |
| | NB | A | 0.0 | 0.0 | A | 0.0 | 0.0 |
| | SB | A | 3.8 | - | A | 1.8 | - |
| | SBL | A | 7.6 | 5.0 | A | 7.7 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |

Route 58 Eastbound Ramps: The eastbound right-turn and southbound left-turn would experience extensive delays during the PM peak hour only.

Kilarney Court/Villa Road: Eastbound Kilarney Court would experience extensive delays during both peak hours, and westbound Villa Road would experience extensive delays during the AM peak hour only.

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Marrowbone Circle: The westbound approach of Marrowbone Circle would experience extensive delays during both peak hours.

Shamrock Drive: The eastbound approach of Shamrock Drive would experience extensive delays and queues during both peak hours.

Covington Lane: Westbound approach would experience extensive delays during the AM peak hour only.

Soapstone Road/ Main Street: The westbound right-turn, northbound and southbound left-turns would experience extensive delays during the PM peak hour only.

Morehead Avenue: The westbound right-turn would experience extensive delays during the AM peak hour only.

Table 8-3: Alternative C 2040 Capacity Results (1)

| Intersection | Movement | AM | | | PM | | |
|---|----------|-----|-------------|------------|------|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 1. Route 58 WB Ramp | Overall | B | 11.3 | - | 16.6 | B | - |
| | WB | C | 25.5 | - | 39.7 | D | - |
| | WBL/T | C | 28.4 | 181.0 | 44.1 | D | 298.0 |
| | WBR | B | 18.4 | 46.0 | 27.5 | C | 35.0 |
| | NB | A | 3.1 | 22.0 | 1.9 | A | 18.0 |
| | SB | B | 10.7 | - | 13.5 | B | - |
| | SBT | B | 10.9 | 135.0 | 13.8 | B | 245.0 |
| | SBR | A | 8.7 | 14.0 | 10.4 | B | 25.0 |
| 2. Route 58 EB Ramp | Overall | C | 21.6 | - | D | 51.8 | - |
| | EB | D | 47.4 | - | E | 77.5 | - |
| | EBL | C | 26.4 | 78 | C | 21.0 | 96 |
| | EBR | D | 53.5 | 207 | G | 88.6 | 656 |
| | NB | B | 18.7 | - | E | 56.8 | - |
| | NBT | C | 20.4 | 295 | E | 63.3 | 482 |
| | NBR | B | 12.9 | 66 | C | 31.3 | 135 |
| | SB | B | 13.6 | - | C | 29.7 | - |
| | SBL | E | 62.3 | 117 | F | 98.4 | 238 |
| | SBT | A | 13.6 | 139 | B | 18.9 | 286 |
| 3. Kilamey Court/Villa Road | EB | F | 134.6 | 70 | F | 491.0 | 100 |
| | WB | F | 89.1 | 25 | D | 27.3 | 10 |
| | NB | A | 0.0 | - | A | 0.1 | - |
| | NBL | B | 11.0 | 0 | B | 14.0 | 0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.2 | - |
| | SBL | B | 12.6 | 0.0 | B | 11.3 | 5.0 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 4. Marrowbone Circle | WB | F | 109.4 | 90.0 | F | 56.7 | 25.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL/T | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.2 | - |
| | SBL/T | B | 12.4 | 0 | B | 11.3 | 2.5 |
| 5. Shamrock Drive | EB | F | 102.1 | 60 | F | 1253.4 | 550 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 6. Covington Lane | WB | F | 82.5 | 122.5 | D | 26.7 | 20 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.2 | - | A | 0.4 | - |
| | SBL | B | 11.8 | 2.5 | B | 10.6 | 0.75 |
| 7. Steve Drive/Drewry Mason School Road | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | EB | A | 0 | 0 | F | 150.3 | 60 |
| | NB | A | 0.0 | - | A | 0.2 | - |
| | NBL | B | 10.7 | 0 | B | 13.3 | 2.5 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 1.4 | - | A | 0.3 | - |
| 8. Water Plant Road | SBL | C | 15.2 | 22.5 | B | 10.5 | 5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | Overall | B | 16.6 | - | C | 20.7 | - |
| | EB | D | 41.7 | - | D | 43.3 | - |
| | EBL | D | 45.4 | 151 | D | 46.6 | 112 |
| | EBT/R | C | 28.9 | 28 | D | 37.1 | 34 |
| | WB | A | 0.0 | - | D | 46.3 | - |
| | WBL | A | 0.0 | - | D | 46.7 | 8 |
| | WBT | A | 0.0 | - | D | 46.0 | 8 |
| | WBR | A | 0.0 | - | A | 0.0 | - |
| 9. Soapstone Road/Main Street | NB | B | 16.0 | - | B | 17.2 | - |
| | NBL | D | 39.1 | 48 | D | 44.7 | 65 |
| | NBT | B | 15.2 | 312 | B | 15.7 | 272 |
| | NBR | A | 7.8 | 0 | B | 10.5 | 0 |
| | SB | B | 12.7 | - | B | 20.7 | - |
| | SBL | D | 37.3 | 49 | D | 43.1 | 73 |
| | SBT | B | 12.1 | 206 | B | 20.8 | 461 |
| | SBR | A | 8.6 | 0 | B | 11.8 | 8 |
| | Overall | C | 29.1 | - | C | 33.6 | - |
| | EB | E | 57.7 | - | E | 59.4 | - |
| | EBL/T | E | 59.1 | 102 | E | 61.5 | 87 |
| 10. Morehead Avenue (VA 87) | EBR | E | 55.7 | 0 | D | 54.5 | 0 |
| | WB | E | 61.1 | - | E | 69.7 | - |
| | WBL/T | D | 45.0 | 92 | D | 42.6 | 64 |
| | WBR | E | 67.4 | 62 | E | 75.2 | 57 |
| | NB | C | 25.8 | - | C | 29.9 | - |
| | NBL | E | 60.2 | 47 | E | 60.7 | 55 |
| | NBT | C | 25.0 | 445 | C | 28.7 | 322 |
| | NBR | A | 0.0 | - | C | 20.8 | 0 |
| | SB | C | 22.2 | - | C | 28.4 | - |
| | SBL | E | 66.1 | 123 | E | 60.6 | 244 |
| | SBT | B | 18.2 | 275 | C | 21.7 | 370 |
| 11. Lee Ford Camp Road/Chruch Street | SBR | B | 13.5 | 0 | B | 13.9 | 0 |
| | Overall | D | 42.9 | - | C | 28.3 | - |
| | WB | F | 123.3 | - | E | 61.5 | - |
| | WBL | C | 24.0 | 43 | C | 22.9 | 61 |
| | WBR | F | 133.9 | 82 | E | 68.8 | 60 |
| | NB | C | 26.2 | - | C | 28.5 | - |
| | NBT | C | 26.3 | 213 | C | 28.7 | 134 |
| | NBR | B | 17.9 | 9 | C | 23.0 | 12 |
| | SB | B | 12.8 | - | B | 13.9 | - |
| | SBL | B | 19.9 | 116 | B | 19.6 | 167 |
| | SBT | A | 8.9 | 95 | B | 10.1 | 113 |
| 11. Lee Ford Camp Road/Chruch Street | EB | D | 27.9 | - | F | 419.6 | - |
| | EBL/T/R | D | 27.9 | 25 | F | 419.6 | 667.5 |
| | WB | D | 30.7 | 27.5 | A | 0.0 | - |
| | NB | A | 0.1 | - | A | 0.2 | - |
| | NBL | A | 8.7 | 0 | A | 9.0 | 0 |
| | NBT | A | 0 | - | A | 0 | - |
| | NBR | A | 0 | - | A | 0 | - |
| | SB | A | 0.2 | - | A | 0.3 | - |
| SBL | A | 9.1 | 0 | A | 8.3 | 2.5 | |
| SBR | A | 0 | - | A | 0 | - | |

Table 8-4: Alternative C 2040 Capacity Results (2)

| Intersection | Movement | AM | | | PM | | |
|--|----------|-----|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 12.1. Reservoir Interchange WB Ramp | WB | B | 14.5 | - | B | 11.4 | - |
| | WBL | A | 0.0 | 0 | C | 17.1 | 0 |
| | WBR | B | 14.5 | 25 | B | 11.1 | 12.5 |
| | NB | A | 0.7 | - | A | 0.8 | - |
| | NBL | A | 8.8 | 5 | A | 9.1 | 2.5 |
| | NBR | A | 0 | - | A | 0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 12.2. Reservoir Interchange EB Ramp | SBR | A | 0.0 | - | A | 0.0 | - |
| | EB | A | 0.0 | - | C | 23.0 | - |
| | EBL | C | 18.4 | 157.5 | C | 23.0 | 130 |
| | EBT/R | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBL | A | 0.0 | - | A | 0.0 | - |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 13.1. Soapstone Interchange WB Ramp | EB | A | 0.0 | - | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | EBR | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBL | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 8.9 | - | A | 9.2 | - |
| | SBL | A | 9.6 | 2.5 | B | 10.1 | 0 |
| 13.2. Soapstone Interchange EB Ramp | SBR | A | 8.7 | 10 | A | 9 | 5 |
| | EB | A | 4.0 | - | A | 4.2 | - |
| | EBL | A | 7.5 | 5 | A | 7.8 | 5 |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | WBR | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| 14.1. Route 58 Interchange Southern | NBL | A | 0.0 | - | A | 0.0 | - |
| | NBT/R | A | 0 | - | A | 0 | - |
| | WB | B | 10.3 | - | B | 10.4 | - |
| | WBL | B | 11.4 | 2.5 | B | 12.6 | 2.5 |
| | WBT/R | B | 10.2 | 37.5 | B | 10.2 | 30 |
| | NB | A | 0 | - | A | 0 | - |
| | SB | A | 4.1 | - | A | 5.4 | - |
| | SBL | A | 7.5 | 7.5 | A | 5.4 | 10 |
| 14.2. Fisher Farm Road/Fisher Farm Road | SBT/R | A | 0 | - | A | 0 | - |
| | EB | A | 0 | - | A | 0 | - |
| | WB | A | 3.1 | - | A | 1.9 | - |
| | WBL | A | 7.6 | 5 | A | 7.7 | 2.5 |
| 14.3. Fisher Farm Road/Route 58 WB Ramp | WBT/R | A | 0 | - | A | 0 | - |
| | NB | B | 13.7 | 52.5 | B | 12.4 | 32.5 |
| | WB | B | 10.1 | 10 | B | 10.7 | 5 |
| | NB | A | 0 | - | A | 0 | - |
| 14.4. Fisher Farm Road/Route 58 EB Ramp | SB | A | 0 | - | A | 0 | - |
| | EB | B | 12.7 | 0 | B | 11.4 | 0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 3.8 | - | A | 1.7 | - |
| | SBL | A | 7.6 | 5 | A | 7.7 | 2.5 |
| | SBT | A | 0 | - | A | 0 | - |

Route 58 Eastbound Ramps: The eastbound right-turn would experience extensive delays during both peak hours, and the northbound through and southbound left-turn would experience extensive delays during the PM peak hour only.

Kilarney Court/Villa Road: The eastbound approach would experience extensive delays during both peak hours and the westbound approach would experience extensive delays during the AM peak hour only.

Marrowbone Circle: The westbound approach of Marrowbone Circle would experience extensive delays during both peak hours.

Shamrock Drive: The eastbound approach of Shamrock Drive would experience extensive delays and queues during both peak hours, especially the PM peak hour.

Covington Lane: The westbound approach would experience extensive delays during the AM peak hour only.

Steve Drive: The eastbound approach of Steve Drive would experience extensive delays during the PM peak hour only.

Soapstone Drive/ Main Street: The eastbound and westbound approaches as well as the northbound and southbound left-turns would experience extensive delays during both peak hours.

Morehead Avenue: The westbound right-turn would experience extensive delays during both peak hours.

Lee Ford Camp Road: The eastbound approach would experience extensive delays during the PM peak hour only.

8.2.2 Travel Times and Distances

Alternative C would improve travel time between the western boundary of the study area on Route 220/Route 58 and the southern project limit at the North Carolina state line, as shown in **Table 8-5**. Dark green boxes represent an improvement to both the travel time and a reduction in travel distance when compared to the No-Build Alternative. Light green indicates that either the travel time or distance would be improved. A dark red box means that both the travel time and distance between a destination pair would be longer than the No-Build Alternative; a light red box indicates that either the travel time or the distance would be increased over the No-Build Alternative.

Alternative C would result in a trip time savings of 2 minutes and 15 seconds over the No-Build Alternative in the southbound direction and a savings of 2 minutes northbound for vehicles traveling between the southern and western limits of the study area. The travel distance between these two points northbound would be reduced by 0.6 miles and southbound would be reduced by 0.7 miles.

Table 8-5: Distances and Travel Times Between Study Area Entrances and Exits – Alternative C

| Origin/Destination | Route 58/Route 220 @ Cameron Road | Joseph Martin Highway @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | VA Route 87 @ Farmbrook Road | Route 220 @ North Carolina State Line |
|--|-----------------------------------|--|------------------------------------|-------------------------------|------------------------------|---------------------------------------|
| Route 58/Route 220 @ Cameron Road | | 2.1 miles (3:15) | 3.1 miles (4:00) | 4.8 miles (4:50) | 8.2 miles (12:30) | 8.8 miles (9:15) |
| Joseph Martin Highway @ Fisher Farm Road | 1.4 miles (1:40) | | 1.3 miles (2:15) | 3.6 miles (4:25) | 7.1 miles (12:35) | 7.7 miles (8:05) |
| Business Route 220 @ Old Sand Road | 3.0 miles (3:20) | 1.3 miles (2:15) | | 2.4 miles (3:15) | 5.9 miles (10:20) | 7.2 miles (9:15) |
| Route 58 @ Smith River Bridge | 4.8 miles (4:50) | 3.5 miles (4:10) | 2.3 miles (2:50) | | 7.7 miles (12:10) | 9.0 miles (11:25) |
| VA Route 87 @ Farmbrook Road | 8.4 miles (12:50) | 7.2 miles (12:05) | 5.9 miles (10:10) | 7.6 miles (11:05) | | 6.1 miles (8:50) |
| Route 220 @ North Carolina State Line | 9.1 miles (9:45) | 7.7 miles (8:20) | 7.2 miles (9:35) | 8.9 miles (11:00) | 6.1 miles (8:40) | |

Alternative C would maintain many of the existing connections between points of interest in the study area, as shown in **Table 8-6**. Green boxes indicate that the distance between those origins and destinations would decrease with this alternative, red boxes indicate an increase in travel distance.

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Table 8-6: Travel Distances Between Points of Interest in the Study Area – Alternative C

| Origin/Destination | Route 58/220 @ Cameron Road | Joseph Martin Hwy @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | Soapstone Road @ Joseph Martin Hwy | Magna Vista High School | Kilamey Court @ Route 220 | Villa Road @ Route 220 | Marrowbone Circle @ Route 220 | Shamrock Drive @ Route 220 | Covington Lane @ Route 220 | Steve Drive @ Route 220 | Drewry Mason Elementary School | Mica Road @ Route 220 | Water Plant Road @ Route 220 | Andra Drive @ Route 220 | Soapstone Road @ Route 220 | Main Street @ Route 220 | VA Route 87 @ Main Street | VA Route 87 @ Farmbrook Road | Lee Ford Camp Road @ Blackfeather Trl | Church Street @ Route 220 | Matrimony Creek Road @ Route 220 | Reservoir Road @ Route 220 | J.B. Dalton Road @ Route 220 | Route 220 @ North Carolina State Line |
|---------------------------------------|-----------------------------|--------------------------------------|------------------------------------|-------------------------------|------------------------------------|-------------------------|---------------------------|------------------------|-------------------------------|----------------------------|----------------------------|-------------------------|--------------------------------|-----------------------|------------------------------|-------------------------|----------------------------|-------------------------|---------------------------|------------------------------|---------------------------------------|---------------------------|----------------------------------|----------------------------|------------------------------|---------------------------------------|
| Route 58/220 @ Cameron Road | 2.1 | 3.1 | 4.8 | 3.8 | 5.0 | 2.9 | 2.9 | 3.2 | 3.3 | 3.5 | 3.8 | 3.8 | 4.2 | 4.2 | 4.8 | 5.1 | 5.1 | 6.0 | 8.2 | 6.5 | 6.4 | 7.9 | 8.1 | 8.5 | 8.8 | |
| Joseph Martin Hwy @ Fisher Farm Road | 1.4 | 1.3 | 3.6 | 2.5 | 3.8 | 1.8 | 1.8 | 2.1 | 2.2 | 2.4 | 2.7 | 2.7 | 3.1 | 3.1 | 3.7 | 4.0 | 4.0 | 4.9 | 7.1 | 5.4 | 5.3 | 6.8 | 6.9 | 7.2 | 7.7 | |
| Business Route 220 @ Old Sand Road | 3.0 | 1.3 | 2.4 | 4.2 | 5.5 | 0.6 | 0.6 | 0.9 | 1.0 | 1.2 | 1.5 | 1.5 | 1.9 | 1.9 | 2.5 | 2.8 | 2.8 | 3.7 | 5.9 | 4.2 | 4.1 | 5.6 | 6.2 | 6.3 | 7.2 | |
| Route 58 @ Smith River Bridge | 4.8 | 3.5 | 2.3 | 6.0 | 7.3 | 2.4 | 2.4 | 2.7 | 2.8 | 3.0 | 3.3 | 3.3 | 3.7 | 3.7 | 4.3 | 4.6 | 4.6 | 5.5 | 7.7 | 6.0 | 5.9 | 7.4 | 8.0 | 8.1 | 9.0 | |
| Soapstone Road @ Joseph Martin Hwy | 3.9 | 2.6 | 3.8 | 5.4 | 1.3 | 3.6 | 3.6 | 3.9 | 4.0 | 4.2 | 3.9 | 3.9 | 3.5 | 3.5 | 2.9 | 2.6 | 2.6 | 3.5 | 5.7 | 4.0 | 3.9 | 5.4 | 5.3 | 5.7 | 6.1 | |
| Magna Vista High School | 5.2 | 3.8 | 5.1 | 6.7 | 1.3 | 4.9 | 4.9 | 4.7 | 4.6 | 4.3 | 4.0 | 4.0 | 3.6 | 3.6 | 3.0 | 2.7 | 2.7 | 3.6 | 5.8 | 3.3 | 3.4 | 4.9 | 5.5 | 5.6 | 6.5 | |
| Kilamey Court @ Route 220 | 3.1 | 1.9 | 0.6 | 2.3 | 3.6 | 4.9 | 0.02 | 0.3 | 0.4 | 0.6 | 0.9 | 0.9 | 1.3 | 1.3 | 1.9 | 2.2 | 2.2 | 3.1 | 5.3 | 3.6 | 3.5 | 5.0 | 5.6 | 5.7 | 6.6 | |
| Villa Road @ Route 220 | 3.1 | 1.9 | 0.6 | 2.3 | 3.6 | 4.9 | 0.02 | 0.3 | 0.4 | 0.6 | 0.9 | 0.9 | 1.3 | 1.3 | 1.9 | 2.2 | 2.2 | 3.1 | 5.3 | 3.6 | 3.5 | 5.0 | 5.6 | 5.7 | 6.6 | |
| Marrowbone Circle @ Route 220 | 3.4 | 2.2 | 0.9 | 2.6 | 3.9 | 4.7 | 0.3 | 0.3 | 0.1 | 0.3 | 0.6 | 0.6 | 1.0 | 1.0 | 1.6 | 1.9 | 1.9 | 2.8 | 5.0 | 3.3 | 3.2 | 4.7 | 5.3 | 5.4 | 6.3 | |
| Shamrock Drive @ Route 220 | 3.5 | 2.3 | 1.0 | 2.7 | 4.0 | 4.6 | 0.4 | 0.4 | 0.1 | 0.2 | 0.5 | 0.5 | 0.9 | 0.9 | 1.5 | 1.8 | 1.8 | 2.7 | 4.9 | 3.2 | 3.1 | 4.6 | 5.2 | 5.3 | 6.2 | |
| Covington Lane @ Route 220 | 3.7 | 2.5 | 1.2 | 2.9 | 4.2 | 4.3 | 0.6 | 0.6 | 0.3 | 0.2 | 0.3 | 0.3 | 0.7 | 0.7 | 1.3 | 1.6 | 1.6 | 2.5 | 4.7 | 3.0 | 2.9 | 4.4 | 5.0 | 5.1 | 6.0 | |
| Steve Drive @ Route 220 | 4.0 | 2.8 | 1.5 | 3.2 | 3.9 | 4.0 | 0.9 | 0.9 | 0.6 | 0.5 | 0.3 | 0.02 | 0.4 | 0.4 | 1.0 | 1.3 | 1.3 | 2.2 | 4.4 | 2.7 | 2.6 | 4.1 | 4.7 | 4.8 | 5.7 | |
| Drewry Mason Elementary School | 4.0 | 2.8 | 1.5 | 3.2 | 3.9 | 4.0 | 0.9 | 0.9 | 0.6 | 0.5 | 0.3 | 0.02 | 0.4 | 0.4 | 1.0 | 1.3 | 1.3 | 2.2 | 4.4 | 2.7 | 2.6 | 4.1 | 4.7 | 4.8 | 5.7 | |
| Mica Road @ Route 220 | 4.4 | 3.2 | 1.9 | 3.6 | 3.5 | 3.6 | 1.3 | 1.3 | 1.0 | 0.9 | 0.7 | 0.4 | 0.4 | 0.02 | 0.6 | 0.9 | 0.9 | 1.8 | 4.0 | 2.3 | 2.2 | 3.7 | 4.3 | 4.4 | 5.3 | |
| Water Plant Road @ Route 220 | 4.4 | 3.2 | 1.9 | 3.6 | 3.5 | 3.6 | 1.3 | 1.3 | 1.0 | 0.9 | 0.7 | 0.4 | 0.4 | 0.02 | 0.6 | 0.9 | 0.9 | 1.8 | 4.0 | 2.3 | 2.2 | 3.7 | 4.3 | 4.4 | 5.3 | |
| Andra Drive @ Route 220 | 5.0 | 3.8 | 2.5 | 4.2 | 2.9 | 3.0 | 1.9 | 1.9 | 1.6 | 1.5 | 1.3 | 1.0 | 1.0 | 0.6 | 0.6 | 0.3 | 0.3 | 1.2 | 3.4 | 1.7 | 1.6 | 3.1 | 3.7 | 3.8 | 4.7 | |
| Soapstone Road @ Route 220 | 5.3 | 4.1 | 2.8 | 4.5 | 2.6 | 2.7 | 2.2 | 2.2 | 1.9 | 1.8 | 1.6 | 1.3 | 1.3 | 0.9 | 0.9 | 0.3 | 0.02 | 0.9 | 3.1 | 1.4 | 1.3 | 2.8 | 3.4 | 3.5 | 4.4 | |
| Main Street @ Route 220 | 5.3 | 4.1 | 2.8 | 4.5 | 2.6 | 2.7 | 2.2 | 2.2 | 1.9 | 1.8 | 1.6 | 1.3 | 1.3 | 0.9 | 0.9 | 0.3 | 0.02 | 0.9 | 3.1 | 1.4 | 1.3 | 2.8 | 3.4 | 3.5 | 4.4 | |
| VA Route 87 @ Main Street | 6.2 | 5.0 | 3.7 | 5.4 | 3.5 | 3.6 | 3.1 | 3.1 | 2.8 | 2.7 | 2.5 | 2.2 | 2.2 | 1.8 | 1.8 | 1.2 | 0.9 | 0.9 | 2.2 | 0.9 | 0.8 | 2.3 | 2.9 | 3.0 | 3.9 | |
| VA Route 87 @ Farmbrook Road | 8.4 | 7.2 | 5.9 | 7.6 | 5.7 | 5.8 | 5.3 | 5.3 | 5.0 | 4.9 | 4.7 | 4.4 | 4.4 | 4.0 | 4.0 | 3.4 | 3.1 | 3.1 | 2.2 | 3.1 | 3.0 | 4.5 | 5.1 | 5.2 | 6.1 | |
| Lee Ford Camp Road @ Blackfeather Trl | 6.7 | 5.5 | 4.2 | 5.9 | 4.0 | 3.3 | 3.6 | 3.6 | 3.3 | 3.2 | 3.0 | 2.7 | 2.7 | 2.3 | 2.3 | 1.7 | 1.4 | 1.4 | 0.9 | 3.1 | 0.1 | 1.6 | 2.2 | 2.3 | 3.2 | |
| Church Street @ Route 220 | 6.6 | 5.4 | 4.1 | 5.8 | 4.1 | 3.4 | 3.5 | 3.5 | 3.2 | 3.1 | 2.9 | 2.6 | 2.6 | 2.2 | 2.2 | 1.6 | 1.3 | 1.3 | 0.8 | 3.0 | 0.1 | 1.5 | 2.1 | 2.2 | 3.1 | |
| Matrimony Creek Road @ Route 220 | 7.6 | 6.4 | 5.1 | 6.8 | 5.1 | 4.4 | 4.5 | 4.5 | 4.2 | 4.1 | 3.9 | 3.6 | 3.6 | 3.2 | 3.2 | 2.6 | 2.3 | 2.3 | 1.8 | 4.0 | 1.1 | 1.0 | 1.5 | 1.6 | 2.4 | |
| Reservoir Road @ Route 220 | 8.4 | 6.9 | 6.2 | 7.9 | 6.2 | 5.5 | 5.6 | 5.6 | 5.3 | 5.2 | 5.0 | 4.7 | 4.7 | 4.3 | 4.3 | 3.7 | 3.4 | 3.4 | 2.9 | 5.1 | 2.2 | 2.1 | 1.1 | 0.5 | 1.0 | |
| J.B. Dalton Road @ Route 220 | 8.2 | 7.0 | 5.7 | 7.4 | 5.7 | 5.0 | 5.1 | 5.1 | 4.8 | 4.7 | 4.5 | 4.2 | 4.2 | 3.8 | 3.8 | 3.2 | 2.9 | 2.9 | 2.4 | 4.6 | 1.7 | 1.6 | 0.6 | 0.9 | 1.9 | |
| Route 220 @ North Carolina State Line | 9.1 | 7.7 | 7.2 | 8.9 | 6.1 | 6.5 | 6.6 | 6.6 | 6.3 | 6.2 | 6.0 | 5.7 | 5.7 | 5.3 | 5.3 | 4.7 | 4.4 | 4.4 | 3.9 | 6.1 | 3.2 | 3.1 | 2.1 | 2.4 | 1.5 | |

8.2.3 Overall Travel Time Results

Calculated average travel times using SimTraffic along the existing corridor between the North Carolina state line and the Route 58 interchange as well as between the border at the new interchange that the new alignment creates with Route 58 are shown in **Table 8-7**. Travel times generally would increase slightly from 2025 to 2040 along both corridors.

Table 8-7: Alternative C Travel Time (Seconds)

| Year | Southbound | | Northbound | |
|---------------------------|------------|-------|------------|-------|
| | AM | PM | AM | PM |
| Existing Alignment | | | | |
| 2025 | 429.4 | 505.7 | 447.6 | 508.5 |
| 2040 | 505.2 | 510.9 | 519.6 | 520.2 |
| New Alignment | | | | |
| 2025 | 378.8 | 378.1 | 356.7 | 333.9 |
| 2040 | 381.5 | 381.6 | 359.7 | 359.8 |

9. FUTURE BUILD ALTERNATIVE D ANALYSIS

Alternative D would follow the current alignment of Route 220 from the North Carolina state line to a new interchange at Water Plant Road. A new four-lane divided roadway would then be constructed west of the current corridor, and tie into a reconstructed existing interchange along Route 58 at Joseph Martin Highway that follows the same alignments as Alternatives B and C. The direct access configurations on existing Route 220 from the North Carolina state line to Ridgeway would be shifted to frontage roads to facilitate current movements.

9.1 VOLUME SUMMARY

9.1.1 Daily Volumes

AADT volumes are shown for Alternative D for both 2025 and 2040 in **Figure 9-1** for the existing alignment and in **Figure 9-2** for the new alignment. Truck volumes and percentages along the roadway network are shown for the existing alignment in **Figure 9-3** and along the new alignment in **Figure 9-4**.

9.1.2 Peak Hour Volumes

AM and PM peak hour volumes for 2025 and 2040 Alternative D for each Route 220 study intersection were developed with the subarea travel demand model post-processing efforts, which are shown in **Figure 9-5** for 2025 and **Figure 9-6** for 2040.

Figure 9-1: Alternative D AADT (Existing Alignment)

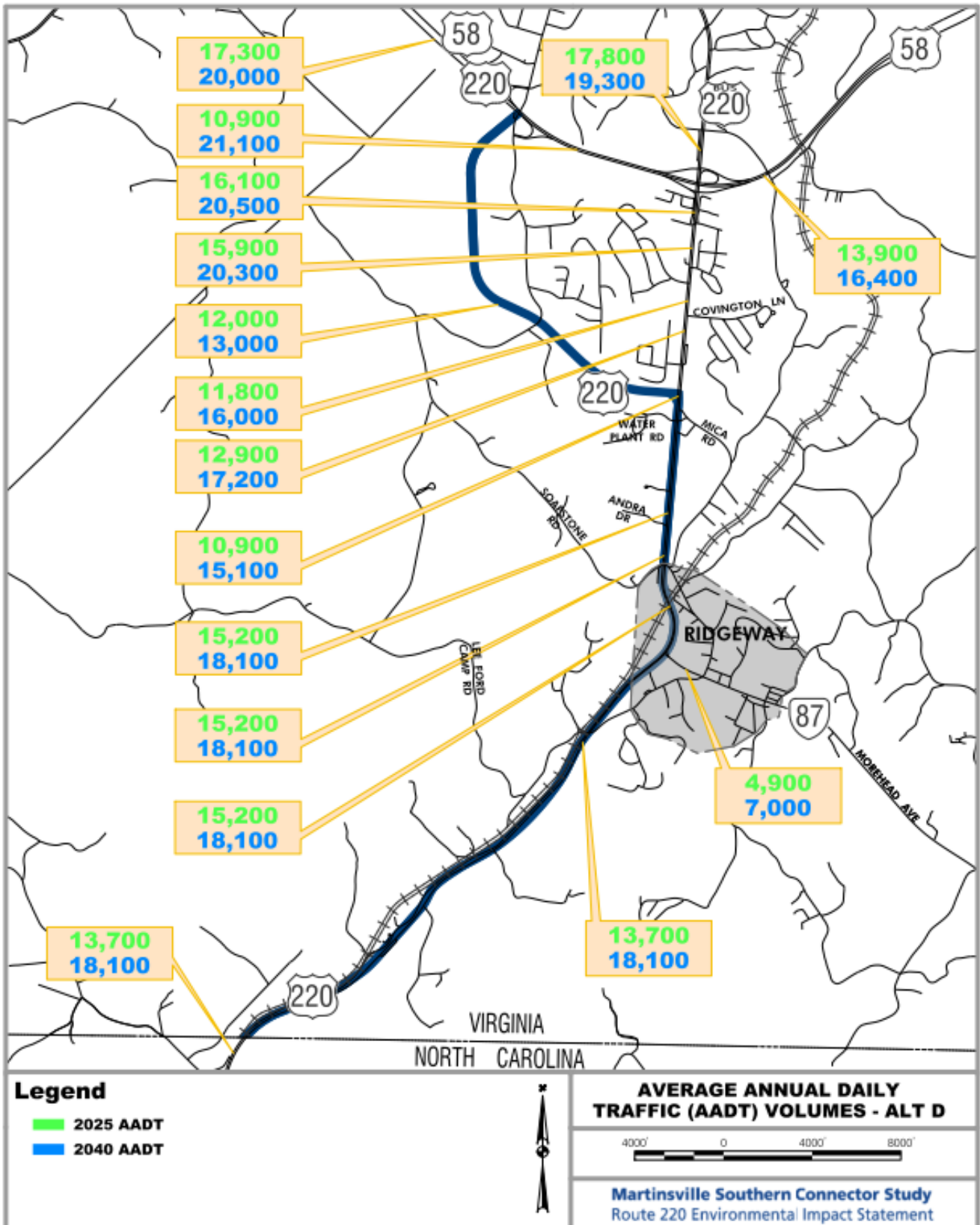


Figure 9-2: Alternative D AADT (New Alignment)

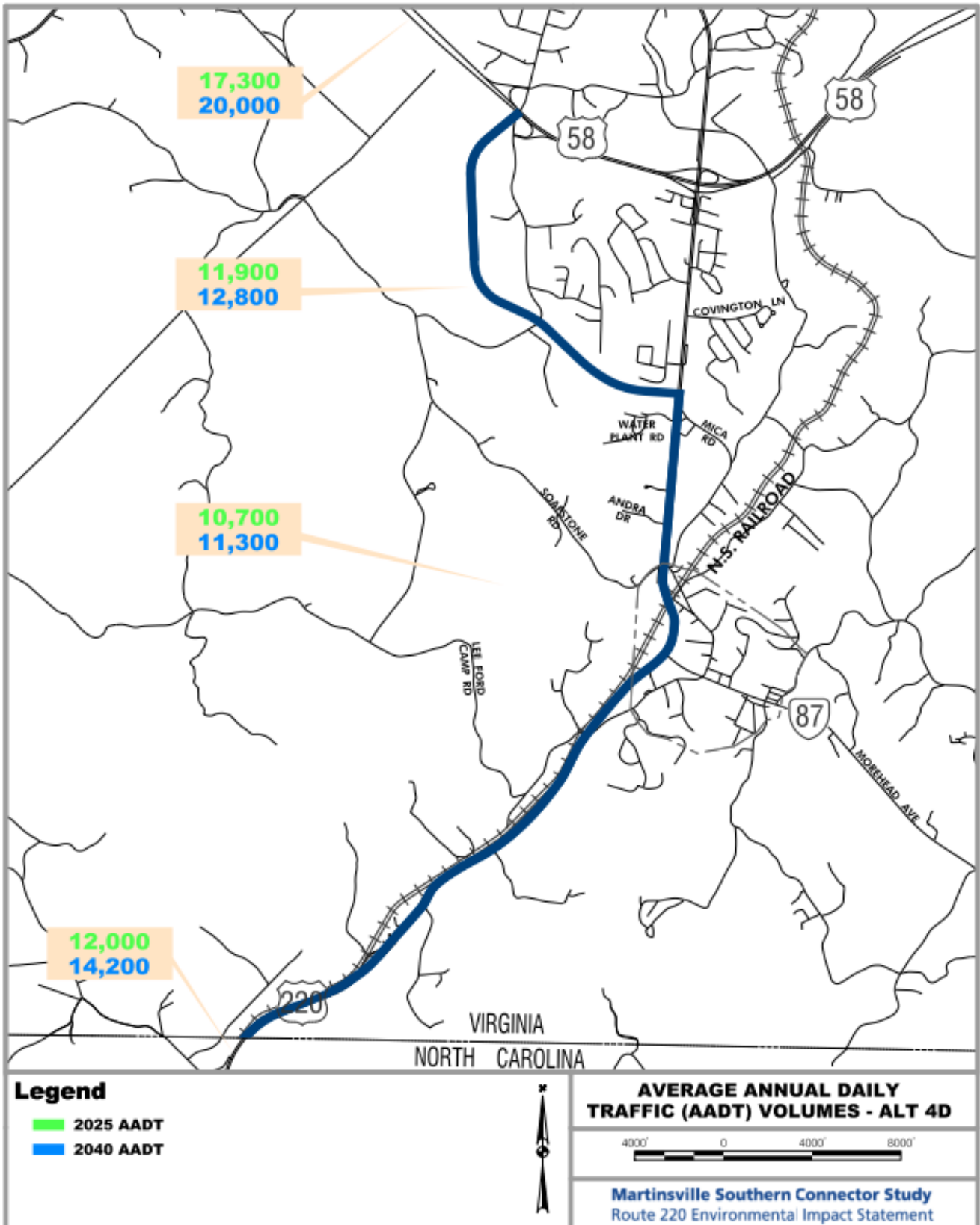


Figure 9-3: Alternative D Truck Percentages (Existing Alignment)

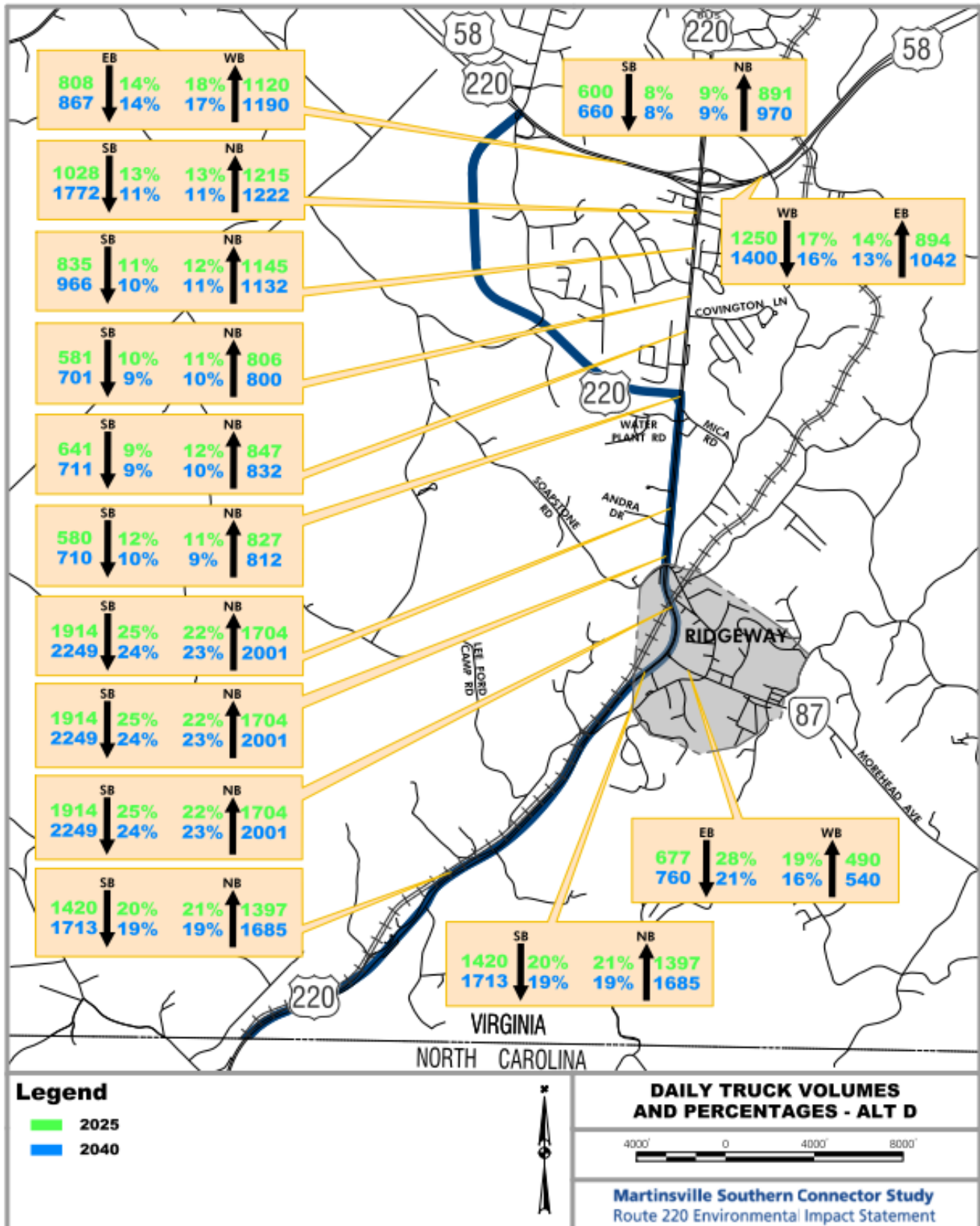


Figure 9-4: Alternative D Truck Percentages (New Alignment)

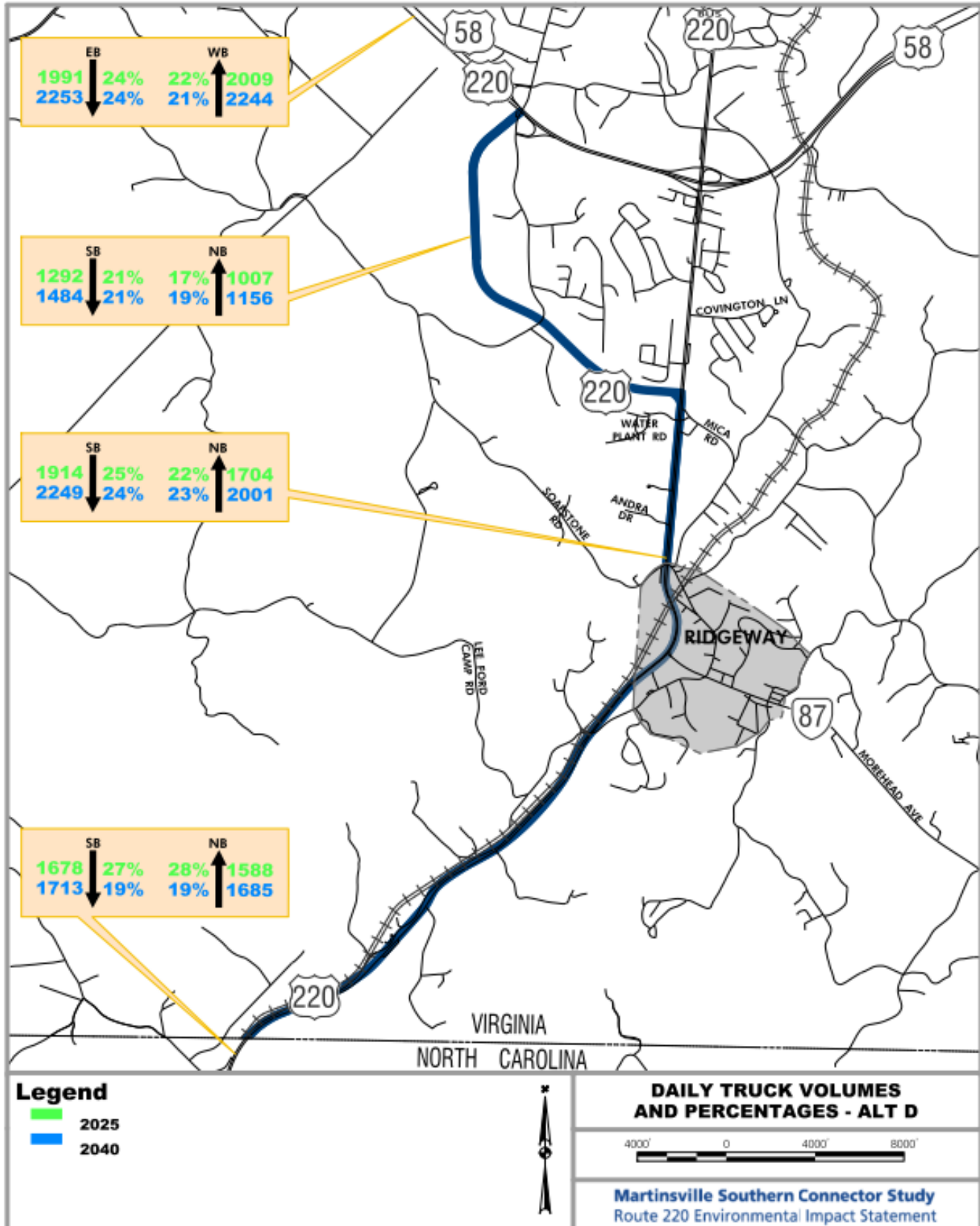


Figure 9-5: Alternative D 2025 Peak Hour Intersection Volumes

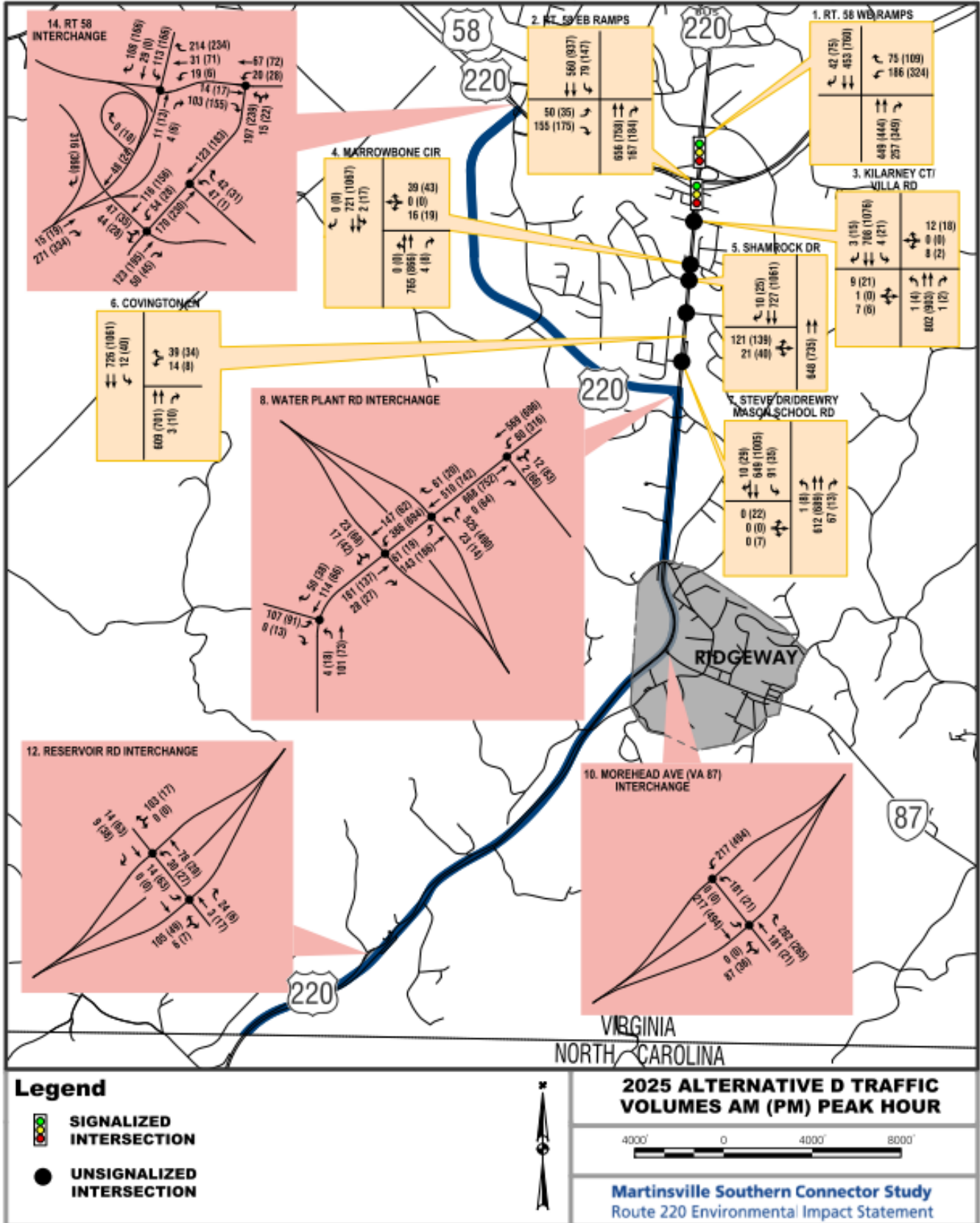
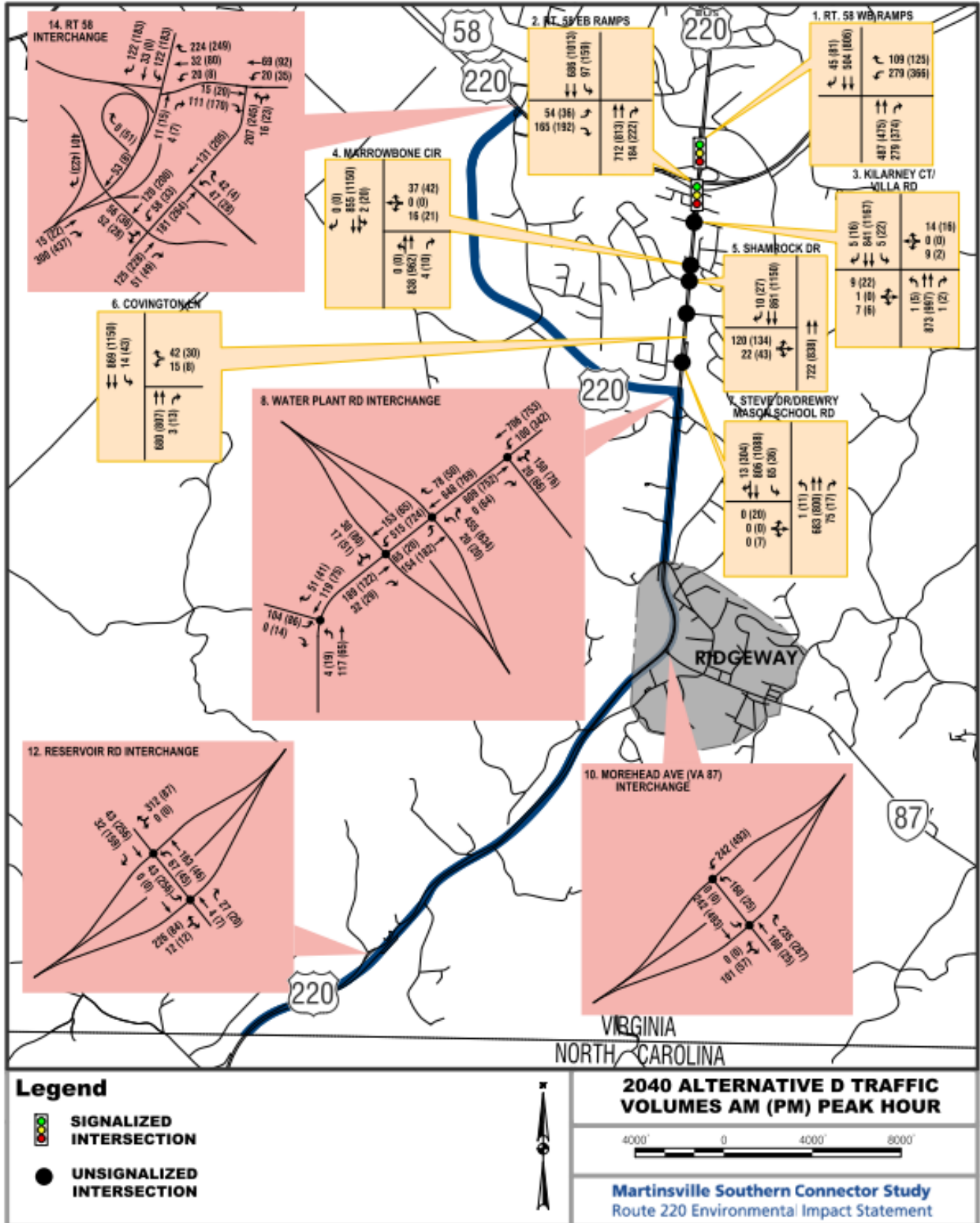


Figure 9-6: Alternative D 2040 Peak Hour Intersection Volumes



Martinsville Southern Connector Study

Route 220 Environmental Impact Statement

9.2 OPERATIONAL ANALYSES

9.2.1 Capacity Results

Capacity analysis was computed using Synchro 10. Signal timings along the corridor were optimized for future conditions, as it was assumed that VDOT would continue to review timings along the corridor and make necessary adjustments to maximize traffic capacity. **Table 9-1** summarize the levels of service, delays, and queues for the No-Build condition for 2025, and **Table 9-2** summarize these values for 2040. Synchro worksheets are included in **Appendix K**.

Table 9-1: Alternative D 2025 Capacity Analysis Summary

| Intersection | Movement | AM | | | PM | | | |
|---|---|-----|-------------|------------|------|-------------|------------|------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) | |
| 1. Route 58 WB Ramp | Overall | A | 9.0 | - | B | 13.3 | - | |
| | WB | C | 22.4 | - | C | 26.3 | - | |
| | WBL/T | C | 24.0 | 111.0 | C | 29.2 | 198.0 | |
| | WBR | B | 18.6 | 25.0 | B | 17.7 | 27.0 | |
| | NB | A | 3.1 | 18.0 | A | 3.1 | 20.0 | |
| | SB | A | 7.2 | - | B | 12.1 | - | |
| | SBT | A | 7.3 | 84.0 | B | 12.4 | 195.0 | |
| | SBR | A | 6.1 | 6.0 | A | 8.9 | 22.0 | |
| 2. Route 58 EB Ramp | Overall | B | 12.0 | - | B | 14.6 | - | |
| | EB | C | 24.5 | - | C | 28.8 | - | |
| | EBL | C | 25.3 | 45.0 | C | 27.5 | 40.0 | |
| | EBR | C | 24.3 | 43.0 | C | 29.1 | 73.0 | |
| | NB | B | 13.2 | - | B | 16.9 | - | |
| | NBT | B | 13.8 | 161.0 | B | 17.9 | 214.0 | |
| | NBR | B | 10.5 | 24.0 | B | 12.9 | 41.0 | |
| | SB | A | 6.5 | - | A | 9.9 | - | |
| | SBL | C | 28.8 | 68.0 | C | 33.0 | 123.0 | |
| | SBT | A | 3.3 | 50.0 | A | 6.3 | 170.0 | |
| | EB | D | 28.0 | 10.0 | F | 116.0 | 50.0 | |
| 3. Kilarney Court/ Villa Road | WB | C | 23.8 | 10.0 | C | 19.0 | 7.5 | |
| | NB | A | 0.0 | - | A | 0.1 | - | |
| | NBL | A | 9.4 | 0.0 | B | 11.4 | 0.0 | |
| | NBT | A | 0.0 | - | A | 0.0 | - | |
| | NBR | A | 0.0 | - | A | 0.0 | - | |
| | SB | A | 0.1 | - | A | 0.2 | - | |
| | SBL | A | 9.8 | 0.0 | B | 10.5 | 2.5 | |
| | SBT | A | 0.0 | - | A | 0.0 | - | |
| | SBR | A | 0.0 | - | A | 0.0 | - | |
| | WB | C | 21.8 | 22.5 | E | 40.4 | 45.0 | |
| | 4. Marrowbone Circle | NB | A | 0.0 | - | A | 0.0 | - |
| NBL/T | | A | 0.0 | - | A | 0.0 | - | |
| NBT | | A | 0.0 | - | A | 0.0 | - | |
| NBR | | A | 0.0 | - | A | 0.0 | - | |
| SB | | A | 0.0 | - | A | 0.2 | - | |
| SBL/T | | A | 9.6 | 0.0 | B | 10.3 | 2.5 | |
| SBT | | A | 0.0 | - | A | 0.0 | - | |
| SBR | | A | 0.0 | - | A | 0.0 | - | |
| 5. Shamrock Drive | EB | F | 68.6 | 140.0 | F | 443.5 | 397.5 | |
| | NB | A | 0.0 | 140.0 | A | 0.0 | - | |
| | SB | A | 0.0 | - | A | 0.0 | - | |
| | SBT | A | 0.0 | - | A | 0.0 | - | |
| 6. Covington Lane | SBR | A | 0.0 | - | A | 0.0 | - | |
| | WB | C | 15.5 | 12.5 | C | 17.8 | 12.5 | |
| | NB | A | 0.0 | - | A | 0.0 | - | |
| | NBT | A | 0.0 | - | A | 0.0 | - | |
| | NBR | A | 0.0 | - | A | 0.0 | - | |
| | SB | A | 0.1 | - | A | 0.3 | - | |
| 7. Steve Drive/ Drewry Mason School Road | SBL | A | 9.0 | 0.0 | A | 9.6 | 5.0 | |
| | SBT | A | 0.0 | - | A | 0.0 | - | |
| | EB | A | 0.0 | 0.0 | F | 53.0 | 30.0 | |
| | NB | A | 0.0 | - | A | 0.1 | - | |
| | NBL | A | 9.1 | 0.0 | B | 11.1 | 0.0 | |
| | NBT | A | 0.0 | - | A | 0.0 | - | |
| | NBR | A | 0.0 | - | A | 0.0 | - | |
| | SB | A | 1.2 | - | A | 0.3 | - | |
| 8.1. Water Plant Road WB | SBL | A | 9.9 | 10.0 | A | 9.7 | 5.0 | |
| | SBT | A | 0.0 | - | A | 0.0 | - | |
| | SBR | A | 0.0 | - | A | 0.0 | - | |
| | EB | B | 11.2 | 15.0 | B | 10.5 | 12.5 | |
| 8.2. Water Plant Road WB Ramp | NB | A | 7.6 | 0.0 | A | 7.5 | 0.0 | |
| | SB | A | 0.0 | - | A | 0.0 | - | |
| | EB | A | 0.0 | - | A | 0.0 | - | |
| | EBT | A | 0.0 | - | A | 0.0 | - | |
| | EBR | A | 0.0 | - | A | 0.0 | - | |
| | WB | A | 6.6 | - | A | 10.1 | - | |
| | WBL | A | 9.1 | 37.5 | B | 10.6 | 95.0 | |
| | WBT | A | 0.0 | - | A | 0.0 | - | |
| | SB | D | 28.3 | - | F | 477.4 | - | |
| | SBL | E | 42.4 | 20.0 | F | 766.9 | 8.5 | |
| | SBT/R | A | 9.2 | 2.5 | A | 8.5 | 0.1 | |
| 8.3. Water Plant Road EB Ramp | EB | A | 2.7 | - | A | 0.9 | - | |
| | EBL | A | 9.2 | 5.0 | A | 9.8 | 2.5 | |
| | EBT | A | 0.0 | - | A | 0.0 | - | |
| | WB | A | 0.0 | - | A | 0.0 | - | |
| | WBT | A | 0.0 | - | A | 0.0 | - | |
| | WBR | A | 0.0 | - | A | 0.0 | - | |
| | NB | C | 18.0 | - | C | 18.7 | - | |
| | NBL | B | 14.0 | 5.0 | B | 14.5 | 2.5 | |
| | NBT/R | C | 18.2 | 145.0 | C | 18.8 | 142.5 | |
| | WB | C | 31.0 | - | C | 32.1 | - | |
| | 8.4. Water Plant Road EB | WBL | C | 25.3 | 5.0 | C | 28.6 | 60.0 |
| WBR | | C | 31.8 | 13.0 | C | 34.9 | 35.0 | |
| NB | | B | 11.1 | - | C | 22.2 | - | |
| NBT | | B | 11.1 | 56.0 | C | 22.7 | 198.0 | |
| NBR | | A | 0.0 | 0.0 | B | 16.2 | 21.0 | |
| SB | | A | 6.8 | - | B | 17.5 | - | |
| SBL | | C | 27.6 | 64.0 | D | 43.8 | 252.0 | |
| SBT | | A | 3.9 | 62.0 | A | 5.5 | 76.0 | |
| EB | | A | 7.4 | 5.0 | A | 4.8 | 5.0 | |
| 9.1. Soapstone Road | | WB | A | 0.0 | - | A | 0.0 | - |
| | | SB | A | 9.1 | 10.0 | B | 10.8 | 10.0 |
| 9.2. Soapstone Road/ Main Street | EB | A | 0.0 | 0.0 | A | 7.5 | 2.5 | |
| | WB | A | 0.0 | - | A | 0.0 | - | |
| 10.1. Morehead Avenue Interchange SB Ramp | SB | A | 0.0 | - | B | 11.3 | 25.0 | |
| | WB | A | 10.0 | 30.0 | A | 9.1 | 2.5 | |
| | SB | B | 12.1 | - | D | 26.6 | - | |
| | SBL | B | 12.1 | 47.5 | D | 26.6 | 212.5 | |
| 10.2. Morehead Avenue Interchange NB Ramp | SBT | A | 7.8 | 0.0 | A | 7.3 | 0.0 | |
| | EB | A | 0.0 | - | A | 0.0 | - | |
| | EBL | A | 0.0 | - | A | 0.0 | - | |
| | EBT | A | 0.0 | - | A | 0.0 | - | |
| | WB | A | 0.0 | - | A | 0.0 | - | |
| | WBT | A | 0.0 | - | A | 0.0 | - | |
| | WBR | A | 0.0 | - | A | 0.0 | - | |
| | NB | B | 10.3 | - | B | 12.6 | - | |
| | NBT | A | 0.0 | - | A | 0.0 | - | |
| | NBR | B | 10.3 | 10.0 | B | 12.6 | 212.5 | |
| | 12.1. Reservoir Interchange WB Ramp | EB | A | 0.0 | - | A | 0.0 | - |
| EBT | | A | 0.0 | - | A | 0.0 | - | |
| EBR | | A | 0.0 | - | A | 0.0 | - | |
| WB | | A | 2.2 | - | A | 3.9 | - | |
| 12.2. Reservoir Interchange EB Ramp | WBL | A | 7.8 | 2.5 | A | 8.0 | 2.5 | |
| | WBT | - | - | - | - | - | | |
| | SB | A | 9.5 | 10.0 | A | 8.7 | 2.5 | |
| | EB | A | 7.8 | - | A | 7.9 | - | |
| 14.1. Route 58 Interchange Southern | EBL | A | 7.8 | 0.0 | A | 7.9 | 5.0 | |
| | EBT | A | 0.0 | - | A | 0.0 | - | |
| | WB | A | 0.0 | - | A | 0.0 | - | |
| | NB | A | 0.0 | - | A | 0.0 | - | |
| 14.2. Fisher Farm Road/Fisher Farm Road | WB | A | 9.7 | - | B | 10.1 | - | |
| | WBL | B | 11.0 | 2.5 | B | 11.9 | 0.0 | |
| | WBT/R | A | 9.6 | 27.5 | B | 10.0 | 35.0 | |
| | NB | A | 0.0 | - | A | 0.0 | - | |
| | NBL | A | 0.0 | 0.0 | A | 0.0 | 0.0 | |
| | NBT/R | A | 0.0 | - | A | 0.0 | - | |
| | SB | A | 4.9 | - | A | 6.5 | - | |
| | SBL | A | 7.4 | 7.5 | A | 7.6 | 10.0 | |
| | SBT/R | - | - | - | - | - | | |
| | EB | A | 0.0 | - | A | 0.0 | - | |
| | 14.3. Fisher Farm Road/Route 58 WB Ramp | WB | A | 1.7 | 0.0 | A | 2.1 | 2.5 |
| NB | | B | 11.5 | 32.5 | B | 13.2 | 50.0 | |
| 14.4. Fisher Farm Road/Route 58 EB Ramp | WB | B | 10.7 | 12.5 | A | 9.9 | 2.5 | |
| | NB | A | 0.0 | - | A | 0.0 | - | |
| 14.5. Fisher Farm Road/Route 58 EB Ramp | SB | A | 0.0 | - | A | 0.0 | - | |
| | EB | B | 11.2 | 12.5 | B | 11.4 | 10.0 | |
| 14.6. Fisher Farm Road/Route 58 EB Ramp | NB | A | 0.0 | - | A | 0.0 | - | |
| | SB | A | 2.5 | - | A | 1.2 | - | |

Martinsville Southern Connector Study

Route 220 Environmental Impact Statement

Table 9-2: Alternative D 2040 Capacity Analysis Summary

| Intersection | Movement | AM | | | PM | | |
|--|--|-----|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 1. Route 58 WB Ramp | Overall | A | 9.0 | - | B | 13.3 | - |
| | WB | C | 22.4 | - | C | 26.3 | - |
| | WBL/T | C | 24.0 | 111.0 | C | 29.2 | 198.0 |
| | WBR | B | 18.6 | 25.0 | B | 17.7 | 27.0 |
| | NB | A | 3.1 | 18.0 | A | 3.1 | 20.0 |
| | SB | A | 7.2 | - | B | 12.1 | - |
| | SBT | A | 7.3 | 84.0 | B | 12.4 | 195.0 |
| | SBR | A | 6.1 | 6.0 | A | 8.9 | 22.0 |
| 2. Route 58 EB Ramp | Overall | B | 12.0 | - | B | 14.6 | - |
| | EB | C | 24.5 | - | C | 28.8 | - |
| | EBL | C | 25.3 | 45.0 | C | 27.5 | 40.0 |
| | EBR | C | 24.3 | 43.0 | C | 29.1 | 73.0 |
| | NB | B | 13.2 | - | B | 16.9 | - |
| | NBT | B | 13.8 | 161.0 | B | 17.9 | 214.0 |
| | NBR | B | 10.5 | 24.0 | B | 12.9 | 41.0 |
| | SB | A | 6.5 | - | A | 9.9 | - |
| | SBL | C | 28.8 | 68.0 | C | 33.0 | 123.0 |
| | SBT | A | 3.3 | 50.0 | A | 6.3 | 170.0 |
| | SBR | A | 6.5 | - | A | 9.9 | - |
| 3. Kilarney Court/ Villa Road | EB | D | 28.0 | 10.0 | F | 116.0 | 50.0 |
| | WB | C | 23.8 | 10.0 | C | 19.0 | 7.5 |
| | NB | A | 0.0 | - | A | 0.1 | - |
| | NBL | A | 9.4 | 0.0 | B | 11.4 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.2 | - |
| | SBL | A | 9.8 | 0.0 | B | 10.5 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 4. Marrowbone Circle | WB | C | 21.8 | 22.5 | E | 40.4 | 45.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL/T | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.2 | - |
| | SBL/T | A | 9.6 | 0.0 | B | 10.3 | 2.5 |
| | SBT | A | 0.0 | - | A | 0.0 | - |
| 5. Shamrock Drive | EB | F | 68.6 | 5.6 | F | 443.5 | 397.5 |
| | NB | A | 0.0 | 140.0 | A | 0.0 | - |
| | SB | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| 6. Covington Lane | WB | C | 15.5 | 12.5 | C | 17.8 | 12.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.1 | - | A | 0.3 | - |
| | SBL | A | 9.0 | 0.0 | A | 9.6 | 5.0 |
| 7. Steve Drive/ Drewry Mason School Road | SBT | A | 0.0 | - | A | 0.0 | - |
| | EB | A | 0.0 | 0.0 | F | 53.0 | 30.0 |
| | NB | A | 0.0 | - | A | 0.1 | - |
| | NBL | A | 9.1 | 0.0 | B | 11.1 | 0.0 |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 1.2 | - | A | 0.3 | - |
| | SBL | A | 9.9 | 10.0 | A | 9.7 | 5.0 |
| 8.1. Water Plant Road WB | SBT | A | 0.0 | - | A | 0.0 | - |
| | SBR | A | 0.0 | - | A | 0.0 | - |
| | EB | B | 11.2 | 15.0 | B | 10.5 | 12.5 |
| | NB | A | 7.6 | 0.0 | A | 7.5 | 0.0 |
| 8.2. Water Plant Road WB Ramp | SB | A | 0.0 | - | A | 0.0 | - |
| | EB | A | 0.0 | - | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | EBR | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 6.6 | - | A | 10.1 | - |
| | WBL | A | 9.1 | 37.5 | B | 10.6 | 95.0 |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | SB | D | 28.3 | - | F | 477.4 | - |
| | SBL | E | 42.4 | 20.0 | F | 766.9 | 8.5 |
| | SBT/R | A | 9.2 | 2.5 | A | 8.5 | 0.1 |
| 8.3. Water Plant Road EB Ramp | EB | A | 2.7 | - | A | 0.9 | - |
| | EBL | A | 9.2 | 5.0 | A | 9.8 | 0.1 |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | WBR | A | 0.0 | - | A | 0.0 | - |
| | NB | C | 18.0 | - | C | 18.7 | - |
| | NBL | B | 14.0 | 5.0 | B | 14.5 | 0.1 |
| | NBT/R | C | 18.2 | 145.0 | C | 18.8 | 5.7 |
| | WB | C | 31.0 | - | C | 32.1 | - |
| | WBL | C | 25.3 | 5.0 | C | 28.6 | 60.0 |
| 8.4. Water Plant Road EB | WBR | C | 31.8 | 13.0 | C | 34.9 | 35.0 |
| | NB | B | 11.1 | - | C | 22.2 | - |
| | NBT | B | 11.1 | 56.0 | C | 22.7 | 198.0 |
| | NBR | A | 0.0 | 0.0 | B | 16.2 | 21.0 |
| | SB | A | 6.8 | - | B | 17.5 | - |
| | SBL | C | 27.6 | 64.0 | D | 43.8 | 252.0 |
| | SBT | A | 3.9 | 62.0 | A | 5.5 | 76.0 |
| | EB | A | 7.4 | 5.0 | A | 4.8 | 5.0 |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 9.1 | 10.0 | B | 10.8 | 10.0 |
| | EB | A | 0.0 | 0.0 | A | 7.5 | 2.5 |
| 9.1. Soapstone Road | WB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 9.1 | 10.0 | B | 10.8 | 10.0 |
| | EB | A | 0.0 | 0.0 | A | 7.5 | 2.5 |
| 9.2. Soapstone Road/ Main Street | WB | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 0.0 | - | B | 11.3 | 25.0 |
| | WB | A | 10.0 | 30.0 | A | 9.1 | 2.5 |
| 10.1. Morehead Avenue Interchange SB Ramp | SB | B | 12.1 | - | D | 26.6 | - |
| | SBL | B | 12.1 | 47.5 | D | 26.6 | 212.5 |
| | SBT | A | 7.8 | 0.0 | A | 7.3 | 0.0 |
| 10.2. Morehead Avenue Interchange NB Ramp | EB | A | 0.0 | - | A | 0.0 | - |
| | EBL | A | 0.0 | - | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | WBR | A | 0.0 | - | A | 0.0 | - |
| | NB | B | 10.3 | - | B | 12.6 | - |
| | NBT | A | 0.0 | - | A | 0.0 | - |
| | NBR | B | 10.3 | 10.0 | B | 12.6 | 212.5 |
| | EB | A | 0.0 | - | A | 0.0 | - |
| | 12.1. Reservoir Interchange WB Ramp | EBT | A | 0.0 | - | A | 0.0 |
| EBR | | A | 0.0 | - | A | 0.0 | - |
| WB | | A | 2.2 | - | A | 3.9 | - |
| WBL | | A | 7.8 | 2.5 | A | 8.0 | 2.5 |
| 12.2. Reservoir Interchange EB Ramp | WBT | - | - | - | - | - | |
| | SB | A | 9.5 | 10.0 | A | 8.7 | 2.5 |
| | EB | A | 7.8 | - | A | 7.9 | - |
| | EBL | A | 7.8 | 0.0 | A | 7.9 | 5.0 |
| 14.1. Route 58 Interchange Southern | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 9.7 | - | B | 10.1 | - |
| | WBL | B | 11.0 | 2.5 | B | 11.9 | 0.0 |
| | WBT/R | A | 9.6 | 27.5 | B | 10.0 | 35.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| | NBL | A | 0.0 | 0.0 | A | 0.0 | 0.0 |
| | NBT/R | A | 0.0 | - | A | 0.0 | - |
| | SB | A | 4.9 | - | A | 6.5 | - |
| | SBL | A | 7.4 | 7.5 | A | 7.6 | 10.0 |
| 14.2. Fisher Farm Road/Fisher Farm Road | SBT/R | - | - | - | - | - | |
| | EB | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 1.7 | 0.0 | A | 2.1 | 2.5 |
| 14.3. Fisher Farm Road/Route 58 WB Ramp | NB | B | 11.5 | 32.5 | B | 13.2 | 50.0 |
| | WB | B | 10.7 | 12.5 | A | 9.9 | 2.5 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| 14.4. Fisher Farm Road/Route 58 EB Ramp | SB | A | 0.0 | - | A | 0.0 | - |
| | EB | B | 11.2 | 12.5 | B | 11.4 | 10.0 |
| | NB | A | 0.0 | - | A | 0.0 | - |
| SB | A | 2.5 | - | A | 1.2 | - | |

There are some intersections, approaches and lane groups that would operate at or below capacity for both future design years, which are listed below.

Kilarney Court/Villa Road: The eastbound approach of Kilarney Court would operate with excessive delay during the PM peak hour only for both design years.

Marrowbone Circle: The westbound approach of Marrowbone Circle would operate with excessive delay during the PM peak hour only for both design years.

Shamrock Drive: The eastbound approach of Shamrock Drive would operate with excessive delay during both peak hours for both design years.

Water Plant Road Westbound Ramps: The southbound left-turn would operate with excessive delay during both peak hours for both design years.

9.2.1 Travel Times and Distances

Alternative D would provide a more direct connection with an improved travel time between the western boundary of the study area on Route 220/Route 58 and the southern project limit at the North Carolina state line, as shown in **Table 9-3**. Dark green boxes represent an improvement to both the travel time and a reduction in travel distance when compared to the No-Build Alternative. Light green indicates that either the travel time or distance would be improved. A dark red box means that both the travel time and distance between a destination pair would be longer than the No-Build Alternative; a light red box indicates that either the travel time or the distance would be increased over the No-Build Alternative.

Alternative D would result in a trip time savings of 1 minute and 45 seconds over the No-Build Alternative in the southbound direction and a savings of 1 minute and 10 seconds northbound for vehicles traveling between the southern and western limits of the study area. The travel distance between these two points northbound would be the same as the No-Build Alternative and southbound it would be reduced by 0.2 miles.

Table 9-3: Distances and Travel Times Between Study Area Entrances and Exits – Alternative D

| Origin/Destination | Route 58/Route 220 @ Cameron Road | Joseph Martin Highway @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | VA Route 87 @ Farmbrook Road | Route 220 @ North Carolina State Line |
|--|-----------------------------------|--|------------------------------------|-------------------------------|------------------------------|---------------------------------------|
| Route 58/Route 220 @ Cameron Road | | 2.1 miles (3:15) | 3.1 miles (4:00) | 4.8 miles (4:50) | 8.2 miles (11:30) | 9.3 miles (9:45) |
| Joseph Martin Highway @ Fisher Farm Road | 1.4 miles (1:40) | | 1.3 miles (2:15) | 3.6 miles (4:15) | 7.0 miles (10:30) | 8.1 miles (8:40) |
| Business Route 220 @ Old Sand Road | 3.0 miles (3:20) | 1.3 miles (2:15) | | 2.4 miles (3:15) | 5.9 miles (9:50) | 7.2 miles (9:00) |
| Route 58 @ Smith River Bridge | 4.8 miles (4:50) | 3.5 miles (4:10) | 2.3 miles (2:50) | | 7.8 miles (12:30) | 9.0 miles (11:25) |
| VA Route 87 @ Farmbrook Road | 8.4 miles (11:40) | 7.2 miles (10:45) | 5.9 miles (9:45) | 7.6 miles (10:45) | | 6.4 miles (8:50) |
| Route 220 @ North Carolina State Line | 9.7 miles (10:35) | 8.4 miles (8:55) | 7.2 miles (9:35) | 8.9 miles (11:00) | 6.4 miles (8:40) | |

Alternative D would maintain some of the existing connections between points of interest in the study area, as shown in **Table 9-4**; however, in Segments A and B, traveling from east to west across the Route 220 corridor would be more challenging. Green boxes indicate that the distance between those origins and destinations would decrease with this alternative, red boxes indicate an increase in travel distance.

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Table 9-4 Travel Distances Between Points of Interest in the Study Area – Alternative D

| Origin/Destination | Route 58/220 @ Cameron Road | Joseph Martin Hwy @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | Soapstone Road @ Joseph Martin Hwy | Magna Vista High School | Kilamey Court @ Route 220 | Villa Road @ Route 220 | Marrowbone Circle @ Route 220 | Shamrock Drive @ Route 220 | Covington Lane @ Route 220 | Steve Drive @ Route 220 | Drewry Mason Elementary School | Mica Road @ Route 220 | Water Plant Road @ Route 220 | Andra Drive @ Route 220 | Soapstone Road @ Route 220 | Main Street @ Route 220 | VA Route 87 @ Main Street | VA Route 87 @ Farmbrook Road | Lee Ford Camp Road @ Blackfeather Trl | Church Street @ Route 220 | Matrimony Creek Road @ Route 220 | Reservoir Road @ Route 220 | J.B. Dalton Road @ Route 220 | Route 220 @ North Carolina State Line |
|---------------------------------------|-----------------------------|--------------------------------------|------------------------------------|-------------------------------|------------------------------------|-------------------------|---------------------------|------------------------|-------------------------------|----------------------------|----------------------------|-------------------------|--------------------------------|-----------------------|------------------------------|-------------------------|----------------------------|-------------------------|---------------------------|------------------------------|---------------------------------------|---------------------------|----------------------------------|----------------------------|------------------------------|---------------------------------------|
| Route 58/220 @ Cameron Road | 2.1 | 3.1 | 4.8 | 3.8 | 5.1 | 2.9 | 2.9 | 3.2 | 3.3 | 3.5 | 3.8 | 3.8 | 4.2 | 4.2 | 4.8 | 5.2 | 5.3 | 6.0 | 8.2 | 6.9 | 6.8 | 9.5 | 8.4 | 9.0 | 9.3 | |
| Joseph Martin Hwy @ Fisher Farm Road | 1.4 | 1.3 | 3.6 | 2.5 | 3.8 | 1.8 | 1.8 | 2.1 | 2.2 | 2.4 | 2.7 | 2.7 | 3.1 | 3.1 | 3.7 | 4.1 | 4.1 | 4.8 | 7.0 | 5.7 | 5.6 | 8.4 | 7.3 | 7.8 | 8.1 | |
| Business Route 220 @ Old Sand Road | 3.0 | 1.3 | 2.4 | 4.2 | 5.5 | 0.6 | 0.6 | 0.9 | 1.0 | 1.2 | 1.5 | 1.5 | 1.9 | 1.9 | 2.6 | 2.9 | 3.1 | 3.7 | 5.9 | 4.7 | 4.6 | 7.4 | 6.2 | 6.8 | 7.2 | |
| Route 58 @ Smith River Bridge | 4.8 | 3.5 | 2.3 | 6.0 | 7.3 | 2.4 | 2.4 | 2.7 | 2.8 | 3.0 | 3.3 | 3.3 | 3.7 | 3.7 | 4.4 | 4.7 | 4.9 | 5.6 | 7.8 | 6.5 | 6.4 | 9.2 | 8.0 | 8.6 | 9.0 | |
| Soapstone Road @ Joseph Martin Hwy | 3.9 | 2.6 | 3.8 | 5.4 | 1.3 | 3.6 | 3.6 | 3.9 | 4.0 | 4.2 | 4.0 | 4.0 | 3.8 | 3.5 | 2.9 | 2.6 | 3.6 | 5.0 | 7.2 | 4.2 | 4.3 | 9.1 | 7.9 | 8.5 | 8.9 | |
| Magna Vista High School | 5.2 | 3.8 | 5.1 | 6.7 | 1.3 | 4.9 | 4.9 | 4.8 | 4.7 | 4.5 | 4.2 | 4.2 | 3.9 | 3.7 | 3.0 | 2.7 | 5.1 | 4.3 | 6.5 | 3.3 | 3.4 | 8.7 | 7.5 | 8.1 | 8.5 | |
| Kilamey Court @ Route 220 | 3.1 | 1.9 | 0.6 | 2.3 | 3.6 | 4.9 | 0.02 | 0.3 | 0.4 | 0.6 | 0.9 | 0.9 | 1.2 | 1.4 | 2.0 | 2.3 | 2.6 | 3.3 | 5.5 | 4.1 | 4.0 | 6.8 | 5.6 | 6.2 | 6.6 | |
| Villa Road @ Route 220 | 3.1 | 1.9 | 0.6 | 2.3 | 3.6 | 4.9 | 0.02 | 0.3 | 0.4 | 0.6 | 0.9 | 0.9 | 1.2 | 1.4 | 2.0 | 2.3 | 2.6 | 3.3 | 5.5 | 4.1 | 4.0 | 6.8 | 5.6 | 6.2 | 6.6 | |
| Marrowbone Circle @ Route 220 | 3.4 | 2.2 | 0.9 | 2.6 | 3.9 | 4.8 | 0.3 | 0.3 | 0.1 | 0.3 | 0.6 | 0.6 | 0.9 | 1.1 | 1.7 | 2.0 | 2.3 | 3.0 | 5.2 | 3.8 | 3.7 | 6.5 | 5.3 | 5.9 | 6.3 | |
| Shamrock Drive @ Route 220 | 3.5 | 2.3 | 1.0 | 2.7 | 4.0 | 4.7 | 0.4 | 0.4 | 0.1 | 0.2 | 0.5 | 0.5 | 0.8 | 1.0 | 1.6 | 1.9 | 2.2 | 2.9 | 5.1 | 3.7 | 3.6 | 6.4 | 5.2 | 5.8 | 6.2 | |
| Covington Lane @ Route 220 | 3.7 | 2.5 | 1.2 | 2.9 | 4.2 | 4.5 | 0.6 | 0.6 | 0.3 | 0.2 | 0.3 | 0.3 | 0.6 | 0.8 | 1.4 | 1.7 | 1.7 | 2.6 | 4.8 | 3.4 | 3.3 | 6.1 | 5.0 | 5.5 | 6.0 | |
| Steve Drive @ Route 220 | 4.0 | 2.8 | 1.5 | 3.2 | 3.9 | 4.2 | 0.9 | 0.9 | 0.6 | 0.5 | 0.3 | 0.02 | 0.3 | 0.5 | 1.1 | 1.4 | 1.4 | 2.3 | 4.5 | 3.1 | 3.0 | 5.8 | 4.7 | 5.2 | 5.7 | |
| Drewry Mason Elementary School | 4.0 | 2.8 | 1.5 | 3.2 | 3.9 | 4.2 | 0.9 | 0.9 | 0.6 | 0.5 | 0.3 | 0.02 | 0.3 | 0.5 | 1.1 | 1.4 | 1.4 | 2.3 | 4.5 | 3.1 | 3.0 | 5.8 | 4.7 | 5.2 | 5.7 | |
| Mica Road @ Route 220 | 4.4 | 3.2 | 1.9 | 3.7 | 3.6 | 3.9 | 1.2 | 1.2 | 0.9 | 0.8 | 0.6 | 0.3 | 0.3 | 0.20 | 0.8 | 1.1 | 1.1 | 2.0 | 4.2 | 2.8 | 2.7 | 5.5 | 4.3 | 4.9 | 5.3 | |
| Water Plant Road @ Route 220 | 4.4 | 3.3 | 2.0 | 3.7 | 3.5 | 3.7 | 1.3 | 1.3 | 1.0 | 0.9 | 0.7 | 0.4 | 0.4 | 0.20 | 0.6 | 0.9 | 1.7 | 2.1 | 4.3 | 3.0 | 2.9 | 5.7 | 4.5 | 5.1 | 5.5 | |
| Andra Drive @ Route 220 | 5.0 | 3.9 | 2.6 | 4.3 | 2.9 | 3.0 | 1.9 | 1.9 | 1.6 | 1.5 | 1.3 | 1.0 | 1.0 | 0.9 | 0.6 | 0.3 | 2.3 | 2.7 | 4.9 | 3.6 | 3.5 | 6.3 | 5.1 | 5.7 | 6.1 | |
| Soapstone Road @ Route 220 | 5.3 | 4.1 | 2.9 | 4.6 | 2.6 | 2.7 | 2.2 | 2.2 | 1.9 | 1.8 | 1.6 | 1.3 | 1.3 | 1.0 | 0.9 | 0.3 | 2.50 | 3.2 | 4.4 | 3.9 | 3.0 | 5.8 | 4.6 | 5.2 | 5.6 | |
| Main Street @ Route 220 | 5.7 | 4.3 | 3.2 | 4.9 | 3.6 | 5.1 | 2.5 | 2.5 | 2.2 | 2.1 | 1.9 | 1.6 | 1.6 | 1.2 | 1.3 | 2.3 | 2.50 | 0.9 | 3.1 | 1.8 | 1.7 | 5.2 | 4.0 | 4.6 | 5.0 | |
| VA Route 87 @ Main Street | 6.2 | 5.0 | 3.7 | 5.4 | 5.6 | 4.4 | 3.3 | 3.3 | 3.0 | 2.9 | 2.6 | 2.3 | 2.3 | 2.0 | 2.1 | 2.7 | 3.2 | 0.9 | 2.2 | 0.9 | 0.8 | 4.4 | 3.2 | 3.7 | 4.2 | |
| VA Route 87 @ Farmbrook Road | 8.4 | 7.2 | 5.9 | 7.6 | 7.8 | 7.2 | 5.5 | 5.5 | 5.2 | 5.1 | 4.8 | 4.5 | 4.5 | 4.2 | 4.3 | 4.0 | 5.4 | 3.1 | 2.2 | 3.1 | 3.0 | 6.6 | 5.4 | 5.9 | 6.4 | |
| Lee Ford Camp Road @ Blackfeather Trl | 7.1 | 5.5 | 4.2 | 5.9 | 4.4 | 3.3 | 4.0 | 4.0 | 3.7 | 3.6 | 3.4 | 3.1 | 3.1 | 2.7 | 2.8 | 3.4 | 3.9 | 1.7 | 0.9 | 3.1 | 0.1 | 4.9 | 4.1 | 4.6 | 5.1 | |
| Church Street @ Route 220 | 7.0 | 5.4 | 4.1 | 5.8 | 4.1 | 4.3 | 3.9 | 3.9 | 3.6 | 3.5 | 3.3 | 3.0 | 3.0 | 2.6 | 2.7 | 3.3 | 3.8 | 1.6 | 0.8 | 3.0 | 0.1 | 4.8 | 4.0 | 4.5 | 5.0 | |
| Matrimony Creek Road @ Route 220 | 9.9 | 8.3 | 7.4 | 9.0 | 9.1 | 8.7 | 6.8 | 6.8 | 6.5 | 6.4 | 6.2 | 5.9 | 5.9 | 5.6 | 5.6 | 6.3 | 6.8 | 5.1 | 4.3 | 6.5 | 4.9 | 4.8 | 1.2 | 0.6 | 2.2 | |
| Reservoir Road @ Route 220 | 8.8 | 7.8 | 6.5 | 8.2 | 8.2 | 7.8 | 5.9 | 5.9 | 5.6 | 5.5 | 5.3 | 5.0 | 5.0 | 4.7 | 4.7 | 5.4 | 5.9 | 4.1 | 3.3 | 5.5 | 4.2 | 4.1 | 1.2 | 0.6 | 0.9 | |
| J.B. Dalton Road @ Route 220 | 9.4 | 8.4 | 7.1 | 8.8 | 8.8 | 8.4 | 6.5 | 6.5 | 6.2 | 6.1 | 5.9 | 5.6 | 5.6 | 5.3 | 5.3 | 5.9 | 6.4 | 4.7 | 3.9 | 6.1 | 4.8 | 4.7 | 0.6 | 0.6 | 1.6 | |
| Route 220 @ North Carolina State Line | 9.7 | 8.4 | 7.2 | 8.9 | 9.2 | 8.8 | 6.6 | 6.6 | 6.3 | 6.2 | 6.0 | 5.7 | 5.7 | 5.3 | 5.3 | 6.3 | 6.8 | 5.0 | 4.2 | 6.4 | 5.1 | 5.0 | 2.2 | 1.0 | 1.5 | |

9.2.2 Overall Travel Time Results

Calculated average travel times using SimTraffic along the existing corridor between the North Carolina state line and the Route 58 interchange as well as between the border at the new interchange that the new alignment creates with Route 58 are shown in **Table 9-5**. Travel times generally would increase slightly from 2025 to 2040 along both corridors.

Table 9-5: Alternative D Travel Times (Seconds)

| Year | Southbound | | Northbound | |
|---------------------------|------------|-------|------------|-------|
| | AM | PM | AM | PM |
| Existing Alignment | | | | |
| 2025 | 387.2 | 369.4 | 442.6 | 453.3 |
| 2040 | 395.3 | 343.4 | 458.4 | 412.9 |
| New Alignment | | | | |
| 2025 | 435.5 | 400 | 473.3 | 479.7 |
| 2040 | 491.0 | 439.3 | 540.2 | 491.0 |

10. FUTURE BUILD ALTERNATIVE E ANALYSIS

Alternative E would follow the existing alignment of Route 220. Access would be controlled and provided only at interchanges at various locations in the corridor. Existing residential and commercial driveways would be directed to frontage roads that parallel the roadway, ultimately connecting to Route 220. New interchanges to provide frontage road access to Route 220 are located at Reservoir Road and Morehead Avenue. The Route 220 interchange at Route 58 would be modified to provide direct access between the new roadway, Route 58, and Business Route 220 to the north.

10.1 VOLUME SUMMARY

10.1.1 Daily Volumes

AADT volumes are shown for Alternative E for both 2025 and 2040 in **Figure 10-1**. Truck volumes and percentages along the roadway network are shown in **Figure 10-2**.

10.1.2 Peak Hour Volumes

AM and PM peak hour volumes for 2025 and 2040 Alternative E for each Route 220 study intersection were developed with the subarea travel demand model post-processing efforts, which are shown in **Figure 10-3** for 2025 and **Figure 10-4** for 2040.

Figure 10-1: Alternative E AADT

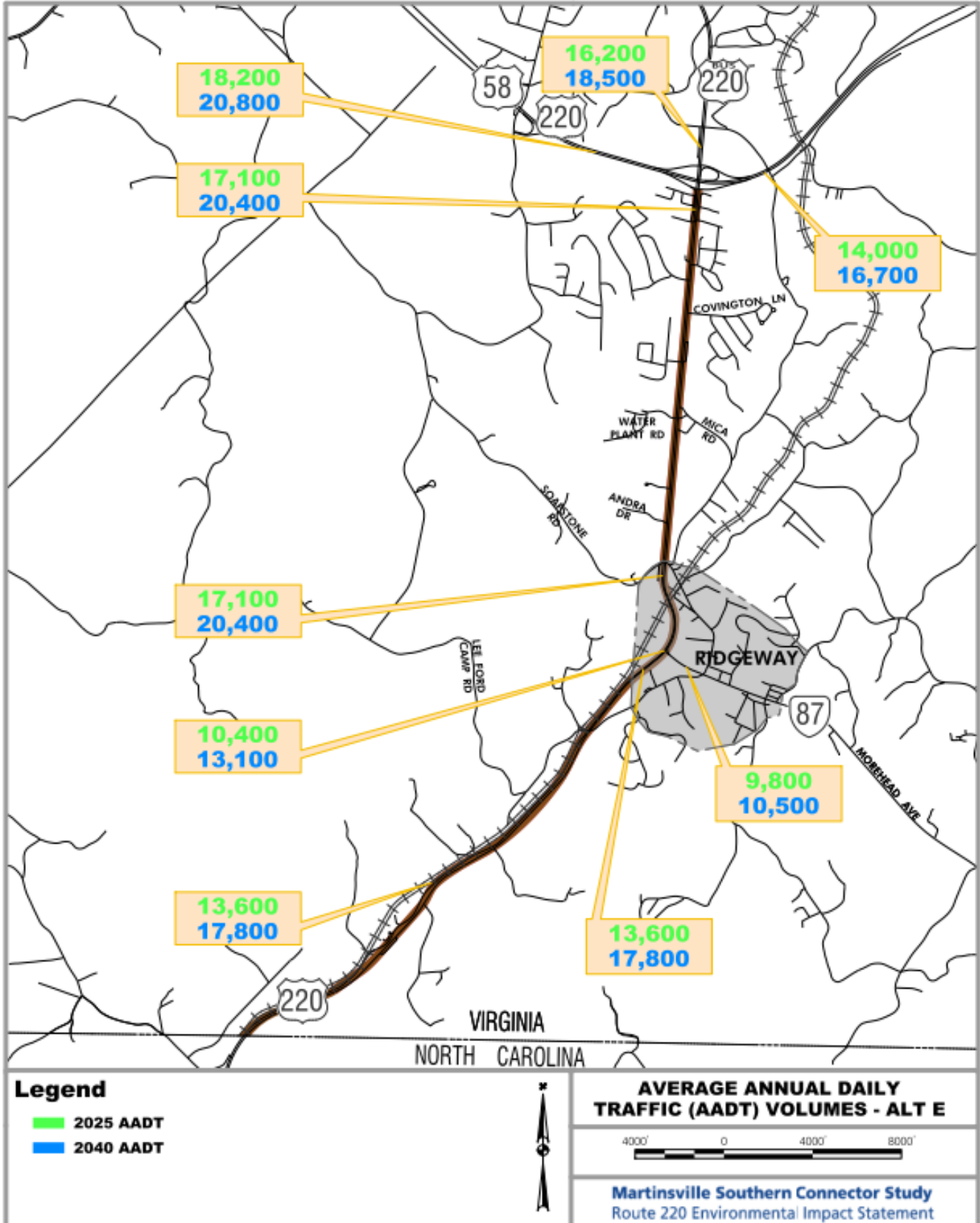


Figure 10-2: Alternative E Truck AADT and Percentages

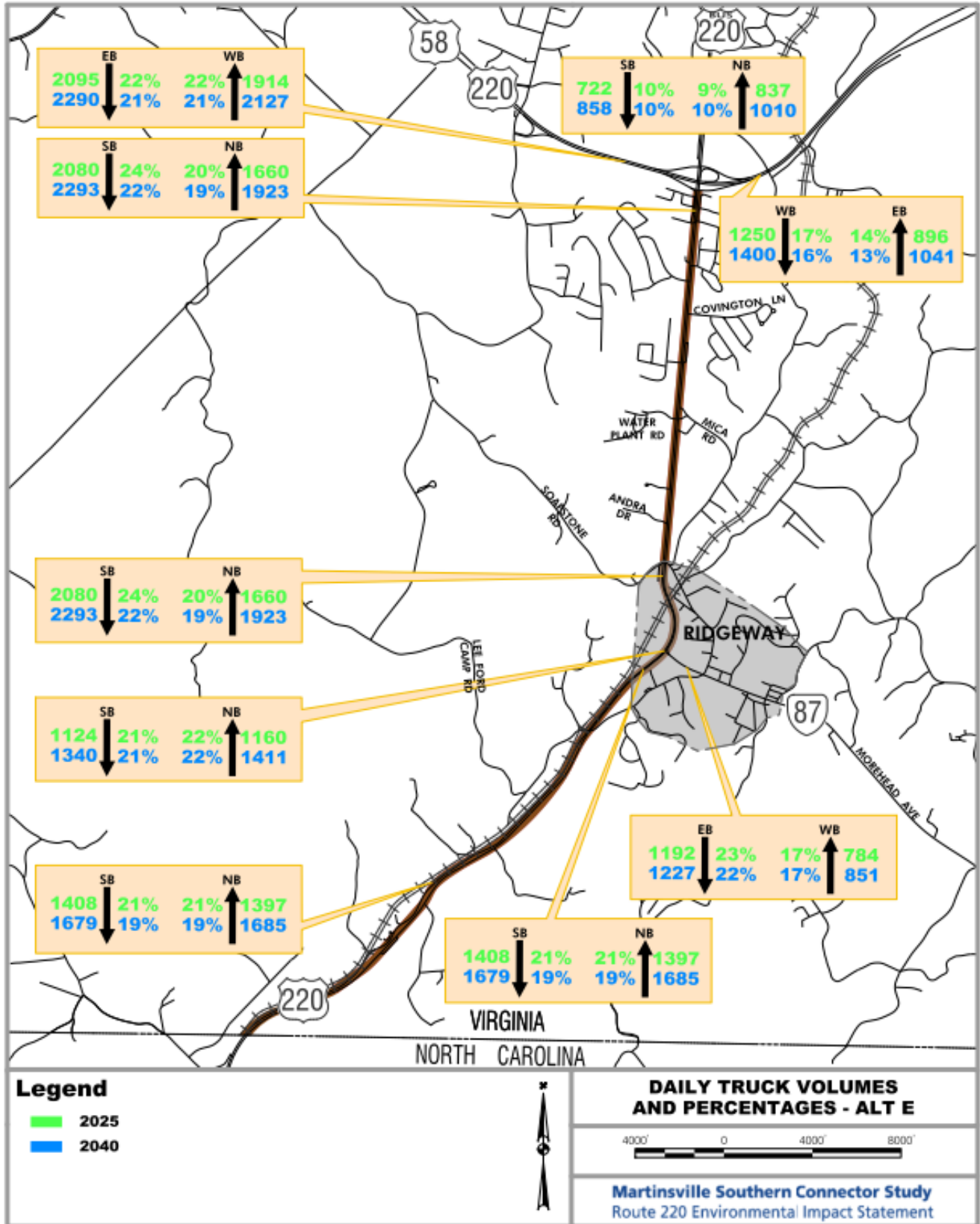


Figure 10-3: Alternative E 2025 Peak Hour Intersection Volumes

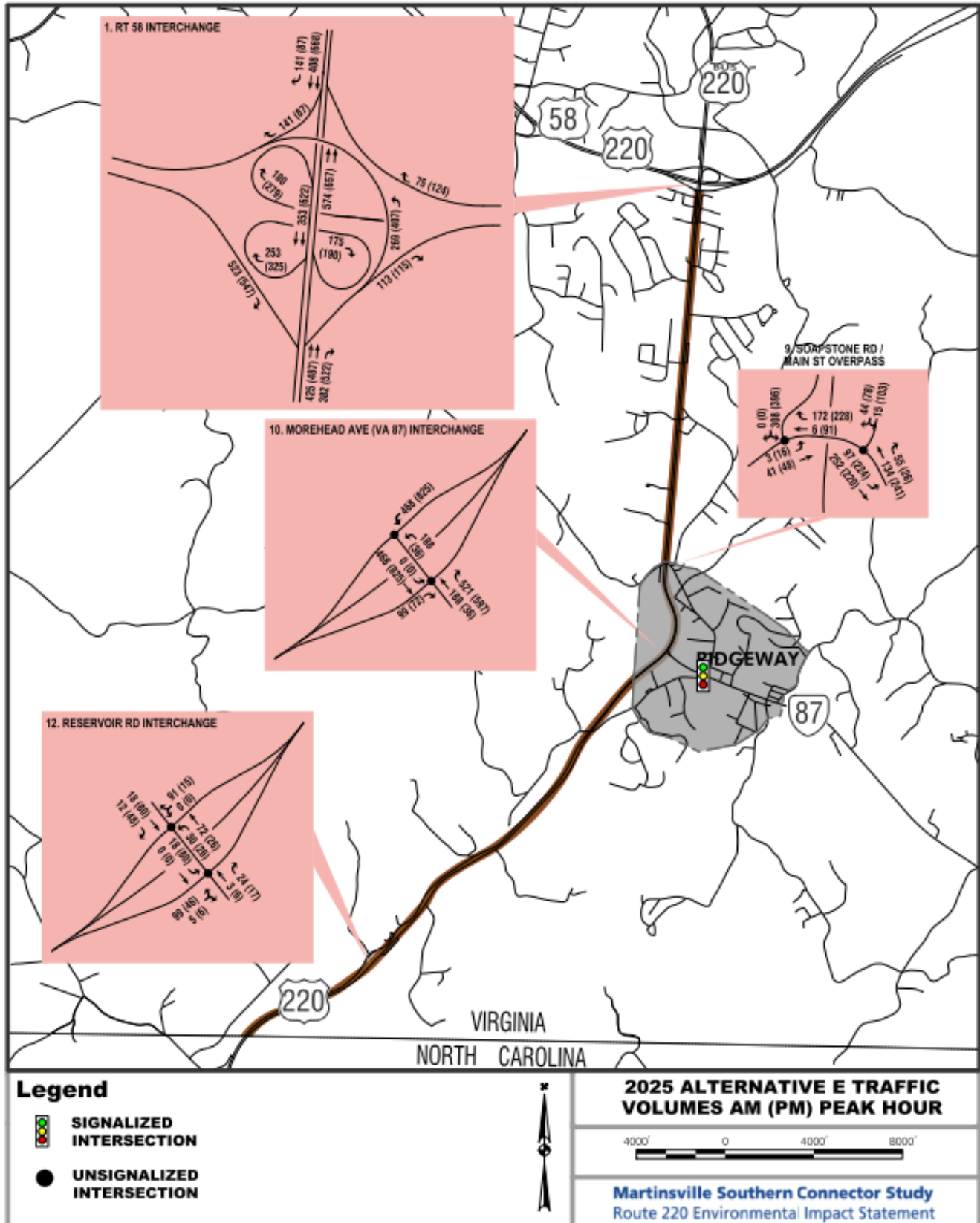
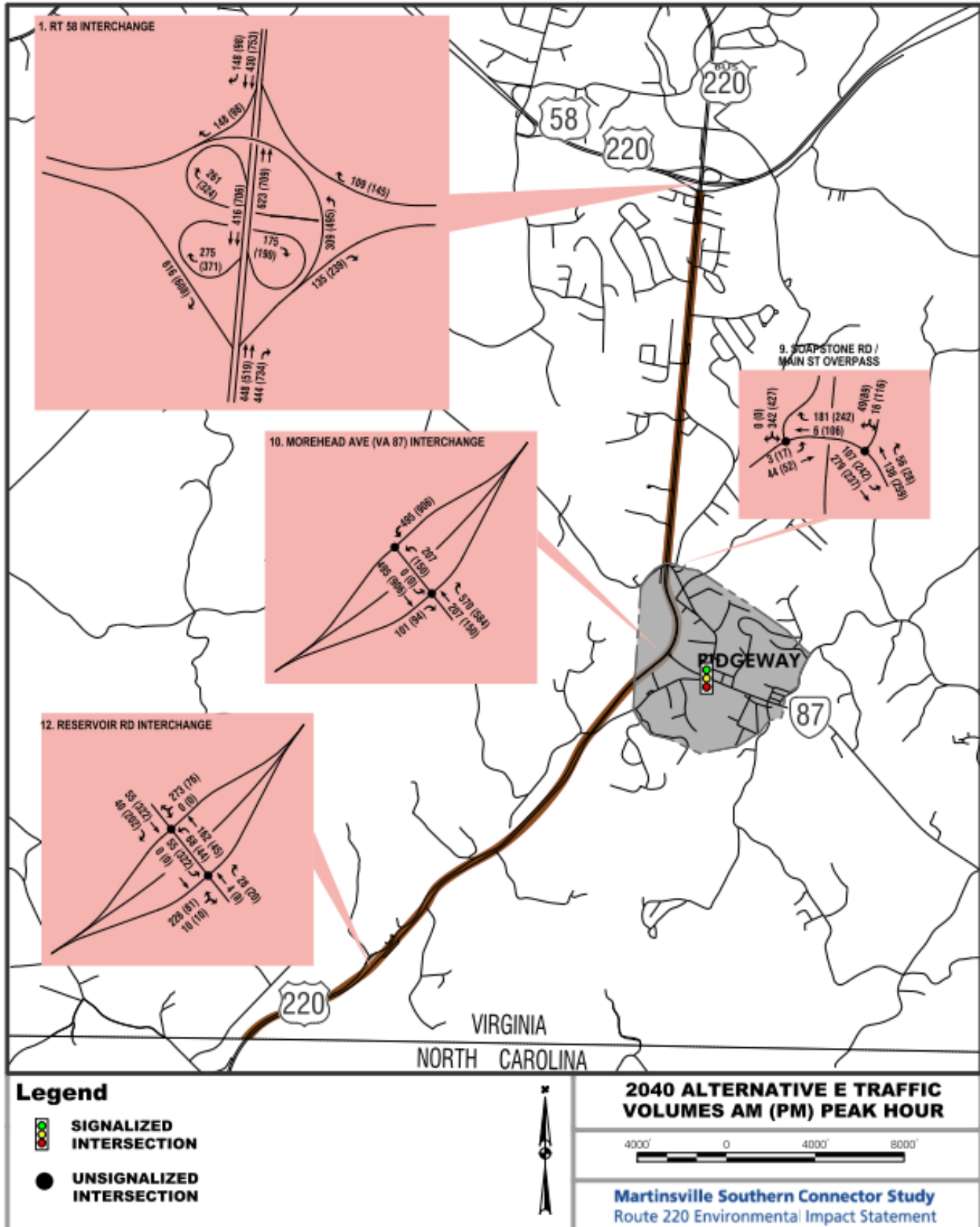


Figure 10-4: Alternative E 2040 Peak Hour Intersection Volumes



10.2 OPERATIONAL ANALYSES

10.2.1 Capacity Results

Capacity analysis was computed using Synchro 10. **Table 10-1** summarizes the levels of service, delays, and queues for the No-Build condition for 2025, and **Table 10-2** summarizes these values for 2040. Synchro worksheets are included in **Appendix L**.

There are some intersections, approaches and lane groups that would operate at or below capacity, which are listed below.

Morehead Avenue @ Route 220 SB Ramp: The southbound left-turn would experience extensive delays and queues during the PM peak hour in 2025 and both peak hours in 2040.

Table 10-1: 2025 Alternative E Capacity Analysis Summary

| Intersection | Movement | AM | | | PM | | |
|---|----------|-----|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 9.1. Soapstone Road | EB | A | 7.6 | 0.0 | A | 8.1 | 0.0 |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | SB | B | 12.4 | 52.5 | C | 21.4 | 135.0 |
| 9.2. Soapstone Road/ Main Street | EB | A | 7.9 | 7.5 | A | 8.1 | 0.0 |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | SB | B | 11.2 | 7.5 | C | 21.4 | 135.0 |
| 10.1. Morehead Avenue/ Route 220 SB Ramp | WB | B | 11.7 | 37.5 | B | 10.3 | 5.0 |
| | SB | D | 30.3 | - | F | 190.1 | - |
| | SBL | D | 30.3 | 222.5 | F | 190.1 | 992.5 |
| 10.2. Morehead Avenue/ Route 220 NB Ramp | SBT | A | 7.9 | 0.0 | A | 7.4 | 0.0 |
| | EB | A | 0.0 | - | A | 0 | - |
| | EBL | B | 13.5 | 20.0 | C | 20.6 | 25.0 |
| | EBT | A | 0.0 | - | A | 0 | - |
| | WB | A | 0.0 | - | A | 0 | - |
| | WBT | A | 0.0 | - | A | 0 | - |
| | WBR | A | 0.0 | - | A | 0 | - |
| | NB | B | 13.5 | - | C | 20.6 | - |
| | NBT | A | 0.0 | - | A | 0 | - |
| 12.1. Reservoir Interchange WB Ramp | NBR | B | 13.5 | 20.0 | C | 20.6 | 25.0 |
| | EB | A | 0.0 | - | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | EBR | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 2.2 | - | A | 4.1 | - |
| | WBL | A | 7.3 | 2.5 | A | 8.1 | 2.5 |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| 12.2. Reservoir Interchange EB Ramp | SB | A | 9.1 | 10 | A | 8.7 | 2.5 |
| | EB | A | 7.3 | - | A | 7.9 | - |
| | EBL | A | 7.3 | 0 | A | 7.9 | 5 |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| NB | A | 0.0 | - | A | 0.0 | - | |

Table 10-2: 2025 Alternative E Capacity Analysis Summary

| Intersection | Movement | AM | | | PM | | |
|---|----------|-----|-------------|------------|-----|-------------|------------|
| | | LOS | Delay (sec) | Queue (ft) | LOS | Delay (sec) | Queue (ft) |
| 9.1. Soapstone Road | EB | A | 8.1 | 2.5 | A | 7.7 | 0.0 |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | SB | D | 27.0 | 177.5 | B | 13.2 | 65.0 |
| 9.2. Soapstone Road/ Main Street | EB | A | 8.8 | 22.5 | A | 7.9 | 7.5 |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | SB | F | 82.2 | 207.5 | B | 11.6 | 10.0 |
| 10.1. Morehead Avenue/ Route 220 SB Ramp | WB | B | 13.2 | 27.5 | B | 12.6 | 45.0 |
| | SB | F | 309.6 | - | E | 42 | - |
| | SBL | F | 309.6 | 1422.5 | E | 42 | 287.5 |
| | SBT | A | 7.8 | 0.0 | A | 8 | 0.0 |
| 10.2. Morehead Avenue/ Route 220 NB Ramp | EB | A | 0.0 | - | A | 0.0 | - |
| | EBL | A | 0.0 | - | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| | WBR | A | 0.0 | - | A | 0.0 | - |
| | NB | D | 26.0 | - | B | 14 | - |
| | NBT | A | 0.0 | - | A | 0 | - |
| 12.1. Reservoir Interchange WB Ramp | NBR | D | 26.0 | 42.5 | B | 14 | 20.0 |
| | EB | A | 0.0 | - | A | 0.0 | - |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | EBR | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 4.9 | - | A | 2.4 | - |
| | WBL | A | 9.9 | 5 | A | 8.1 | 5 |
| | WBT | A | 0.0 | - | A | 0.0 | - |
| 12.2. Reservoir Interchange EB Ramp | SB | A | 9.1 | 7.5 | B | 12.3 | 45 |
| | EB | A | 8.8 | - | A | 7.9 | - |
| | EBL | A | 8.8 | 27.5 | A | 7.9 | 2.5 |
| | EBT | A | 0.0 | - | A | 0.0 | - |
| | WB | A | 0.0 | - | A | 0.0 | - |
| | NB | A | 0.0 | - | A | 0.0 | - |

10.2.2 Travel Times and Distances

Alternative E utilized the same roadway alignment as the No-Build Alternative but would provide an improved travel time between the western boundary of the study area on Route 220/Route 58 and the southern project limit at the North Carolina state line, as shown in **Table 10-3**. Dark green boxes represent an improvement to both the travel time and a reduction in travel distance when compared to the No-Build Alternative. Light green indicates that either the travel time or distance would be improved. A dark red box means that both the travel time and distance between a destination pair would be longer than the No-Build Alternative; a light red box indicates that either the travel time or the distance would be increased over the No-Build Alternative.

Alternative E resulted in a trip time savings of 1 minute and 30 seconds over the No-Build Alternative in the southbound direction, and a savings of 1 minute and 5 seconds northbound for vehicles traveling between the southern and western limits of the study area. The travel distance between these two points northbound was the same as the No-Build Alternative, and southbound it would be reduced by 0.1 miles.

Table 10-3: Distances and Travel Times Between Study Area Entrances and Exits – Alternative E

| Origin/Destination | Route 58/Route 220 @ Cameron Road | Joseph Martin Highway @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | VA Route 87 @ Farmbrook Road | Route 220 @ North Carolina State Line |
|--|-----------------------------------|--|------------------------------------|-------------------------------|------------------------------|---------------------------------------|
| Route 58/Route 220 @ Cameron Road | | 2.1 miles (2:50) | 3.3 miles (4:20) | 4.8 miles (4:50) | 8.2 miles (11:30) | 9.4 miles (10:00) |
| Joseph Martin Highway @ Fisher Farm Road | 1.4 miles (1:35) | | 1.3 miles (2:15) | 3.6 miles (4:15) | 7.0 miles (10:45) | 8.1 miles (8:55) |
| Business Route 220 @ Old Sand Road | 3.0 miles (3:15) | 1.3 miles (2:15) | | 2.6 miles (3:25) | 5.9 miles (9:25) | 7.2 miles (8:00) |
| Route 58 @ Smith River Bridge | 4.8 miles (4:50) | 3.5 miles (4:00) | 2.3 miles (2:45) | | 8.0 miles (10:55) | 9.3 miles (10:00) |
| VA Route 87 @ Farmbrook Road | 8.4 miles (11:55) | 7.2 miles (11:05) | 5.9 miles (9:00) | 7.6 miles (10:15) | | 6.4 miles (8:50) |
| Route 220 @ North Carolina State Line | 9.7 miles (10:40) | 8.5 miles (9:05) | 7.2 miles (8:00) | 8.9 miles (9:30) | 6.4 miles (8:40) | |

Alternative E maintained some of the existing connections between points of interest in the study area, as shown in **Table 10-4**, however traveling from east to west across the Route 220 corridor would be more challenging. Green boxes indicate that the distance between those origins and destinations would decrease with this alternative, red boxes indicate an increase in travel distance.

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Table 10-4: Travel Distances Between Points of Interest in the Study Area – Alternative E

| Origin/Destination | Route 58/220 @ Cameron Road | Joseph Martin Hwy @ Fisher Farm Road | Business Route 220 @ Old Sand Road | Route 58 @ Smith River Bridge | Soapstone Road @ Joseph Martin Hwy | Magna Vista High School | Kilamey Court @ Route 220 | Villa Road @ Route 220 | Marrowbone Circle @ Route 220 | Shamrock Drive @ Route 220 | Covington Lane @ Route 220 | Steve Drive @ Route 220 | Drewry Mason Elementary School | Mica Road @ Route 220 | Water Plant Road @ Route 220 | Andra Drive @ Route 220 | Soapstone Road @ Route 220 | Main Street @ Route 220 | VA Route 87 @ Main Street | VA Route 87 @ Farmbrook Road | Lee Ford Camp Road @ Blackfeather Trl | Church Street @ Route 220 | Matrimony Creek Road @ Route 220 | Reservoir Road @ Route 220 | J.B. Dalton Road @ Route 220 | Route 220 @ North Carolina State Line |
|---------------------------------------|-----------------------------|--------------------------------------|------------------------------------|-------------------------------|------------------------------------|-------------------------|---------------------------|------------------------|-------------------------------|----------------------------|----------------------------|-------------------------|--------------------------------|-----------------------|------------------------------|-------------------------|----------------------------|-------------------------|---------------------------|------------------------------|---------------------------------------|---------------------------|----------------------------------|----------------------------|------------------------------|---------------------------------------|
| Route 58/220 @ Cameron Road | 2.1 | 3.3 | 4.8 | 3.9 | 5.2 | 8.8 | 8.9 | 8.6 | 8.3 | 8.3 | 7.8 | 8.0 | 7.7 | 7.5 | 6.9 | 6.6 | 6.7 | 6.0 | 8.2 | 6.9 | 6.8 | 9.6 | 8.4 | 9.0 | 9.3 | |
| Joseph Martin Hwy @ Fisher Farm Road | 1.4 | 1.3 | 3.6 | 2.5 | 3.8 | 7.2 | 7.3 | 7.0 | 6.8 | 6.7 | 6.3 | 6.4 | 6.1 | 6.0 | 5.3 | 5.0 | 5.1 | 4.8 | 7.0 | 5.7 | 5.6 | 8.4 | 7.4 | 7.8 | 8.1 | |
| Business Route 220 @ Old Sand Road | 3.0 | 1.3 | 2.4 | 4.2 | 5.5 | 6.8 | 6.7 | 6.4 | 6.4 | 6.1 | 5.9 | 5.8 | 5.5 | 5.5 | 4.8 | 4.6 | 4.5 | 3.7 | 5.9 | 4.7 | 4.6 | 7.4 | 6.2 | 6.8 | 7.2 | |
| Route 58 @ Smith River Bridge | 4.8 | 3.5 | 2.3 | 6.0 | 7.3 | 8.9 | 8.8 | 8.5 | 8.5 | 8.2 | 8.0 | 7.9 | 7.6 | 7.6 | 6.9 | 6.7 | 4.9 | 5.8 | 8.0 | 6.7 | 6.6 | 9.5 | 8.3 | 8.9 | 9.3 | |
| Soapstone Road @ Joseph Martin Hwy | 3.9 | 2.5 | 3.8 | 5.4 | 1.3 | 4.8 | 4.9 | 4.6 | 4.6 | 4.3 | 3.9 | 4.1 | 3.8 | 3.5 | 2.9 | 2.6 | 2.7 | 3.6 | 5.8 | 4.5 | 4.4 | 7.8 | 6.6 | 7.2 | 7.6 | |
| Magna Vista High School | 5.2 | 3.8 | 5.1 | 6.7 | 1.3 | 4.9 | 5.0 | 4.8 | 4.6 | 4.5 | 4.0 | 4.2 | 3.9 | 3.6 | 3.0 | 2.7 | 2.8 | 3.7 | 5.9 | 4.6 | 4.5 | 7.9 | 6.7 | 7.3 | 7.7 | |
| Kilamey Court @ Route 220 | 8.7 | 7.3 | 5.9 | 8.3 | 4.2 | 4.9 | 4.8 | 4.5 | 4.4 | 4.1 | 0.9 | 3.8 | 3.5 | 1.3 | 1.9 | 2.2 | 2.3 | 3.2 | 5.4 | 4.1 | 4.0 | 7.4 | 6.2 | 6.8 | 7.2 | |
| Villa Road @ Route 220 | 7.1 | 5.7 | 4.4 | 7.1 | 4.3 | 5.1 | 4.8 | 0.3 | 4.6 | 0.6 | 4.0 | 0.9 | 1.3 | 3.6 | 3.0 | 2.7 | 2.6 | 3.3 | 5.5 | 4.1 | 4.0 | 7.4 | 6.2 | 6.8 | 7.2 | |
| Marrowbone Circle @ Route 220 | 6.9 | 5.5 | 4.2 | 6.9 | 4.0 | 4.8 | 4.5 | 0.3 | 4.3 | 0.3 | 3.7 | 0.6 | 1.0 | 3.3 | 2.7 | 2.4 | 2.2 | 3.0 | 5.2 | 3.8 | 3.7 | 7.1 | 5.9 | 6.5 | 6.9 | |
| Shamrock Drive @ Route 220 | 8.3 | 6.9 | 5.5 | 7.8 | 4.4 | 4.6 | 0.4 | 4.4 | 4.1 | 3.7 | 0.5 | 3.4 | 3.1 | 0.9 | 1.5 | 1.8 | 1.9 | 2.8 | 5.0 | 3.6 | 3.5 | 6.9 | 5.7 | 6.3 | 6.7 | |
| Covington Lane @ Route 220 | 6.5 | 5.1 | 3.8 | 6.5 | 4.7 | 4.4 | 4.3 | 0.6 | 0.3 | 3.9 | 3.3 | 0.3 | 0.7 | 2.9 | 2.3 | 2.0 | 1.9 | 2.7 | 4.9 | 3.5 | 3.4 | 6.8 | 5.7 | 6.3 | 6.7 | |
| Steve Drive @ Route 220 | 7.6 | 6.2 | 4.9 | 7.6 | 3.9 | 4.0 | 0.9 | 4.0 | 3.7 | 0.5 | 3.3 | 3.00 | 2.7 | 0.4 | 1.0 | 1.3 | 1.4 | 2.3 | 4.5 | 3.1 | 3.0 | 6.5 | 5.3 | 5.9 | 6.3 | |
| Drewry Mason Elementary School | 6.2 | 4.8 | 3.5 | 6.2 | 4.4 | 4.1 | 4.0 | 0.9 | 0.6 | 3.6 | 0.3 | 3.00 | 0.4 | 2.5 | 2.0 | 1.7 | 1.6 | 2.4 | 4.6 | 3.2 | 3.1 | 6.6 | 5.4 | 6.0 | 6.4 | |
| Mica Road @ Route 220 | 5.9 | 4.5 | 3.2 | 5.9 | 4.1 | 3.8 | 3.6 | 1.3 | 1.0 | 3.2 | 0.7 | 2.6 | 0.4 | 2.20 | 1.7 | 1.4 | 1.3 | 2.1 | 4.3 | 2.9 | 2.8 | 6.3 | 5.1 | 5.7 | 6.1 | |
| Water Plant Road @ Route 220 | 7.2 | 5.8 | 4.5 | 7.2 | 3.5 | 3.6 | 1.3 | 3.6 | 3.3 | 0.9 | 2.9 | 0.4 | 2.6 | 2.20 | 0.6 | 0.9 | 1.0 | 1.8 | 4.0 | 2.6 | 2.5 | 6.0 | 4.8 | 5.4 | 5.8 | |
| Andra Drive @ Route 220 | 6.7 | 5.3 | 3.9 | 6.6 | 2.9 | 3.0 | 1.9 | 2.9 | 2.6 | 1.5 | 2.2 | 1.0 | 1.9 | 0.9 | 0.6 | 0.3 | 0.4 | 1.2 | 3.4 | 2.0 | 1.9 | 5.4 | 4.2 | 4.8 | 5.2 | |
| Soapstone Road @ Route 220 | 6.4 | 5.0 | 3.6 | 6.3 | 2.6 | 2.7 | 2.2 | 2.6 | 2.3 | 1.8 | 1.9 | 1.3 | 1.6 | 1.3 | 0.9 | 0.3 | 0.10 | 1.0 | 3.2 | 1.8 | 1.7 | 5.1 | 3.9 | 4.5 | 4.9 | |
| Main Street @ Route 220 | 6.3 | 4.9 | 3.5 | 4.9 | 2.7 | 2.8 | 2.4 | 2.5 | 2.2 | 1.9 | 1.9 | 1.4 | 1.5 | 1.2 | 1.0 | 0.4 | 0.10 | 0.9 | 3.1 | 1.7 | 1.6 | 5.0 | 3.8 | 4.4 | 4.8 | |
| VA Route 87 @ Main Street | 6.2 | 5.0 | 3.7 | 5.4 | 3.5 | 3.6 | 3.2 | 3.2 | 2.9 | 2.9 | 2.6 | 2.4 | 2.3 | 2.0 | 1.9 | 1.3 | 1.0 | 0.9 | 2.2 | 0.9 | 0.8 | 4.4 | 3.2 | 3.7 | 4.2 | |
| VA Route 87 @ Farmbrook Road | 8.4 | 7.2 | 5.9 | 7.6 | 5.7 | 5.8 | 5.4 | 5.4 | 5.2 | 5.1 | 4.8 | 4.6 | 4.5 | 4.2 | 4.3 | 3.5 | 3.2 | 3.1 | 2.2 | 3.1 | 3.0 | 6.6 | 5.4 | 5.9 | 6.4 | |
| Lee Ford Camp Road @ Blackfeather Trl | 7.1 | 5.9 | 4.6 | 6.3 | 4.4 | 3.3 | 4.0 | 4.0 | 3.7 | 3.6 | 3.4 | 3.1 | 3.1 | 2.7 | 2.8 | 2.2 | 3.9 | 1.7 | 0.9 | 3.1 | 0.1 | 4.9 | 4.1 | 4.6 | 5.1 | |
| Church Street @ Route 220 | 7.0 | 5.8 | 4.5 | 6.2 | 4.3 | 3.4 | 3.9 | 3.9 | 3.6 | 3.5 | 3.3 | 3.0 | 3.0 | 2.6 | 2.7 | 2.1 | 3.8 | 1.6 | 0.8 | 3.0 | 0.1 | 4.8 | 4.0 | 4.5 | 5.0 | |
| Matrimony Creek Road @ Route 220 | 9.9 | 8.3 | 7.4 | 8.9 | 8.1 | 8.2 | 7.4 | 7.4 | 7.1 | 6.9 | 6.8 | 6.5 | 6.6 | 6.3 | 6.0 | 5.4 | 5.1 | 5.0 | 4.4 | 6.6 | 4.9 | 4.8 | 1.2 | 0.6 | 2.2 | |
| Reservoir Road @ Route 220 | 8.9 | 7.7 | 6.4 | 7.9 | 8.2 | 7.8 | 6.4 | 6.3 | 6.0 | 5.9 | 5.7 | 5.5 | 5.4 | 5.0 | 5.1 | 4.5 | 4.2 | 4.1 | 3.2 | 5.4 | 4.1 | 4.0 | 1.2 | 0.6 | 0.9 | |
| J.B. Dalton Road @ Route 220 | 9.5 | 8.3 | 7.1 | 8.6 | 8.8 | 8.4 | 7.0 | 6.9 | 6.6 | 6.5 | 6.3 | 6.1 | 6.0 | 5.6 | 5.7 | 5.1 | 4.8 | 4.7 | 3.8 | 6.0 | 4.7 | 4.6 | 0.6 | 0.6 | 1.6 | |
| Route 220 @ North Carolina State Line | 9.7 | 8.4 | 7.2 | 8.8 | 9.2 | 8.8 | 7.4 | 7.2 | 6.9 | 6.8 | 6.6 | 6.4 | 6.3 | 5.9 | 6.0 | 5.4 | 5.1 | 5.0 | 4.1 | 6.3 | 5.0 | 4.9 | 2.2 | 2.4 | 1.5 | |

10.2.3 Overall Travel Time Results

Travel times along the existing corridor between the North Carolina state line and the Route 58 interchange as well as between the border at the new interchange that the new alignment creates with Route 58 are shown in **Table 10-5**. Travel times would be extensive southbound during the PM peak hour. The location where traffic queues would occur is north of the ramp to Route 220 southbound toward the North Carolina state line.

Table 10-5: Alternative E Travel Times (Seconds)

| Year | Southbound | | Northbound | |
|------|------------|--------|------------|-------|
| | AM | PM | AM | PM |
| 2025 | 823.7 | 2250.6 | 491.7 | 494.5 |
| 2040 | 782.5 | 2938.6 | 490.3 | 694.9 |

11. CONCLUSIONS

Auto and truck volumes were collected and developed for the Route 220 study corridor for existing, future 2025 and 2040 No-Build and future 2025 and 2040 build conditions for five alternative alignments. Capacity at the study intersections and corridor travel times were evaluated for each condition and design year. **Table 11-1** summarizes the travel time results for each condition compare the effects of each alternative build condition with the No-Build conditions.

Table 11-1: Travel Times Summary (Seconds)

| Alternative | Year | Southbound | | Northbound | |
|-------------|---------------------------|------------|--------|------------|-------|
| | | AM | PM | AM | PM |
| Existing | 2018 | 495.9 | 542.5 | 539.4 | 576.0 |
| No-Build | 2025 | 478.7 | 581.0 | 577.2 | 582.1 |
| | 2040 | 507.7 | 457.8 | 595.3 | 567.2 |
| A | Existing Alignment | | | | |
| | 2025 | 480.6 | 517.2 | 489.2 | 491.8 |
| | 2040 | 521.6 | 521.7 | 519.8 | 517.3 |
| | New Alignment | | | | |
| | 2025 | 338.7 | 336.3 | 384.1 | 364.1 |
| | 2040 | 343.6 | 348.6 | 363.5 | 380.5 |
| B | Existing Alignment | | | | |
| | 2025 | 500.3 | 399.2 | 493.0 | 513.8 |
| | 2040 | 509.6 | 512.4 | 507.3 | 506.8 |
| | New Alignment | | | | |
| | 2025 | 399.2 | 399.4 | 385.3 | 387.1 |
| | 2040 | 412.8 | 411.4 | 388.3 | 388.9 |
| C | Existing Alignment | | | | |
| | 2025 | 429.4 | 505.7 | 447.6 | 508.5 |
| | 2040 | 505.2 | 510.9 | 519.6 | 520.2 |
| | New Alignment | | | | |
| | 2025 | 378.8 | 378.1 | 356.7 | 333.9 |
| | 2040 | 381.5 | 381.6 | 359.7 | 359.8 |
| D | Existing Alignment | | | | |
| | 2025 | 387.2 | 369.4 | 442.6 | 453.3 |
| | 2040 | 395.3 | 343.4 | 458.4 | 412.9 |
| | New Alignment | | | | |
| | 2025 | 435.5 | 400.0 | 473.3 | 479.7 |
| | 2040 | 491.0 | 439.3 | 540.2 | 491.0 |
| E | 2025 | 823.7 | 2250.6 | 491.7 | 494.5 |
| | 2040 | 782.5 | 2938.6 | 490.3 | 694.9 |

No-Build: Though it varies, travel times would slightly increase under future conditions compared to existing conditions in both directions.

Alternative A: Compared to No-Build conditions, travel times would improve along the northbound existing alignment and travel times would notably improve along the new alignment for both future design years.

Alternative B: Compared to No-Build conditions, travel times would improve along the northbound existing alignment and travel times would notably improve along the new alignment for both future design years.

Alternative C: Compared to No-Build conditions, travel times would improve along the existing alignment in both directions (except for 2040 PM) and travel times would notably improve along the new alignment for both future design years.

Alternative D: Compared to No-Build conditions, travel times would improve along the existing alignment in both directions; however, travel times would be higher along the new alignment for both future design years.

Alternative E: Compared to No-Build conditions, travel times would be mostly higher along the existing alignment in both directions for both future design years. There would be some travel time improvement along northbound compared to Alternatives A, B and C.

12. REFERENCES & RESOURCES

- Citilabs, Inc. (2018). *Cube Analyst Drive: Reference Guide*.
- County of Henry, Virginia (County of Henry). 2019. *Budget FY 2019-2020, April 2019*.
- Virginia Department of Transportation (VDOT). 2014. *Travel Demand Modeling Policies and Procedures*. Retrieved from:
http://www.virginiadot.org/projects/resources/vtm/VTM_Policy_Manual.pdf
- Virginia Department of Transportation (VDOT). 2019. *Six-Year Improvement Program*. Retrieved from <http://syip.virginiadot.org/Pages/allProjects.aspx>
- Virginia Department of Transportation (VDOT). 2020b. *Martinsville Southern Connector Study Alternatives Technical Report*.
- Virginia Department of Transportation (VDOT). 2020j. *Martinsville Southern Connector Study Indirect and Cumulative Effects Technical Report*.

APPENDIX A

MACHINE COUNT WORKSHEETS

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|----|----|---|---|---|---|---|---|----|----|----|----|----|----|-------|
| 00:15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 00:30 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 00:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 01:00 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Hour Total | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 01:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:00 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hour Total | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 03:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hour Total | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:30 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Hour Total | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 05:15 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 05:30 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 05:45 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 06:00 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| Hour Total | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 15 |
| 06:15 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 06:30 | 0 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 20 |
| 06:45 | 0 | 13 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 07:00 | 0 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Hour Total | 0 | 41 | 8 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 56 |
| 07:15 | 0 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 07:30 | 0 | 18 | 4 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 07:45 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 08:00 | 0 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Hour Total | 0 | 73 | 8 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| 08:15 | 0 | 16 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 08:30 | 0 | 15 | 5 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 08:45 | 0 | 15 | 5 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 09:00 | 0 | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 16 |
| Hour Total | 0 | 55 | 21 | 1 | 1 | 0 | 0 | 1 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 86 |

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|----|----|---|---|---|---|---|---|----|----|----|----|----|----|-------|
| 09:15 | 0 | 6 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 09:30 | 0 | 12 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 09:45 | 0 | 8 | 4 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 10:00 | 0 | 10 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Hour Total | 0 | 36 | 10 | 0 | 4 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 10:15 | 1 | 5 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 10:30 | 0 | 8 | 4 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 18 |
| 10:45 | 1 | 6 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 11:00 | 0 | 20 | 3 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| Hour Total | 2 | 39 | 10 | 0 | 3 | 1 | 0 | 3 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 65 |
| 11:15 | 0 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 11:30 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 11:45 | 0 | 7 | 6 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 12:00 | 0 | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Hour Total | 0 | 34 | 15 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| 12:15 | 0 | 17 | 8 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 12:30 | 0 | 17 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 12:45 | 0 | 14 | 4 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 13:00 | 0 | 8 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Hour Total | 0 | 56 | 18 | 0 | 2 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 85 |
| 13:15 | 0 | 22 | 5 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 13:30 | 0 | 15 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 13:45 | 1 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 14:00 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Hour Total | 1 | 62 | 11 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| 14:15 | 0 | 14 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 14:30 | 0 | 16 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 14:45 | 0 | 11 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 15:00 | 1 | 16 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 21 |
| Hour Total | 1 | 57 | 13 | 0 | 1 | 0 | 0 | 1 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 81 |
| 15:15 | 0 | 18 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 15:30 | 0 | 11 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 15:45 | 0 | 20 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 16:00 | 0 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Hour Total | 0 | 64 | 10 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| 16:15 | 1 | 17 | 8 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 31 |
| 16:30 | 1 | 32 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 16:45 | 0 | 25 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 17:00 | 0 | 18 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| Hour Total | 2 | 92 | 17 | 0 | 1 | 1 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 120 |
| 17:15 | 0 | 32 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 17:30 | 0 | 21 | 7 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 17:45 | 0 | 22 | 6 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 18:00 | 0 | 18 | 10 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| Hour Total | 0 | 93 | 28 | 0 | 2 | 1 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 130 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|--------|
| 18:15 | 0 | 20 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 18:30 | 0 | 12 | 7 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 18:45 | 1 | 20 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 19:00 | 0 | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Hour Total | 1 | 61 | 23 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 19:15 | 0 | 11 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 19:30 | 0 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 19:45 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| 20:00 | 0 | 15 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Hour Total | 0 | 46 | 7 | 0 | 3 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 59 |
| 20:15 | 1 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 20:30 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 20:45 | 1 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 15 |
| 21:00 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Hour Total | 2 | 31 | 6 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 43 |
| 21:15 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 21:30 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 21:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 22:00 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Hour Total | 1 | 23 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 22:15 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 22:30 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| 22:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 23:00 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Hour Total | 0 | 14 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 19 |
| 23:15 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 23:30 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 23:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 24:00 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Hour Total | 0 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| DAY TOTAL | 10 | 906 | 219 | 2 | 22 | 5 | 0 | 15 | 86 | 0 | 9 | 4 | 0 | 0 | 0 | 1278 |
| PERCENTS | 0.8% | 70.9% | 17.1% | 0.2% | 1.7% | 0.4% | 0.0% | 1.2% | 6.7% | 0.0% | 0.7% | 0.3% | 0.0% | 0.0% | 0.0% | 100.0% |

Passenger Vehicles 88.8% Trucks & Buses 11.2%

| | | | | | | | | | | | |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| AM Times | 10:00 | 07:30 | 08:15 | 08:00 | 09:15 | 10:15 | 01:45 | 09:45 | 03:00 | 05:45 | 08:00 |
| AM Peaks | 2 | 75 | 21 | 1 | 4 | 1 | 3 | 9 | 1 | 2 | 91 |
| PM Times | 15:45 | 16:30 | 17:30 | 12:30 | 14:45 | 11:00 | 11:45 | 12:00 | 20:00 | 17:15 | |
| PM Peaks | 2 | 107 | 30 | 1 | 3 | 2 | 1 | 10 | 2 | 130 | |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|----|----|---|---|---|---|---|---|----|----|----|----|----|----|-------|
| 00:15 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 00:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 00:45 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:00 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Hour Total | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 02:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| 04:15 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 05:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Hour Total | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| 05:30 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 05:45 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 06:00 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Hour Total | 0 | 9 | 4 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 17 |
| 06:15 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 06:30 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 |
| 06:45 | 0 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| 07:00 | 0 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Hour Total | 0 | 35 | 5 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 45 |
| 07:15 | 0 | 18 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 07:30 | 0 | 11 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 07:45 | 1 | 20 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 08:00 | 0 | 26 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 34 |
| Hour Total | 1 | 75 | 18 | 1 | 1 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 101 |
| 08:15 | 0 | 14 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 08:30 | 0 | 16 | 5 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 08:45 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 09:00 | 0 | 15 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Hour Total | 0 | 54 | 16 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|---|---|---|---|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 09:30 | 0 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 |
| 09:45 | 0 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 10:00 | 0 | 6 | 1 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Hour Total | 0 | 47 | 9 | 0 | 1 | 0 | 0 | 2 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 64 |
| 10:15 | 0 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 10:30 | 0 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 10:45 | 0 | 9 | 2 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 15 |
| 11:00 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Hour Total | 0 | 34 | 11 | 0 | 1 | 0 | 0 | 1 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 58 |
| 11:15 | 0 | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 11:30 | 0 | 17 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 11:45 | 0 | 14 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 12:00 | 0 | 15 | 7 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| Hour Total | 0 | 52 | 20 | 0 | 1 | 1 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 81 |
| 12:15 | 0 | 14 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 12:30 | 0 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 12:45 | 0 | 12 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 13:00 | 1 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| Hour Total | 1 | 59 | 14 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| 13:15 | 0 | 8 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 14 |
| 13:30 | 0 | 10 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 13:45 | 0 | 13 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 14:00 | 0 | 16 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Hour Total | 0 | 47 | 13 | 0 | 1 | 1 | 0 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 71 |
| 14:15 | 0 | 14 | 4 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 14:30 | 0 | 13 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 |
| 14:45 | 0 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 15:00 | 0 | 24 | 10 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| Hour Total | 0 | 64 | 19 | 0 | 3 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 91 |
| 15:15 | 3 | 22 | 6 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 15:30 | 0 | 17 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 15:45 | 0 | 20 | 2 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 16:00 | 0 | 21 | 7 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| Hour Total | 3 | 80 | 16 | 0 | 4 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 16:15 | 0 | 21 | 7 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 16:30 | 0 | 27 | 13 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 42 |
| 16:45 | 0 | 22 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 17:00 | 0 | 23 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| Hour Total | 0 | 93 | 29 | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 130 |
| 17:15 | 0 | 25 | 6 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 17:30 | 0 | 33 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 17:45 | 0 | 23 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 18:00 | 0 | 19 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| Hour Total | 0 | 100 | 21 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 127 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|------|--------|
| 18:15 | 0 | 19 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 18:30 | 0 | 28 | 3 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 18:45 | 0 | 19 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 19:00 | 0 | 19 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Hour Total | 0 | 85 | 12 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 103 |
| 19:15 | 0 | 13 | 5 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 19:30 | 0 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 19:45 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 20:00 | 0 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Hour Total | 0 | 43 | 10 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 20:15 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 20:30 | 0 | 9 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 20:45 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 |
| 21:00 | 0 | 15 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Hour Total | 0 | 39 | 4 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 47 |
| 21:15 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 21:30 | 0 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 21:45 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 22:00 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Hour Total | 0 | 28 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 22:15 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 22:30 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 12 |
| 22:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 23:00 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Hour Total | 1 | 19 | 3 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 27 |
| 23:15 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 23:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 23:45 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 24:00 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Hour Total | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| DAY TOTAL | 6 | 990 | 233 | 2 | 27 | 3 | 0 | 14 | 75 | 5 | 7 | 1 | 0 | 0 | 0 | 1363 |
| PERCENTS | 0.4% | 72.6% | 17.1% | 0.1% | 2.0% | 0.2% | 0.0% | 1.0% | 5.5% | 0.4% | 0.5% | 0.1% | 0.0% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 90.2% | | | | | | | | | | | | | | | |
| Trucks & Buses | 9.8% | | | | | | | | | | | | | | | |
| AM Times | 07:00 | 07:45 | 11:15 | 07:15 | 07:45 | 11:15 | | 09:15 | 10:30 | 05:45 | 02:30 | 10:00 | | | | 07:45 |
| AM Peaks | 1 | 76 | 20 | 1 | 3 | 1 | | 2 | 11 | 1 | 1 | 1 | | | | 104 |
| PM Times | 14:30 | 17:00 | 16:00 | 16:45 | 15:30 | 11:30 | | 18:30 | 13:00 | 12:30 | 15:45 | | | | | 16:45 |
| PM Peaks | 3 | 104 | 31 | 1 | 7 | 1 | | 3 | 11 | 2 | 1 | | | | | 134 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|----|-----|----|---|----|---|---|---|----|----|----|----|----|----|----|-------|
| 00:15 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 15 |
| 00:30 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 8 |
| 00:45 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 01:00 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| Hour Total | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 2 | 1 | 0 | 0 | 0 | 40 |
| 01:15 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 01:30 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 11 |
| 01:45 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 9 |
| 02:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Hour Total | 0 | 16 | 2 | 0 | 1 | 0 | 0 | 1 | 11 | 0 | 1 | 1 | 0 | 0 | 0 | 33 |
| 02:15 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 7 |
| 02:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 7 |
| 02:45 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 1 | 1 | 0 | 0 | 0 | 14 |
| 03:00 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Hour Total | 0 | 9 | 3 | 0 | 0 | 0 | 0 | 2 | 20 | 0 | 4 | 2 | 0 | 0 | 0 | 40 |
| 03:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 11 |
| 03:30 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 03:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 04:00 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 10 |
| Hour Total | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 4 | 14 | 0 | 5 | 1 | 0 | 0 | 0 | 33 |
| 04:15 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 1 | 2 | 0 | 0 | 0 | 14 |
| 04:30 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 11 |
| 04:45 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 11 |
| 05:00 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 16 |
| Hour Total | 0 | 17 | 4 | 0 | 4 | 0 | 0 | 4 | 15 | 0 | 5 | 3 | 0 | 0 | 0 | 52 |
| 05:15 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 17 |
| 05:30 | 0 | 15 | 4 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 24 |
| 05:45 | 0 | 11 | 5 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 26 |
| 06:00 | 0 | 8 | 4 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 19 |
| Hour Total | 0 | 43 | 14 | 0 | 1 | 1 | 0 | 2 | 19 | 0 | 6 | 0 | 0 | 0 | 0 | 86 |
| 06:15 | 0 | 14 | 5 | 0 | 0 | 2 | 0 | 3 | 7 | 1 | 1 | 1 | 0 | 0 | 0 | 34 |
| 06:30 | 0 | 29 | 9 | 0 | 1 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 51 |
| 06:45 | 0 | 29 | 7 | 0 | 3 | 0 | 0 | 4 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 07:00 | 0 | 26 | 14 | 0 | 5 | 1 | 0 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 56 |
| Hour Total | 0 | 98 | 35 | 0 | 9 | 3 | 0 | 8 | 38 | 1 | 2 | 1 | 0 | 0 | 0 | 195 |
| 07:15 | 0 | 30 | 5 | 0 | 5 | 1 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 07:30 | 0 | 38 | 8 | 0 | 1 | 0 | 0 | 2 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 61 |
| 07:45 | 0 | 36 | 9 | 2 | 3 | 1 | 0 | 1 | 13 | 2 | 1 | 0 | 0 | 0 | 0 | 68 |
| 08:00 | 0 | 36 | 15 | 1 | 2 | 0 | 0 | 1 | 17 | 0 | 3 | 0 | 0 | 0 | 0 | 75 |
| Hour Total | 0 | 140 | 37 | 3 | 11 | 2 | 0 | 5 | 48 | 2 | 5 | 0 | 0 | 0 | 0 | 253 |
| 08:15 | 1 | 43 | 13 | 0 | 0 | 1 | 0 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 68 |
| 08:30 | 0 | 30 | 11 | 0 | 1 | 1 | 0 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 61 |
| 08:45 | 0 | 39 | 18 | 2 | 3 | 1 | 0 | 1 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 76 |
| 09:00 | 12 | 23 | 9 | 0 | 1 | 0 | 0 | 3 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| Hour Total | 13 | 135 | 51 | 2 | 5 | 3 | 0 | 6 | 45 | 0 | 2 | 0 | 0 | 0 | 0 | 262 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|----|---|---|---|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 18 | 9 | 2 | 4 | 2 | 0 | 1 | 14 | 1 | 1 | 1 | 0 | 0 | 0 | 53 |
| 09:30 | 1 | 25 | 5 | 0 | 2 | 2 | 0 | 2 | 11 | 0 | 1 | 4 | 0 | 0 | 0 | 53 |
| 09:45 | 0 | 28 | 14 | 0 | 4 | 2 | 0 | 1 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 60 |
| 10:00 | 0 | 29 | 10 | 1 | 5 | 1 | 0 | 3 | 11 | 0 | 1 | 1 | 0 | 0 | 0 | 62 |
| Hour Total | 1 | 100 | 38 | 3 | 15 | 7 | 0 | 7 | 46 | 1 | 3 | 7 | 0 | 0 | 0 | 228 |
| 10:15 | 1 | 45 | 4 | 0 | 1 | 2 | 0 | 2 | 16 | 0 | 1 | 1 | 0 | 0 | 0 | 73 |
| 10:30 | 1 | 30 | 14 | 0 | 2 | 0 | 0 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 56 |
| 10:45 | 1 | 41 | 12 | 0 | 0 | 0 | 0 | 3 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 69 |
| 11:00 | 0 | 23 | 12 | 0 | 1 | 3 | 0 | 2 | 21 | 0 | 2 | 0 | 0 | 0 | 0 | 64 |
| Hour Total | 3 | 139 | 42 | 0 | 4 | 5 | 0 | 9 | 55 | 0 | 3 | 2 | 0 | 0 | 0 | 262 |
| 11:15 | 0 | 21 | 10 | 0 | 0 | 0 | 0 | 1 | 13 | 0 | 1 | 1 | 0 | 0 | 0 | 47 |
| 11:30 | 0 | 33 | 13 | 0 | 1 | 1 | 0 | 0 | 10 | 0 | 1 | 1 | 0 | 0 | 0 | 60 |
| 11:45 | 0 | 30 | 16 | 0 | 1 | 2 | 0 | 4 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| 12:00 | 1 | 24 | 15 | 0 | 1 | 0 | 0 | 3 | 14 | 0 | 2 | 0 | 0 | 0 | 0 | 60 |
| Hour Total | 1 | 108 | 54 | 0 | 3 | 3 | 0 | 8 | 53 | 0 | 4 | 2 | 0 | 0 | 0 | 236 |
| 12:15 | 0 | 32 | 14 | 0 | 1 | 2 | 0 | 3 | 12 | 0 | 3 | 0 | 0 | 0 | 0 | 67 |
| 12:30 | 0 | 36 | 14 | 0 | 2 | 0 | 0 | 4 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 12:45 | 2 | 30 | 13 | 0 | 1 | 2 | 0 | 2 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 13:00 | 0 | 31 | 11 | 0 | 1 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| Hour Total | 2 | 129 | 52 | 0 | 5 | 4 | 0 | 9 | 57 | 0 | 3 | 0 | 0 | 0 | 0 | 261 |
| 13:15 | 1 | 23 | 9 | 0 | 4 | 0 | 0 | 2 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 13:30 | 0 | 39 | 16 | 0 | 4 | 0 | 0 | 2 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 13:45 | 0 | 40 | 14 | 0 | 6 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| 14:00 | 0 | 23 | 7 | 0 | 3 | 2 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| Hour Total | 1 | 125 | 46 | 0 | 17 | 2 | 0 | 5 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 238 |
| 14:15 | 1 | 41 | 14 | 0 | 5 | 0 | 0 | 1 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 80 |
| 14:30 | 0 | 39 | 9 | 0 | 3 | 2 | 0 | 2 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 64 |
| 14:45 | 0 | 40 | 22 | 0 | 1 | 0 | 0 | 1 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 73 |
| 15:00 | 0 | 31 | 10 | 0 | 1 | 0 | 0 | 3 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| Hour Total | 1 | 151 | 55 | 0 | 10 | 2 | 0 | 7 | 45 | 1 | 3 | 0 | 0 | 0 | 0 | 275 |
| 15:15 | 0 | 41 | 7 | 0 | 1 | 0 | 0 | 2 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 15:30 | 0 | 44 | 12 | 0 | 1 | 0 | 0 | 0 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 72 |
| 15:45 | 2 | 38 | 18 | 0 | 3 | 0 | 1 | 0 | 12 | 1 | 1 | 0 | 0 | 0 | 0 | 76 |
| 16:00 | 0 | 55 | 17 | 0 | 1 | 1 | 0 | 0 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 88 |
| Hour Total | 2 | 178 | 54 | 0 | 6 | 1 | 1 | 2 | 51 | 1 | 3 | 0 | 0 | 0 | 0 | 299 |
| 16:15 | 2 | 44 | 14 | 0 | 0 | 0 | 0 | 3 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 16:30 | 0 | 39 | 20 | 1 | 0 | 0 | 0 | 0 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 72 |
| 16:45 | 0 | 50 | 19 | 0 | 2 | 1 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 84 |
| 17:00 | 0 | 46 | 13 | 3 | 0 | 0 | 0 | 0 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 73 |
| Hour Total | 2 | 179 | 66 | 4 | 2 | 1 | 0 | 3 | 44 | 0 | 3 | 0 | 0 | 0 | 0 | 304 |
| 17:15 | 0 | 71 | 15 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| 17:30 | 2 | 56 | 14 | 0 | 1 | 0 | 0 | 1 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 83 |
| 17:45 | 0 | 57 | 13 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 79 |
| 18:00 | 0 | 48 | 15 | 0 | 0 | 1 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| Hour Total | 2 | 232 | 57 | 0 | 2 | 1 | 0 | 2 | 32 | 0 | 2 | 0 | 0 | 0 | 0 | 330 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|--------|
| 18:15 | 0 | 54 | 14 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 18:30 | 3 | 43 | 9 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 18:45 | 0 | 43 | 4 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 59 |
| 19:00 | 1 | 38 | 14 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| Hour Total | 4 | 178 | 41 | 0 | 1 | 1 | 0 | 0 | 24 | 0 | 1 | 0 | 0 | 0 | 0 | 250 |
| 19:15 | 1 | 34 | 13 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 19:30 | 0 | 41 | 14 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 61 |
| 19:45 | 0 | 35 | 5 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| 20:00 | 0 | 34 | 13 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 54 |
| Hour Total | 1 | 144 | 45 | 0 | 1 | 0 | 0 | 2 | 20 | 0 | 1 | 0 | 0 | 0 | 0 | 214 |
| 20:15 | 0 | 31 | 9 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| 20:30 | 0 | 26 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 20:45 | 1 | 26 | 7 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 21:00 | 0 | 28 | 8 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 41 |
| Hour Total | 1 | 111 | 30 | 1 | 3 | 0 | 0 | 1 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 160 |
| 21:15 | 0 | 18 | 4 | 0 | 0 | 1 | 0 | 0 | 6 | 1 | 2 | 0 | 0 | 0 | 0 | 32 |
| 21:30 | 0 | 26 | 4 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 37 |
| 21:45 | 0 | 14 | 5 | 0 | 1 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 22:00 | 0 | 18 | 4 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 28 |
| Hour Total | 0 | 76 | 17 | 0 | 4 | 2 | 0 | 1 | 18 | 1 | 5 | 0 | 0 | 0 | 0 | 124 |
| 22:15 | 0 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 3 | 0 | 0 | 0 | 0 | 25 |
| 22:30 | 0 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 21 |
| 22:45 | 0 | 14 | 4 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 25 |
| 23:00 | 0 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Hour Total | 0 | 47 | 9 | 0 | 0 | 1 | 0 | 0 | 21 | 0 | 5 | 1 | 0 | 0 | 0 | 84 |
| 23:15 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 18 |
| 23:30 | 0 | 5 | 2 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 23:45 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 16 |
| 24:00 | 0 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 15 |
| Hour Total | 0 | 30 | 8 | 1 | 0 | 0 | 0 | 3 | 14 | 0 | 3 | 1 | 0 | 0 | 0 | 60 |
| DAY TOTAL | 34 | 2419 | 761 | 14 | 104 | 39 | 1 | 92 | 754 | 7 | 72 | 22 | 0 | 0 | 0 | 4319 |
| PERCENTS | 0.8% | 56.0% | 17.6% | 0.3% | 2.4% | 0.9% | 0.0% | 2.1% | 17.5% | 0.2% | 1.7% | 0.5% | 0.0% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 74.4% | | | | | | | | | | | | | | | |
| Trucks & Buses | 25.6% | | | | | | | | | | | | | | | |
| AM Times | 08:15 | 07:30 | 08:00 | 08:30 | 09:15 | 09:15 | | 10:00 | 07:45 | 07:00 | 02:30 | 09:15 | | | | 08:00 |
| AM Peaks | 13 | 153 | 57 | 4 | 15 | 7 | | 10 | 56 | 2 | 6 | 7 | | | | 280 |
| PM Times | 18:30 | 17:15 | 16:00 | 16:15 | 13:30 | 11:00 | 15:00 | 11:45 | 11:00 | 14:00 | 22:00 | 11:00 | | | | 16:45 |
| PM Peaks | 5 | 232 | 70 | 4 | 18 | 6 | 1 | 14 | 60 | 1 | 7 | 2 | | | | 334 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|----|---|---|---|----|----|----|----|----|----|----|-------|
| 00:15 | 0 | 13 | 3 | 0 | 2 | 0 | 0 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 24 |
| 00:30 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 12 |
| 00:45 | 0 | 10 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 01:00 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Hour Total | 0 | 34 | 5 | 0 | 3 | 1 | 0 | 3 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 58 |
| 01:15 | 0 | 5 | 3 | 0 | 0 | 1 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 01:30 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 10 |
| 01:45 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 11 |
| 02:00 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 8 |
| Hour Total | 0 | 12 | 5 | 0 | 1 | 2 | 0 | 3 | 17 | 0 | 2 | 3 | 0 | 0 | 0 | 45 |
| 02:15 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| 02:30 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 5 |
| 02:45 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 14 |
| 03:00 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| Hour Total | 0 | 13 | 6 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 4 | 0 | 0 | 0 | 0 | 37 |
| 03:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| 03:30 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 6 |
| 03:45 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 2 | 1 | 0 | 0 | 0 | 10 |
| 04:00 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 11 |
| Hour Total | 0 | 5 | 2 | 0 | 2 | 0 | 0 | 1 | 14 | 0 | 6 | 1 | 0 | 0 | 0 | 31 |
| 04:15 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 4 | 2 | 0 | 0 | 0 | 13 |
| 04:30 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 04:45 | 0 | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 18 |
| 05:00 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 15 |
| Hour Total | 0 | 17 | 8 | 0 | 1 | 0 | 0 | 2 | 16 | 0 | 5 | 4 | 0 | 0 | 0 | 53 |
| 05:15 | 0 | 13 | 2 | 0 | 1 | 1 | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 23 |
| 05:30 | 0 | 14 | 5 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 26 |
| 05:45 | 0 | 10 | 3 | 0 | 1 | 0 | 0 | 2 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 27 |
| 06:00 | 0 | 7 | 9 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 24 |
| Hour Total | 0 | 44 | 19 | 0 | 3 | 1 | 0 | 4 | 24 | 0 | 3 | 2 | 0 | 0 | 0 | 100 |
| 06:15 | 0 | 21 | 3 | 0 | 2 | 0 | 0 | 0 | 8 | 0 | 2 | 1 | 0 | 0 | 0 | 37 |
| 06:30 | 0 | 26 | 9 | 0 | 2 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 06:45 | 0 | 29 | 10 | 0 | 1 | 0 | 0 | 3 | 6 | 1 | 1 | 2 | 0 | 0 | 0 | 53 |
| 07:00 | 0 | 26 | 10 | 0 | 1 | 1 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| Hour Total | 0 | 102 | 32 | 0 | 6 | 1 | 0 | 5 | 32 | 1 | 3 | 3 | 0 | 0 | 0 | 185 |
| 07:15 | 1 | 32 | 10 | 0 | 4 | 0 | 0 | 1 | 11 | 1 | 2 | 0 | 0 | 0 | 0 | 62 |
| 07:30 | 0 | 35 | 10 | 0 | 3 | 0 | 0 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 07:45 | 0 | 40 | 5 | 0 | 3 | 1 | 0 | 3 | 9 | 0 | 3 | 0 | 0 | 0 | 0 | 64 |
| 08:00 | 0 | 59 | 8 | 0 | 5 | 2 | 0 | 1 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 84 |
| Hour Total | 1 | 166 | 33 | 0 | 15 | 3 | 0 | 6 | 43 | 1 | 6 | 0 | 0 | 0 | 0 | 274 |
| 08:15 | 0 | 32 | 12 | 0 | 0 | 1 | 1 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 56 |
| 08:30 | 0 | 32 | 14 | 1 | 2 | 0 | 0 | 2 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 08:45 | 0 | 28 | 14 | 0 | 2 | 1 | 0 | 6 | 5 | 0 | 4 | 0 | 0 | 0 | 0 | 60 |
| 09:00 | 0 | 29 | 14 | 0 | 2 | 2 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| Hour Total | 0 | 121 | 54 | 1 | 6 | 4 | 1 | 9 | 37 | 0 | 4 | 0 | 0 | 0 | 0 | 237 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|----|---|---|----|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 32 | 6 | 0 | 3 | 0 | 0 | 2 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 57 |
| 09:30 | 0 | 30 | 11 | 1 | 6 | 3 | 0 | 1 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 66 |
| 09:45 | 0 | 24 | 9 | 0 | 5 | 0 | 0 | 4 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 46 |
| 10:00 | 0 | 31 | 15 | 1 | 1 | 0 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 56 |
| Hour Total | 0 | 117 | 41 | 2 | 15 | 3 | 0 | 7 | 36 | 0 | 2 | 2 | 0 | 0 | 0 | 225 |
| 10:15 | 0 | 25 | 10 | 0 | 3 | 0 | 0 | 2 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 10:30 | 1 | 32 | 9 | 0 | 3 | 1 | 0 | 3 | 14 | 0 | 0 | 2 | 0 | 0 | 0 | 65 |
| 10:45 | 0 | 37 | 16 | 1 | 3 | 2 | 0 | 4 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 11:00 | 0 | 36 | 10 | 0 | 2 | 1 | 0 | 3 | 11 | 0 | 1 | 1 | 0 | 0 | 0 | 65 |
| Hour Total | 1 | 130 | 45 | 1 | 11 | 4 | 0 | 12 | 52 | 0 | 1 | 3 | 0 | 0 | 0 | 260 |
| 11:15 | 1 | 28 | 11 | 0 | 3 | 0 | 0 | 1 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 59 |
| 11:30 | 1 | 35 | 14 | 0 | 1 | 0 | 0 | 4 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 68 |
| 11:45 | 0 | 30 | 11 | 0 | 3 | 1 | 0 | 2 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 61 |
| 12:00 | 0 | 29 | 14 | 0 | 2 | 0 | 0 | 1 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 58 |
| Hour Total | 2 | 122 | 50 | 0 | 9 | 1 | 0 | 8 | 50 | 0 | 4 | 0 | 0 | 0 | 0 | 246 |
| 12:15 | 0 | 33 | 13 | 1 | 3 | 0 | 0 | 1 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 67 |
| 12:30 | 0 | 40 | 9 | 0 | 1 | 1 | 0 | 1 | 17 | 1 | 1 | 0 | 0 | 0 | 0 | 71 |
| 12:45 | 0 | 42 | 16 | 0 | 3 | 0 | 0 | 5 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 80 |
| 13:00 | 2 | 42 | 9 | 0 | 1 | 3 | 0 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| Hour Total | 2 | 157 | 47 | 1 | 8 | 4 | 0 | 9 | 56 | 1 | 3 | 0 | 0 | 0 | 0 | 288 |
| 13:15 | 1 | 28 | 11 | 0 | 1 | 1 | 0 | 1 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 57 |
| 13:30 | 0 | 37 | 11 | 0 | 1 | 0 | 0 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 13:45 | 0 | 37 | 10 | 0 | 2 | 0 | 0 | 2 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 67 |
| 14:00 | 0 | 37 | 14 | 0 | 2 | 2 | 0 | 4 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 73 |
| Hour Total | 1 | 139 | 46 | 0 | 6 | 3 | 0 | 8 | 55 | 1 | 2 | 0 | 0 | 0 | 0 | 261 |
| 14:15 | 0 | 38 | 16 | 0 | 1 | 1 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 14:30 | 1 | 39 | 11 | 0 | 1 | 0 | 0 | 0 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 69 |
| 14:45 | 0 | 49 | 8 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 69 |
| 15:00 | 0 | 41 | 22 | 0 | 3 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| Hour Total | 1 | 167 | 57 | 0 | 5 | 1 | 0 | 0 | 50 | 0 | 2 | 0 | 0 | 0 | 0 | 283 |
| 15:15 | 2 | 43 | 15 | 1 | 1 | 1 | 0 | 2 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 81 |
| 15:30 | 0 | 47 | 8 | 0 | 2 | 0 | 0 | 1 | 12 | 1 | 2 | 1 | 0 | 0 | 0 | 74 |
| 15:45 | 1 | 46 | 15 | 1 | 3 | 0 | 0 | 2 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 80 |
| 16:00 | 0 | 59 | 22 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 91 |
| Hour Total | 3 | 195 | 60 | 2 | 7 | 1 | 0 | 5 | 47 | 1 | 4 | 1 | 0 | 0 | 0 | 326 |
| 16:15 | 0 | 60 | 15 | 0 | 0 | 0 | 0 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 16:30 | 0 | 49 | 18 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 77 |
| 16:45 | 0 | 45 | 15 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 68 |
| 17:00 | 0 | 43 | 15 | 0 | 1 | 0 | 0 | 3 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 72 |
| Hour Total | 0 | 197 | 63 | 0 | 3 | 0 | 0 | 4 | 36 | 0 | 4 | 0 | 0 | 0 | 0 | 307 |
| 17:15 | 0 | 62 | 12 | 0 | 1 | 1 | 0 | 1 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 85 |
| 17:30 | 0 | 65 | 21 | 0 | 0 | 0 | 0 | 2 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 102 |
| 17:45 | 0 | 53 | 7 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 66 |
| 18:00 | 0 | 46 | 15 | 1 | 0 | 0 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| Hour Total | 0 | 226 | 55 | 1 | 1 | 2 | 0 | 5 | 31 | 0 | 4 | 0 | 0 | 0 | 0 | 325 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|--------|
| 18:15 | 0 | 61 | 6 | 0 | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 18:30 | 0 | 42 | 13 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 59 |
| 18:45 | 0 | 45 | 6 | 0 | 2 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 19:00 | 0 | 32 | 11 | 0 | 1 | 0 | 1 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| Hour Total | 0 | 180 | 36 | 0 | 3 | 3 | 1 | 1 | 26 | 0 | 1 | 0 | 0 | 0 | 0 | 251 |
| 19:15 | 0 | 52 | 8 | 0 | 2 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 68 |
| 19:30 | 0 | 39 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 19:45 | 0 | 34 | 11 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 20:00 | 0 | 27 | 10 | 0 | 1 | 0 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| Hour Total | 0 | 152 | 37 | 0 | 3 | 0 | 0 | 6 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 215 |
| 20:15 | 0 | 30 | 8 | 0 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 20:30 | 0 | 20 | 10 | 0 | 2 | 0 | 0 | 2 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 39 |
| 20:45 | 0 | 19 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 21:00 | 0 | 21 | 6 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| Hour Total | 0 | 90 | 28 | 0 | 2 | 1 | 0 | 6 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 140 |
| 21:15 | 0 | 22 | 9 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 36 |
| 21:30 | 0 | 22 | 6 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 36 |
| 21:45 | 0 | 19 | 3 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 28 |
| 22:00 | 0 | 24 | 5 | 0 | 3 | 0 | 0 | 3 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 41 |
| Hour Total | 0 | 87 | 23 | 0 | 4 | 0 | 0 | 6 | 16 | 0 | 4 | 1 | 0 | 0 | 0 | 141 |
| 22:15 | 0 | 17 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 21 |
| 22:30 | 0 | 21 | 8 | 0 | 1 | 0 | 0 | 1 | 5 | 0 | 2 | 1 | 0 | 0 | 0 | 39 |
| 22:45 | 0 | 13 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 21 |
| 23:00 | 0 | 17 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 23 |
| Hour Total | 0 | 68 | 15 | 0 | 2 | 0 | 0 | 3 | 9 | 0 | 3 | 4 | 0 | 0 | 0 | 104 |
| 23:15 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 14 |
| 23:30 | 0 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 23 |
| 23:45 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 24:00 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Hour Total | 0 | 30 | 6 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 2 | 1 | 0 | 0 | 0 | 51 |
| DAY TOTAL | 11 | 2571 | 773 | 8 | 116 | 35 | 2 | 113 | 712 | 5 | 72 | 25 | 0 | 0 | 0 | 4443 |
| PERCENTS | 0.2% | 57.9% | 17.4% | 0.2% | 2.6% | 0.8% | 0.0% | 2.5% | 16.0% | 0.1% | 1.6% | 0.6% | 0.0% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 75.5% | | | | | | | | | | | | | | | |
| Trucks & Buses | 24.5% | | | | | | | | | | | | | | | |
| AM Times | 10:30 | 07:15 | 08:15 | 09:15 | 09:00 | 08:45 | 07:30 | 10:15 | 10:15 | 06:30 | 03:30 | 04:00 | | | | 07:15 |
| AM Peaks | 2 | 166 | 54 | 2 | 16 | 6 | 1 | 12 | 52 | 2 | 9 | 4 | | | | 274 |
| PM Times | 12:30 | 17:15 | 15:45 | 15:00 | 11:00 | 12:30 | 18:15 | 11:00 | 13:45 | 11:45 | 16:30 | 22:00 | | | | 15:45 |
| PM Peaks | 3 | 226 | 70 | 2 | 9 | 5 | 1 | 10 | 58 | 1 | 6 | 4 | | | | 338 |

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|----|----|---|---|---|---|---|----|----|----|----|----|----|----|-------|
| 00:15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| 00:30 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 00:45 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Hour Total | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 16 |
| 01:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 01:30 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 01:45 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:00 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| Hour Total | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 11 |
| 02:15 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:30 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 02:45 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 1 | 6 | 0 | 0 | 3 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 03:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:00 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| Hour Total | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 11 |
| 04:15 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 04:30 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 9 |
| 04:45 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 05:00 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 8 |
| Hour Total | 1 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 31 |
| 05:15 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 05:30 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 05:45 | 0 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 22 |
| 06:00 | 0 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 26 |
| Hour Total | 0 | 42 | 10 | 0 | 0 | 0 | 0 | 1 | 11 | 0 | 1 | 1 | 0 | 0 | 0 | 66 |
| 06:15 | 0 | 22 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 06:30 | 0 | 18 | 9 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 06:45 | 0 | 16 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 07:00 | 0 | 19 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| Hour Total | 0 | 75 | 24 | 0 | 0 | 1 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 107 |
| 07:15 | 0 | 22 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 07:30 | 0 | 25 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 07:45 | 1 | 22 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 08:00 | 0 | 17 | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| Hour Total | 1 | 86 | 19 | 0 | 3 | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 115 |
| 08:15 | 0 | 21 | 2 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 08:30 | 0 | 20 | 6 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 08:45 | 0 | 13 | 6 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 09:00 | 0 | 14 | 4 | 0 | 0 | 2 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 26 |
| Hour Total | 0 | 68 | 18 | 0 | 0 | 2 | 0 | 1 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 105 |

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|---|---|---|---|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 15 | 3 | 0 | 0 | 1 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 09:30 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 09:45 | 0 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 10:00 | 0 | 12 | 3 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 20 |
| Hour Total | 0 | 46 | 11 | 0 | 1 | 1 | 0 | 1 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 72 |
| 10:15 | 0 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 10:30 | 0 | 16 | 4 | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 10:45 | 1 | 12 | 1 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 20 |
| 11:00 | 0 | 17 | 3 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| Hour Total | 1 | 58 | 11 | 0 | 2 | 0 | 0 | 2 | 18 | 0 | 1 | 0 | 0 | 0 | 0 | 93 |
| 11:15 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 11:30 | 0 | 13 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 11:45 | 1 | 14 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 12:00 | 0 | 17 | 4 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 29 |
| Hour Total | 1 | 53 | 12 | 0 | 0 | 0 | 0 | 2 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 82 |
| 12:15 | 0 | 6 | 6 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 18 |
| 12:30 | 0 | 26 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 12:45 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 13:00 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Hour Total | 0 | 53 | 14 | 0 | 0 | 0 | 1 | 1 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 87 |
| 13:15 | 0 | 15 | 7 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 13:30 | 0 | 15 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 13:45 | 0 | 16 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 14:00 | 0 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Hour Total | 0 | 57 | 19 | 0 | 1 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| 14:15 | 0 | 14 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 14:30 | 1 | 14 | 3 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 14:45 | 0 | 15 | 6 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 15:00 | 0 | 20 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 26 |
| Hour Total | 1 | 63 | 18 | 0 | 4 | 0 | 0 | 1 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 94 |
| 15:15 | 1 | 20 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 32 |
| 15:30 | 3 | 31 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 40 |
| 15:45 | 0 | 21 | 6 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 32 |
| 16:00 | 0 | 33 | 6 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| Hour Total | 4 | 105 | 23 | 0 | 2 | 0 | 0 | 0 | 9 | 0 | 0 | 4 | 0 | 0 | 0 | 147 |
| 16:15 | 0 | 14 | 6 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 16:30 | 0 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 16:45 | 0 | 17 | 5 | 0 | 2 | 0 | 0 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 30 |
| 17:00 | 0 | 25 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| Hour Total | 0 | 74 | 21 | 0 | 2 | 0 | 0 | 2 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 113 |
| 17:15 | 0 | 25 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 17:30 | 0 | 26 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 17:45 | 1 | 41 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 49 |
| 18:00 | 0 | 35 | 2 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| Hour Total | 1 | 127 | 13 | 0 | 1 | 0 | 0 | 2 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 153 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|------|------|--------|
| 18:15 | 0 | 17 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 18:30 | 0 | 21 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 29 |
| 18:45 | 0 | 17 | 6 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 28 |
| 19:00 | 1 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| Hour Total | 1 | 73 | 18 | 0 | 1 | 1 | 0 | 1 | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 101 |
| 19:15 | 1 | 11 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 20 |
| 19:30 | 0 | 18 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 22 |
| 19:45 | 0 | 10 | 4 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 20:00 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Hour Total | 1 | 48 | 13 | 2 | 0 | 0 | 0 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 70 |
| 20:15 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 20:30 | 0 | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 12 |
| 20:45 | 0 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 21:00 | 0 | 11 | 4 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| Hour Total | 0 | 49 | 11 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 65 |
| 21:15 | 0 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 21:30 | 1 | 8 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 21:45 | 0 | 6 | 3 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 22:00 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Hour Total | 1 | 35 | 10 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 22:15 | 0 | 9 | 3 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 22:30 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 22:45 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| 23:00 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Hour Total | 0 | 31 | 4 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 41 |
| 23:15 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 23:30 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| 23:45 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 24:00 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| Hour Total | 0 | 20 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 26 |
| DAY TOTAL | 17 | 1200 | 280 | 3 | 20 | 7 | 1 | 24 | 179 | 0 | 20 | 8 | 1 | 0 | 0 | 1760 |
| PERCENTS | 1.0% | 68.2% | 15.9% | 0.2% | 1.1% | 0.4% | 0.1% | 1.4% | 10.2% | 0.0% | 1.1% | 0.5% | 0.1% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 85.1% | | | | | | | | | | | | | | | |
| Trucks & Buses | 14.9% | | | | | | | | | | | | | | | |
| AM Times | 00:15 | 07:00 | 06:00 | | 02:00 | 08:30 | | 07:30 | 08:30 | | 04:15 | 01:15 | | | | 07:15 |
| AM Peaks | 3 | 88 | 26 | | 3 | 3 | | 3 | 18 | | 3 | 1 | | | | 115 |
| PM Times | 14:45 | 17:15 | 15:15 | 18:45 | 14:30 | 18:00 | 11:30 | 17:30 | 12:00 | | 18:45 | 15:00 | 17:45 | | | 17:15 |
| PM Peaks | 4 | 127 | 23 | 2 | 5 | 1 | 1 | 3 | 22 | | 3 | 4 | 1 | | | 153 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|----|----|---|---|---|---|---|----|----|----|----|----|----|----|-------|
| 00:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 00:30 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 00:45 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 01:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Hour Total | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 01:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 01:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 01:45 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:00 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Hour Total | 0 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 02:15 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 02:45 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hour Total | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 10 |
| 03:15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:30 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 03:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| 04:00 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Hour Total | 0 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 15 |
| 04:15 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| 04:30 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 04:45 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| 05:00 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 9 |
| Hour Total | 0 | 19 | 1 | 1 | 0 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 0 | 0 | 0 | 33 |
| 05:15 | 1 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 05:30 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 05:45 | 0 | 13 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 06:00 | 0 | 17 | 5 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 26 |
| Hour Total | 1 | 41 | 10 | 0 | 1 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 60 |
| 06:15 | 0 | 20 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 06:30 | 0 | 20 | 11 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 06:45 | 0 | 17 | 7 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 07:00 | 0 | 27 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 36 |
| Hour Total | 0 | 84 | 31 | 0 | 2 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 124 |
| 07:15 | 0 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 24 |
| 07:30 | 0 | 22 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 27 |
| 07:45 | 0 | 23 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 08:00 | 0 | 22 | 7 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| Hour Total | 0 | 83 | 20 | 0 | 0 | 0 | 0 | 0 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 113 |
| 08:15 | 0 | 21 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 08:30 | 0 | 22 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 08:45 | 1 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 09:00 | 1 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Hour Total | 2 | 69 | 13 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|---|---|---|---|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 09:30 | 0 | 13 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 09:45 | 0 | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 10:00 | 0 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| Hour Total | 0 | 57 | 11 | 0 | 2 | 1 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 10:15 | 0 | 12 | 5 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 10:30 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 10:45 | 0 | 18 | 6 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 29 |
| 11:00 | 1 | 12 | 4 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Hour Total | 1 | 51 | 15 | 1 | 2 | 0 | 0 | 2 | 8 | 0 | 1 | 1 | 0 | 0 | 0 | 82 |
| 11:15 | 1 | 11 | 7 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 25 |
| 11:30 | 0 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 11:45 | 1 | 14 | 1 | 0 | 3 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 12:00 | 0 | 21 | 3 | 0 | 1 | 0 | 0 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| Hour Total | 2 | 62 | 13 | 0 | 5 | 0 | 0 | 4 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 103 |
| 12:15 | 0 | 16 | 1 | 0 | 2 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 12:30 | 0 | 17 | 8 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 12:45 | 0 | 15 | 12 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 13:00 | 0 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Hour Total | 0 | 61 | 24 | 0 | 4 | 0 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 99 |
| 13:15 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 13:30 | 0 | 22 | 5 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 13:45 | 0 | 24 | 7 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 14:00 | 0 | 26 | 4 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| Hour Total | 0 | 90 | 16 | 0 | 2 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 122 |
| 14:15 | 0 | 31 | 7 | 0 | 1 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 14:30 | 0 | 27 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 14:45 | 0 | 26 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 3 | 0 | 0 | 0 | 0 | 37 |
| 15:00 | 1 | 15 | 5 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 26 |
| Hour Total | 1 | 99 | 19 | 0 | 3 | 0 | 0 | 3 | 17 | 0 | 3 | 1 | 0 | 0 | 0 | 146 |
| 15:15 | 1 | 30 | 13 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 15:30 | 0 | 29 | 12 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 49 |
| 15:45 | 0 | 15 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 21 |
| 16:00 | 0 | 20 | 7 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| Hour Total | 1 | 94 | 33 | 1 | 3 | 0 | 0 | 0 | 10 | 0 | 2 | 1 | 0 | 0 | 0 | 145 |
| 16:15 | 0 | 25 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 32 |
| 16:30 | 0 | 29 | 7 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 16:45 | 4 | 32 | 9 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 17:00 | 0 | 33 | 5 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 42 |
| Hour Total | 4 | 119 | 27 | 0 | 2 | 1 | 0 | 2 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 162 |
| 17:15 | 0 | 27 | 5 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 17:30 | 0 | 31 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 17:45 | 0 | 33 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 18:00 | 0 | 31 | 6 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| Hour Total | 0 | 122 | 24 | 0 | 1 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 153 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBI Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|------|--------|
| 18:15 | 0 | 13 | 5 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 18:30 | 1 | 14 | 4 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 18:45 | 0 | 22 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 19:00 | 0 | 16 | 6 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 26 |
| Hour Total | 1 | 65 | 16 | 0 | 3 | 0 | 0 | 2 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 94 |
| 19:15 | 0 | 23 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 27 |
| 19:30 | 0 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 19:45 | 0 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 20:00 | 0 | 13 | 7 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| Hour Total | 0 | 64 | 14 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 85 |
| 20:15 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 20:30 | 0 | 15 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 20:45 | 0 | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 12 |
| 21:00 | 0 | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Hour Total | 0 | 46 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 61 |
| 21:15 | 0 | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 15 |
| 21:30 | 0 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 21:45 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 22:00 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 10 |
| Hour Total | 0 | 32 | 9 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 2 | 0 | 0 | 0 | 48 |
| 22:15 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 22:30 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 22:45 | 0 | 8 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 23:00 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Hour Total | 0 | 32 | 4 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 23:15 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 23:30 | 0 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 23:45 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 8 |
| 24:00 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Hour Total | 0 | 26 | 1 | 0 | 1 | 1 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 34 |
| DAY TOTAL | 13 | 1340 | 316 | 4 | 34 | 3 | 0 | 19 | 169 | 1 | 17 | 10 | 0 | 0 | 0 | 1926 |
| PERCENTS | 0.7% | 69.6% | 16.4% | 0.2% | 1.8% | 0.2% | 0.0% | 1.0% | 8.8% | 0.1% | 0.9% | 0.5% | 0.0% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 86.7% | | | | | | | | | | | | | | | |
| Trucks & Buses | 13.3% | | | | | | | | | | | | | | | |
| AM Times | 08:15 | 07:00 | 06:15 | 02:30 | 11:15 | 08:45 | | 11:15 | 11:15 | 06:45 | 04:15 | 01:45 | | | | 06:15 |
| AM Peaks | 2 | 88 | 31 | 1 | 5 | 1 | | 4 | 16 | 1 | 3 | 1 | | | | 124 |
| PM Times | 16:00 | 17:00 | 15:15 | 15:00 | 11:45 | 16:15 | | 11:30 | 13:30 | | 14:45 | 14:45 | | | | 16:30 |
| PM Peaks | 4 | 124 | 33 | 1 | 7 | 1 | | 6 | 20 | | 4 | 2 | | | | 166 |

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|----|---|---|---|----|----|----|----|----|----|----|-------|
| 00:15 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 14 |
| 00:30 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 12 |
| 00:45 | 0 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 16 |
| 01:00 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Hour Total | 0 | 19 | 6 | 0 | 1 | 0 | 0 | 1 | 14 | 0 | 8 | 0 | 0 | 0 | 0 | 49 |
| 01:15 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 01:30 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 01:45 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 02:00 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 7 |
| Hour Total | 0 | 12 | 5 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 25 |
| 02:15 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 10 |
| 02:30 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 9 |
| 02:45 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 9 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 5 |
| Hour Total | 0 | 10 | 1 | 0 | 1 | 0 | 0 | 1 | 15 | 0 | 4 | 1 | 0 | 0 | 0 | 33 |
| 03:15 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 03:30 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 03:45 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 04:00 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 12 |
| Hour Total | 0 | 8 | 4 | 1 | 1 | 0 | 0 | 1 | 18 | 0 | 2 | 0 | 0 | 0 | 0 | 35 |
| 04:15 | 1 | 7 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 04:30 | 0 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 19 |
| 04:45 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 05:00 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 3 | 0 | 0 | 0 | 0 | 14 |
| Hour Total | 1 | 24 | 9 | 0 | 0 | 0 | 0 | 2 | 19 | 0 | 6 | 0 | 0 | 0 | 0 | 61 |
| 05:15 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 05:30 | 0 | 21 | 14 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 43 |
| 05:45 | 0 | 27 | 5 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 2 | 0 | 0 | 0 | 42 |
| 06:00 | 1 | 23 | 12 | 0 | 1 | 0 | 0 | 1 | 7 | 0 | 2 | 0 | 0 | 0 | 0 | 47 |
| Hour Total | 1 | 83 | 32 | 0 | 1 | 0 | 0 | 3 | 22 | 0 | 3 | 3 | 0 | 0 | 0 | 148 |
| 06:15 | 0 | 32 | 10 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 51 |
| 06:30 | 0 | 40 | 11 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 2 | 0 | 0 | 0 | 0 | 62 |
| 06:45 | 0 | 28 | 11 | 0 | 1 | 0 | 0 | 1 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 51 |
| 07:00 | 0 | 38 | 10 | 0 | 1 | 2 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| Hour Total | 0 | 138 | 42 | 0 | 3 | 2 | 0 | 3 | 28 | 1 | 3 | 1 | 0 | 0 | 0 | 221 |
| 07:15 | 0 | 35 | 11 | 0 | 2 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| 07:30 | 0 | 21 | 10 | 0 | 3 | 0 | 1 | 1 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 44 |
| 07:45 | 0 | 28 | 11 | 0 | 1 | 0 | 0 | 0 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 53 |
| 08:00 | 0 | 25 | 9 | 0 | 4 | 1 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| Hour Total | 0 | 109 | 41 | 0 | 10 | 1 | 1 | 2 | 35 | 0 | 1 | 1 | 0 | 0 | 0 | 201 |
| 08:15 | 0 | 31 | 4 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 45 |
| 08:30 | 1 | 37 | 14 | 0 | 3 | 1 | 0 | 2 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 71 |
| 08:45 | 0 | 31 | 7 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 09:00 | 0 | 30 | 3 | 0 | 1 | 1 | 0 | 1 | 11 | 0 | 2 | 1 | 0 | 0 | 0 | 50 |
| Hour Total | 1 | 129 | 28 | 0 | 7 | 2 | 0 | 3 | 38 | 0 | 3 | 2 | 0 | 0 | 0 | 213 |

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|----|---|---|---|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 24 | 13 | 0 | 2 | 1 | 0 | 2 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 55 |
| 09:30 | 1 | 16 | 12 | 0 | 1 | 2 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 09:45 | 0 | 24 | 10 | 0 | 1 | 0 | 0 | 2 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 10:00 | 0 | 34 | 7 | 1 | 3 | 0 | 0 | 1 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 58 |
| Hour Total | 1 | 98 | 42 | 1 | 7 | 3 | 0 | 5 | 51 | 0 | 2 | 0 | 0 | 0 | 0 | 210 |
| 10:15 | 3 | 36 | 10 | 0 | 3 | 0 | 0 | 2 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 10:30 | 0 | 33 | 6 | 1 | 2 | 1 | 0 | 1 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 57 |
| 10:45 | 0 | 24 | 13 | 0 | 3 | 1 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| 11:00 | 0 | 29 | 7 | 0 | 1 | 0 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| Hour Total | 3 | 122 | 36 | 1 | 9 | 2 | 0 | 4 | 62 | 0 | 1 | 0 | 0 | 0 | 0 | 240 |
| 11:15 | 0 | 34 | 13 | 0 | 0 | 1 | 0 | 0 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 62 |
| 11:30 | 0 | 34 | 10 | 0 | 1 | 0 | 0 | 1 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 59 |
| 11:45 | 0 | 25 | 8 | 0 | 2 | 0 | 0 | 2 | 15 | 0 | 2 | 0 | 0 | 0 | 0 | 54 |
| 12:00 | 0 | 31 | 9 | 0 | 0 | 1 | 0 | 0 | 17 | 0 | 2 | 0 | 0 | 0 | 0 | 60 |
| Hour Total | 0 | 124 | 40 | 0 | 3 | 2 | 0 | 3 | 57 | 0 | 6 | 0 | 0 | 0 | 0 | 235 |
| 12:15 | 1 | 35 | 10 | 0 | 2 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 61 |
| 12:30 | 0 | 27 | 14 | 1 | 4 | 0 | 1 | 4 | 13 | 0 | 2 | 0 | 0 | 0 | 0 | 66 |
| 12:45 | 0 | 31 | 10 | 0 | 2 | 2 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 13:00 | 0 | 36 | 19 | 0 | 2 | 2 | 0 | 4 | 11 | 0 | 1 | 1 | 0 | 0 | 0 | 76 |
| Hour Total | 1 | 129 | 53 | 1 | 10 | 4 | 1 | 8 | 46 | 0 | 3 | 1 | 0 | 0 | 0 | 257 |
| 13:15 | 0 | 35 | 12 | 0 | 2 | 0 | 0 | 3 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 70 |
| 13:30 | 1 | 28 | 3 | 0 | 2 | 1 | 0 | 2 | 24 | 0 | 2 | 0 | 0 | 0 | 0 | 63 |
| 13:45 | 0 | 30 | 10 | 0 | 1 | 1 | 0 | 3 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 58 |
| 14:00 | 1 | 32 | 9 | 0 | 4 | 1 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| Hour Total | 2 | 125 | 34 | 0 | 9 | 3 | 0 | 9 | 63 | 0 | 4 | 0 | 0 | 0 | 0 | 249 |
| 14:15 | 0 | 32 | 11 | 0 | 1 | 0 | 0 | 2 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 58 |
| 14:30 | 2 | 33 | 5 | 0 | 2 | 0 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 14:45 | 0 | 33 | 7 | 0 | 0 | 0 | 0 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 56 |
| 15:00 | 0 | 32 | 11 | 0 | 3 | 1 | 0 | 0 | 13 | 0 | 2 | 1 | 0 | 0 | 0 | 63 |
| Hour Total | 2 | 130 | 34 | 0 | 6 | 1 | 0 | 4 | 50 | 0 | 4 | 1 | 0 | 0 | 0 | 232 |
| 15:15 | 2 | 41 | 18 | 0 | 2 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 15:30 | 6 | 36 | 11 | 0 | 2 | 1 | 0 | 2 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 69 |
| 15:45 | 0 | 32 | 9 | 0 | 1 | 1 | 1 | 0 | 14 | 0 | 0 | 2 | 0 | 0 | 0 | 60 |
| 16:00 | 0 | 39 | 6 | 0 | 0 | 2 | 0 | 0 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 57 |
| Hour Total | 8 | 148 | 44 | 0 | 5 | 4 | 1 | 3 | 42 | 0 | 3 | 2 | 0 | 0 | 0 | 260 |
| 16:15 | 0 | 33 | 16 | 0 | 1 | 0 | 0 | 2 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 16:30 | 2 | 43 | 12 | 0 | 1 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| 16:45 | 1 | 44 | 11 | 0 | 2 | 0 | 0 | 2 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 73 |
| 17:00 | 0 | 30 | 11 | 0 | 0 | 1 | 0 | 1 | 8 | 0 | 4 | 0 | 0 | 0 | 0 | 55 |
| Hour Total | 3 | 150 | 50 | 0 | 4 | 1 | 0 | 6 | 44 | 0 | 5 | 0 | 0 | 0 | 0 | 263 |
| 17:15 | 0 | 32 | 8 | 0 | 1 | 0 | 0 | 1 | 13 | 0 | 3 | 0 | 0 | 0 | 0 | 58 |
| 17:30 | 0 | 31 | 13 | 0 | 1 | 1 | 0 | 2 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 59 |
| 17:45 | 0 | 55 | 10 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 2 | 0 | 0 | 0 | 0 | 76 |
| 18:00 | 0 | 43 | 17 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| Hour Total | 0 | 161 | 48 | 0 | 4 | 1 | 0 | 3 | 33 | 0 | 6 | 0 | 0 | 0 | 0 | 256 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|--------|
| 18:15 | 0 | 42 | 13 | 1 | 0 | 1 | 0 | 1 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 67 |
| 18:30 | 0 | 35 | 11 | 0 | 3 | 0 | 0 | 3 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 68 |
| 18:45 | 1 | 36 | 2 | 1 | 0 | 1 | 0 | 1 | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 49 |
| 19:00 | 1 | 33 | 13 | 1 | 2 | 0 | 0 | 0 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 61 |
| Hour Total | 2 | 146 | 39 | 3 | 5 | 2 | 0 | 5 | 36 | 1 | 5 | 1 | 0 | 0 | 0 | 245 |
| 19:15 | 2 | 19 | 6 | 0 | 2 | 0 | 0 | 1 | 8 | 0 | 2 | 3 | 0 | 0 | 0 | 43 |
| 19:30 | 0 | 36 | 8 | 1 | 2 | 1 | 0 | 0 | 10 | 0 | 2 | 2 | 0 | 0 | 0 | 62 |
| 19:45 | 0 | 22 | 0 | 0 | 0 | 1 | 0 | 6 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 41 |
| 20:00 | 0 | 19 | 4 | 0 | 2 | 0 | 0 | 2 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| Hour Total | 2 | 96 | 18 | 1 | 6 | 2 | 0 | 9 | 38 | 0 | 5 | 5 | 0 | 0 | 0 | 182 |
| 20:15 | 3 | 25 | 4 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 40 |
| 20:30 | 0 | 24 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 20:45 | 0 | 20 | 4 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 21:00 | 0 | 18 | 4 | 0 | 0 | 1 | 0 | 1 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 30 |
| Hour Total | 3 | 87 | 18 | 0 | 2 | 1 | 0 | 1 | 16 | 0 | 0 | 2 | 0 | 0 | 0 | 130 |
| 21:15 | 0 | 15 | 3 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 25 |
| 21:30 | 0 | 25 | 4 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 36 |
| 21:45 | 0 | 16 | 1 | 0 | 0 | 1 | 0 | 0 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 27 |
| 22:00 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 21 |
| Hour Total | 0 | 68 | 9 | 0 | 0 | 1 | 0 | 2 | 23 | 0 | 4 | 2 | 0 | 0 | 0 | 109 |
| 22:15 | 1 | 20 | 6 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 22:30 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 1 | 0 | 0 | 0 | 19 |
| 22:45 | 0 | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 22 |
| 23:00 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 11 |
| Hour Total | 1 | 43 | 14 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 4 | 1 | 0 | 0 | 0 | 86 |
| 23:15 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 23:30 | 0 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 11 |
| 23:45 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 14 |
| 24:00 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 11 |
| Hour Total | 0 | 25 | 4 | 0 | 1 | 0 | 0 | 1 | 12 | 0 | 3 | 2 | 0 | 0 | 0 | 48 |
| DAY TOTAL | 31 | 2184 | 651 | 8 | 96 | 32 | 3 | 79 | 791 | 2 | 85 | 26 | 0 | 0 | 0 | 3988 |
| PERCENTS | 0.8% | 54.8% | 16.3% | 0.2% | 2.4% | 0.8% | 0.1% | 2.0% | 19.8% | 0.1% | 2.1% | 0.7% | 0.0% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 71.9% | | | | | | | | | | | | | | | |
| Trucks & Buses | 28.1% | | | | | | | | | | | | | | | |
| AM Times | 09:30 | 06:30 | 06:00 | 09:45 | 10:00 | 08:45 | 06:45 | 09:45 | 10:15 | 06:00 | 00:15 | 05:00 | | | | 10:00 |
| AM Peaks | 4 | 141 | 44 | 2 | 11 | 4 | 1 | 6 | 62 | 1 | 8 | 3 | | | | 248 |
| PM Times | 14:45 | 17:45 | 12:30 | 18:15 | 12:15 | 12:45 | 11:45 | 13:00 | 13:00 | 17:45 | 17:00 | 18:45 | | | | 17:45 |
| PM Peaks | 8 | 175 | 55 | 3 | 10 | 5 | 1 | 12 | 64 | 1 | 10 | 6 | | | | 274 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|---|---|---|----|----|----|----|----|----|----|----|-------|
| 00:15 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 7 |
| 00:30 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 00:45 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 10 |
| 01:00 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| Hour Total | 0 | 16 | 1 | 1 | 0 | 0 | 0 | 0 | 9 | 0 | 4 | 1 | 0 | 0 | 0 | 32 |
| 01:15 | 0 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| 01:30 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| 01:45 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 02:00 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Hour Total | 0 | 13 | 2 | 0 | 3 | 0 | 0 | 0 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 32 |
| 02:15 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 6 |
| 02:30 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 02:45 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 7 |
| 03:00 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Hour Total | 0 | 9 | 4 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 22 |
| 03:15 | 0 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 03:30 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 03:45 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| 04:00 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Hour Total | 0 | 11 | 5 | 1 | 1 | 1 | 0 | 1 | 20 | 0 | 1 | 0 | 0 | 0 | 0 | 41 |
| 04:15 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 13 |
| 04:30 | 0 | 10 | 1 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 20 |
| 04:45 | 0 | 3 | 1 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| 05:00 | 0 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Hour Total | 0 | 25 | 4 | 3 | 2 | 0 | 0 | 0 | 23 | 0 | 3 | 1 | 0 | 0 | 0 | 61 |
| 05:15 | 0 | 9 | 4 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 05:30 | 0 | 19 | 5 | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 05:45 | 0 | 23 | 7 | 0 | 1 | 1 | 0 | 0 | 7 | 0 | 2 | 0 | 0 | 0 | 0 | 41 |
| 06:00 | 1 | 32 | 9 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 4 | 0 | 0 | 0 | 0 | 53 |
| Hour Total | 1 | 83 | 25 | 0 | 1 | 1 | 0 | 2 | 26 | 0 | 6 | 0 | 0 | 0 | 0 | 145 |
| 06:15 | 0 | 39 | 10 | 0 | 1 | 0 | 0 | 5 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 59 |
| 06:30 | 0 | 24 | 9 | 0 | 1 | 1 | 0 | 1 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 44 |
| 06:45 | 0 | 33 | 9 | 0 | 2 | 1 | 0 | 4 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 07:00 | 0 | 33 | 9 | 0 | 0 | 0 | 0 | 0 | 13 | 1 | 1 | 0 | 0 | 0 | 0 | 57 |
| Hour Total | 0 | 129 | 37 | 0 | 4 | 2 | 0 | 10 | 33 | 1 | 4 | 0 | 0 | 0 | 0 | 220 |
| 07:15 | 0 | 35 | 9 | 0 | 2 | 0 | 0 | 0 | 13 | 1 | 2 | 1 | 0 | 0 | 0 | 63 |
| 07:30 | 0 | 35 | 13 | 0 | 3 | 2 | 0 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 63 |
| 07:45 | 0 | 32 | 6 | 0 | 4 | 1 | 0 | 1 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 56 |
| 08:00 | 0 | 27 | 7 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 46 |
| Hour Total | 0 | 129 | 35 | 0 | 9 | 3 | 0 | 1 | 43 | 3 | 4 | 1 | 0 | 0 | 0 | 228 |
| 08:15 | 0 | 29 | 11 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 08:30 | 0 | 34 | 6 | 0 | 1 | 1 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| 08:45 | 0 | 22 | 12 | 0 | 1 | 0 | 0 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 09:00 | 0 | 22 | 8 | 0 | 0 | 1 | 0 | 3 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 50 |
| Hour Total | 0 | 107 | 37 | 0 | 2 | 2 | 0 | 4 | 58 | 0 | 1 | 0 | 0 | 0 | 0 | 211 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|----|---|---|---|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 29 | 9 | 0 | 2 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 09:30 | 0 | 27 | 7 | 0 | 1 | 0 | 0 | 1 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 49 |
| 09:45 | 0 | 29 | 8 | 0 | 2 | 1 | 0 | 2 | 20 | 0 | 1 | 0 | 0 | 0 | 0 | 63 |
| 10:00 | 0 | 29 | 5 | 0 | 2 | 0 | 0 | 2 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 51 |
| Hour Total | 0 | 114 | 29 | 0 | 7 | 1 | 0 | 5 | 59 | 1 | 2 | 0 | 0 | 0 | 0 | 218 |
| 10:15 | 0 | 16 | 12 | 0 | 5 | 3 | 1 | 1 | 14 | 0 | 1 | 1 | 0 | 0 | 0 | 54 |
| 10:30 | 0 | 25 | 10 | 0 | 2 | 1 | 1 | 2 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 10:45 | 1 | 31 | 15 | 0 | 2 | 0 | 0 | 2 | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 68 |
| 11:00 | 1 | 32 | 13 | 0 | 1 | 0 | 0 | 2 | 12 | 0 | 0 | 1 | 1 | 0 | 0 | 63 |
| Hour Total | 2 | 104 | 50 | 0 | 10 | 4 | 2 | 7 | 56 | 0 | 1 | 3 | 1 | 0 | 0 | 240 |
| 11:15 | 0 | 35 | 7 | 1 | 2 | 2 | 0 | 3 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 64 |
| 11:30 | 3 | 32 | 15 | 0 | 3 | 0 | 0 | 4 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 11:45 | 1 | 29 | 9 | 0 | 3 | 1 | 0 | 0 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 57 |
| 12:00 | 0 | 31 | 7 | 1 | 2 | 1 | 0 | 1 | 15 | 0 | 1 | 1 | 0 | 0 | 0 | 60 |
| Hour Total | 4 | 127 | 38 | 2 | 10 | 4 | 0 | 8 | 55 | 0 | 3 | 1 | 0 | 0 | 0 | 252 |
| 12:15 | 0 | 27 | 8 | 0 | 1 | 0 | 0 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 12:30 | 0 | 41 | 16 | 0 | 1 | 1 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 77 |
| 12:45 | 1 | 37 | 7 | 0 | 2 | 2 | 0 | 1 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 60 |
| 13:00 | 1 | 31 | 12 | 0 | 0 | 0 | 0 | 2 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 60 |
| Hour Total | 2 | 136 | 43 | 0 | 4 | 3 | 0 | 4 | 54 | 0 | 3 | 0 | 0 | 0 | 0 | 249 |
| 13:15 | 0 | 32 | 6 | 0 | 2 | 1 | 0 | 1 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 56 |
| 13:30 | 0 | 44 | 9 | 2 | 2 | 2 | 0 | 1 | 13 | 0 | 4 | 0 | 0 | 0 | 0 | 77 |
| 13:45 | 0 | 41 | 15 | 0 | 3 | 1 | 0 | 0 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 74 |
| 14:00 | 0 | 40 | 13 | 1 | 2 | 2 | 0 | 2 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 73 |
| Hour Total | 0 | 157 | 43 | 3 | 9 | 6 | 0 | 4 | 50 | 1 | 6 | 1 | 0 | 0 | 0 | 280 |
| 14:15 | 1 | 42 | 11 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 65 |
| 14:30 | 0 | 49 | 10 | 0 | 0 | 1 | 0 | 2 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 76 |
| 14:45 | 0 | 43 | 14 | 1 | 2 | 0 | 0 | 1 | 13 | 1 | 4 | 0 | 0 | 0 | 0 | 79 |
| 15:00 | 0 | 44 | 15 | 0 | 3 | 1 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| Hour Total | 1 | 178 | 50 | 1 | 5 | 2 | 0 | 3 | 46 | 1 | 7 | 0 | 0 | 0 | 0 | 294 |
| 15:15 | 0 | 43 | 15 | 0 | 0 | 0 | 0 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 67 |
| 15:30 | 3 | 39 | 17 | 0 | 3 | 2 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 77 |
| 15:45 | 0 | 32 | 5 | 0 | 0 | 0 | 0 | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 16:00 | 0 | 49 | 14 | 0 | 6 | 1 | 0 | 2 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 84 |
| Hour Total | 3 | 163 | 51 | 0 | 9 | 3 | 0 | 3 | 43 | 1 | 0 | 1 | 0 | 0 | 0 | 277 |
| 16:15 | 0 | 38 | 8 | 0 | 1 | 0 | 0 | 1 | 11 | 0 | 4 | 0 | 0 | 0 | 0 | 63 |
| 16:30 | 0 | 37 | 10 | 0 | 3 | 0 | 0 | 1 | 14 | 0 | 0 | 1 | 0 | 0 | 0 | 66 |
| 16:45 | 0 | 44 | 9 | 1 | 5 | 1 | 0 | 4 | 12 | 1 | 2 | 0 | 0 | 0 | 0 | 79 |
| 17:00 | 0 | 43 | 13 | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| Hour Total | 0 | 162 | 40 | 1 | 9 | 1 | 0 | 7 | 47 | 1 | 6 | 1 | 0 | 0 | 0 | 275 |
| 17:15 | 0 | 33 | 12 | 0 | 3 | 0 | 0 | 4 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| 17:30 | 0 | 51 | 14 | 0 | 3 | 0 | 0 | 1 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 79 |
| 17:45 | 0 | 45 | 13 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 18:00 | 0 | 45 | 10 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 64 |
| Hour Total | 0 | 174 | 49 | 0 | 7 | 0 | 0 | 5 | 33 | 0 | 3 | 0 | 0 | 0 | 0 | 271 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Class.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|--------|
| 18:15 | 1 | 38 | 9 | 0 | 1 | 2 | 0 | 2 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 61 |
| 18:30 | 0 | 27 | 6 | 1 | 1 | 0 | 0 | 0 | 8 | 1 | 2 | 0 | 0 | 0 | 0 | 46 |
| 18:45 | 0 | 37 | 7 | 0 | 1 | 2 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 19:00 | 0 | 35 | 6 | 0 | 2 | 0 | 1 | 1 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 51 |
| Hour Total | 1 | 137 | 28 | 1 | 5 | 4 | 1 | 5 | 24 | 2 | 3 | 2 | 0 | 0 | 0 | 213 |
| 19:15 | 0 | 26 | 12 | 0 | 1 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 19:30 | 0 | 29 | 5 | 0 | 0 | 0 | 0 | 4 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 45 |
| 19:45 | 0 | 28 | 3 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 38 |
| 20:00 | 0 | 21 | 8 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| Hour Total | 0 | 104 | 28 | 0 | 3 | 0 | 0 | 7 | 20 | 0 | 1 | 2 | 0 | 0 | 0 | 165 |
| 20:15 | 0 | 18 | 9 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 35 |
| 20:30 | 1 | 29 | 6 | 0 | 1 | 1 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 44 |
| 20:45 | 0 | 12 | 4 | 0 | 1 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 21:00 | 0 | 22 | 6 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| Hour Total | 1 | 81 | 25 | 0 | 3 | 1 | 0 | 2 | 21 | 0 | 2 | 1 | 0 | 0 | 0 | 137 |
| 21:15 | 0 | 13 | 8 | 0 | 1 | 0 | 0 | 1 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 29 |
| 21:30 | 1 | 21 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 3 | 1 | 0 | 0 | 0 | 34 |
| 21:45 | 0 | 18 | 4 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 2 | 1 | 0 | 0 | 0 | 32 |
| 22:00 | 0 | 17 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 26 |
| Hour Total | 1 | 69 | 17 | 0 | 1 | 0 | 0 | 3 | 20 | 0 | 5 | 5 | 0 | 0 | 0 | 121 |
| 22:15 | 0 | 11 | 4 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 22 |
| 22:30 | 0 | 16 | 4 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 22:45 | 0 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 19 |
| 23:00 | 0 | 18 | 3 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 30 |
| Hour Total | 0 | 55 | 14 | 0 | 1 | 0 | 0 | 3 | 19 | 0 | 2 | 2 | 0 | 0 | 0 | 96 |
| 23:15 | 0 | 14 | 1 | 1 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 23:30 | 0 | 9 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 23:45 | 0 | 5 | 2 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 16 |
| 24:00 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 1 | 0 | 0 | 0 | 17 |
| Hour Total | 0 | 35 | 5 | 1 | 2 | 0 | 0 | 2 | 16 | 0 | 3 | 2 | 0 | 0 | 0 | 66 |
| DAY TOTAL | 16 | 2318 | 660 | 14 | 107 | 38 | 3 | 88 | 791 | 11 | 74 | 25 | 1 | 0 | 0 | 4146 |
| PERCENTS | 0.4% | 55.9% | 15.9% | 0.3% | 2.6% | 0.9% | 0.1% | 2.1% | 19.1% | 0.3% | 1.8% | 0.6% | 0.0% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 72.2% | | | | | | | | | | | | | | | |
| Trucks & Buses | 27.8% | | | | | | | | | | | | | | | |
| AM Times | 10:45 | 06:45 | 10:15 | 04:00 | 09:45 | 09:45 | 09:45 | 10:45 | 09:00 | 07:00 | 05:45 | 10:15 | 10:15 | | | 10:45 |
| AM Peaks | 5 | 136 | 50 | 3 | 11 | 5 | 2 | 11 | 62 | 4 | 9 | 3 | 1 | | | 266 |
| PM Times | 11:00 | 14:30 | 14:45 | 13:15 | 16:00 | 13:15 | 18:15 | 16:30 | 11:45 | 14:00 | 12:45 | 21:15 | 11:00 | | | 14:45 |
| PM Peaks | 5 | 179 | 61 | 3 | 15 | 6 | 1 | 10 | 61 | 2 | 9 | 5 | 1 | | | 297 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|----|----|---|---|---|---|---|---|----|----|----|----|----|----|-------|
| 00:15 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 5 |
| 01:15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hour Total | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hour Total | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:30 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 04:45 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 05:00 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| Hour Total | 0 | 9 | 4 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 18 |
| 05:15 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 05:30 | 0 | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 05:45 | 0 | 10 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 06:00 | 0 | 15 | 6 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| Hour Total | 0 | 35 | 17 | 0 | 2 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 06:15 | 0 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 06:30 | 0 | 12 | 4 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 06:45 | 0 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 07:00 | 0 | 25 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| Hour Total | 0 | 68 | 18 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 07:15 | 0 | 28 | 13 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 07:30 | 0 | 30 | 8 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 07:45 | 0 | 21 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 08:00 | 0 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Hour Total | 0 | 97 | 27 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 129 |
| 08:15 | 0 | 20 | 5 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 31 |
| 08:30 | 0 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 17 |
| 08:45 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 09:00 | 0 | 11 | 6 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Hour Total | 0 | 53 | 15 | 0 | 1 | 0 | 0 | 1 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 78 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|---|---|---|---|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 09:30 | 1 | 12 | 4 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 09:45 | 0 | 11 | 2 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 10:00 | 0 | 7 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Hour Total | 1 | 42 | 8 | 2 | 1 | 0 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 10:15 | 0 | 12 | 4 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 10:30 | 0 | 4 | 5 | 0 | 1 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 10:45 | 0 | 12 | 3 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 22 |
| 11:00 | 0 | 8 | 6 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Hour Total | 0 | 36 | 18 | 0 | 3 | 0 | 1 | 1 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 76 |
| 11:15 | 0 | 8 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 11:30 | 0 | 14 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 11:45 | 1 | 14 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 12:00 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Hour Total | 1 | 43 | 19 | 0 | 1 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 12:15 | 1 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 12:30 | 0 | 9 | 4 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 12:45 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 13:00 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Hour Total | 1 | 39 | 9 | 0 | 1 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 61 |
| 13:15 | 0 | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 13:30 | 0 | 19 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 13:45 | 0 | 20 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 14:00 | 0 | 16 | 6 | 0 | 1 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| Hour Total | 0 | 64 | 21 | 0 | 1 | 1 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |
| 14:15 | 0 | 10 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 14:30 | 0 | 13 | 5 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 14:45 | 0 | 21 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 33 |
| 15:00 | 1 | 25 | 5 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| Hour Total | 1 | 69 | 22 | 1 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 101 |
| 15:15 | 0 | 29 | 10 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 45 |
| 15:30 | 0 | 14 | 8 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 15:45 | 2 | 12 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 16:00 | 0 | 15 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Hour Total | 2 | 70 | 29 | 0 | 2 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 113 |
| 16:15 | 1 | 26 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 16:30 | 0 | 20 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 16:45 | 0 | 22 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 17:00 | 0 | 32 | 8 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| Hour Total | 1 | 100 | 25 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 128 |
| 17:15 | 1 | 29 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 17:30 | 0 | 20 | 8 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 |
| 17:45 | 0 | 23 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 18:00 | 0 | 20 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| Hour Total | 1 | 92 | 29 | 1 | 2 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 129 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|--------|
| 18:15 | 1 | 19 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 18:30 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 18:45 | 0 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 19:00 | 0 | 16 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| Hour Total | 1 | 61 | 13 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 19:15 | 1 | 7 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 19:30 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 10 |
| 19:45 | 0 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 20:00 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 16 |
| Hour Total | 1 | 42 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 52 |
| 20:15 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 20:30 | 0 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21:00 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Hour Total | 0 | 19 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 21:15 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 21:30 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 21:45 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 22:00 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Hour Total | 0 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 22:15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 22:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 22:45 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 23:00 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Hour Total | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 23:15 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 23:30 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 23:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 24:00 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Hour Total | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| DAY TOTAL | 10 | 975 | 295 | 5 | 19 | 7 | 1 | 12 | 98 | 2 | 3 | 3 | 2 | 0 | 0 | 1432 |
| PERCENTS | 0.7% | 68.1% | 20.6% | 0.3% | 1.3% | 0.5% | 0.1% | 0.8% | 6.8% | 0.1% | 0.2% | 0.2% | 0.1% | 0.0% | 0.0% | 100.0% |

Passenger Vehicles 89.4% Trucks & Buses 10.6%

| | | | | | | | | | | | | | | | | |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|-------|
| AM Times | 08:45 | 07:00 | 07:00 | 09:15 | 09:45 | 05:45 | 09:30 | 09:00 | 10:15 | 07:45 | 00:15 | | 07:30 | | | 07:00 |
| AM Peaks | 1 | 104 | 35 | 2 | 3 | 3 | 1 | 2 | 16 | 1 | 1 | | 1 | | | 143 |
| PM Times | 15:00 | 17:00 | 14:45 | 14:15 | 13:45 | 13:15 | | 11:30 | 11:45 | 16:45 | | 19:15 | 14:30 | | | 17:00 |
| PM Peaks | 3 | 104 | 33 | 1 | 4 | 1 | | 2 | 10 | 1 | | 2 | 1 | | | 144 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|---|---|---|---|---|----|----|----|----|----|----|-------|
| 00:15 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 00:45 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Hour Total | 0 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 01:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 01:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 01:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 7 |
| 02:15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:45 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Hour Total | 0 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:30 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 03:45 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hour Total | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:30 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| 04:45 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 |
| 05:00 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Hour Total | 0 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 26 |
| 05:15 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 05:30 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 05:45 | 0 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 06:00 | 0 | 11 | 10 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| Hour Total | 0 | 20 | 15 | 0 | 1 | 0 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 06:15 | 0 | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 06:30 | 0 | 19 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 06:45 | 0 | 22 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 30 |
| 07:00 | 0 | 17 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Hour Total | 0 | 70 | 20 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 95 |
| 07:15 | 0 | 23 | 7 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 33 |
| 07:30 | 0 | 33 | 8 | 1 | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 07:45 | 0 | 28 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 08:00 | 0 | 20 | 3 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| Hour Total | 0 | 104 | 20 | 1 | 3 | 2 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 138 |
| 08:15 | 0 | 17 | 4 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 08:30 | 0 | 21 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 08:45 | 0 | 14 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 09:00 | 0 | 10 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Hour Total | 0 | 62 | 11 | 0 | 2 | 1 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 85 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|---|---|---|---|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 09:30 | 0 | 11 | 6 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 09:45 | 0 | 9 | 7 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 10:00 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Hour Total | 0 | 35 | 17 | 0 | 0 | 1 | 0 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| 10:15 | 0 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 10:30 | 1 | 10 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 10:45 | 0 | 15 | 5 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 11:00 | 0 | 13 | 5 | 0 | 1 | 2 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| Hour Total | 1 | 50 | 14 | 0 | 2 | 3 | 0 | 3 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| 11:15 | 0 | 13 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 11:30 | 0 | 14 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 11:45 | 0 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 12:00 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Hour Total | 0 | 50 | 13 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| 12:15 | 0 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 12:30 | 0 | 10 | 4 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 12:45 | 0 | 12 | 4 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 13:00 | 0 | 10 | 8 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Hour Total | 0 | 46 | 17 | 0 | 2 | 1 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| 13:15 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 13:30 | 0 | 17 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 13:45 | 0 | 18 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 14:00 | 0 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Hour Total | 0 | 57 | 14 | 0 | 1 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| 14:15 | 0 | 18 | 5 | 1 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 14:30 | 2 | 22 | 10 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 14:45 | 0 | 24 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 15:00 | 0 | 13 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| Hour Total | 2 | 77 | 31 | 1 | 1 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| 15:15 | 0 | 41 | 7 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| 15:30 | 0 | 38 | 9 | 0 | 2 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 15:45 | 0 | 29 | 3 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 16:00 | 0 | 22 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| Hour Total | 0 | 130 | 25 | 0 | 3 | 0 | 0 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 170 |
| 16:15 | 3 | 21 | 6 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 34 |
| 16:30 | 0 | 20 | 2 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 16:45 | 0 | 21 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 17:00 | 0 | 42 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| Hour Total | 3 | 104 | 29 | 0 | 3 | 1 | 0 | 1 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 146 |
| 17:15 | 0 | 31 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 17:30 | 1 | 28 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 17:45 | 0 | 31 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 18:00 | 0 | 17 | 3 | 0 | 1 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| Hour Total | 1 | 107 | 25 | 0 | 3 | 1 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 142 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|--------|
| 18:15 | 0 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 18:30 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 18:45 | 0 | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 19:00 | 0 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Hour Total | 0 | 39 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| 19:15 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 19:30 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 19:45 | 0 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 20:00 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 6 |
| Hour Total | 0 | 38 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 46 |
| 20:15 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 20:30 | 0 | 4 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 20:45 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 21:00 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Hour Total | 0 | 25 | 5 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 21:15 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 21:30 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 21:45 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 22:00 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Hour Total | 0 | 18 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 22:15 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 22:30 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 22:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 23:00 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Hour Total | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 23:15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 23:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 23:45 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 24:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| Hour Total | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 12 |
| DAY TOTAL | 7 | 1080 | 287 | 3 | 23 | 14 | 0 | 16 | 111 | 0 | 5 | 3 | 0 | 0 | 0 | 1549 |
| PERCENTS | 0.5% | 69.7% | 18.5% | 0.2% | 1.5% | 0.9% | 0.0% | 1.0% | 7.2% | 0.0% | 0.3% | 0.2% | 0.0% | 0.0% | 0.0% | 100.0% |

Passenger Vehicles 88.7% Trucks & Buses 11.3%

| | | | | | | | | | | | |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| AM Times | 09:45 | 07:15 | 06:00 | 02:00 | 07:15 | 07:30 | 09:45 | 05:45 | 04:00 | 01:00 | 07:15 |
| AM Peaks | 1 | 104 | 27 | 1 | 3 | 3 | 3 | 10 | 2 | 1 | 138 |
| PM Times | 15:30 | 17:00 | 16:45 | 13:30 | 15:30 | 11:00 | 14:45 | 14:45 | 15:30 | 15:15 | |
| PM Peaks | 3 | 132 | 37 | 1 | 4 | 2 | 2 | 12 | 1 | 170 | |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|-----|---|----|----|---|---|----|----|----|----|----|----|----|-------|
| 00:15 | 0 | 5 | 2 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 14 |
| 00:30 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 00:45 | 0 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 01:00 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Hour Total | 0 | 12 | 5 | 0 | 4 | 1 | 0 | 1 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 39 |
| 01:15 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 01:30 | 0 | 5 | 2 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 13 |
| 01:45 | 0 | 7 | 1 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 19 |
| 02:00 | 0 | 10 | 3 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Hour Total | 0 | 27 | 7 | 0 | 3 | 2 | 0 | 0 | 15 | 0 | 1 | 2 | 0 | 0 | 0 | 57 |
| 02:15 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 0 | 0 | 0 | 0 | 13 |
| 02:30 | 0 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| 02:45 | 0 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 19 |
| 03:00 | 0 | 7 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Hour Total | 0 | 20 | 3 | 2 | 2 | 1 | 0 | 1 | 20 | 0 | 3 | 1 | 0 | 0 | 0 | 53 |
| 03:15 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 14 |
| 03:30 | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 18 |
| 03:45 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 5 | 0 | 0 | 0 | 0 | 22 |
| 04:00 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Hour Total | 0 | 21 | 8 | 0 | 0 | 0 | 0 | 4 | 32 | 0 | 7 | 0 | 0 | 0 | 0 | 72 |
| 04:15 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 0 | 0 | 0 | 29 |
| 04:30 | 0 | 7 | 4 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 20 |
| 04:45 | 0 | 26 | 5 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 41 |
| 05:00 | 0 | 18 | 5 | 0 | 0 | 1 | 0 | 2 | 8 | 0 | 2 | 2 | 0 | 0 | 0 | 38 |
| Hour Total | 0 | 67 | 15 | 0 | 3 | 1 | 0 | 2 | 30 | 0 | 7 | 3 | 0 | 0 | 0 | 128 |
| 05:15 | 0 | 28 | 15 | 0 | 1 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 56 |
| 05:30 | 0 | 32 | 13 | 0 | 2 | 2 | 0 | 3 | 15 | 0 | 3 | 0 | 0 | 0 | 0 | 70 |
| 05:45 | 0 | 39 | 18 | 0 | 0 | 3 | 0 | 0 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 74 |
| 06:00 | 0 | 59 | 19 | 0 | 4 | 1 | 0 | 1 | 16 | 2 | 0 | 1 | 0 | 0 | 0 | 103 |
| Hour Total | 0 | 158 | 65 | 0 | 7 | 6 | 0 | 4 | 54 | 2 | 6 | 1 | 0 | 0 | 0 | 303 |
| 06:15 | 0 | 69 | 24 | 0 | 4 | 6 | 0 | 3 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| 06:30 | 0 | 60 | 21 | 0 | 8 | 2 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 102 |
| 06:45 | 0 | 81 | 16 | 1 | 3 | 4 | 0 | 3 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 116 |
| 07:00 | 0 | 62 | 23 | 0 | 5 | 1 | 0 | 1 | 15 | 0 | 2 | 0 | 0 | 0 | 0 | 109 |
| Hour Total | 0 | 272 | 84 | 1 | 20 | 13 | 0 | 7 | 49 | 0 | 2 | 0 | 0 | 0 | 0 | 448 |
| 07:15 | 0 | 90 | 33 | 0 | 6 | 1 | 0 | 2 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 149 |
| 07:30 | 0 | 79 | 25 | 0 | 8 | 2 | 0 | 2 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 128 |
| 07:45 | 0 | 71 | 24 | 1 | 7 | 1 | 0 | 3 | 18 | 0 | 1 | 1 | 0 | 0 | 0 | 127 |
| 08:00 | 1 | 73 | 20 | 0 | 7 | 3 | 1 | 0 | 13 | 1 | 0 | 1 | 0 | 0 | 0 | 120 |
| Hour Total | 1 | 313 | 102 | 1 | 28 | 7 | 1 | 7 | 58 | 1 | 3 | 2 | 0 | 0 | 0 | 524 |
| 08:15 | 0 | 71 | 18 | 0 | 3 | 2 | 0 | 3 | 24 | 0 | 3 | 1 | 0 | 0 | 0 | 125 |
| 08:30 | 1 | 52 | 24 | 0 | 5 | 1 | 1 | 3 | 19 | 1 | 1 | 0 | 0 | 0 | 0 | 108 |
| 08:45 | 0 | 44 | 26 | 0 | 3 | 0 | 0 | 0 | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 94 |
| 09:00 | 0 | 39 | 21 | 0 | 2 | 0 | 0 | 2 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 78 |
| Hour Total | 1 | 206 | 89 | 0 | 13 | 3 | 1 | 8 | 76 | 3 | 4 | 1 | 0 | 0 | 0 | 405 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|-----|---|----|----|---|----|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 54 | 17 | 0 | 6 | 3 | 1 | 5 | 24 | 0 | 2 | 0 | 0 | 0 | 0 | 112 |
| 09:30 | 1 | 48 | 22 | 0 | 4 | 3 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 96 |
| 09:45 | 1 | 59 | 21 | 0 | 6 | 2 | 0 | 4 | 23 | 0 | 1 | 0 | 0 | 0 | 0 | 117 |
| 10:00 | 0 | 48 | 24 | 0 | 1 | 4 | 1 | 4 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 102 |
| Hour Total | 2 | 209 | 84 | 0 | 17 | 12 | 2 | 13 | 85 | 0 | 3 | 0 | 0 | 0 | 0 | 427 |
| 10:15 | 0 | 50 | 15 | 0 | 5 | 1 | 0 | 1 | 19 | 0 | 1 | 0 | 0 | 0 | 0 | 92 |
| 10:30 | 1 | 46 | 18 | 0 | 2 | 0 | 1 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| 10:45 | 0 | 45 | 29 | 0 | 3 | 1 | 0 | 1 | 18 | 0 | 2 | 0 | 0 | 0 | 0 | 99 |
| 11:00 | 2 | 48 | 13 | 0 | 2 | 1 | 0 | 2 | 22 | 0 | 2 | 0 | 0 | 0 | 0 | 92 |
| Hour Total | 3 | 189 | 75 | 0 | 12 | 3 | 1 | 5 | 76 | 0 | 5 | 0 | 0 | 0 | 0 | 369 |
| 11:15 | 0 | 55 | 17 | 0 | 2 | 3 | 1 | 1 | 18 | 0 | 1 | 1 | 0 | 0 | 0 | 99 |
| 11:30 | 0 | 53 | 25 | 0 | 4 | 0 | 0 | 4 | 24 | 0 | 1 | 0 | 0 | 0 | 0 | 111 |
| 11:45 | 1 | 47 | 20 | 0 | 5 | 1 | 0 | 7 | 19 | 0 | 3 | 1 | 0 | 0 | 0 | 104 |
| 12:00 | 0 | 51 | 20 | 0 | 0 | 2 | 0 | 1 | 19 | 0 | 1 | 1 | 0 | 0 | 0 | 95 |
| Hour Total | 1 | 206 | 82 | 0 | 11 | 6 | 1 | 13 | 80 | 0 | 6 | 3 | 0 | 0 | 0 | 409 |
| 12:15 | 0 | 60 | 19 | 1 | 4 | 2 | 1 | 4 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 105 |
| 12:30 | 0 | 63 | 15 | 0 | 2 | 0 | 0 | 2 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 97 |
| 12:45 | 2 | 46 | 17 | 0 | 3 | 3 | 1 | 3 | 23 | 0 | 3 | 0 | 0 | 0 | 0 | 101 |
| 13:00 | 1 | 50 | 19 | 0 | 1 | 1 | 0 | 5 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 91 |
| Hour Total | 3 | 219 | 70 | 1 | 10 | 6 | 2 | 14 | 61 | 2 | 6 | 0 | 0 | 0 | 0 | 394 |
| 13:15 | 0 | 47 | 22 | 0 | 2 | 0 | 0 | 2 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 93 |
| 13:30 | 0 | 48 | 10 | 0 | 3 | 1 | 0 | 2 | 23 | 0 | 2 | 1 | 0 | 0 | 0 | 90 |
| 13:45 | 0 | 57 | 22 | 0 | 5 | 1 | 0 | 4 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 14:00 | 0 | 52 | 19 | 0 | 4 | 0 | 0 | 2 | 19 | 0 | 1 | 0 | 0 | 0 | 0 | 97 |
| Hour Total | 0 | 204 | 73 | 0 | 14 | 2 | 0 | 10 | 83 | 0 | 3 | 1 | 0 | 0 | 0 | 390 |
| 14:15 | 0 | 58 | 26 | 0 | 4 | 0 | 0 | 0 | 13 | 0 | 1 | 1 | 0 | 0 | 0 | 103 |
| 14:30 | 0 | 64 | 17 | 0 | 6 | 0 | 0 | 3 | 12 | 0 | 3 | 2 | 0 | 0 | 0 | 107 |
| 14:45 | 1 | 66 | 24 | 3 | 5 | 2 | 0 | 5 | 20 | 0 | 0 | 1 | 0 | 0 | 0 | 127 |
| 15:00 | 0 | 57 | 18 | 0 | 1 | 3 | 3 | 4 | 15 | 0 | 1 | 2 | 0 | 0 | 0 | 104 |
| Hour Total | 1 | 245 | 85 | 3 | 16 | 5 | 3 | 12 | 60 | 0 | 5 | 6 | 0 | 0 | 0 | 441 |
| 15:15 | 0 | 82 | 35 | 1 | 11 | 2 | 0 | 3 | 18 | 0 | 2 | 1 | 0 | 0 | 0 | 155 |
| 15:30 | 1 | 82 | 29 | 0 | 4 | 0 | 0 | 3 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 138 |
| 15:45 | 1 | 70 | 19 | 0 | 3 | 0 | 0 | 3 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 114 |
| 16:00 | 0 | 80 | 20 | 0 | 1 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 1 | 0 | 0 | 114 |
| Hour Total | 2 | 314 | 103 | 1 | 19 | 2 | 0 | 9 | 65 | 0 | 4 | 1 | 1 | 0 | 0 | 521 |
| 16:15 | 1 | 70 | 23 | 0 | 2 | 0 | 0 | 3 | 16 | 0 | 3 | 0 | 0 | 0 | 0 | 118 |
| 16:30 | 0 | 88 | 20 | 0 | 2 | 0 | 0 | 5 | 16 | 0 | 3 | 0 | 0 | 0 | 0 | 134 |
| 16:45 | 2 | 89 | 30 | 1 | 0 | 1 | 1 | 3 | 15 | 0 | 2 | 0 | 0 | 0 | 0 | 144 |
| 17:00 | 1 | 110 | 26 | 0 | 0 | 1 | 1 | 4 | 14 | 0 | 2 | 0 | 0 | 0 | 0 | 159 |
| Hour Total | 4 | 357 | 99 | 1 | 4 | 2 | 2 | 15 | 61 | 0 | 10 | 0 | 0 | 0 | 0 | 555 |
| 17:15 | 1 | 114 | 27 | 0 | 2 | 1 | 0 | 2 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 158 |
| 17:30 | 0 | 90 | 23 | 0 | 0 | 0 | 0 | 3 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 129 |
| 17:45 | 0 | 71 | 30 | 1 | 5 | 1 | 0 | 5 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 131 |
| 18:00 | 2 | 68 | 18 | 1 | 2 | 1 | 0 | 5 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 115 |
| Hour Total | 3 | 343 | 98 | 2 | 9 | 3 | 0 | 15 | 56 | 1 | 3 | 0 | 0 | 0 | 0 | 533 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|--------|
| 18:15 | 0 | 65 | 17 | 0 | 2 | 0 | 0 | 1 | 11 | 0 | 3 | 1 | 0 | 0 | 0 | 100 |
| 18:30 | 2 | 44 | 13 | 1 | 3 | 0 | 0 | 0 | 12 | 0 | 2 | 2 | 0 | 0 | 0 | 79 |
| 18:45 | 0 | 53 | 11 | 0 | 3 | 1 | 0 | 2 | 9 | 0 | 2 | 2 | 0 | 0 | 0 | 83 |
| 19:00 | 0 | 54 | 9 | 1 | 0 | 1 | 0 | 4 | 13 | 0 | 2 | 1 | 0 | 0 | 0 | 85 |
| Hour Total | 2 | 216 | 50 | 2 | 8 | 2 | 0 | 7 | 45 | 0 | 9 | 6 | 0 | 0 | 0 | 347 |
| 19:15 | 0 | 38 | 10 | 0 | 2 | 1 | 0 | 3 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 19:30 | 1 | 48 | 12 | 0 | 2 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 19:45 | 0 | 54 | 16 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 20:00 | 0 | 63 | 14 | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 84 |
| Hour Total | 1 | 203 | 52 | 0 | 4 | 2 | 0 | 5 | 29 | 0 | 0 | 1 | 0 | 0 | 0 | 297 |
| 20:15 | 0 | 35 | 7 | 0 | 2 | 0 | 0 | 2 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 57 |
| 20:30 | 0 | 36 | 14 | 0 | 0 | 1 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 20:45 | 1 | 31 | 6 | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 2 | 0 | 0 | 0 | 0 | 50 |
| 21:00 | 0 | 37 | 8 | 0 | 1 | 2 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| Hour Total | 1 | 139 | 35 | 0 | 3 | 3 | 0 | 5 | 35 | 0 | 2 | 1 | 0 | 0 | 0 | 224 |
| 21:15 | 0 | 16 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 2 | 0 | 0 | 0 | 34 |
| 21:30 | 0 | 29 | 6 | 0 | 0 | 1 | 0 | 1 | 8 | 0 | 1 | 1 | 0 | 0 | 0 | 47 |
| 21:45 | 0 | 27 | 2 | 0 | 0 | 0 | 0 | 2 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 41 |
| 22:00 | 0 | 15 | 6 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 4 | 0 | 0 | 0 | 0 | 33 |
| Hour Total | 0 | 87 | 21 | 0 | 1 | 1 | 0 | 3 | 31 | 0 | 7 | 4 | 0 | 0 | 0 | 155 |
| 22:15 | 0 | 17 | 3 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 30 |
| 22:30 | 0 | 15 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 22:45 | 0 | 18 | 4 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 29 |
| 23:00 | 0 | 14 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 19 |
| Hour Total | 0 | 64 | 13 | 0 | 0 | 0 | 0 | 3 | 18 | 0 | 2 | 2 | 0 | 0 | 0 | 102 |
| 23:15 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 22 |
| 23:30 | 0 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 22 |
| 23:45 | 0 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 12 |
| 24:00 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 14 |
| Hour Total | 0 | 36 | 7 | 0 | 1 | 0 | 0 | 2 | 16 | 0 | 6 | 2 | 0 | 0 | 0 | 70 |
| DAY TOTAL | 25 | 4127 | 1325 | 14 | 209 | 83 | 13 | 165 | 1150 | 9 | 105 | 37 | 1 | 0 | 0 | 7263 |
| PERCENTS | 0.3% | 56.8% | 18.2% | 0.2% | 2.9% | 1.1% | 0.2% | 2.3% | 15.8% | 0.1% | 1.4% | 0.5% | 0.0% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 75.4% | | | | | | | | | | | | | | | |
| Trucks & Buses | 24.6% | | | | | | | | | | | | | | | |
| AM Times | 10:15 | 07:15 | 07:00 | 01:45 | 07:15 | 06:00 | 07:45 | 09:15 | 09:15 | 08:00 | 03:45 | 04:15 | | | | 07:15 |
| AM Peaks | 3 | 313 | 105 | 2 | 28 | 13 | 2 | 13 | 85 | 3 | 10 | 3 | | | | 524 |
| PM Times | 16:15 | 16:45 | 14:45 | 14:30 | 14:30 | 12:00 | 14:15 | 11:30 | 11:00 | 12:15 | 16:15 | 14:15 | 15:15 | | | 16:30 |
| PM Peaks | 4 | 403 | 106 | 4 | 23 | 7 | 3 | 16 | 83 | 2 | 10 | 6 | 1 | | | 595 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|-----|---|----|----|---|----|----|----|----|----|----|----|----|-------|
| 00:15 | 0 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 00:30 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| 00:45 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 01:00 | 0 | 5 | 1 | 0 | 0 | 1 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 14 |
| Hour Total | 0 | 22 | 3 | 1 | 0 | 1 | 0 | 0 | 17 | 0 | 2 | 0 | 0 | 0 | 0 | 46 |
| 01:15 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 01:30 | 0 | 5 | 2 | 0 | 1 | 1 | 0 | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 18 |
| 01:45 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 12 |
| 02:00 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 14 |
| Hour Total | 0 | 20 | 4 | 0 | 2 | 1 | 0 | 2 | 20 | 0 | 3 | 1 | 0 | 0 | 0 | 53 |
| 02:15 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 15 |
| 02:30 | 0 | 7 | 0 | 0 | 1 | 2 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 02:45 | 0 | 5 | 2 | 0 | 1 | 1 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 03:00 | 0 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Hour Total | 0 | 23 | 6 | 0 | 2 | 3 | 0 | 3 | 26 | 0 | 0 | 1 | 0 | 0 | 0 | 64 |
| 03:15 | 0 | 5 | 3 | 0 | 0 | 1 | 0 | 1 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 16 |
| 03:30 | 0 | 9 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 03:45 | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 1 | 11 | 0 | 1 | 1 | 0 | 0 | 0 | 22 |
| 04:00 | 0 | 7 | 0 | 3 | 0 | 1 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 17 |
| Hour Total | 0 | 26 | 9 | 3 | 0 | 2 | 0 | 2 | 22 | 0 | 5 | 1 | 0 | 0 | 0 | 70 |
| 04:15 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 2 | 13 | 0 | 2 | 0 | 0 | 0 | 0 | 30 |
| 04:30 | 0 | 12 | 4 | 0 | 1 | 1 | 0 | 1 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 26 |
| 04:45 | 0 | 21 | 6 | 0 | 1 | 0 | 0 | 1 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 37 |
| 05:00 | 1 | 24 | 8 | 0 | 0 | 1 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| Hour Total | 1 | 69 | 19 | 0 | 2 | 2 | 0 | 5 | 35 | 0 | 5 | 0 | 0 | 0 | 0 | 138 |
| 05:15 | 0 | 17 | 11 | 0 | 3 | 1 | 0 | 1 | 8 | 0 | 4 | 0 | 0 | 0 | 0 | 45 |
| 05:30 | 0 | 38 | 19 | 0 | 1 | 2 | 0 | 2 | 8 | 0 | 2 | 0 | 0 | 0 | 0 | 72 |
| 05:45 | 0 | 39 | 13 | 0 | 0 | 0 | 0 | 2 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 66 |
| 06:00 | 0 | 74 | 22 | 0 | 7 | 3 | 0 | 3 | 11 | 0 | 1 | 1 | 0 | 0 | 0 | 122 |
| Hour Total | 0 | 168 | 65 | 0 | 11 | 6 | 0 | 8 | 38 | 0 | 8 | 1 | 0 | 0 | 0 | 305 |
| 06:15 | 0 | 63 | 17 | 0 | 1 | 1 | 0 | 6 | 18 | 1 | 2 | 0 | 0 | 0 | 0 | 109 |
| 06:30 | 0 | 69 | 23 | 0 | 5 | 4 | 0 | 1 | 22 | 0 | 2 | 1 | 0 | 0 | 0 | 127 |
| 06:45 | 0 | 68 | 17 | 0 | 3 | 4 | 0 | 2 | 12 | 1 | 3 | 0 | 0 | 0 | 0 | 110 |
| 07:00 | 0 | 81 | 20 | 1 | 4 | 2 | 0 | 0 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 124 |
| Hour Total | 0 | 281 | 77 | 1 | 13 | 11 | 0 | 9 | 67 | 2 | 8 | 1 | 0 | 0 | 0 | 470 |
| 07:15 | 0 | 89 | 26 | 1 | 3 | 1 | 0 | 0 | 17 | 0 | 2 | 0 | 0 | 0 | 0 | 139 |
| 07:30 | 0 | 79 | 28 | 0 | 9 | 4 | 0 | 2 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 141 |
| 07:45 | 0 | 61 | 25 | 0 | 4 | 1 | 0 | 5 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| 08:00 | 0 | 56 | 26 | 0 | 7 | 2 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| Hour Total | 0 | 285 | 105 | 1 | 23 | 8 | 0 | 7 | 67 | 0 | 2 | 0 | 0 | 0 | 0 | 498 |
| 08:15 | 0 | 63 | 24 | 0 | 2 | 2 | 0 | 4 | 23 | 0 | 1 | 0 | 0 | 0 | 0 | 119 |
| 08:30 | 0 | 55 | 14 | 0 | 4 | 0 | 1 | 5 | 26 | 1 | 0 | 0 | 0 | 0 | 0 | 106 |
| 08:45 | 0 | 51 | 20 | 0 | 2 | 1 | 0 | 4 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| 09:00 | 0 | 50 | 17 | 0 | 5 | 1 | 0 | 1 | 25 | 0 | 2 | 0 | 0 | 0 | 0 | 101 |
| Hour Total | 0 | 219 | 75 | 0 | 13 | 4 | 1 | 14 | 90 | 1 | 3 | 0 | 0 | 0 | 0 | 420 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|-----|---|----|---|---|----|----|----|----|----|----|----|----|-------|
| 09:15 | 1 | 47 | 20 | 0 | 4 | 1 | 0 | 0 | 24 | 0 | 1 | 0 | 0 | 0 | 0 | 98 |
| 09:30 | 1 | 54 | 26 | 0 | 4 | 5 | 0 | 2 | 25 | 2 | 1 | 0 | 0 | 0 | 0 | 120 |
| 09:45 | 0 | 59 | 16 | 0 | 1 | 0 | 1 | 4 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 99 |
| 10:00 | 2 | 49 | 23 | 0 | 0 | 1 | 1 | 4 | 25 | 0 | 0 | 1 | 0 | 0 | 0 | 106 |
| Hour Total | 4 | 209 | 85 | 0 | 9 | 7 | 2 | 10 | 92 | 2 | 2 | 1 | 0 | 0 | 0 | 423 |
| 10:15 | 0 | 57 | 22 | 0 | 8 | 3 | 0 | 5 | 25 | 0 | 1 | 1 | 0 | 0 | 0 | 122 |
| 10:30 | 1 | 44 | 13 | 0 | 4 | 0 | 0 | 3 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| 10:45 | 3 | 54 | 22 | 2 | 2 | 1 | 0 | 2 | 23 | 0 | 1 | 0 | 0 | 0 | 0 | 110 |
| 11:00 | 4 | 58 | 23 | 1 | 6 | 2 | 0 | 4 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 113 |
| Hour Total | 8 | 213 | 80 | 3 | 20 | 6 | 0 | 14 | 84 | 0 | 3 | 1 | 0 | 0 | 0 | 432 |
| 11:15 | 0 | 51 | 18 | 0 | 1 | 0 | 0 | 4 | 24 | 0 | 3 | 1 | 0 | 0 | 0 | 102 |
| 11:30 | 0 | 60 | 17 | 0 | 2 | 2 | 0 | 3 | 25 | 0 | 0 | 1 | 0 | 0 | 0 | 110 |
| 11:45 | 0 | 57 | 19 | 0 | 4 | 0 | 0 | 5 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| 12:00 | 1 | 56 | 22 | 1 | 0 | 2 | 0 | 3 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 98 |
| Hour Total | 1 | 224 | 76 | 1 | 7 | 4 | 0 | 15 | 77 | 0 | 4 | 2 | 0 | 0 | 0 | 411 |
| 12:15 | 1 | 51 | 20 | 0 | 1 | 0 | 0 | 2 | 18 | 0 | 1 | 0 | 0 | 0 | 0 | 94 |
| 12:30 | 0 | 54 | 14 | 2 | 0 | 1 | 0 | 6 | 18 | 0 | 4 | 0 | 0 | 0 | 0 | 99 |
| 12:45 | 1 | 62 | 14 | 0 | 3 | 0 | 0 | 4 | 21 | 0 | 2 | 0 | 0 | 0 | 0 | 107 |
| 13:00 | 0 | 58 | 19 | 0 | 3 | 2 | 0 | 1 | 15 | 0 | 2 | 1 | 0 | 0 | 0 | 101 |
| Hour Total | 2 | 225 | 67 | 2 | 7 | 3 | 0 | 13 | 72 | 0 | 9 | 1 | 0 | 0 | 0 | 401 |
| 13:15 | 0 | 50 | 23 | 1 | 5 | 2 | 0 | 5 | 19 | 1 | 0 | 0 | 0 | 0 | 0 | 106 |
| 13:30 | 1 | 74 | 21 | 0 | 1 | 2 | 0 | 5 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 119 |
| 13:45 | 2 | 79 | 18 | 0 | 3 | 0 | 0 | 4 | 18 | 1 | 2 | 0 | 0 | 0 | 0 | 127 |
| 14:00 | 0 | 79 | 26 | 0 | 4 | 1 | 0 | 6 | 20 | 0 | 7 | 0 | 0 | 0 | 0 | 143 |
| Hour Total | 3 | 282 | 88 | 1 | 13 | 5 | 0 | 20 | 71 | 2 | 10 | 0 | 0 | 0 | 0 | 495 |
| 14:15 | 0 | 74 | 25 | 4 | 3 | 0 | 0 | 2 | 12 | 0 | 1 | 1 | 0 | 0 | 0 | 122 |
| 14:30 | 1 | 90 | 25 | 0 | 4 | 1 | 0 | 5 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 139 |
| 14:45 | 0 | 69 | 31 | 0 | 3 | 2 | 2 | 2 | 19 | 0 | 2 | 2 | 0 | 0 | 0 | 132 |
| 15:00 | 2 | 54 | 17 | 1 | 3 | 1 | 0 | 1 | 14 | 0 | 2 | 0 | 1 | 0 | 0 | 96 |
| Hour Total | 3 | 287 | 98 | 5 | 13 | 4 | 2 | 10 | 58 | 0 | 5 | 3 | 1 | 0 | 0 | 489 |
| 15:15 | 0 | 113 | 19 | 0 | 17 | 3 | 0 | 2 | 20 | 0 | 0 | 2 | 0 | 0 | 0 | 176 |
| 15:30 | 0 | 103 | 26 | 0 | 3 | 0 | 0 | 3 | 13 | 0 | 2 | 0 | 0 | 0 | 0 | 150 |
| 15:45 | 0 | 79 | 22 | 0 | 2 | 0 | 0 | 6 | 12 | 0 | 2 | 1 | 0 | 0 | 0 | 124 |
| 16:00 | 0 | 85 | 28 | 0 | 4 | 1 | 0 | 0 | 19 | 1 | 2 | 0 | 0 | 0 | 0 | 140 |
| Hour Total | 0 | 380 | 95 | 0 | 26 | 4 | 0 | 11 | 64 | 1 | 6 | 3 | 0 | 0 | 0 | 590 |
| 16:15 | 0 | 65 | 30 | 0 | 2 | 0 | 0 | 6 | 12 | 1 | 1 | 0 | 0 | 0 | 0 | 117 |
| 16:30 | 0 | 93 | 13 | 0 | 3 | 0 | 0 | 5 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 132 |
| 16:45 | 0 | 93 | 24 | 0 | 3 | 1 | 0 | 2 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 139 |
| 17:00 | 0 | 98 | 25 | 0 | 0 | 0 | 0 | 4 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 137 |
| Hour Total | 0 | 349 | 92 | 0 | 8 | 1 | 0 | 17 | 54 | 1 | 3 | 0 | 0 | 0 | 0 | 525 |
| 17:15 | 1 | 99 | 34 | 0 | 1 | 0 | 0 | 1 | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 150 |
| 17:30 | 0 | 83 | 31 | 0 | 2 | 0 | 0 | 3 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 128 |
| 17:45 | 0 | 82 | 19 | 0 | 6 | 2 | 0 | 2 | 12 | 1 | 2 | 0 | 0 | 0 | 0 | 126 |
| 18:00 | 0 | 69 | 16 | 1 | 1 | 0 | 0 | 4 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 103 |
| Hour Total | 1 | 333 | 100 | 1 | 10 | 2 | 0 | 10 | 42 | 1 | 6 | 0 | 1 | 0 | 0 | 507 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|--------|
| 18:15 | 0 | 60 | 21 | 0 | 1 | 1 | 0 | 1 | 12 | 0 | 0 | 2 | 0 | 0 | 0 | 98 |
| 18:30 | 0 | 52 | 16 | 0 | 1 | 0 | 0 | 1 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 79 |
| 18:45 | 0 | 58 | 9 | 0 | 0 | 0 | 0 | 5 | 10 | 0 | 1 | 2 | 0 | 0 | 0 | 85 |
| 19:00 | 0 | 50 | 8 | 0 | 3 | 0 | 0 | 1 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 71 |
| Hour Total | 0 | 220 | 54 | 0 | 5 | 1 | 0 | 8 | 38 | 0 | 1 | 6 | 0 | 0 | 0 | 333 |
| 19:15 | 0 | 41 | 16 | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 19:30 | 0 | 45 | 14 | 0 | 1 | 0 | 0 | 2 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 74 |
| 19:45 | 2 | 61 | 14 | 0 | 2 | 0 | 0 | 2 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 87 |
| 20:00 | 0 | 51 | 8 | 0 | 1 | 2 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| Hour Total | 2 | 198 | 52 | 0 | 4 | 2 | 0 | 7 | 30 | 0 | 2 | 1 | 0 | 0 | 0 | 298 |
| 20:15 | 0 | 38 | 11 | 0 | 0 | 0 | 0 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 20:30 | 0 | 29 | 11 | 0 | 1 | 1 | 0 | 1 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 52 |
| 20:45 | 0 | 33 | 11 | 0 | 0 | 0 | 0 | 2 | 9 | 0 | 3 | 1 | 0 | 0 | 0 | 59 |
| 21:00 | 0 | 37 | 6 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 5 | 1 | 0 | 0 | 0 | 58 |
| Hour Total | 0 | 137 | 39 | 0 | 1 | 1 | 0 | 8 | 35 | 0 | 9 | 3 | 0 | 0 | 0 | 233 |
| 21:15 | 0 | 33 | 5 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 47 |
| 21:30 | 0 | 19 | 7 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 32 |
| 21:45 | 0 | 25 | 8 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 42 |
| 22:00 | 0 | 29 | 6 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 44 |
| Hour Total | 0 | 106 | 26 | 0 | 1 | 1 | 0 | 4 | 21 | 0 | 2 | 4 | 0 | 0 | 0 | 165 |
| 22:15 | 0 | 29 | 7 | 0 | 0 | 0 | 0 | 3 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 48 |
| 22:30 | 0 | 24 | 5 | 1 | 1 | 0 | 0 | 2 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 42 |
| 22:45 | 0 | 19 | 6 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 32 |
| 23:00 | 0 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 1 | 0 | 0 | 0 | 30 |
| Hour Total | 0 | 88 | 22 | 1 | 1 | 0 | 0 | 7 | 26 | 0 | 5 | 2 | 0 | 0 | 0 | 152 |
| 23:15 | 0 | 12 | 4 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 23 |
| 23:30 | 0 | 11 | 1 | 0 | 1 | 1 | 0 | 1 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 23 |
| 23:45 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 15 |
| 24:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 4 | 1 | 0 | 0 | 0 | 11 |
| Hour Total | 0 | 31 | 6 | 0 | 2 | 1 | 0 | 2 | 22 | 0 | 6 | 2 | 0 | 0 | 0 | 72 |
| DAY TOTAL | 25 | 4395 | 1343 | 20 | 193 | 80 | 5 | 206 | 1168 | 10 | 109 | 34 | 2 | 0 | 0 | 7590 |
| PERCENTS | 0.3% | 57.9% | 17.7% | 0.3% | 2.5% | 1.1% | 0.1% | 2.7% | 15.4% | 0.1% | 1.4% | 0.4% | 0.0% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 75.9% | | | | | | | | | | | | | | | |
| Trucks & Buses | 24.1% | | | | | | | | | | | | | | | |
| AM Times | 10:15 | 06:45 | 07:15 | 03:15 | 07:15 | 06:00 | 09:15 | 09:45 | 10:00 | 06:00 | 05:15 | 01:30 | | | | 06:45 |
| AM Peaks | 8 | 317 | 105 | 3 | 23 | 12 | 2 | 16 | 95 | 2 | 8 | 2 | | | | 514 |
| PM Times | 11:00 | 16:30 | 16:45 | 14:15 | 14:30 | 14:30 | 14:00 | 13:15 | 11:00 | 13:00 | 13:30 | 18:15 | 14:15 | | | 15:15 |
| PM Peaks | 4 | 383 | 114 | 5 | 27 | 7 | 2 | 20 | 79 | 2 | 11 | 6 | 1 | | | 590 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|---|---|---|---|----|----|----|----|----|----|----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 00:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 01:00 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Hour Total | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 01:15 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 01:30 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 7 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 12 |
| 02:15 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 03:30 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:00 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hour Total | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 04:15 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 12 |
| 05:00 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Hour Total | 0 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 23 |
| 05:15 | 0 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 05:30 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 05:45 | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 11 |
| 06:00 | 0 | 4 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Hour Total | 0 | 21 | 18 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 45 |
| 06:15 | 0 | 31 | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| 06:30 | 0 | 17 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 06:45 | 0 | 18 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 07:00 | 1 | 36 | 4 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| Hour Total | 1 | 102 | 31 | 0 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 139 |
| 07:15 | 0 | 50 | 9 | 0 | 1 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 65 |
| 07:30 | 1 | 56 | 17 | 0 | 1 | 1 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| 07:45 | 0 | 45 | 14 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| 08:00 | 0 | 23 | 3 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| Hour Total | 1 | 174 | 43 | 0 | 2 | 1 | 0 | 3 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 238 |
| 08:15 | 0 | 25 | 7 | 0 | 2 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 08:30 | 0 | 32 | 13 | 2 | 0 | 2 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 08:45 | 0 | 17 | 2 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 09:00 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 17 |
| Hour Total | 0 | 86 | 24 | 2 | 3 | 2 | 0 | 3 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 133 |

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|---|---|---|---|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 23 | 14 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 09:30 | 0 | 17 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 09:45 | 0 | 17 | 7 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 10:00 | 0 | 11 | 4 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| Hour Total | 0 | 68 | 30 | 0 | 4 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 113 |
| 10:15 | 0 | 20 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 10:30 | 0 | 23 | 6 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 10:45 | 0 | 19 | 7 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 11:00 | 0 | 17 | 11 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| Hour Total | 0 | 79 | 29 | 0 | 3 | 1 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 120 |
| 11:15 | 0 | 14 | 10 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 11:30 | 0 | 17 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 11:45 | 0 | 28 | 3 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 12:00 | 1 | 33 | 7 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| Hour Total | 1 | 92 | 25 | 0 | 0 | 1 | 0 | 2 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 135 |
| 12:15 | 0 | 19 | 8 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 12:30 | 0 | 23 | 10 | 0 | 0 | 1 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 12:45 | 0 | 15 | 6 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 13:00 | 0 | 21 | 5 | 0 | 2 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 34 |
| Hour Total | 0 | 78 | 29 | 0 | 3 | 1 | 0 | 0 | 23 | 1 | 0 | 0 | 0 | 0 | 0 | 135 |
| 13:15 | 0 | 13 | 8 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 13:30 | 2 | 20 | 7 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 13:45 | 3 | 25 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 14:00 | 0 | 21 | 10 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| Hour Total | 5 | 79 | 36 | 0 | 3 | 1 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 137 |
| 14:15 | 0 | 29 | 6 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 14:30 | 0 | 22 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 14:45 | 1 | 31 | 11 | 0 | 2 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 15:00 | 0 | 43 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 54 |
| Hour Total | 1 | 125 | 28 | 1 | 3 | 0 | 0 | 3 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 174 |
| 15:15 | 0 | 32 | 12 | 0 | 2 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 15:30 | 1 | 28 | 9 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 15:45 | 0 | 40 | 15 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 16:00 | 0 | 33 | 7 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 46 |
| Hour Total | 1 | 133 | 43 | 0 | 4 | 1 | 0 | 3 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 199 |
| 16:15 | 2 | 37 | 5 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 16:30 | 0 | 28 | 11 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 16:45 | 1 | 47 | 17 | 3 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 17:00 | 0 | 47 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| Hour Total | 3 | 159 | 45 | 3 | 1 | 2 | 1 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 223 |
| 17:15 | 0 | 56 | 14 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 17:30 | 0 | 37 | 17 | 0 | 2 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 17:45 | 0 | 24 | 12 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 18:00 | 1 | 20 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| Hour Total | 1 | 137 | 46 | 0 | 3 | 2 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 198 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|--------|
| 18:15 | 0 | 14 | 6 | 0 | 1 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 18:30 | 1 | 20 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 18:45 | 0 | 17 | 13 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 19:00 | 0 | 21 | 6 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| Hour Total | 1 | 72 | 34 | 0 | 3 | 0 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 118 |
| 19:15 | 0 | 17 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 19:30 | 0 | 18 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 19:45 | 0 | 14 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 20:00 | 0 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Hour Total | 0 | 65 | 14 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 81 |
| 20:15 | 0 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 20:30 | 0 | 18 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 20:45 | 0 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 21:00 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Hour Total | 0 | 53 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 21:15 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 21:30 | 0 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 21:45 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 22:00 | 0 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Hour Total | 0 | 28 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 22:15 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 22:30 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 22:45 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 23:00 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 7 |
| Hour Total | 0 | 18 | 5 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 27 |
| 23:15 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 23:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 23:45 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| DAY TOTAL | 15 | 1607 | 505 | 6 | 39 | 12 | 1 | 24 | 156 | 3 | 4 | 3 | 0 | 0 | 0 | 2375 |
| PERCENTS | 0.6% | 67.7% | 21.3% | 0.3% | 1.6% | 0.5% | 0.0% | 1.0% | 6.6% | 0.1% | 0.2% | 0.1% | 0.0% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 89.6% | | | | | | | | | | | | | | | |
| Trucks & Buses | 10.4% | | | | | | | | | | | | | | | |
| AM Times | 06:45 | 07:00 | 07:00 | 07:45 | 09:30 | 07:45 | | 06:45 | 07:30 | 06:30 | 04:00 | 00:45 | | | | 07:00 |
| AM Peaks | 2 | 187 | 44 | 2 | 5 | 2 | | 4 | 15 | 1 | 2 | 1 | | | | 253 |
| PM Times | 13:00 | 16:45 | 16:45 | 16:00 | 14:45 | 11:45 | 16:00 | 14:30 | 12:30 | 12:15 | 15:15 | 22:15 | | | | 16:45 |
| PM Peaks | 5 | 187 | 60 | 3 | 6 | 2 | 1 | 5 | 27 | 1 | 1 | 1 | | | | 266 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|---|---|---|---|----|----|----|----|----|----|----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 00:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 00:45 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 01:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| Hour Total | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 02:30 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hour Total | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:15 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:00 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Hour Total | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:30 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 6 |
| 04:45 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 05:00 | 0 | 7 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Hour Total | 0 | 16 | 3 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 26 |
| 05:15 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 05:30 | 0 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 05:45 | 0 | 13 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 06:00 | 0 | 17 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| Hour Total | 0 | 40 | 15 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 61 |
| 06:15 | 0 | 25 | 11 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 06:30 | 0 | 26 | 13 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 06:45 | 0 | 13 | 12 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 07:00 | 0 | 36 | 2 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| Hour Total | 0 | 100 | 38 | 0 | 4 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 149 |
| 07:15 | 1 | 50 | 16 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 07:30 | 0 | 60 | 16 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 07:45 | 0 | 53 | 13 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 08:00 | 0 | 23 | 11 | 0 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| Hour Total | 1 | 186 | 56 | 0 | 8 | 1 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 260 |
| 08:15 | 0 | 20 | 6 | 1 | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 34 |
| 08:30 | 0 | 22 | 5 | 0 | 1 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 08:45 | 0 | 18 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 09:00 | 0 | 18 | 6 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| Hour Total | 0 | 78 | 25 | 1 | 1 | 0 | 0 | 1 | 14 | 1 | 1 | 0 | 0 | 0 | 0 | 122 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|---|---|---|---|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 16 | 9 | 1 | 1 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 09:30 | 0 | 13 | 9 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 09:45 | 0 | 23 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 10:00 | 0 | 11 | 11 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| Hour Total | 0 | 63 | 38 | 3 | 1 | 1 | 0 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 119 |
| 10:15 | 0 | 24 | 4 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 10:30 | 0 | 24 | 10 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 10:45 | 0 | 14 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 11:00 | 1 | 14 | 9 | 0 | 0 | 1 | 0 | 1 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 34 |
| Hour Total | 1 | 76 | 29 | 0 | 2 | 2 | 0 | 4 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 125 |
| 11:15 | 1 | 29 | 10 | 0 | 0 | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 11:30 | 0 | 25 | 7 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 11:45 | 0 | 26 | 10 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 12:00 | 0 | 24 | 7 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| Hour Total | 1 | 104 | 34 | 0 | 2 | 1 | 0 | 3 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 157 |
| 12:15 | 0 | 30 | 10 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 12:30 | 0 | 22 | 10 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 12:45 | 1 | 32 | 8 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 13:00 | 0 | 18 | 11 | 0 | 1 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| Hour Total | 1 | 102 | 39 | 0 | 2 | 0 | 0 | 3 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 166 |
| 13:15 | 0 | 28 | 9 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 13:30 | 1 | 22 | 11 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 13:45 | 0 | 36 | 11 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 14:00 | 1 | 34 | 8 | 1 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 49 |
| Hour Total | 2 | 120 | 39 | 1 | 2 | 1 | 0 | 1 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 178 |
| 14:15 | 0 | 32 | 16 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 14:30 | 1 | 24 | 8 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 38 |
| 14:45 | 1 | 44 | 15 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 15:00 | 0 | 35 | 10 | 0 | 2 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| Hour Total | 2 | 135 | 49 | 1 | 3 | 1 | 0 | 4 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 207 |
| 15:15 | 0 | 22 | 6 | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 35 |
| 15:30 | 1 | 32 | 12 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 15:45 | 2 | 39 | 17 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 16:00 | 0 | 26 | 14 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| Hour Total | 3 | 119 | 49 | 0 | 3 | 3 | 0 | 1 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 189 |
| 16:15 | 0 | 48 | 10 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| 16:30 | 0 | 38 | 13 | 0 | 1 | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 16:45 | 0 | 48 | 7 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 17:00 | 0 | 66 | 14 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| Hour Total | 0 | 200 | 44 | 1 | 2 | 2 | 0 | 3 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 262 |
| 17:15 | 1 | 54 | 18 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 17:30 | 0 | 31 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 17:45 | 0 | 24 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 18:00 | 0 | 23 | 7 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| Hour Total | 1 | 132 | 45 | 0 | 5 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 187 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|------|--------|
| 18:15 | 0 | 27 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 18:30 | 0 | 21 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 18:45 | 0 | 22 | 7 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 19:00 | 0 | 20 | 11 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| Hour Total | 0 | 90 | 36 | 0 | 1 | 1 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 133 |
| 19:15 | 0 | 18 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 19:30 | 0 | 19 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 19:45 | 0 | 17 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 20:00 | 1 | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Hour Total | 1 | 63 | 22 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 20:15 | 0 | 10 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 20:30 | 0 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 20:45 | 0 | 12 | 3 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 21:00 | 0 | 16 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Hour Total | 0 | 51 | 10 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 21:15 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 21:30 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 21:45 | 0 | 12 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 22:00 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Hour Total | 0 | 38 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 22:15 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 22:30 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 22:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| 23:00 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Hour Total | 0 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 17 |
| 23:15 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 23:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 23:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 24:00 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Hour Total | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| DAY TOTAL | 13 | 1741 | 581 | 7 | 44 | 15 | 0 | 32 | 143 | 2 | 4 | 3 | 0 | 0 | 0 | 2585 |
| PERCENTS | 0.5% | 67.4% | 22.5% | 0.3% | 1.7% | 0.6% | 0.0% | 1.2% | 5.5% | 0.1% | 0.2% | 0.1% | 0.0% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 90.3% | | | | | | | | | | | | | | | |
| Trucks & Buses | 9.7% | | | | | | | | | | | | | | | |
| AM Times | 10:30 | 07:00 | 07:15 | 08:45 | 07:15 | 10:30 | | 09:30 | 08:15 | 07:45 | 03:45 | 00:15 | | | | 07:00 |
| AM Peaks | 2 | 199 | 56 | 3 | 8 | 3 | | 6 | 14 | 1 | 1 | 1 | | | | 262 |
| PM Times | 14:00 | 16:30 | 15:45 | 13:45 | 14:45 | 14:30 | | 11:00 | 12:15 | 13:15 | 11:00 | 14:30 | | | | 16:30 |
| PM Peaks | 3 | 206 | 54 | 2 | 5 | 3 | | 4 | 19 | 1 | 1 | 1 | | | | 276 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|----|---|---|----|----|----|----|----|----|----|----|-------|
| 00:15 | 0 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 15 |
| 00:30 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 00:45 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| 01:00 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 11 |
| Hour Total | 0 | 30 | 3 | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 2 | 1 | 0 | 0 | 0 | 47 |
| 01:15 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 12 |
| 01:30 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 9 |
| 01:45 | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 15 |
| 02:00 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 8 |
| Hour Total | 0 | 15 | 5 | 0 | 2 | 0 | 0 | 0 | 14 | 2 | 4 | 2 | 0 | 0 | 0 | 44 |
| 02:15 | 0 | 5 | 2 | 1 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 17 |
| 02:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| 02:45 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 03:00 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 2 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 14 |
| Hour Total | 0 | 12 | 3 | 1 | 3 | 0 | 0 | 7 | 18 | 0 | 4 | 1 | 0 | 0 | 0 | 49 |
| 03:15 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:30 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 11 |
| 03:45 | 0 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 1 | 3 | 0 | 0 | 0 | 18 |
| 04:00 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 2 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 12 |
| Hour Total | 0 | 15 | 2 | 0 | 2 | 0 | 0 | 4 | 15 | 0 | 3 | 5 | 0 | 0 | 0 | 46 |
| 04:15 | 0 | 5 | 3 | 0 | 3 | 0 | 1 | 3 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 24 |
| 04:30 | 0 | 2 | 4 | 0 | 1 | 0 | 0 | 2 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 17 |
| 04:45 | 0 | 17 | 4 | 0 | 2 | 0 | 0 | 1 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 33 |
| 05:00 | 0 | 23 | 10 | 0 | 3 | 0 | 0 | 3 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 46 |
| Hour Total | 0 | 47 | 21 | 0 | 9 | 0 | 1 | 9 | 26 | 0 | 4 | 3 | 0 | 0 | 0 | 120 |
| 05:15 | 1 | 14 | 18 | 0 | 0 | 0 | 0 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 05:30 | 0 | 22 | 13 | 1 | 1 | 0 | 0 | 0 | 8 | 1 | 1 | 1 | 0 | 0 | 0 | 48 |
| 05:45 | 0 | 28 | 14 | 0 | 1 | 2 | 1 | 1 | 8 | 0 | 5 | 0 | 0 | 0 | 0 | 60 |
| 06:00 | 0 | 41 | 13 | 0 | 1 | 2 | 1 | 1 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 70 |
| Hour Total | 1 | 105 | 58 | 1 | 3 | 4 | 2 | 5 | 30 | 4 | 6 | 1 | 0 | 0 | 0 | 220 |
| 06:15 | 0 | 66 | 13 | 0 | 2 | 2 | 0 | 3 | 8 | 1 | 0 | 1 | 1 | 0 | 0 | 97 |
| 06:30 | 0 | 54 | 17 | 0 | 2 | 1 | 0 | 5 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 89 |
| 06:45 | 0 | 42 | 15 | 0 | 2 | 1 | 0 | 1 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 78 |
| 07:00 | 1 | 60 | 14 | 1 | 1 | 1 | 0 | 2 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 96 |
| Hour Total | 1 | 222 | 59 | 1 | 7 | 5 | 0 | 11 | 45 | 7 | 0 | 1 | 1 | 0 | 0 | 360 |
| 07:15 | 0 | 75 | 19 | 1 | 6 | 2 | 1 | 2 | 16 | 1 | 1 | 0 | 0 | 0 | 0 | 124 |
| 07:30 | 0 | 60 | 24 | 1 | 5 | 0 | 0 | 4 | 16 | 3 | 2 | 0 | 1 | 0 | 0 | 116 |
| 07:45 | 0 | 78 | 20 | 0 | 5 | 4 | 0 | 1 | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 118 |
| 08:00 | 0 | 47 | 17 | 0 | 7 | 1 | 0 | 3 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 94 |
| Hour Total | 0 | 260 | 80 | 2 | 23 | 7 | 1 | 10 | 57 | 5 | 6 | 0 | 1 | 0 | 0 | 452 |
| 08:15 | 0 | 41 | 18 | 0 | 5 | 1 | 2 | 5 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 84 |
| 08:30 | 0 | 45 | 23 | 0 | 3 | 1 | 0 | 6 | 17 | 2 | 3 | 0 | 0 | 0 | 0 | 100 |
| 08:45 | 1 | 32 | 13 | 0 | 2 | 2 | 0 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 63 |
| 09:00 | 0 | 30 | 20 | 0 | 3 | 1 | 0 | 1 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 71 |
| Hour Total | 1 | 148 | 74 | 0 | 13 | 5 | 2 | 12 | 54 | 5 | 4 | 0 | 0 | 0 | 0 | 318 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|----|----|---|----|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 28 | 22 | 0 | 4 | 3 | 0 | 2 | 16 | 0 | 1 | 4 | 0 | 0 | 0 | 80 |
| 09:30 | 0 | 32 | 21 | 0 | 3 | 1 | 0 | 3 | 19 | 0 | 1 | 2 | 0 | 0 | 0 | 82 |
| 09:45 | 1 | 34 | 14 | 0 | 2 | 3 | 0 | 2 | 16 | 1 | 1 | 2 | 0 | 0 | 0 | 76 |
| 10:00 | 0 | 27 | 14 | 0 | 2 | 3 | 0 | 4 | 19 | 0 | 0 | 1 | 0 | 0 | 0 | 70 |
| Hour Total | 1 | 121 | 71 | 0 | 11 | 10 | 0 | 11 | 70 | 1 | 3 | 9 | 0 | 0 | 0 | 308 |
| 10:15 | 2 | 42 | 17 | 0 | 1 | 1 | 0 | 3 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 10:30 | 0 | 41 | 13 | 0 | 3 | 3 | 1 | 3 | 14 | 0 | 0 | 1 | 0 | 0 | 0 | 79 |
| 10:45 | 0 | 43 | 16 | 0 | 2 | 1 | 0 | 2 | 17 | 0 | 3 | 1 | 0 | 0 | 0 | 85 |
| 11:00 | 1 | 41 | 13 | 0 | 2 | 3 | 1 | 1 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 79 |
| Hour Total | 3 | 167 | 59 | 0 | 8 | 8 | 2 | 9 | 57 | 0 | 4 | 2 | 0 | 0 | 0 | 319 |
| 11:15 | 0 | 27 | 18 | 0 | 4 | 2 | 0 | 4 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 73 |
| 11:30 | 0 | 40 | 20 | 0 | 1 | 0 | 0 | 2 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| 11:45 | 1 | 44 | 15 | 0 | 3 | 2 | 0 | 1 | 20 | 0 | 3 | 0 | 0 | 0 | 0 | 89 |
| 12:00 | 0 | 52 | 12 | 0 | 1 | 1 | 0 | 3 | 20 | 0 | 2 | 0 | 0 | 0 | 0 | 91 |
| Hour Total | 1 | 163 | 65 | 0 | 9 | 5 | 0 | 10 | 76 | 0 | 6 | 0 | 0 | 0 | 0 | 335 |
| 12:15 | 0 | 49 | 19 | 0 | 2 | 1 | 0 | 2 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 12:30 | 1 | 36 | 9 | 0 | 3 | 2 | 0 | 3 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 71 |
| 12:45 | 0 | 35 | 25 | 0 | 2 | 0 | 0 | 3 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 84 |
| 13:00 | 1 | 46 | 19 | 0 | 4 | 1 | 0 | 3 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 92 |
| Hour Total | 2 | 166 | 72 | 0 | 11 | 4 | 0 | 11 | 66 | 5 | 0 | 0 | 0 | 0 | 0 | 337 |
| 13:15 | 0 | 46 | 17 | 0 | 3 | 1 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 13:30 | 1 | 39 | 20 | 0 | 4 | 2 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| 13:45 | 0 | 42 | 11 | 0 | 3 | 0 | 0 | 4 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 14:00 | 1 | 51 | 28 | 0 | 4 | 1 | 1 | 2 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 101 |
| Hour Total | 2 | 178 | 76 | 0 | 14 | 4 | 1 | 8 | 49 | 0 | 1 | 0 | 0 | 0 | 0 | 333 |
| 14:15 | 1 | 49 | 19 | 0 | 5 | 1 | 0 | 1 | 17 | 3 | 1 | 0 | 0 | 0 | 0 | 97 |
| 14:30 | 0 | 45 | 22 | 1 | 4 | 0 | 0 | 3 | 14 | 1 | 1 | 0 | 0 | 0 | 0 | 91 |
| 14:45 | 0 | 54 | 14 | 0 | 7 | 4 | 0 | 2 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 95 |
| 15:00 | 2 | 48 | 22 | 0 | 4 | 0 | 1 | 5 | 18 | 2 | 0 | 0 | 0 | 0 | 0 | 102 |
| Hour Total | 3 | 196 | 77 | 1 | 20 | 5 | 1 | 11 | 62 | 6 | 3 | 0 | 0 | 0 | 0 | 385 |
| 15:15 | 2 | 51 | 20 | 0 | 7 | 3 | 0 | 1 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 102 |
| 15:30 | 0 | 68 | 21 | 0 | 3 | 1 | 0 | 4 | 19 | 1 | 0 | 0 | 0 | 0 | 0 | 117 |
| 15:45 | 0 | 61 | 26 | 0 | 4 | 1 | 0 | 2 | 12 | 0 | 3 | 0 | 0 | 0 | 0 | 109 |
| 16:00 | 0 | 51 | 15 | 1 | 3 | 1 | 0 | 5 | 18 | 0 | 1 | 0 | 0 | 0 | 0 | 95 |
| Hour Total | 2 | 231 | 82 | 1 | 17 | 6 | 0 | 12 | 66 | 1 | 5 | 0 | 0 | 0 | 0 | 423 |
| 16:15 | 1 | 60 | 27 | 0 | 4 | 4 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 106 |
| 16:30 | 0 | 57 | 21 | 0 | 1 | 0 | 0 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 93 |
| 16:45 | 1 | 91 | 26 | 0 | 0 | 0 | 2 | 1 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 133 |
| 17:00 | 0 | 76 | 17 | 0 | 2 | 0 | 0 | 3 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 110 |
| Hour Total | 2 | 284 | 91 | 0 | 7 | 4 | 2 | 5 | 45 | 1 | 1 | 0 | 0 | 0 | 0 | 442 |
| 17:15 | 0 | 73 | 25 | 0 | 2 | 1 | 0 | 0 | 13 | 1 | 2 | 0 | 0 | 0 | 0 | 117 |
| 17:30 | 1 | 63 | 22 | 0 | 1 | 1 | 0 | 3 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 106 |
| 17:45 | 0 | 71 | 15 | 0 | 1 | 1 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 98 |
| 18:00 | 2 | 53 | 17 | 0 | 1 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| Hour Total | 3 | 260 | 79 | 0 | 5 | 3 | 0 | 4 | 46 | 1 | 2 | 0 | 0 | 0 | 0 | 403 |

CLASSIFICATION SUMMARY
Wed 5/9/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|--------|
| 18:15 | 1 | 60 | 17 | 0 | 1 | 1 | 0 | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 85 |
| 18:30 | 1 | 58 | 22 | 0 | 1 | 0 | 0 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| 18:45 | 0 | 59 | 17 | 0 | 2 | 1 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 85 |
| 19:00 | 1 | 61 | 24 | 0 | 0 | 1 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 96 |
| Hour Total | 3 | 238 | 80 | 0 | 4 | 3 | 0 | 4 | 27 | 0 | 0 | 1 | 0 | 0 | 0 | 360 |
| 19:15 | 0 | 46 | 18 | 0 | 2 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 19:30 | 0 | 54 | 11 | 0 | 2 | 0 | 0 | 1 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 75 |
| 19:45 | 0 | 49 | 7 | 0 | 0 | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 20:00 | 0 | 35 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| Hour Total | 0 | 184 | 41 | 0 | 4 | 0 | 1 | 2 | 16 | 1 | 1 | 0 | 0 | 0 | 0 | 250 |
| 20:15 | 0 | 51 | 12 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 67 |
| 20:30 | 1 | 43 | 5 | 1 | 1 | 0 | 0 | 2 | 8 | 0 | 1 | 1 | 0 | 0 | 0 | 63 |
| 20:45 | 0 | 22 | 6 | 0 | 1 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 35 |
| 21:00 | 0 | 27 | 2 | 0 | 0 | 2 | 0 | 0 | 8 | 0 | 3 | 0 | 0 | 0 | 0 | 42 |
| Hour Total | 1 | 143 | 25 | 1 | 2 | 2 | 0 | 2 | 23 | 1 | 6 | 1 | 0 | 0 | 0 | 207 |
| 21:15 | 0 | 33 | 5 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 47 |
| 21:30 | 0 | 23 | 6 | 0 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 21:45 | 0 | 29 | 4 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 4 | 1 | 0 | 0 | 0 | 42 |
| 22:00 | 0 | 21 | 3 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 37 |
| Hour Total | 0 | 106 | 18 | 0 | 4 | 1 | 0 | 1 | 22 | 0 | 7 | 1 | 0 | 0 | 0 | 160 |
| 22:15 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 23 |
| 22:30 | 0 | 20 | 5 | 0 | 1 | 2 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 36 |
| 22:45 | 0 | 18 | 3 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 28 |
| 23:00 | 0 | 17 | 2 | 1 | 0 | 0 | 0 | 2 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 30 |
| Hour Total | 0 | 71 | 11 | 1 | 1 | 2 | 0 | 4 | 19 | 1 | 6 | 0 | 1 | 0 | 0 | 117 |
| 23:15 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 14 |
| 23:30 | 0 | 13 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 22 |
| 23:45 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 9 |
| 24:00 | 0 | 10 | 2 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 20 |
| Hour Total | 0 | 36 | 6 | 0 | 1 | 0 | 0 | 1 | 14 | 2 | 5 | 0 | 0 | 0 | 0 | 65 |
| DAY TOTAL | 26 | 3398 | 1158 | 9 | 180 | 78 | 13 | 154 | 927 | 43 | 83 | 28 | 3 | 0 | 0 | 6100 |
| PERCENTS | 0.4% | 55.7% | 19.0% | 0.1% | 3.0% | 1.3% | 0.2% | 2.5% | 15.2% | 0.7% | 1.4% | 0.5% | 0.0% | 0.0% | 0.0% | 100.0% |
| Passenger Vehicles | 75.1% | | | | | | | | | | | | | | | |
| Trucks & Buses | 24.9% | | | | | | | | | | | | | | | |
| AM Times | 09:30 | 07:00 | 07:15 | 06:45 | 07:15 | 09:15 | 05:15 | 07:45 | 11:15 | 06:45 | 05:00 | 09:15 | 05:30 | | | 07:00 |
| AM Peaks | 3 | 273 | 80 | 3 | 23 | 10 | 2 | 15 | 76 | 8 | 7 | 9 | 1 | | | 454 |
| PM Times | 14:30 | 16:45 | 16:15 | 13:45 | 14:30 | 14:45 | 16:00 | 14:45 | 11:30 | 14:15 | 21:00 | 17:30 | 21:30 | | | 16:45 |
| PM Peaks | 4 | 303 | 91 | 1 | 22 | 8 | 2 | 12 | 76 | 6 | 8 | 1 | 1 | | | 466 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|----|---|---|----|----|----|----|----|----|----|----|-------|
| 00:15 | 0 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 00:30 | 0 | 7 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 00:45 | 0 | 6 | 0 | 0 | 0 | 1 | 0 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 14 |
| 01:00 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Hour Total | 0 | 25 | 4 | 0 | 1 | 2 | 0 | 3 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 46 |
| 01:15 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 2 | 1 | 0 | 0 | 0 | 14 |
| 01:30 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 15 |
| 01:45 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 12 |
| 02:00 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 10 |
| Hour Total | 0 | 21 | 4 | 0 | 0 | 0 | 0 | 2 | 14 | 0 | 5 | 5 | 0 | 0 | 0 | 51 |
| 02:15 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 02:30 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 12 |
| 02:45 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 12 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 2 | 1 | 1 | 0 | 0 | 9 |
| Hour Total | 0 | 12 | 1 | 0 | 2 | 2 | 0 | 0 | 20 | 1 | 5 | 1 | 1 | 0 | 0 | 45 |
| 03:15 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 12 |
| 03:30 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 0 | 0 | 0 | 17 |
| 03:45 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 3 | 5 | 1 | 4 | 0 | 0 | 0 | 0 | 20 |
| 04:00 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 2 | 2 | 2 | 1 | 3 | 0 | 0 | 0 | 16 |
| Hour Total | 0 | 16 | 2 | 0 | 4 | 0 | 0 | 6 | 19 | 5 | 9 | 4 | 0 | 0 | 0 | 65 |
| 04:15 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 12 |
| 04:30 | 0 | 4 | 8 | 0 | 0 | 1 | 0 | 0 | 13 | 0 | 1 | 1 | 0 | 0 | 0 | 28 |
| 04:45 | 0 | 18 | 6 | 0 | 2 | 0 | 0 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 32 |
| 05:00 | 0 | 17 | 15 | 0 | 2 | 0 | 0 | 2 | 4 | 2 | 2 | 0 | 1 | 0 | 0 | 45 |
| Hour Total | 0 | 44 | 30 | 0 | 4 | 1 | 0 | 4 | 23 | 3 | 5 | 2 | 1 | 0 | 0 | 117 |
| 05:15 | 0 | 15 | 13 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 05:30 | 0 | 23 | 11 | 0 | 0 | 1 | 0 | 3 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 48 |
| 05:45 | 0 | 21 | 21 | 0 | 1 | 0 | 0 | 2 | 11 | 0 | 2 | 1 | 0 | 0 | 0 | 59 |
| 06:00 | 0 | 44 | 16 | 0 | 2 | 1 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| Hour Total | 0 | 103 | 61 | 0 | 4 | 2 | 0 | 8 | 32 | 0 | 2 | 2 | 0 | 0 | 0 | 214 |
| 06:15 | 0 | 56 | 7 | 0 | 2 | 4 | 0 | 3 | 9 | 1 | 2 | 1 | 0 | 0 | 0 | 85 |
| 06:30 | 0 | 51 | 21 | 0 | 1 | 0 | 0 | 5 | 12 | 1 | 1 | 0 | 0 | 0 | 0 | 92 |
| 06:45 | 0 | 43 | 13 | 0 | 1 | 1 | 0 | 4 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 68 |
| 07:00 | 1 | 55 | 20 | 0 | 0 | 0 | 1 | 2 | 15 | 3 | 2 | 1 | 0 | 0 | 0 | 100 |
| Hour Total | 1 | 205 | 61 | 0 | 4 | 5 | 1 | 14 | 41 | 5 | 5 | 2 | 1 | 0 | 0 | 345 |
| 07:15 | 0 | 81 | 16 | 0 | 9 | 1 | 0 | 2 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 127 |
| 07:30 | 0 | 83 | 13 | 1 | 6 | 2 | 0 | 3 | 13 | 4 | 3 | 0 | 0 | 0 | 0 | 128 |
| 07:45 | 0 | 68 | 20 | 0 | 6 | 2 | 0 | 3 | 9 | 2 | 2 | 0 | 0 | 0 | 0 | 112 |
| 08:00 | 0 | 42 | 16 | 0 | 5 | 1 | 1 | 1 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 81 |
| Hour Total | 0 | 274 | 65 | 1 | 26 | 6 | 1 | 9 | 52 | 9 | 5 | 0 | 0 | 0 | 0 | 448 |
| 08:15 | 0 | 42 | 15 | 1 | 2 | 0 | 1 | 2 | 12 | 1 | 2 | 0 | 0 | 0 | 0 | 78 |
| 08:30 | 0 | 43 | 18 | 0 | 2 | 1 | 0 | 3 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 89 |
| 08:45 | 1 | 47 | 12 | 0 | 2 | 5 | 1 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 88 |
| 09:00 | 0 | 38 | 14 | 0 | 1 | 1 | 2 | 3 | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 76 |
| Hour Total | 1 | 170 | 59 | 1 | 7 | 7 | 4 | 8 | 68 | 3 | 2 | 1 | 0 | 0 | 0 | 331 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|---|-----|----|---|----|----|---|----|----|----|----|----|----|----|----|-------|
| 09:15 | 0 | 32 | 17 | 1 | 8 | 2 | 0 | 3 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 78 |
| 09:30 | 0 | 49 | 13 | 0 | 5 | 0 | 0 | 4 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 83 |
| 09:45 | 0 | 28 | 12 | 0 | 2 | 3 | 0 | 2 | 15 | 0 | 0 | 1 | 0 | 0 | 0 | 63 |
| 10:00 | 0 | 37 | 19 | 0 | 2 | 1 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| Hour Total | 0 | 146 | 61 | 1 | 17 | 6 | 0 | 10 | 52 | 0 | 2 | 1 | 0 | 0 | 0 | 296 |
| 10:15 | 0 | 35 | 14 | 0 | 2 | 1 | 0 | 2 | 19 | 0 | 0 | 3 | 0 | 0 | 0 | 76 |
| 10:30 | 0 | 42 | 15 | 1 | 2 | 1 | 0 | 2 | 12 | 1 | 0 | 1 | 0 | 0 | 0 | 77 |
| 10:45 | 0 | 32 | 16 | 0 | 1 | 1 | 0 | 3 | 12 | 2 | 1 | 1 | 0 | 0 | 0 | 69 |
| 11:00 | 1 | 36 | 20 | 0 | 4 | 3 | 0 | 5 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| Hour Total | 1 | 145 | 65 | 1 | 9 | 6 | 0 | 12 | 57 | 3 | 1 | 5 | 0 | 0 | 0 | 305 |
| 11:15 | 1 | 38 | 22 | 0 | 3 | 3 | 0 | 4 | 20 | 0 | 2 | 0 | 0 | 0 | 0 | 93 |
| 11:30 | 0 | 42 | 15 | 0 | 1 | 4 | 0 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 11:45 | 0 | 45 | 26 | 1 | 2 | 1 | 0 | 1 | 19 | 0 | 1 | 0 | 0 | 0 | 0 | 96 |
| 12:00 | 0 | 39 | 15 | 0 | 3 | 0 | 0 | 5 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 79 |
| Hour Total | 1 | 164 | 78 | 1 | 9 | 8 | 0 | 12 | 66 | 0 | 4 | 0 | 0 | 0 | 0 | 343 |
| 12:15 | 0 | 34 | 16 | 0 | 1 | 2 | 2 | 6 | 18 | 2 | 1 | 0 | 0 | 0 | 0 | 82 |
| 12:30 | 0 | 49 | 16 | 0 | 3 | 2 | 0 | 4 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 86 |
| 12:45 | 0 | 43 | 11 | 1 | 1 | 5 | 1 | 3 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 86 |
| 13:00 | 0 | 38 | 17 | 0 | 1 | 3 | 1 | 2 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 73 |
| Hour Total | 0 | 164 | 60 | 1 | 6 | 12 | 4 | 15 | 58 | 4 | 3 | 0 | 0 | 0 | 0 | 327 |
| 13:15 | 0 | 43 | 13 | 0 | 2 | 1 | 0 | 4 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 81 |
| 13:30 | 0 | 53 | 15 | 0 | 3 | 0 | 1 | 7 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 95 |
| 13:45 | 0 | 60 | 14 | 0 | 4 | 0 | 0 | 6 | 11 | 1 | 1 | 0 | 0 | 0 | 0 | 97 |
| 14:00 | 0 | 55 | 18 | 0 | 3 | 0 | 0 | 4 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 101 |
| Hour Total | 0 | 211 | 60 | 0 | 12 | 1 | 1 | 21 | 61 | 6 | 1 | 0 | 0 | 0 | 0 | 374 |
| 14:15 | 1 | 61 | 26 | 1 | 4 | 2 | 0 | 6 | 15 | 3 | 1 | 0 | 0 | 0 | 0 | 120 |
| 14:30 | 0 | 59 | 21 | 0 | 5 | 0 | 0 | 3 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 100 |
| 14:45 | 0 | 69 | 27 | 0 | 2 | 1 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 119 |
| 15:00 | 0 | 64 | 18 | 0 | 5 | 1 | 0 | 1 | 15 | 1 | 2 | 0 | 0 | 0 | 0 | 107 |
| Hour Total | 1 | 253 | 92 | 1 | 16 | 4 | 0 | 10 | 61 | 5 | 3 | 0 | 0 | 0 | 0 | 446 |
| 15:15 | 0 | 58 | 22 | 0 | 5 | 0 | 0 | 0 | 13 | 3 | 1 | 1 | 0 | 0 | 0 | 103 |
| 15:30 | 0 | 68 | 23 | 0 | 4 | 1 | 1 | 2 | 13 | 2 | 1 | 0 | 0 | 0 | 0 | 115 |
| 15:45 | 0 | 56 | 22 | 0 | 6 | 2 | 0 | 3 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 16:00 | 0 | 70 | 14 | 0 | 2 | 1 | 0 | 4 | 9 | 1 | 1 | 0 | 0 | 0 | 0 | 102 |
| Hour Total | 0 | 252 | 81 | 0 | 17 | 4 | 1 | 9 | 46 | 6 | 3 | 1 | 0 | 0 | 0 | 420 |
| 16:15 | 0 | 77 | 22 | 0 | 4 | 2 | 0 | 1 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 114 |
| 16:30 | 0 | 71 | 30 | 0 | 3 | 0 | 0 | 1 | 8 | 1 | 2 | 0 | 0 | 0 | 0 | 116 |
| 16:45 | 0 | 74 | 23 | 1 | 1 | 0 | 0 | 1 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 112 |
| 17:00 | 0 | 84 | 20 | 0 | 4 | 3 | 1 | 0 | 10 | 0 | 1 | 1 | 0 | 0 | 0 | 124 |
| Hour Total | 0 | 306 | 95 | 1 | 12 | 5 | 1 | 3 | 35 | 2 | 4 | 2 | 0 | 0 | 0 | 466 |
| 17:15 | 0 | 54 | 17 | 0 | 1 | 0 | 1 | 4 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 89 |
| 17:30 | 0 | 55 | 21 | 0 | 2 | 0 | 0 | 2 | 9 | 1 | 1 | 0 | 0 | 0 | 0 | 91 |
| 17:45 | 0 | 70 | 19 | 0 | 0 | 0 | 0 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 97 |
| 18:00 | 0 | 61 | 9 | 0 | 2 | 0 | 0 | 1 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 81 |
| Hour Total | 0 | 240 | 66 | 0 | 5 | 0 | 1 | 8 | 32 | 3 | 3 | 0 | 0 | 0 | 0 | 358 |

CLASSIFICATION SUMMARY
Thu 5/10/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBO Class.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|------------|------|-------|-------|------|------|------|------|------|-------|------|------|------|------|------|------|--------|
| 18:15 | 0 | 72 | 20 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |
| 18:30 | 0 | 47 | 14 | 0 | 1 | 0 | 0 | 2 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 18:45 | 2 | 48 | 8 | 0 | 3 | 1 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 19:00 | 0 | 55 | 20 | 0 | 3 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 84 |
| Hour Total | 2 | 222 | 62 | 0 | 7 | 1 | 0 | 4 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 326 |
| 19:15 | 0 | 60 | 14 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 81 |
| 19:30 | 0 | 62 | 9 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 80 |
| 19:45 | 0 | 47 | 7 | 0 | 1 | 1 | 0 | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 20:00 | 0 | 47 | 11 | 0 | 1 | 2 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| Hour Total | 0 | 216 | 41 | 0 | 4 | 3 | 0 | 6 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 292 |
| 20:15 | 0 | 48 | 6 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 60 |
| 20:30 | 1 | 39 | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 20:45 | 0 | 35 | 4 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 21:00 | 0 | 30 | 11 | 0 | 1 | 0 | 0 | 1 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 50 |
| Hour Total | 1 | 152 | 27 | 0 | 1 | 0 | 0 | 1 | 21 | 0 | 4 | 1 | 0 | 0 | 0 | 208 |
| 21:15 | 0 | 28 | 5 | 0 | 0 | 1 | 0 | 1 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 42 |
| 21:30 | 1 | 22 | 7 | 0 | 1 | 1 | 0 | 4 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 44 |
| 21:45 | 0 | 23 | 8 | 0 | 2 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 38 |
| 22:00 | 0 | 18 | 10 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 36 |
| Hour Total | 1 | 91 | 30 | 0 | 4 | 2 | 1 | 7 | 16 | 1 | 5 | 2 | 0 | 0 | 0 | 160 |
| 22:15 | 0 | 22 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 1 | 0 | 0 | 0 | 39 |
| 22:30 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 17 |
| 22:45 | 0 | 22 | 4 | 0 | 1 | 0 | 0 | 2 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 35 |
| 23:00 | 0 | 18 | 2 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 27 |
| Hour Total | 0 | 76 | 13 | 0 | 1 | 0 | 0 | 2 | 17 | 1 | 5 | 3 | 0 | 0 | 0 | 118 |
| 23:15 | 0 | 15 | 4 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 29 |
| 23:30 | 0 | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 23:45 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 11 |
| 24:00 | 0 | 6 | 4 | 1 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Hour Total | 0 | 38 | 12 | 1 | 1 | 0 | 0 | 1 | 15 | 0 | 3 | 1 | 0 | 0 | 0 | 72 |
| DAY TOTAL | 9 | 3546 | 1130 | 9 | 173 | 77 | 15 | 175 | 866 | 58 | 79 | 33 | 3 | 0 | 0 | 6173 |
| PERCENTS | 0.1% | 57.4% | 18.3% | 0.1% | 2.8% | 1.2% | 0.2% | 2.8% | 14.0% | 0.9% | 1.3% | 0.5% | 0.0% | 0.0% | 0.0% | 100.0% |

Passenger Vehicles 75.9% Trucks & Buses 24.1%

| | | | | | | | | | | | | | | | | |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|-------|
| AM Times | 10:30 | 07:00 | 11:15 | 07:30 | 07:15 | 10:45 | 08:15 | 06:00 | 08:30 | 07:00 | 03:00 | 00:45 | 02:15 | | | 07:00 |
| AM Peaks | 2 | 287 | 78 | 2 | 26 | 11 | 4 | 15 | 70 | 11 | 10 | 5 | 1 | | | 467 |
| PM Times | 11:00 | 16:15 | 16:15 | 11:00 | 15:00 | 12:15 | 12:15 | 13:30 | 11:00 | 13:30 | 22:00 | 21:45 | | | | 16:15 |
| PM Peaks | 2 | 306 | 95 | 1 | 20 | 12 | 4 | 23 | 64 | 8 | 6 | 4 | | | | 466 |

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 3 | 7 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 5 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 5 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 10 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 6 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 4 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 7 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 10 | 2 | 15 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 2 | 7 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 7 | 7 | 20 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 9 | 5 | 16 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 7 | 13 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 10 | 20 | 21 | 56 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 5 | 7 | 17 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12 | 8 | 25 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 9 | 23 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9 | 7 | 21 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 16 | 38 | 31 | 86 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 5 | 11 | 21 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 9 | 8 | 23 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 9 | 8 | 26 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 5 | 4 | 16 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 20 | 28 | 31 | 86 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 3 | 11 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 4 | 6 | 16 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 5 | 6 | 17 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 5 | 3 | 5 | 15 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 16 | 17 | 20 | 59 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 4 | 1 | 9 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 7 | 2 | 18 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 4 | 12 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 12 | 4 | 26 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 22 | 29 | 11 | 65 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 2 | 5 | 12 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 3 | 11 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 4 | 4 | 15 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 6 | 5 | 2 | 15 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 19 | 15 | 14 | 53 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 7 | 10 | 5 | 28 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 12 | 3 | 23 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 5 | 9 | 5 | 23 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 1 | 11 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 7 | 21 | 38 | 14 | 85 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 8 | 11 | 5 | 2 | 31 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 7 | 4 | 21 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 4 | 13 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 5 | 14 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 11 | 26 | 21 | 15 | 79 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 11 | 3 | 20 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 10 | 8 | 5 | 25 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 7 | 4 | 15 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 9 | 8 | 21 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 19 | 35 | 20 | 81 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 10 | 6 | 21 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 7 | 3 | 15 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 10 | 13 | 29 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 2 | 11 | 18 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 13 | 29 | 33 | 83 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 10 | 9 | 7 | 31 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 14 | 12 | 36 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15 | 12 | 29 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 6 | 10 | 24 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 25 | 44 | 41 | 120 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 15 | 18 | 38 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 14 | 9 | 30 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 12 | 12 | 30 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 9 | 12 | 9 | 32 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 22 | 53 | 48 | 130 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 10 | 9 | 28 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 7 | 7 | 21 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 13 | 9 | 26 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 7 | 15 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 18 | 36 | 32 | 90 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 3 | 15 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 8 | 2 | 16 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 3 | 10 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 6 | 8 | 18 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 12 | 24 | 16 | 59 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 4 | 12 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | 6 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 8 | 3 | 15 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 10 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 10 | 20 | 8 | 43 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 6 | 1 | 11 |
| 21:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 2 | 9 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 5 |
| Hour Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 15 | 4 | 27 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 2 | 6 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | 0 | 8 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 5 | 19 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 4 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 12 |
| 24 HR TOTAL | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 6 | 38 | 68 | 286 | 500 | 376 | 1278 |
| PERCENTS | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.1% | 0.5% | 3.0% | 5.3% | 22.4% | 39.1% | 29.4% | 100.0% |

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|

Statistical Information...

15th Percentile Speed
60.3 mph

85th Percentile Speed
68.7 mph

Median Speed
65.5 mph

Average Speed
64.3 mph

10 MPH Pace Speed
60 mph to 70 mph
786 vehicles in pace
Representing 87.1% of the total vehicles

Vehicles > 65 MPH
500
55.4%

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 3 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 2 | 2 | 9 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 3 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 3 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 6 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 3 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 5 | 1 | 9 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 4 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 5 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 1 | 6 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 8 | 3 | 4 | 17 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 4 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 10 | 16 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 3 | 10 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 9 | 15 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 12 | 23 | 45 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 6 | 7 | 24 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 4 | 16 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 15 | 27 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13 | 17 | 34 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 17 | 35 | 43 | 101 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 10 | 5 | 19 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 4 | 11 | 24 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 6 | 2 | 12 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 11 | 5 | 21 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 19 | 31 | 23 | 76 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 5 | 10 | 5 | 24 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 1 | 13 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 9 | 4 | 16 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 4 | 11 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 11 | 33 | 14 | 64 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 9 | 16 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 7 | 3 | 15 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 8 | 2 | 15 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 5 | 1 | 12 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 13 | 24 | 15 | 58 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 4 | 11 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 9 | 11 | 25 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 7 | 9 | 20 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 5 | 11 | 3 | 25 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 6 | 13 | 30 | 27 | 81 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 10 | 21 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 11 | 7 | 21 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 7 | 7 | 17 |
| 13:00 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 10 | 7 | 23 |
| Hour Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 11 | 34 | 31 | 82 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 7 | 14 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 4 | 6 | 17 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 5 | 8 | 19 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 6 | 10 | 21 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 5 | 14 | 19 | 31 | 71 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 6 | 6 | 6 | 22 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 10 | 18 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 4 | 6 | 15 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 8 | 13 | 12 | 36 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 20 | 27 | 34 | 91 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 5 | 13 | 14 | 35 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 10 | 5 | 19 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 6 | 6 | 7 | 3 | 25 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 15 | 7 | 31 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 9 | 19 | 45 | 29 | 110 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 5 | 10 | 15 | 33 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 14 | 19 | 42 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13 | 9 | 26 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 6 | 7 | 14 | 29 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 4 | 22 | 44 | 57 | 130 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 16 | 16 | 36 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 16 | 21 | 43 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10 | 10 | 26 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 9 | 10 | 22 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 16 | 51 | 57 | 127 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 5 | 4 | 14 | 26 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 13 | 13 | 34 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 10 | 22 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 5 | 11 | 21 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 19 | 28 | 48 | 103 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 16 | 21 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 2 | 12 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 4 | 9 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 4 | 16 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 8 | 21 | 26 | 58 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 6 | 4 | 13 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 3 | 13 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 4 | 9 | 3 | 18 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 7 | 23 | 12 | 47 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 1 | 6 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 5 | 10 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 10 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 2 | 8 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 6 | 11 | 14 | 34 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 1 | 0 | 6 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 2 | 12 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 1 | 7 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 11 | 9 | 3 | 27 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 4 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 3 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 3 | 3 | 1 | 11 |
| 24 HR TOTAL | 0 | 0 | 0 | 1 | 0 | 3 | 1 | 1 | 10 | 36 | 67 | 250 | 495 | 499 | 1363 |
| PERCENTS | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.2% | 0.1% | 0.1% | 0.7% | 2.6% | 4.9% | 18.3% | 36.3% | 36.6% | 100.0% |

Station #: Site A-NBI
Site ID: 000000003558
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
60.2 mph

85th Percentile Speed
68.7 mph

Median Speed
65.6 mph

Average Speed
64.2 mph

10 MPH Pace Speed
60 mph to 70 mph
745 vehicles in pace
Representing 86.2% of the total vehicles

Vehicles > 65 MPH
495
57.3%

SPEED SUMMARY
Wed 5/9/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 8 | 4 | 0 | 15 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 4 | 8 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 3 | 0 | 10 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 2 | 7 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 17 | 9 | 6 | 40 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 3 | 0 | 11 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 5 | 0 | 11 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 4 | 0 | 9 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 11 | 13 | 0 | 33 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 3 | 0 | 7 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 7 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 5 | 0 | 14 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 2 | 3 | 12 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 8 | 12 | 14 | 3 | 40 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 11 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 1 | 7 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 5 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 3 | 3 | 10 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 9 | 16 | 4 | 33 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 5 | 0 | 14 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 3 | 1 | 11 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 4 | 1 | 11 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 6 | 5 | 2 | 16 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 21 | 17 | 4 | 52 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 5 | 5 | 1 | 17 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 2 | 10 | 5 | 2 | 24 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 8 | 8 | 1 | 26 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 9 | 4 | 3 | 19 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 9 | 13 | 32 | 22 | 7 | 86 |
| 06:15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 11 | 8 | 4 | 34 |
| 06:30 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 9 | 20 | 13 | 3 | 51 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 10 | 18 | 21 | 1 | 54 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 20 | 20 | 3 | 56 |
| Hour Total | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 12 | 37 | 69 | 62 | 11 | 195 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 8 | 18 | 16 | 2 | 49 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 12 | 22 | 16 | 10 | 61 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 11 | 25 | 18 | 9 | 68 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 26 | 24 | 15 | 75 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 8 | 40 | 91 | 74 | 36 | 253 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 12 | 24 | 19 | 8 | 68 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9 | 26 | 17 | 5 | 61 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 31 | 25 | 6 | 76 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 30 | 12 | 2 | 57 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 10 | 44 | 111 | 73 | 21 | 262 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 6 | 18 | 14 | 6 | 53 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11 | 26 | 9 | 2 | 53 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 10 | 28 | 17 | 3 | 60 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12 | 23 | 21 | 2 | 62 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 39 | 95 | 61 | 13 | 228 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 15 | 25 | 22 | 7 | 73 |
| 10:30 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 5 | 7 | 25 | 13 | 2 | 56 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16 | 28 | 18 | 3 | 69 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 25 | 20 | 3 | 64 |
| Hour Total | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 13 | 54 | 103 | 73 | 15 | 262 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 19 | 16 | 1 | 47 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 13 | 28 | 12 | 6 | 60 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 24 | 26 | 4 | 69 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 10 | 31 | 8 | 4 | 60 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 45 | 102 | 62 | 15 | 236 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 25 | 24 | 5 | 67 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 32 | 25 | 4 | 72 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 13 | 28 | 11 | 8 | 65 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 21 | 15 | 6 | 57 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 7 | 46 | 106 | 75 | 23 | 261 |
| 13:15 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 9 | 19 | 10 | 2 | 48 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14 | 32 | 19 | 6 | 74 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 10 | 35 | 14 | 4 | 69 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 22 | 11 | 3 | 47 |
| Hour Total | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 12 | 41 | 108 | 54 | 15 | 238 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 11 | 37 | 23 | 2 | 80 |
| 14:30 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 26 | 16 | 5 | 64 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 33 | 19 | 6 | 73 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 12 | 23 | 17 | 1 | 58 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 11 | 52 | 119 | 75 | 14 | 275 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 12 | 25 | 14 | 8 | 63 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 11 | 27 | 21 | 8 | 72 |
| 15:45 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 10 | 28 | 21 | 12 | 76 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 14 | 34 | 23 | 14 | 88 |
| Hour Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 10 | 47 | 114 | 79 | 42 | 299 |
| 16:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 28 | 23 | 10 | 75 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 36 | 23 | 3 | 72 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 11 | 32 | 26 | 10 | 84 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 24 | 26 | 14 | 73 |
| Hour Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 38 | 120 | 98 | 37 | 304 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 42 | 27 | 12 | 94 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 34 | 31 | 6 | 83 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 6 | 36 | 25 | 8 | 79 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 15 | 25 | 17 | 11 | 74 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 13 | 41 | 137 | 100 | 37 | 330 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 32 | 28 | 8 | 78 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 7 | 28 | 13 | 6 | 58 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 10 | 19 | 19 | 7 | 59 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 9 | 19 | 18 | 4 | 55 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 9 | 33 | 98 | 78 | 25 | 250 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 9 | 19 | 19 | 5 | 55 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 9 | 20 | 22 | 6 | 61 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 9 | 18 | 9 | 7 | 44 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 8 | 18 | 16 | 9 | 54 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 6 | 35 | 75 | 66 | 27 | 214 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 10 | 15 | 9 | 3 | 44 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 8 | 11 | 6 | 3 | 34 |
| 20:45 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 9 | 15 | 10 | 1 | 41 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 19 | 9 | 3 | 41 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 6 | 13 | 35 | 60 | 34 | 10 | 160 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 14 | 10 | 0 | 32 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 13 | 12 | 2 | 37 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 11 | 6 | 1 | 27 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 | 13 | 5 | 4 | 28 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 27 | 51 | 33 | 7 | 124 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12 | 8 | 1 | 25 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 9 | 3 | 1 | 21 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 5 | 6 | 8 | 3 | 25 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 5 | 2 | 2 | 13 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 18 | 32 | 21 | 7 | 84 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 8 | 0 | 18 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 1 | 11 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 10 | 1 | 1 | 16 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 3 | 5 | 2 | 15 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 10 | 22 | 19 | 4 | 60 |
| 24 HR TOTAL | 3 | 3 | 4 | 2 | 0 | 2 | 7 | 16 | 43 | 187 | 726 | 1715 | 1228 | 383 | 4319 |
| PERCENTS | 0.1% | 0.1% | 0.1% | 0.0% | 0.0% | 0.0% | 0.2% | 0.4% | 1.0% | 4.3% | 16.8% | 39.7% | 28.4% | 8.9% | 100.0% |

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
57.3 mph

85th Percentile Speed
67.6 mph

Median Speed
62.9 mph

Average Speed
62.3 mph

10 MPH Pace Speed
60 mph to 70 mph
2943 vehicles in pace
Representing 74.8% of the total vehicles

Vehicles > 65 MPH
1228
31.2%

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 8 | 5 | 2 | 24 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 4 | 2 | 12 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 6 | 2 | 2 | 13 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 1 | 1 | 9 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 15 | 20 | 12 | 7 | 58 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 8 | 4 | 16 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 1 | 2 | 10 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 5 | 2 | 11 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 3 | 1 | 8 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 11 | 17 | 9 | 45 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 3 | 8 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 5 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 5 | 3 | 14 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 3 | 1 | 10 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 11 | 10 | 8 | 37 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 4 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 1 | 0 | 6 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 2 | 10 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 2 | 2 | 11 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 9 | 11 | 4 | 31 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 5 | 1 | 13 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 1 | 1 | 7 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 6 | 1 | 18 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 3 | 2 | 5 | 15 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 9 | 20 | 14 | 8 | 53 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 | 5 | 6 | 6 | 23 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 9 | 7 | 3 | 26 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 2 | 10 | 7 | 3 | 27 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 5 | 9 | 4 | 24 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 8 | 15 | 29 | 29 | 16 | 100 |
| 06:15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 14 | 10 | 6 | 37 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 20 | 10 | 5 | 46 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 4 | 18 | 16 | 10 | 53 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 20 | 13 | 7 | 49 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 10 | 21 | 72 | 49 | 28 | 185 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 9 | 21 | 22 | 5 | 62 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 4 | 22 | 23 | 9 | 64 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 24 | 24 | 5 | 64 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 9 | 36 | 26 | 11 | 84 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 9 | 31 | 103 | 95 | 30 | 274 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 26 | 14 | 7 | 56 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 12 | 24 | 16 | 4 | 63 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 26 | 18 | 2 | 60 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 19 | 20 | 7 | 58 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 40 | 95 | 68 | 20 | 237 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 23 | 21 | 3 | 57 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 31 | 19 | 3 | 66 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 11 | 16 | 13 | 4 | 46 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 20 | 23 | 3 | 56 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 6 | 38 | 90 | 76 | 13 | 225 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6 | 23 | 17 | 5 | 55 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 30 | 18 | 6 | 65 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 34 | 17 | 10 | 75 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 9 | 23 | 21 | 9 | 65 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 5 | 39 | 110 | 73 | 30 | 260 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 25 | 21 | 5 | 59 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12 | 24 | 19 | 9 | 68 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 8 | 28 | 14 | 8 | 61 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 8 | 29 | 13 | 4 | 58 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 10 | 32 | 106 | 67 | 26 | 246 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | 12 | 24 | 21 | 4 | 67 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 29 | 20 | 11 | 71 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 16 | 40 | 17 | 5 | 80 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 34 | 24 | 2 | 70 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 11 | 43 | 127 | 82 | 22 | 288 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 14 | 18 | 18 | 3 | 57 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 10 | 24 | 20 | 5 | 64 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 23 | 26 | 10 | 67 |
| 14:00 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 16 | 24 | 19 | 8 | 73 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 4 | 10 | 47 | 89 | 83 | 26 | 261 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 5 | 7 | 25 | 21 | 8 | 70 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 32 | 19 | 6 | 69 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 13 | 23 | 20 | 9 | 69 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 16 | 29 | 20 | 7 | 75 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 | 12 | 46 | 109 | 80 | 30 | 283 |
| 15:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 18 | 28 | 26 | 6 | 81 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 10 | 32 | 23 | 5 | 74 |
| 15:45 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 8 | 15 | 32 | 16 | 6 | 80 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 22 | 36 | 19 | 7 | 91 |
| Hour Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 3 | 18 | 65 | 128 | 84 | 24 | 326 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 17 | 36 | 27 | 8 | 90 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 12 | 32 | 21 | 8 | 77 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 25 | 25 | 6 | 68 |
| 17:00 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 9 | 25 | 23 | 11 | 72 |
| Hour Total | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 10 | 46 | 118 | 96 | 33 | 307 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 33 | 30 | 16 | 85 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 11 | 41 | 29 | 16 | 102 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 20 | 32 | 9 | 66 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 29 | 22 | 11 | 72 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 6 | 28 | 123 | 113 | 52 | 325 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|--------|
| 18:15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 28 | 24 | 11 | 75 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 8 | 19 | 24 | 5 | 59 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 18 | 23 | 12 | 58 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 28 | 23 | 2 | 59 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 22 | 93 | 94 | 30 | 251 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 28 | 23 | 10 | 68 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 24 | 11 | 3 | 49 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 18 | 15 | 6 | 50 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 8 | 20 | 11 | 6 | 48 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 31 | 90 | 60 | 25 | 215 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 17 | 17 | 3 | 43 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 6 | 15 | 12 | 1 | 39 |
| 20:45 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 14 | 8 | 1 | 25 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6 | 12 | 8 | 3 | 33 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 17 | 58 | 45 | 8 | 140 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15 | 16 | 1 | 2 | 36 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 16 | 8 | 2 | 36 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 15 | 3 | 3 | 28 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 16 | 12 | 5 | 41 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 31 | 63 | 24 | 12 | 141 |
| 22:15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 9 | 1 | 21 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 4 | 20 | 10 | 0 | 39 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10 | 3 | 2 | 21 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9 | 7 | 2 | 23 |
| Hour Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 18 | 46 | 29 | 5 | 104 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 5 | 2 | 14 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 8 | 9 | 0 | 23 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 0 | 6 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 2 | 0 | 8 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 10 | 21 | 17 | 2 | 51 |
| 24 HR TOTAL | 1 | 1 | 4 | 1 | 1 | 3 | 5 | 14 | 40 | 171 | 665 | 1741 | 1328 | 468 | 4443 |
| PERCENTS | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.1% | 0.1% | 0.3% | 0.9% | 3.8% | 15.0% | 39.2% | 29.9% | 10.5% | 100.0% |

Station #: Site A-NBO
Site ID: 000000003810
Location: US 220, N of NC Border
Direction: NORTH
Lane: 1

File: A-US 220, N of NC Border_NBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
57.7 mph

85th Percentile Speed
67.8 mph

Median Speed
63.1 mph

Average Speed
62.6 mph

10 MPH Pace Speed
60 mph to 70 mph
3069 vehicles in pace
Representing 77.2% of the total vehicles

Vehicles > 65 MPH
1328
33.4%

SPEED SUMMARY
Wed 5/9/2018

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 5 | 4 | 0 | 0 | 14 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | 2 | 1 | 1 | 12 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 3 | 4 | 2 | 2 | 0 | 16 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 0 | 0 | 0 | 7 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 12 | 16 | 8 | 3 | 1 | 49 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 1 | 0 | 0 | 6 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 1 | 0 | 6 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 1 | 0 | 6 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | 1 | 0 | 7 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 10 | 4 | 3 | 0 | 25 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 1 | 1 | 2 | 0 | 10 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 2 | 1 | 0 | 9 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 4 | 1 | 0 | 9 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 5 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 7 | 11 | 7 | 4 | 0 | 33 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 0 | 1 | 8 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 0 | 1 | 1 | 10 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 5 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 5 | 1 | 1 | 12 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 11 | 3 | 3 | 35 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 2 | 4 | 2 | 14 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 7 | 1 | 1 | 19 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 1 | 6 | 1 | 0 | 14 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 6 | 0 | 2 | 14 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 8 | 17 | 21 | 6 | 5 | 61 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 8 | 2 | 2 | 16 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14 | 14 | 8 | 4 | 43 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 11 | 15 | 2 | 3 | 42 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 11 | 15 | 12 | 1 | 47 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 17 | 39 | 52 | 24 | 10 | 148 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 16 | 19 | 6 | 2 | 51 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 11 | 21 | 14 | 8 | 62 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 17 | 12 | 7 | 5 | 51 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 23 | 18 | 7 | 4 | 57 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 22 | 67 | 70 | 34 | 19 | 221 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 16 | 22 | 9 | 0 | 57 |
| 07:30 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 6 | 13 | 16 | 5 | 2 | 44 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 14 | 19 | 12 | 1 | 53 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 20 | 12 | 7 | 2 | 47 |
| Hour Total | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 26 | 63 | 69 | 33 | 5 | 201 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 9 | 15 | 10 | 0 | 45 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 33 | 19 | 5 | 0 | 71 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 13 | 14 | 9 | 2 | 47 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 9 | 17 | 14 | 2 | 1 | 50 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 11 | 37 | 72 | 62 | 26 | 3 | 213 |

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 19 | 17 | 6 | 1 | 55 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 24 | 10 | 3 | 0 | 45 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 16 | 20 | 14 | 0 | 0 | 52 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 25 | 18 | 3 | 0 | 58 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 43 | 88 | 59 | 12 | 1 | 210 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 9 | 29 | 27 | 4 | 0 | 76 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 9 | 20 | 20 | 3 | 1 | 57 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 17 | 24 | 10 | 4 | 0 | 57 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13 | 17 | 9 | 7 | 1 | 50 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 12 | 48 | 90 | 66 | 18 | 2 | 240 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 13 | 24 | 16 | 4 | 0 | 62 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 13 | 26 | 17 | 2 | 0 | 59 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13 | 19 | 14 | 4 | 0 | 54 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 8 | 16 | 24 | 4 | 1 | 60 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14 | 47 | 85 | 71 | 14 | 1 | 235 |
| 12:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 16 | 21 | 12 | 3 | 0 | 61 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 19 | 26 | 13 | 4 | 0 | 66 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 15 | 23 | 12 | 1 | 0 | 54 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 19 | 21 | 22 | 5 | 1 | 76 |
| Hour Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 16 | 69 | 91 | 59 | 13 | 1 | 257 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 24 | 27 | 8 | 6 | 0 | 70 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 16 | 27 | 14 | 1 | 0 | 63 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 9 | 19 | 19 | 4 | 1 | 58 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 13 | 19 | 24 | 1 | 0 | 58 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13 | 62 | 92 | 65 | 12 | 1 | 249 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 16 | 18 | 17 | 1 | 1 | 58 |
| 14:30 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 19 | 17 | 15 | 0 | 0 | 55 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 17 | 14 | 16 | 3 | 1 | 56 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 18 | 26 | 8 | 3 | 0 | 63 |
| Hour Total | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 17 | 70 | 75 | 56 | 7 | 2 | 232 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 18 | 25 | 20 | 7 | 2 | 74 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 15 | 22 | 20 | 5 | 1 | 69 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 20 | 17 | 3 | 1 | 60 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 21 | 18 | 3 | 1 | 57 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 63 | 88 | 75 | 18 | 5 | 260 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 18 | 25 | 11 | 4 | 1 | 66 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 24 | 18 | 8 | 1 | 69 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 12 | 29 | 17 | 5 | 1 | 73 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 15 | 25 | 7 | 6 | 1 | 55 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 12 | 63 | 103 | 53 | 23 | 4 | 263 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 22 | 13 | 8 | 0 | 58 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 22 | 21 | 4 | 1 | 59 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 29 | 23 | 5 | 1 | 76 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 23 | 25 | 4 | 1 | 63 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 39 | 96 | 82 | 21 | 3 | 256 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 17 | 13 | 26 | 8 | 0 | 67 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 29 | 14 | 12 | 1 | 68 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 18 | 16 | 5 | 0 | 49 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14 | 21 | 16 | 3 | 2 | 61 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 46 | 81 | 72 | 28 | 3 | 245 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 18 | 10 | 3 | 0 | 43 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 25 | 16 | 2 | 4 | 62 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 16 | 10 | 1 | 0 | 41 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 16 | 9 | 1 | 0 | 36 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 38 | 75 | 45 | 7 | 4 | 182 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 8 | 13 | 9 | 3 | 2 | 40 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 11 | 9 | 3 | 1 | 1 | 31 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 12 | 5 | 9 | 1 | 0 | 29 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 7 | 11 | 6 | 1 | 0 | 30 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 10 | 38 | 38 | 27 | 6 | 3 | 130 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 9 | 6 | 6 | 1 | 0 | 25 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 6 | 13 | 11 | 0 | 0 | 36 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 5 | 5 | 5 | 0 | 27 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 8 | 5 | 2 | 0 | 0 | 21 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14 | 31 | 29 | 24 | 6 | 0 | 109 |
| 22:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 11 | 10 | 7 | 0 | 34 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 5 | 0 | 0 | 19 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 8 | 3 | 0 | 0 | 22 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 4 | 4 | 0 | 0 | 11 |
| Hour Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 18 | 30 | 22 | 7 | 0 | 86 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 4 | 0 | 2 | 0 | 12 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 3 | 0 | 0 | 11 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 4 | 3 | 1 | 0 | 14 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 6 | 0 | 0 | 11 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 16 | 12 | 12 | 3 | 0 | 48 |
| 24 HR TOTAL | 1 | 2 | 0 | 0 | 2 | 1 | 6 | 49 | 220 | 831 | 1377 | 1092 | 331 | 76 | 3988 |
| PERCENTS | 0.0% | 0.1% | 0.0% | 0.0% | 0.1% | 0.0% | 0.2% | 1.2% | 5.5% | 20.8% | 34.5% | 27.4% | 8.3% | 1.9% | 100.0% |

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
51.9 mph

85th Percentile Speed
63.8 mph

Median Speed
58.1 mph

Average Speed
57.9 mph

10 MPH Pace Speed
55 mph to 65 mph
2469 vehicles in pace
Representing 63.1% of the total vehicles

Vehicles > 65 MPH
331
8.5%

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 1 | 7 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 5 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 5 | 1 | 0 | 0 | 10 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 1 | 1 | 0 | 10 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 14 | 3 | 1 | 1 | 32 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 4 | 0 | 0 | 10 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 2 | 1 | 0 | 7 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 4 | 2 | 0 | 0 | 12 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 3 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 10 | 10 | 8 | 1 | 0 | 32 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 1 | 0 | 0 | 6 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 1 | 0 | 0 | 7 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 1 | 0 | 6 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 12 | 2 | 2 | 0 | 22 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 4 | 5 | 2 | 0 | 15 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 1 | 3 | 0 | 2 | 11 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 0 | 7 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 3 | 0 | 8 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 7 | 11 | 10 | 6 | 2 | 41 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 3 | 0 | 13 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 7 | 4 | 0 | 20 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 1 | 0 | 10 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 5 | 3 | 2 | 0 | 18 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 17 | 19 | 10 | 0 | 61 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 3 | 5 | 2 | 17 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 13 | 9 | 4 | 3 | 34 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 11 | 18 | 5 | 1 | 41 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 16 | 21 | 5 | 2 | 53 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 15 | 46 | 51 | 19 | 8 | 145 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 16 | 23 | 10 | 3 | 59 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 15 | 15 | 5 | 1 | 44 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 21 | 18 | 4 | 5 | 60 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 11 | 18 | 11 | 2 | 57 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 32 | 63 | 74 | 30 | 11 | 220 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 24 | 21 | 7 | 1 | 63 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 12 | 19 | 19 | 3 | 2 | 63 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 17 | 19 | 10 | 4 | 56 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 17 | 19 | 3 | 0 | 46 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 33 | 77 | 78 | 23 | 7 | 228 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 18 | 8 | 13 | 0 | 54 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 6 | 23 | 18 | 7 | 0 | 57 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 15 | 12 | 15 | 3 | 1 | 50 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15 | 13 | 7 | 8 | 2 | 50 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 49 | 66 | 48 | 31 | 3 | 211 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 17 | 17 | 17 | 1 | 1 | 55 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 22 | 12 | 3 | 0 | 49 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 21 | 24 | 11 | 2 | 0 | 63 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 10 | 19 | 11 | 2 | 0 | 51 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15 | 59 | 82 | 51 | 8 | 1 | 218 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 16 | 17 | 11 | 4 | 0 | 54 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 14 | 17 | 15 | 6 | 0 | 55 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 11 | 30 | 19 | 3 | 0 | 68 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16 | 22 | 17 | 3 | 0 | 63 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 13 | 57 | 86 | 62 | 16 | 0 | 240 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 23 | 15 | 6 | 1 | 64 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 19 | 28 | 12 | 5 | 2 | 71 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 12 | 26 | 12 | 3 | 0 | 57 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 12 | 20 | 16 | 4 | 1 | 60 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12 | 61 | 97 | 55 | 18 | 4 | 252 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 14 | 17 | 14 | 3 | 0 | 52 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 22 | 30 | 15 | 7 | 0 | 77 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 13 | 25 | 10 | 1 | 1 | 60 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 27 | 18 | 2 | 0 | 60 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 16 | 60 | 99 | 57 | 13 | 1 | 249 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 17 | 22 | 9 | 2 | 0 | 56 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 22 | 31 | 14 | 2 | 1 | 77 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 21 | 22 | 22 | 3 | 0 | 74 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 23 | 27 | 13 | 3 | 0 | 73 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 23 | 83 | 102 | 58 | 10 | 1 | 280 |
| 14:15 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 7 | 24 | 15 | 15 | 2 | 0 | 65 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 27 | 30 | 16 | 0 | 0 | 76 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 28 | 25 | 16 | 1 | 1 | 79 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 21 | 23 | 20 | 0 | 0 | 74 |
| Hour Total | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 4 | 23 | 100 | 93 | 67 | 3 | 1 | 294 |
| 15:15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 7 | 9 | 29 | 16 | 4 | 0 | 67 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 20 | 29 | 11 | 3 | 0 | 77 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 14 | 11 | 10 | 5 | 1 | 0 | 49 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15 | 26 | 27 | 10 | 1 | 0 | 84 |
| Hour Total | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 15 | 48 | 66 | 95 | 42 | 9 | 0 | 277 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 12 | 21 | 17 | 3 | 1 | 63 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 13 | 17 | 22 | 4 | 0 | 66 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 21 | 30 | 17 | 2 | 1 | 79 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 15 | 19 | 20 | 9 | 1 | 67 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 23 | 61 | 87 | 76 | 18 | 3 | 275 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 7 | 17 | 26 | 7 | 0 | 62 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 20 | 27 | 21 | 7 | 0 | 79 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 26 | 23 | 5 | 2 | 66 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 20 | 19 | 3 | 2 | 64 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 51 | 90 | 89 | 22 | 4 | 271 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 15 | 23 | 11 | 3 | 1 | 61 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 10 | 13 | 5 | 0 | 46 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 22 | 17 | 3 | 0 | 55 |
| 19:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 12 | 21 | 4 | 1 | 51 |
| Hour Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 13 | 50 | 67 | 62 | 15 | 2 | 213 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15 | 16 | 12 | 2 | 0 | 47 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 16 | 14 | 4 | 1 | 45 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 13 | 10 | 4 | 1 | 38 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 16 | 6 | 6 | 1 | 35 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 38 | 61 | 42 | 16 | 3 | 165 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 17 | 8 | 2 | 0 | 35 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 16 | 11 | 9 | 1 | 1 | 44 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 9 | 5 | 4 | 0 | 0 | 23 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 8 | 14 | 8 | 0 | 0 | 35 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 15 | 39 | 47 | 29 | 3 | 1 | 137 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 6 | 7 | 7 | 0 | 0 | 29 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 16 | 7 | 0 | 0 | 34 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 12 | 9 | 6 | 1 | 0 | 32 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 10 | 5 | 7 | 1 | 0 | 26 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16 | 34 | 37 | 27 | 2 | 0 | 121 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 8 | 4 | 6 | 1 | 0 | 22 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 6 | 6 | 4 | 4 | 0 | 25 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 7 | 4 | 0 | 0 | 19 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11 | 8 | 4 | 2 | 0 | 30 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 12 | 30 | 25 | 18 | 7 | 0 | 96 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9 | 5 | 1 | 0 | 20 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 3 | 1 | 0 | 13 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 7 | 1 | 0 | 0 | 16 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 3 | 5 | 2 | 1 | 0 | 17 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 15 | 28 | 11 | 3 | 0 | 66 |
| 24 HR TOTAL | 0 | 1 | 0 | 2 | 0 | 1 | 6 | 74 | 298 | 974 | 1412 | 1039 | 286 | 53 | 4146 |
| PERCENTS | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 1.8% | 7.2% | 23.5% | 34.1% | 25.1% | 6.9% | 1.3% | 100.0% |

Station #: Site A-SBO
Site ID: 000000003563
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220, N of NC Border_SBO Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
51.2 mph

85th Percentile Speed
63.4 mph

Median Speed
57.5 mph

Average Speed
57.2 mph

10 MPH Pace Speed
55 mph to 65 mph
2451 vehicles in pace
Representing 59.9% of the total vehicles

Vehicles > 65 MPH
286
7.0%

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220,1 N of NC Border_SBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 4 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 5 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 5 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 |
| Hour Total | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 6 | 1 | 0 | 16 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 4 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 4 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 2 | 3 | 0 | 11 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 4 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 6 |
| 02:45 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 6 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 6 | 1 | 16 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 3 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 5 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 1 | 2 | 11 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 1 | 2 | 10 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 4 | 2 | 9 |
| 04:45 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 4 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 2 | 8 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 11 | 7 | 6 | 31 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 2 | 7 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 3 | 2 | 11 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 10 | 4 | 4 | 22 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 7 | 6 | 8 | 26 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 26 | 15 | 16 | 66 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 14 | 6 | 8 | 30 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 8 | 12 | 30 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 8 | 24 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 9 | 5 | 23 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 36 | 31 | 33 | 107 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 9 | 7 | 7 | 29 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 10 | 11 | 5 | 30 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 11 | 6 | 26 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 13 | 13 | 3 | 30 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 41 | 42 | 21 | 115 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 10 | 14 | 2 | 28 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 11 | 12 | 1 | 29 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 6 | 5 | 6 | 22 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 11 | 7 | 0 | 26 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15 | 38 | 38 | 9 | 105 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220,1 N of NC Border_SBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14 | 7 | 2 | 26 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 2 | 14 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 2 | 0 | 12 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 4 | 9 | 3 | 20 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 9 | 31 | 24 | 7 | 72 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 3 | 2 | 18 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 12 | 1 | 11 | 31 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 8 | 2 | 20 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 7 | 11 | 0 | 24 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 11 | 37 | 23 | 15 | 93 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 2 | 3 | 13 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 6 | 1 | 20 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 8 | 4 | 1 | 20 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 18 | 5 | 0 | 29 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 19 | 40 | 17 | 5 | 82 |
| 12:15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 6 | 5 | 1 | 18 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 19 | 6 | 2 | 34 |
| 12:45 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 4 | 9 | 1 | 2 | 19 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 8 | 0 | 16 |
| Hour Total | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 15 | 40 | 20 | 5 | 87 |
| 13:15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 2 | 9 | 3 | 3 | 24 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 9 | 8 | 1 | 22 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 8 | 5 | 2 | 23 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 12 | 3 | 1 | 17 |
| Hour Total | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 10 | 9 | 38 | 19 | 7 | 86 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 5 | 5 | 4 | 21 |
| 14:30 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 13 | 1 | 1 | 22 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | 11 | 5 | 1 | 25 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 6 | 10 | 1 | 26 |
| Hour Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 8 | 21 | 35 | 21 | 7 | 94 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 14 | 10 | 2 | 32 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 15 | 12 | 3 | 40 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 17 | 6 | 1 | 32 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 15 | 10 | 6 | 43 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 32 | 61 | 38 | 12 | 147 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14 | 9 | 1 | 27 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 7 | 2 | 22 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 11 | 8 | 4 | 30 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 14 | 10 | 3 | 34 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 18 | 49 | 34 | 10 | 113 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 19 | 8 | 1 | 32 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 17 | 2 | 8 | 29 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 30 | 12 | 3 | 49 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 14 | 20 | 5 | 43 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 80 | 42 | 17 | 153 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220,1 N of NC Border_SBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 10 | 9 | 0 | 22 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 10 | 11 | 4 | 29 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 7 | 10 | 3 | 28 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 7 | 2 | 22 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 16 | 35 | 37 | 9 | 101 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 8 | 4 | 3 | 20 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 13 | 7 | 1 | 22 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 5 | 5 | 2 | 17 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 7 | 0 | 11 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 8 | 28 | 23 | 6 | 70 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 8 | 4 | 1 | 15 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 2 | 5 | 0 | 12 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 8 | 5 | 0 | 2 | 19 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 7 | 4 | 1 | 19 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5 | 15 | 22 | 13 | 4 | 65 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 7 | 3 | 0 | 17 |
| 21:30 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 3 | 0 | 12 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 3 | 0 | 12 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 1 | 0 | 11 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 14 | 21 | 10 | 0 | 52 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 6 | 2 | 1 | 15 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 5 | 0 | 10 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 7 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 3 | 1 | 9 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 7 | 16 | 11 | 3 | 41 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 6 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 1 | 0 | 7 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 0 | 0 | 6 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 7 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 11 | 12 | 1 | 0 | 26 |
| 24 HR TOTAL | 4 | 1 | 3 | 1 | 1 | 0 | 1 | 2 | 19 | 73 | 273 | 710 | 477 | 195 | 1760 |
| PERCENTS | 0.2% | 0.1% | 0.2% | 0.1% | 0.1% | 0.0% | 0.1% | 0.1% | 1.1% | 4.1% | 15.5% | 40.3% | 27.1% | 11.1% | 100.0% |

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220,1 N of NC Border_SBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
57.4 mph

85th Percentile Speed
67.6 mph

Median Speed
62.9 mph

Average Speed
62.3 mph

10 MPH Pace Speed
60 mph to 70 mph
1187 vehicles in pace
Representing 76.0% of the total vehicles

Vehicles > 65 MPH
477
30.6%

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220,1 N of NC Border_SBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 4 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 0 | 0 | 5 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 2 | 0 | 12 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| 01:30 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 5 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 |
| Hour Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 1 | 12 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 4 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 2 | 1 | 0 | 10 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 4 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 4 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 5 | 3 | 1 | 15 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 4 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 4 | 2 | 13 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 1 | 7 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 4 | 2 | 0 | 9 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 13 | 9 | 5 | 33 |
| 05:15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 1 | 6 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 2 | 11 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 4 | 3 | 17 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5 | 12 | 3 | 26 |
| Hour Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 18 | 22 | 9 | 60 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 10 | 9 | 28 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 12 | 10 | 33 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 9 | 11 | 27 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 10 | 16 | 3 | 36 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 29 | 47 | 33 | 124 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 10 | 5 | 24 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 11 | 7 | 4 | 27 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 8 | 9 | 6 | 29 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 13 | 6 | 7 | 33 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 13 | 36 | 32 | 22 | 113 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14 | 8 | 4 | 29 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 13 | 2 | 27 |
| 08:45 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 10 | 1 | 22 |
| 09:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 3 | 2 | 17 |
| Hour Total | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 39 | 34 | 9 | 95 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220,1 N of NC Border_SBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 7 | 1 | 18 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 6 | 1 | 19 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 10 | 3 | 3 | 19 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 16 | 2 | 0 | 22 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 45 | 18 | 5 | 78 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 9 | 4 | 1 | 20 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 3 | 2 | 12 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | 9 | 11 | 1 | 29 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 12 | 6 | 1 | 21 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 10 | 35 | 24 | 5 | 82 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 7 | 11 | 3 | 25 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 8 | 5 | 1 | 21 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 10 | 4 | 1 | 23 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 17 | 5 | 3 | 34 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 22 | 42 | 25 | 8 | 103 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 7 | 7 | 1 | 24 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 6 | 3 | 27 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 12 | 14 | 1 | 1 | 30 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 12 | 2 | 0 | 18 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 28 | 42 | 16 | 5 | 99 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 10 | 0 | 1 | 19 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 15 | 7 | 0 | 33 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 12 | 13 | 1 | 36 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 13 | 8 | 0 | 34 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 34 | 50 | 28 | 2 | 122 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 14 | 13 | 10 | 0 | 47 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 19 | 3 | 0 | 36 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 17 | 9 | 1 | 37 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 12 | 6 | 0 | 26 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 16 | 38 | 61 | 28 | 1 | 146 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 12 | 15 | 16 | 0 | 46 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 5 | 10 | 17 | 11 | 3 | 49 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 5 | 6 | 5 | 0 | 1 | 21 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 10 | 11 | 3 | 1 | 29 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 3 | 15 | 38 | 48 | 30 | 5 | 145 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 13 | 9 | 2 | 32 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 22 | 14 | 3 | 41 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 9 | 16 | 18 | 2 | 47 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 18 | 12 | 5 | 42 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 21 | 69 | 53 | 12 | 162 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 16 | 7 | 2 | 36 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 16 | 12 | 2 | 39 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 12 | 13 | 7 | 39 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 23 | 5 | 4 | 39 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 32 | 67 | 37 | 15 | 153 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220,1 N of NC Border_SBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 9 | 6 | 2 | 21 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 11 | 4 | 1 | 23 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 14 | 4 | 2 | 24 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12 | 7 | 3 | 26 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 13 | 46 | 21 | 8 | 94 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 13 | 6 | 0 | 27 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 4 | 7 | 2 | 19 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 3 | 0 | 16 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 7 | 6 | 4 | 23 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 22 | 32 | 22 | 6 | 85 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 5 | 2 | 3 | 16 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 8 | 0 | 4 | 19 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 2 | 0 | 0 | 12 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5 | 3 | 0 | 14 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 23 | 20 | 5 | 7 | 61 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 6 | 2 | 0 | 15 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 2 | 0 | 11 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 4 | 0 | 0 | 12 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 1 | 0 | 10 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 18 | 21 | 5 | 0 | 48 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 2 | 1 | 9 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 2 | 0 | 11 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 4 | 1 | 11 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 3 | 1 | 9 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 14 | 11 | 3 | 40 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 2 | 0 | 9 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 5 | 4 | 0 | 12 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 3 | 0 | 0 | 8 |
| 24:00 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 5 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 9 | 14 | 6 | 0 | 34 |
| 24 HR TOTAL | 2 | 0 | 1 | 2 | 0 | 0 | 1 | 7 | 14 | 114 | 385 | 757 | 481 | 162 | 1926 |
| PERCENTS | 0.1% | 0.0% | 0.1% | 0.1% | 0.0% | 0.0% | 0.1% | 0.4% | 0.7% | 5.9% | 20.0% | 39.3% | 25.0% | 8.4% | 100.0% |

Station #: Site A-SBI
Site ID: 000000009360
Location: US 220, N of NC Border
Direction: SOUTH
Lane: 1

File: A-US 220,1 N of NC Border_SBI Speed.prn
City: 18-173 RS Max
County: 36.54277, -79.91055

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
56.6 mph

85th Percentile Speed
67.3 mph

Median Speed
62.4 mph

Average Speed
61.9 mph

10 MPH Pace Speed
60 mph to 70 mph
1238 vehicles in pace
Representing 70.3% of the total vehicles

Vehicles > 65 MPH
481
27.3%

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 4 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 5 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 4 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 5 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 12 | 18 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 13 | 17 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 12 | 16 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 20 | 25 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 10 | 46 | 60 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16 | 21 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14 | 18 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 14 | 16 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 28 | 35 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 72 | 90 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 31 | 42 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 30 | 40 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 21 | 26 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 16 | 21 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 26 | 98 | 129 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 18 | 31 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 11 | 17 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 10 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 12 | 20 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 24 | 49 | 78 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 13 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 7 | 12 | 22 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 9 | 16 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 13 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 16 | 44 | 64 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 5 | 12 | 20 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 10 | 17 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 17 | 22 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 6 | 9 | 17 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 2 | 21 | 48 | 76 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 9 | 14 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 12 | 18 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 19 | 23 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 12 | 17 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 15 | 52 | 72 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 15 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 15 | 19 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 15 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 12 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 48 | 61 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 10 | 16 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | 18 | 26 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 21 | 26 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 18 | 27 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 22 | 67 | 95 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 14 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 18 | 21 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 25 | 33 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 26 | 33 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 21 | 76 | 101 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 11 | 31 | 45 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 17 | 26 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 18 | 21 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 13 | 21 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 29 | 79 | 113 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 16 | 30 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 24 | 27 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 26 | 30 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 13 | 27 | 41 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 34 | 93 | 128 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 12 | 27 | 40 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 23 | 31 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 27 | 32 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 21 | 26 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 28 | 98 | 129 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 22 | 26 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 14 | 17 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 9 | 13 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 15 | 22 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 15 | 60 | 78 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 6 | 11 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 10 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 8 | 15 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 9 | 16 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 21 | 28 | 52 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 6 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 13 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 3 | 9 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 17 | 28 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 5 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 6 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 5 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 5 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 7 | 11 | 21 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6 | 10 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 4 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 4 | 12 |
| 24 HR TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 12 | 51 | 351 | 1013 | 1432 |
| PERCENTS | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.1% | 0.0% | 0.2% | 0.8% | 3.6% | 24.5% | 70.7% | 100.0% |

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|

Statistical Information...

15th Percentile Speed
64.5 mph

85th Percentile Speed
69.1 mph

Median Speed
67.0 mph

Average Speed
66.4 mph

10 MPH Pace Speed
60 mph to 70 mph
402 vehicles in pace
Representing 95.9% of the total vehicles

Vehicles > 65 MPH
351
83.8%

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 3 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 4 | 0 | 7 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 4 | 7 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 3 | 11 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 5 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 7 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 5 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 10 | 12 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 14 | 26 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 9 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 22 | 26 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 36 | 46 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 13 | 18 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 24 | 26 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 20 | 30 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16 | 21 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 20 | 73 | 95 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 23 | 33 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 41 | 47 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 26 | 31 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 17 | 27 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 27 | 107 | 138 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 21 | 26 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 24 | 27 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 13 | 19 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 13 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15 | 68 | 85 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 9 | 12 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 15 | 20 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 13 | 18 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 10 | 12 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 10 | 47 | 62 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 10 | 18 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 10 | 15 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 20 | 23 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 20 | 26 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 2 | 15 | 60 | 82 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 15 | 22 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 17 | 20 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 12 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 15 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 16 | 52 | 69 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 10 | 16 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 9 | 17 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 19 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 17 | 21 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 15 | 54 | 73 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 13 | 16 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 18 | 21 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 22 | 27 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 10 | 15 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 14 | 63 | 79 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 22 | 28 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 32 | 36 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 25 | 34 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 4 | 14 | 23 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 19 | 93 | 121 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 6 | 3 | 15 | 15 | 7 | 53 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 8 | 19 | 24 | 54 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 28 | 35 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 22 | 28 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 5 | 7 | 4 | 23 | 46 | 81 | 170 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 28 | 34 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 19 | 26 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 24 | 33 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 39 | 53 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 31 | 110 | 146 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 32 | 38 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 28 | 41 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 29 | 37 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 22 | 26 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 25 | 111 | 142 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 18 | 20 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 7 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 11 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 15 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 46 | 53 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 11 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 15 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 10 | 14 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 6 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 36 | 46 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 5 | 10 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 7 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 2 | 8 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12 | 15 | 32 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 7 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 5 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 6 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 6 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 9 | 12 | 24 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 6 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 6 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 5 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 5 | 18 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 2 | 6 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 4 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 3 | 12 |
| 24 HR TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 10 | 14 | 80 | 337 | 1096 | 1549 |
| PERCENTS | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.3% | 0.4% | 0.6% | 0.9% | 5.2% | 21.8% | 70.8% | 100.0% |

Station #: Site B-EBI
Site ID: 000000009379
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
62.0 mph

85th Percentile Speed
69.0 mph

Median Speed
66.6 mph

Average Speed
65.4 mph

10 MPH Pace Speed
60 mph to 70 mph
417 vehicles in pace
Representing 92.1% of the total vehicles

Vehicles > 65 MPH
337
74.4%

SPEED SUMMARY
Wed 5/9/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 1 | 14 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 2 | 8 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 2 | 3 | 1 | 10 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 1 | 7 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 12 | 17 | 5 | 39 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | 0 | 8 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 2 | 4 | 13 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 3 | 8 | 3 | 19 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 11 | 4 | 17 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 10 | 8 | 26 | 11 | 57 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 4 | 1 | 13 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 4 | 1 | 10 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 6 | 8 | 19 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 2 | 3 | 11 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 6 | 15 | 16 | 13 | 53 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 6 | 3 | 14 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 3 | 5 | 18 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 8 | 22 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 7 | 6 | 18 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 22 | 23 | 22 | 72 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 12 | 3 | 29 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11 | 2 | 20 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 20 | 10 | 41 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 16 | 10 | 5 | 38 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 40 | 53 | 20 | 128 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 14 | 20 | 15 | 56 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14 | 38 | 15 | 70 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 13 | 35 | 18 | 74 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 24 | 38 | 31 | 103 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 24 | 65 | 131 | 79 | 303 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 36 | 43 | 35 | 121 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 15 | 53 | 29 | 102 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 18 | 50 | 46 | 116 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 21 | 49 | 32 | 109 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 17 | 90 | 195 | 142 | 448 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 36 | 73 | 37 | 149 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 23 | 45 | 50 | 128 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 30 | 49 | 35 | 127 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 28 | 50 | 38 | 120 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 22 | 117 | 217 | 160 | 524 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 33 | 59 | 22 | 125 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 32 | 46 | 21 | 108 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 24 | 35 | 27 | 94 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 16 | 34 | 21 | 78 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 29 | 105 | 174 | 91 | 405 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 6 | 30 | 56 | 17 | 112 |
| 09:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 3 | 24 | 40 | 23 | 96 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 34 | 49 | 25 | 117 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 33 | 44 | 22 | 102 |
| Hour Total | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 5 | 21 | 121 | 189 | 87 | 427 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | 17 | 44 | 23 | 92 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 25 | 39 | 11 | 86 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 20 | 47 | 22 | 99 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 25 | 35 | 24 | 92 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 28 | 87 | 165 | 80 | 369 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 23 | 41 | 26 | 99 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 24 | 48 | 34 | 111 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 30 | 37 | 23 | 104 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 25 | 39 | 23 | 95 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 31 | 102 | 165 | 106 | 409 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 33 | 33 | 31 | 105 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 16 | 42 | 32 | 97 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 29 | 51 | 17 | 101 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 6 | 25 | 31 | 28 | 91 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 22 | 103 | 157 | 108 | 394 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 9 | 27 | 31 | 24 | 93 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 20 | 38 | 23 | 90 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 29 | 36 | 33 | 110 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 25 | 40 | 25 | 97 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 34 | 101 | 145 | 105 | 390 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 21 | 44 | 35 | 103 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 30 | 33 | 37 | 107 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 42 | 42 | 35 | 127 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 9 | 27 | 41 | 26 | 104 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 24 | 120 | 160 | 133 | 441 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 22 | 44 | 57 | 28 | 155 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 11 | 31 | 53 | 39 | 138 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 21 | 53 | 35 | 114 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12 | 20 | 44 | 33 | 114 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 14 | 47 | 116 | 207 | 135 | 521 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 13 | 38 | 45 | 19 | 118 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 31 | 52 | 47 | 134 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 39 | 45 | 57 | 144 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 41 | 58 | 49 | 159 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 25 | 149 | 200 | 172 | 555 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 40 | 69 | 42 | 158 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 30 | 60 | 36 | 129 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 29 | 50 | 43 | 131 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 29 | 47 | 35 | 115 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 22 | 128 | 226 | 156 | 533 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 22 | 36 | 34 | 100 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 25 | 28 | 20 | 79 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 16 | 30 | 26 | 83 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 17 | 32 | 27 | 85 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 30 | 80 | 126 | 107 | 347 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 16 | 30 | 12 | 64 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 18 | 34 | 17 | 74 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | 18 | 34 | 15 | 75 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 25 | 33 | 17 | 84 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 20 | 77 | 131 | 61 | 297 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 13 | 21 | 14 | 57 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 22 | 21 | 14 | 64 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 13 | 15 | 14 | 4 | 50 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 17 | 22 | 5 | 53 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 33 | 67 | 78 | 37 | 224 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 9 | 10 | 10 | 34 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 17 | 17 | 7 | 47 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 10 | 16 | 10 | 41 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 14 | 7 | 8 | 33 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 14 | 50 | 50 | 35 | 155 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 9 | 6 | 30 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 6 | 24 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 7 | 10 | 6 | 29 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 9 | 6 | 19 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 6 | 27 | 40 | 24 | 102 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 14 | 3 | 22 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 3 | 5 | 9 | 22 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 6 | 1 | 12 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 5 | 3 | 14 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 9 | 30 | 16 | 70 |
| 24 HR TOTAL | 0 | 2 | 0 | 0 | 0 | 1 | 2 | 4 | 16 | 105 | 496 | 1811 | 2921 | 1905 | 7263 |
| PERCENTS | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.2% | 1.4% | 6.8% | 24.9% | 40.2% | 26.2% | 100.0% |

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
60.5 mph

85th Percentile Speed
68.6 mph

Median Speed
65.4 mph

Average Speed
64.5 mph

10 MPH Pace Speed
60 mph to 70 mph
4732 vehicles in pace
Representing 88.3% of the total vehicles

Vehicles > 65 MPH
2921
54.5%

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 6 | 0 | 14 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 3 | 0 | 10 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 2 | 1 | 8 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 5 | 1 | 14 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 22 | 16 | 2 | 46 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 2 | 3 | 9 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 6 | 18 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 3 | 3 | 12 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 4 | 14 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 15 | 16 | 16 | 53 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 7 | 1 | 15 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 10 | 1 | 18 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 5 | 4 | 15 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 9 | 16 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 4 | 18 | 24 | 15 | 64 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 4 | 16 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 4 | 1 | 15 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 9 | 8 | 22 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 4 | 3 | 17 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 22 | 23 | 16 | 70 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 15 | 4 | 30 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 15 | 5 | 26 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 14 | 11 | 8 | 37 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 15 | 15 | 9 | 45 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 41 | 56 | 26 | 138 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14 | 12 | 15 | 45 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 17 | 29 | 20 | 72 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 15 | 31 | 16 | 66 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 31 | 49 | 34 | 122 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 21 | 77 | 121 | 85 | 305 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 25 | 48 | 33 | 109 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 22 | 58 | 40 | 127 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 20 | 48 | 37 | 110 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 27 | 53 | 41 | 124 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 94 | 207 | 151 | 470 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 32 | 62 | 35 | 139 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 37 | 48 | 44 | 141 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 23 | 51 | 28 | 108 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 39 | 38 | 22 | 110 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 32 | 131 | 199 | 129 | 498 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 31 | 53 | 26 | 119 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 32 | 39 | 31 | 106 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 20 | 43 | 23 | 94 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 22 | 52 | 23 | 101 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 19 | 105 | 187 | 103 | 420 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 26 | 44 | 24 | 98 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 38 | 51 | 22 | 120 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 28 | 29 | 31 | 99 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 22 | 36 | 39 | 106 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 32 | 114 | 160 | 116 | 423 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 15 | 29 | 56 | 21 | 122 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 24 | 34 | 23 | 87 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 10 | 26 | 37 | 32 | 110 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 37 | 40 | 25 | 113 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 41 | 116 | 167 | 101 | 432 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 21 | 37 | 27 | 102 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 22 | 50 | 33 | 110 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 28 | 47 | 19 | 101 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 19 | 48 | 22 | 98 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 37 | 90 | 182 | 101 | 411 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 7 | 23 | 42 | 19 | 94 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 27 | 45 | 19 | 99 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 26 | 50 | 28 | 107 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 31 | 41 | 26 | 101 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 19 | 107 | 178 | 92 | 401 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 27 | 46 | 27 | 106 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 19 | 61 | 26 | 119 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 27 | 52 | 38 | 127 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 30 | 62 | 47 | 143 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 30 | 103 | 221 | 138 | 495 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 32 | 40 | 41 | 122 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 26 | 63 | 40 | 139 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 12 | 30 | 55 | 34 | 132 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 12 | 26 | 28 | 18 | 96 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 41 | 114 | 186 | 133 | 489 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 9 | 22 | 41 | 44 | 27 | 15 | 3 | 176 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 11 | 28 | 46 | 45 | 15 | 150 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 8 | 32 | 48 | 35 | 124 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 11 | 26 | 60 | 40 | 140 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 13 | 25 | 54 | 91 | 131 | 168 | 93 | 590 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 24 | 46 | 43 | 117 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 36 | 48 | 41 | 132 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 35 | 50 | 38 | 139 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 23 | 58 | 45 | 137 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 36 | 118 | 202 | 167 | 525 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 12 | 26 | 61 | 50 | 150 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 9 | 37 | 45 | 35 | 128 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 13 | 25 | 53 | 31 | 126 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 21 | 35 | 42 | 103 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 6 | 36 | 109 | 194 | 158 | 507 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 37 | 41 | 98 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14 | 32 | 29 | 79 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 18 | 31 | 30 | 85 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 21 | 31 | 17 | 71 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 70 | 131 | 117 | 333 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 12 | 26 | 21 | 66 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 19 | 27 | 22 | 74 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 21 | 33 | 25 | 87 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 14 | 30 | 22 | 71 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 16 | 66 | 116 | 90 | 298 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 17 | 28 | 9 | 64 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 22 | 10 | 52 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 17 | 25 | 11 | 59 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 12 | 31 | 10 | 58 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 18 | 63 | 106 | 40 | 233 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 11 | 23 | 9 | 47 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 10 | 11 | 7 | 32 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 17 | 17 | 3 | 42 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 12 | 17 | 9 | 44 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12 | 50 | 68 | 28 | 165 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 22 | 13 | 5 | 48 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 8 | 18 | 10 | 42 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 11 | 9 | 32 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 6 | 10 | 6 | 7 | 30 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 22 | 48 | 48 | 31 | 152 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 10 | 7 | 23 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 10 | 3 | 23 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 4 | 15 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 7 | 1 | 11 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 17 | 33 | 15 | 72 |
| 24 HR TOTAL | 0 | 0 | 0 | 0 | 0 | 1 | 16 | 17 | 39 | 137 | 567 | 1841 | 3009 | 1963 | 7590 |
| PERCENTS | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.2% | 0.5% | 1.8% | 7.5% | 24.3% | 39.6% | 25.9% | 100.0% |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-EBO
Site ID: 000000003590
Location: US 59 Bypass, W of US 220
Direction: EAST
Lane: 1

File: B-US 59 Bypass, W of US 220_EBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
60.2 mph

85th Percentile Speed
68.6 mph

Median Speed
65.3 mph

Average Speed
64.2 mph

10 MPH Pace Speed
60 mph to 70 mph
4850 vehicles in pace
Representing 86.2% of the total vehicles

Vehicles > 65 MPH
3009
53.5%

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 2 | 5 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 2 | 8 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 3 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 1 | 7 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 4 | 4 | 12 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 4 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 6 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 5 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 5 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 12 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 6 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 15 | 23 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 10 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 5 | 12 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 5 | 11 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 12 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 16 | 23 | 45 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 10 | 29 | 44 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 15 | 26 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 9 | 12 | 25 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 8 | 31 | 44 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 12 | 36 | 87 | 139 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 45 | 65 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 30 | 40 | 82 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 21 | 38 | 62 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 21 | 29 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 75 | 144 | 238 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 16 | 19 | 39 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 25 | 25 | 54 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 8 | 12 | 23 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 11 | 17 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 55 | 67 | 133 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 17 | 19 | 41 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 9 | 12 | 24 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 9 | 15 | 29 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 9 | 19 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 13 | 42 | 55 | 113 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 11 | 12 | 27 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 9 | 15 | 34 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 22 | 29 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12 | 13 | 30 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 18 | 38 | 62 | 120 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 13 | 28 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 10 | 9 | 24 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 15 | 19 | 37 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 28 | 46 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 15 | 48 | 69 | 135 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 19 | 9 | 32 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 18 | 15 | 43 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 15 | 26 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 12 | 18 | 34 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 15 | 59 | 57 | 135 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 5 | 21 | 30 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 8 | 19 | 32 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 13 | 20 | 39 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 18 | 15 | 36 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 11 | 44 | 75 | 137 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12 | 24 | 40 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 9 | 15 | 28 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 22 | 22 | 52 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 22 | 28 | 54 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 65 | 89 | 174 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 19 | 28 | 51 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 18 | 22 | 43 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 24 | 31 | 59 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 14 | 25 | 46 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 17 | 75 | 106 | 199 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 36 | 48 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 27 | 43 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 30 | 37 | 72 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 17 | 39 | 60 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 73 | 139 | 223 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 25 | 48 | 74 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 18 | 39 | 60 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 11 | 22 | 38 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 8 | 12 | 26 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 62 | 121 | 198 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 15 | 26 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 12 | 13 | 30 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 22 | 33 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 13 | 12 | 29 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14 | 39 | 62 | 118 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 12 | 23 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 6 | 13 | 23 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 13 | 17 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 7 | 5 | 18 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 13 | 22 | 43 | 81 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 10 | 19 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 10 | 5 | 20 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 4 | 1 | 10 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 3 | 6 | 14 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 13 | 22 | 22 | 63 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 9 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 2 | 9 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 3 | 8 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 2 | 9 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 12 | 15 | 35 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 6 | 9 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 7 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 7 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 18 | 27 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 3 | 8 |
| 24 HR TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 2 | 8 | 42 | 234 | 800 | 1284 | 2375 |
| PERCENTS | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.1% | 0.3% | 1.8% | 9.9% | 33.7% | 54.1% | 100.0% |

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
62.3 mph

85th Percentile Speed
69.0 mph

Median Speed
66.6 mph

Average Speed
65.8 mph

10 MPH Pace Speed
60 mph to 70 mph
1034 vehicles in pace
Representing 94.8% of the total vehicles

Vehicles > 65 MPH
800
73.3%

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 4 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | 6 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 2 | 6 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 6 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 9 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 9 | 10 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 6 | 17 | 26 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 7 | 12 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 7 | 11 | 20 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 18 | 23 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 16 | 40 | 61 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 9 | 30 | 41 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 29 | 40 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 17 | 26 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 32 | 42 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 37 | 108 | 149 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 23 | 44 | 72 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11 | 62 | 78 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 23 | 42 | 70 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 15 | 21 | 40 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 72 | 169 | 260 |
| 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11 | 18 | 34 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9 | 19 | 33 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 11 | 13 | 28 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 9 | 14 | 27 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14 | 40 | 64 | 122 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 14 | 13 | 33 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 11 | 12 | 26 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 15 | 33 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 12 | 27 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 14 | 51 | 52 | 119 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 13 | 9 | 33 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 18 | 13 | 36 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 9 | 11 | 22 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 7 | 14 | 10 | 34 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 6 | 19 | 54 | 43 | 125 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 18 | 18 | 46 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 13 | 18 | 35 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 13 | 22 | 40 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 15 | 18 | 36 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 18 | 59 | 76 | 157 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 11 | 15 | 14 | 42 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 19 | 17 | 40 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 15 | 25 | 46 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 5 | 15 | 12 | 38 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 9 | 23 | 64 | 68 | 166 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 17 | 19 | 40 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11 | 22 | 38 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 24 | 24 | 51 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 20 | 20 | 49 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 18 | 72 | 85 | 178 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 17 | 30 | 54 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 11 | 18 | 38 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 26 | 32 | 64 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 8 | 3 | 6 | 21 | 10 | 51 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 8 | 8 | 23 | 75 | 90 | 207 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 5 | 12 | 10 | 3 | 0 | 35 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 21 | 16 | 49 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | 23 | 25 | 63 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 17 | 21 | 42 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 2 | 5 | 12 | 40 | 64 | 62 | 189 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | 20 | 29 | 62 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 26 | 29 | 58 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 14 | 38 | 59 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 25 | 52 | 83 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 27 | 85 | 148 | 262 |
| 17:15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 7 | 27 | 35 | 76 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 | 16 | 19 | 42 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 5 | 10 | 18 | 35 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9 | 20 | 34 |
| Hour Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 3 | 22 | 62 | 92 | 187 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 21 | 39 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 15 | 30 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 10 | 17 | 32 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 16 | 32 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 43 | 69 | 133 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 13 | 24 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 12 | 24 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 6 | 13 | 22 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | 12 | 20 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 30 | 50 | 90 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 8 | 16 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 9 | 15 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13 | 0 | 17 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 8 | 18 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 29 | 25 | 66 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 11 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 7 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 5 | 5 | 14 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 11 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 13 | 24 | 43 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 5 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 10 | 17 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 4 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 10 |
| 24 HR TOTAL | 1 | 0 | 0 | 0 | 0 | 1 | 5 | 3 | 7 | 22 | 60 | 295 | 888 | 1303 | 2585 |
| PERCENTS | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.1% | 0.3% | 0.9% | 2.3% | 11.4% | 34.4% | 50.4% | 100.0% |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-WBI
Site ID: 000000003608
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220_WBI Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
61.6 mph

85th Percentile Speed
68.9 mph

Median Speed
66.4 mph

Average Speed
65.3 mph

10 MPH Pace Speed
60 mph to 70 mph
1183 vehicles in pace
Representing 92.3% of the total vehicles

Vehicles > 65 MPH
888
69.3%

SPEED SUMMARY
Wed 5/9/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220-WBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 5 | 1 | 15 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 4 | 0 | 11 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 2 | 1 | 10 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 3 | 11 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 18 | 14 | 5 | 47 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 7 | 1 | 1 | 12 |
| 01:30 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 2 | 0 | 9 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 7 | 3 | 0 | 15 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 0 | 8 |
| Hour Total | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 2 | 3 | 7 | 18 | 9 | 1 | 44 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 6 | 5 | 1 | 17 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 3 | 1 | 10 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 4 | 1 | 0 | 8 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 1 | 3 | 14 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 10 | 16 | 10 | 5 | 49 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 5 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 5 | 0 | 11 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 8 | 1 | 18 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 2 | 12 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 13 | 21 | 5 | 46 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 5 | 5 | 7 | 2 | 24 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 4 | 4 | 17 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 13 | 9 | 4 | 33 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 14 | 17 | 9 | 46 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | 17 | 39 | 37 | 19 | 120 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 9 | 15 | 10 | 4 | 42 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11 | 10 | 13 | 7 | 48 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5 | 15 | 19 | 15 | 60 |
| 06:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 7 | 26 | 19 | 12 | 70 |
| Hour Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 21 | 32 | 66 | 61 | 38 | 220 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 17 | 37 | 20 | 22 | 97 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 12 | 18 | 34 | 24 | 89 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14 | 24 | 28 | 9 | 78 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 14 | 30 | 30 | 13 | 96 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 57 | 109 | 112 | 68 | 360 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 17 | 39 | 33 | 30 | 124 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 17 | 43 | 33 | 18 | 116 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 34 | 40 | 30 | 118 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 35 | 28 | 16 | 94 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 13 | 57 | 151 | 134 | 94 | 452 |
| 08:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 16 | 29 | 20 | 8 | 84 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 14 | 44 | 28 | 10 | 100 |
| 08:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 7 | 25 | 21 | 7 | 63 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 23 | 33 | 9 | 71 |
| Hour Total | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 15 | 42 | 121 | 102 | 34 | 318 |

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220-WBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 16 | 25 | 24 | 9 | 80 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 14 | 23 | 33 | 9 | 82 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 25 | 24 | 8 | 76 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 27 | 22 | 12 | 70 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 8 | 55 | 100 | 103 | 38 | 308 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 28 | 27 | 6 | 76 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 33 | 20 | 11 | 79 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 10 | 28 | 32 | 11 | 85 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 11 | 23 | 29 | 10 | 79 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 46 | 112 | 108 | 38 | 319 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 10 | 24 | 25 | 9 | 73 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 27 | 29 | 14 | 82 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15 | 33 | 26 | 10 | 89 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 11 | 37 | 31 | 9 | 91 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 13 | 46 | 121 | 111 | 42 | 335 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 16 | 35 | 27 | 9 | 90 |
| 12:30 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 7 | 9 | 20 | 26 | 5 | 71 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 19 | 29 | 23 | 11 | 84 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 17 | 27 | 29 | 15 | 92 |
| Hour Total | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 16 | 61 | 111 | 105 | 40 | 337 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 16 | 28 | 20 | 12 | 78 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 14 | 17 | 32 | 14 | 79 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13 | 20 | 23 | 16 | 75 |
| 14:00 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 12 | 35 | 33 | 14 | 101 |
| Hour Total | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 55 | 100 | 108 | 56 | 333 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 14 | 39 | 29 | 10 | 97 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 16 | 32 | 30 | 6 | 91 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16 | 35 | 25 | 14 | 95 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 19 | 27 | 39 | 13 | 102 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 20 | 65 | 133 | 123 | 43 | 385 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 11 | 33 | 37 | 15 | 102 |
| 15:30 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 10 | 34 | 49 | 20 | 117 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 19 | 32 | 36 | 19 | 109 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 11 | 36 | 33 | 11 | 95 |
| Hour Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 11 | 51 | 135 | 155 | 65 | 423 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 14 | 32 | 34 | 23 | 106 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13 | 21 | 44 | 12 | 93 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 18 | 42 | 46 | 20 | 133 |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 19 | 36 | 34 | 17 | 110 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 13 | 64 | 131 | 158 | 72 | 442 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16 | 33 | 48 | 16 | 117 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 33 | 42 | 17 | 106 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 34 | 33 | 16 | 98 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 27 | 29 | 12 | 82 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 55 | 127 | 152 | 61 | 403 |

SPEED SUMMARY
Wed 5/9/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220-WBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 5 | 8 | 32 | 26 | 11 | 85 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 17 | 24 | 27 | 21 | 94 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 9 | 18 | 41 | 11 | 85 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 15 | 26 | 40 | 8 | 96 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 21 | 49 | 100 | 134 | 51 | 360 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 15 | 23 | 18 | 14 | 71 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 33 | 30 | 3 | 75 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 19 | 28 | 11 | 63 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 12 | 7 | 13 | 3 | 41 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 37 | 82 | 89 | 31 | 250 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 20 | 19 | 12 | 11 | 67 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 6 | 20 | 20 | 11 | 3 | 63 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 10 | 14 | 4 | 0 | 35 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 12 | 12 | 4 | 42 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 22 | 57 | 65 | 39 | 18 | 207 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 19 | 11 | 3 | 47 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 13 | 5 | 6 | 34 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 9 | 15 | 10 | 3 | 42 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 15 | 10 | 5 | 37 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 9 | 34 | 62 | 36 | 17 | 160 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 6 | 8 | 2 | 23 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 16 | 8 | 8 | 36 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 8 | 6 | 7 | 4 | 28 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 12 | 8 | 3 | 30 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 19 | 40 | 31 | 17 | 117 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 2 | 2 | 14 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 3 | 1 | 22 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 4 | 0 | 9 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 7 | 6 | 2 | 20 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 17 | 22 | 15 | 5 | 65 |
| 24 HR TOTAL | 2 | 3 | 2 | 1 | 2 | 1 | 1 | 17 | 30 | 273 | 946 | 1992 | 1967 | 863 | 6100 |
| PERCENTS | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | 0.5% | 4.5% | 15.5% | 32.7% | 32.2% | 14.1% | 100.0% |

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220-WBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
57.4 mph

85th Percentile Speed
68.0 mph

Median Speed
63.4 mph

Average Speed
62.7 mph

10 MPH Pace Speed
60 mph to 70 mph
3959 vehicles in pace
Representing 75.6% of the total vehicles

Vehicles > 65 MPH
1967
37.6%

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220-WBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 00:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 6 | 1 | 1 | 12 |
| 00:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 3 | 2 | 2 | 12 |
| 00:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 5 | 0 | 14 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 3 | 0 | 0 | 8 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 9 | 19 | 8 | 3 | 46 |
| 01:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 4 | 1 | 14 |
| 01:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 6 | 4 | 1 | 15 |
| 01:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 1 | 2 | 12 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 1 | 2 | 10 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 9 | 24 | 10 | 6 | 51 |
| 02:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 4 | 4 | 12 |
| 02:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 4 | 4 | 1 | 12 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 4 | 0 | 12 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 4 | 0 | 9 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 4 | 13 | 16 | 5 | 45 |
| 03:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 3 | 1 | 12 |
| 03:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 5 | 3 | 17 |
| 03:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 14 | 3 | 1 | 20 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 4 | 0 | 16 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 34 | 15 | 5 | 65 |
| 04:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 3 | 3 | 1 | 12 |
| 04:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 8 | 6 | 5 | 28 |
| 04:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 11 | 14 | 3 | 32 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 11 | 11 | 13 | 45 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 21 | 33 | 34 | 22 | 117 |
| 05:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 9 | 14 | 4 | 36 |
| 05:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12 | 15 | 15 | 2 | 48 |
| 05:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9 | 18 | 17 | 10 | 59 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 26 | 22 | 14 | 71 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 32 | 68 | 68 | 30 | 214 |
| 06:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 31 | 26 | 13 | 85 |
| 06:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 25 | 32 | 23 | 92 |
| 06:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 24 | 18 | 20 | 68 |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 40 | 35 | 18 | 100 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 30 | 120 | 111 | 74 | 345 |
| 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15 | 43 | 38 | 29 | 127 |
| 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15 | 35 | 41 | 35 | 128 |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 19 | 40 | 24 | 23 | 112 |
| 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 40 | 22 | 4 | 81 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 64 | 158 | 125 | 91 | 448 |
| 08:15 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 4 | 18 | 29 | 19 | 4 | 78 |
| 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 34 | 22 | 14 | 89 |
| 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 17 | 27 | 27 | 10 | 88 |
| 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9 | 38 | 16 | 9 | 76 |
| Hour Total | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 14 | 63 | 128 | 84 | 37 | 331 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220-WBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16 | 34 | 17 | 6 | 78 |
| 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 23 | 34 | 11 | 83 |
| 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 16 | 20 | 19 | 5 | 63 |
| 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 14 | 27 | 22 | 2 | 72 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 13 | 61 | 104 | 92 | 24 | 296 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15 | 30 | 21 | 8 | 76 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 13 | 25 | 22 | 9 | 77 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 19 | 26 | 16 | 4 | 69 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 5 | 23 | 22 | 24 | 5 | 83 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 4 | 16 | 70 | 103 | 83 | 26 | 305 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 13 | 40 | 23 | 9 | 93 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 17 | 30 | 17 | 9 | 75 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 6 | 15 | 39 | 21 | 12 | 96 |
| 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 15 | 27 | 24 | 7 | 79 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 3 | 15 | 60 | 136 | 85 | 37 | 343 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 14 | 28 | 24 | 10 | 82 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 37 | 23 | 11 | 86 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 13 | 26 | 33 | 10 | 86 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 6 | 13 | 27 | 17 | 6 | 73 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 16 | 53 | 118 | 97 | 37 | 327 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14 | 24 | 29 | 10 | 81 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 18 | 36 | 30 | 5 | 95 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 21 | 34 | 33 | 8 | 97 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 20 | 41 | 20 | 10 | 101 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16 | 73 | 135 | 112 | 33 | 374 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 20 | 38 | 37 | 13 | 120 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 15 | 35 | 31 | 12 | 100 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 31 | 36 | 28 | 13 | 119 |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 9 | 12 | 11 | 18 | 24 | 25 | 6 | 107 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 9 | 17 | 36 | 84 | 133 | 121 | 44 | 446 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6 | 13 | 28 | 30 | 11 | 10 | 1 | 103 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 29 | 40 | 31 | 8 | 115 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 20 | 30 | 34 | 12 | 100 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15 | 51 | 26 | 8 | 102 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 17 | 36 | 94 | 132 | 101 | 29 | 420 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 16 | 34 | 39 | 22 | 114 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 10 | 43 | 40 | 20 | 116 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 13 | 35 | 38 | 20 | 112 |
| 17:00 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 45 | 44 | 20 | 124 |
| Hour Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 13 | 51 | 157 | 161 | 82 | 466 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 11 | 34 | 25 | 14 | 89 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 15 | 30 | 34 | 6 | 91 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 21 | 32 | 32 | 9 | 97 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 28 | 32 | 10 | 81 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 13 | 56 | 124 | 123 | 39 | 358 |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220-WBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

| TIME | <10 | <15 | <20 | <25 | <30 | <35 | <40 | <45 | <50 | <55 | <60 | <65 | <70 | <75 | Total |
|-------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|--------|
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 13 | 32 | 30 | 19 | 95 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | 23 | 26 | 12 | 76 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 34 | 15 | 8 | 71 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 14 | 29 | 30 | 9 | 84 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 53 | 118 | 101 | 48 | 326 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 18 | 33 | 18 | 9 | 81 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 16 | 18 | 27 | 13 | 80 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 17 | 15 | 25 | 6 | 65 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 11 | 23 | 24 | 4 | 66 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 62 | 89 | 94 | 32 | 292 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 16 | 24 | 11 | 5 | 60 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 12 | 20 | 12 | 5 | 52 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 19 | 17 | 1 | 46 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 13 | 16 | 13 | 3 | 50 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9 | 48 | 79 | 53 | 14 | 208 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 14 | 17 | 3 | 42 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 18 | 11 | 5 | 44 |
| 21:45 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 13 | 10 | 8 | 38 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 11 | 11 | 8 | 36 |
| Hour Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 22 | 56 | 49 | 24 | 160 |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 13 | 17 | 4 | 39 |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 8 | 2 | 2 | 17 |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 11 | 12 | 4 | 35 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 6 | 11 | 7 | 1 | 27 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 18 | 43 | 38 | 11 | 118 |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 16 | 5 | 4 | 29 |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 5 | 5 | 3 | 17 |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 6 | 1 | 1 | 11 |
| 24:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 6 | 4 | 2 | 15 |
| Hour Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 8 | 33 | 15 | 10 | 72 |
| 24 HR TOTAL | 1 | 0 | 1 | 1 | 1 | 2 | 12 | 26 | 71 | 288 | 1054 | 2157 | 1796 | 763 | 6173 |
| PERCENTS | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.4% | 1.2% | 4.7% | 17.1% | 34.9% | 29.1% | 12.4% | 100.0% |

SPEED SUMMARY
Thu 5/10/2018

Station #: Site B-WBO
Site ID: 000000003570
Location: US 59 Bypass, W of US 220
Direction: WEST
Lane: 1

File: B-US 59 Bypass, W of US 220-WBO Speed.prn
City: 18-173 RS Max
County: 36.62503, -79.87074

TIME <10 <15 <20 <25 <30 <35 <40 <45 <50 <55 <60 <65 <70 <75 Total

Statistical Information...

15th Percentile Speed
57.0 mph

85th Percentile Speed
67.8 mph

Median Speed
62.9 mph

Average Speed
62.3 mph

10 MPH Pace Speed
60 mph to 70 mph
3953 vehicles in pace
Representing 73.1% of the total vehicles

Vehicles > 65 MPH
1796
33.2%

APPENDIX B

TURNING MOVEMENT COUNT WORKSHEETS

Peggy Malone & Associates

(800) 247-8602

File Name : 1-US 220 and Lee Ford Camp
 Site Code :
 Start Date : 5/9/2018
 Page No : 1

Groups Printed- Car

| Start Time | US 220 Southbound | | | | | Church St Westbound | | | | | US 220 Northbound | | | | | Lee Ford Camp Rd Eastbound | | | | | Int. Total |
|--------------------|-------------------|-------------|------------|----------|-------------|---------------------|-------------|-------------|----------|------------|-------------------|-------------|------------|----------|-------------|----------------------------|-------------|-------------|----------|------------|-------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 06:00 AM | 0 | 53 | 0 | 0 | 53 | 1 | 0 | 3 | 0 | 4 | 1 | 23 | 0 | 0 | 24 | 0 | 1 | 2 | 0 | 3 | 84 |
| 06:15 AM | 2 | 68 | 0 | 0 | 70 | 1 | 1 | 5 | 0 | 7 | 5 | 34 | 0 | 0 | 39 | 4 | 1 | 3 | 0 | 8 | 124 |
| 06:30 AM | 0 | 54 | 0 | 0 | 54 | 2 | 0 | 4 | 0 | 6 | 8 | 49 | 0 | 0 | 57 | 1 | 4 | 3 | 0 | 8 | 125 |
| 06:45 AM | 3 | 54 | 1 | 0 | 58 | 0 | 1 | 5 | 0 | 6 | 2 | 48 | 0 | 0 | 50 | 2 | 1 | 4 | 0 | 7 | 121 |
| Total | 5 | 229 | 1 | 0 | 235 | 4 | 2 | 17 | 0 | 23 | 16 | 154 | 0 | 0 | 170 | 7 | 7 | 12 | 0 | 26 | 454 |
| 07:00 AM | 1 | 74 | 0 | 0 | 75 | 3 | 1 | 3 | 0 | 7 | 3 | 41 | 2 | 0 | 46 | 0 | 1 | 4 | 0 | 5 | 133 |
| 07:15 AM | 4 | 51 | 1 | 0 | 56 | 8 | 5 | 5 | 0 | 18 | 9 | 69 | 0 | 0 | 78 | 3 | 2 | 11 | 0 | 16 | 168 |
| 07:30 AM | 1 | 51 | 1 | 0 | 53 | 3 | 4 | 2 | 0 | 9 | 7 | 74 | 0 | 0 | 81 | 0 | 3 | 14 | 0 | 17 | 160 |
| 07:45 AM | 10 | 58 | 2 | 0 | 70 | 3 | 6 | 3 | 0 | 12 | 4 | 52 | 2 | 0 | 58 | 6 | 4 | 4 | 0 | 14 | 154 |
| Total | 16 | 234 | 4 | 0 | 254 | 17 | 16 | 13 | 0 | 46 | 23 | 236 | 4 | 0 | 263 | 9 | 10 | 33 | 0 | 52 | 615 |
| 08:00 AM | 6 | 48 | 2 | 0 | 56 | 1 | 5 | 5 | 0 | 11 | 10 | 56 | 1 | 0 | 67 | 2 | 1 | 2 | 0 | 5 | 139 |
| 08:15 AM | 4 | 72 | 1 | 0 | 77 | 0 | 3 | 0 | 0 | 3 | 7 | 68 | 3 | 0 | 78 | 3 | 5 | 2 | 0 | 10 | 168 |
| 08:30 AM | 4 | 40 | 0 | 0 | 44 | 2 | 0 | 3 | 0 | 5 | 4 | 72 | 0 | 0 | 76 | 2 | 3 | 2 | 0 | 7 | 132 |
| 08:45 AM | 5 | 52 | 0 | 0 | 57 | 1 | 2 | 3 | 0 | 6 | 5 | 69 | 1 | 0 | 75 | 1 | 5 | 1 | 0 | 7 | 145 |
| Total | 19 | 212 | 3 | 0 | 234 | 4 | 10 | 11 | 0 | 25 | 26 | 265 | 5 | 0 | 296 | 8 | 14 | 7 | 0 | 29 | 584 |
| 09:00 AM | 6 | 49 | 0 | 0 | 55 | 2 | 2 | 0 | 0 | 4 | 4 | 22 | 1 | 0 | 27 | 0 | 3 | 4 | 0 | 7 | 93 |
| 09:15 AM | 4 | 29 | 1 | 0 | 34 | 2 | 1 | 4 | 0 | 7 | 6 | 45 | 0 | 0 | 51 | 1 | 4 | 2 | 0 | 7 | 99 |
| 09:30 AM | 5 | 52 | 0 | 0 | 57 | 0 | 0 | 2 | 0 | 2 | 4 | 47 | 1 | 0 | 52 | 0 | 4 | 4 | 0 | 8 | 119 |
| 09:45 AM | 8 | 56 | 3 | 0 | 67 | 3 | 2 | 2 | 0 | 7 | 3 | 44 | 0 | 0 | 47 | 1 | 2 | 6 | 0 | 9 | 130 |
| Total | 23 | 186 | 4 | 0 | 213 | 7 | 5 | 8 | 0 | 20 | 17 | 158 | 2 | 0 | 177 | 2 | 13 | 16 | 0 | 31 | 441 |
| 10:00 AM | 7 | 56 | 1 | 0 | 64 | 0 | 3 | 2 | 0 | 5 | 6 | 46 | 1 | 0 | 53 | 1 | 3 | 6 | 0 | 10 | 132 |
| 10:15 AM | 6 | 54 | 1 | 0 | 61 | 0 | 5 | 2 | 0 | 7 | 3 | 60 | 1 | 0 | 64 | 2 | 1 | 7 | 0 | 10 | 142 |
| 10:30 AM | 3 | 45 | 1 | 0 | 49 | 0 | 6 | 2 | 0 | 8 | 5 | 50 | 1 | 0 | 56 | 1 | 6 | 4 | 0 | 11 | 124 |
| 10:45 AM | 4 | 46 | 4 | 0 | 54 | 0 | 2 | 2 | 0 | 4 | 9 | 43 | 0 | 0 | 52 | 3 | 4 | 3 | 0 | 10 | 120 |
| Total | 20 | 201 | 7 | 0 | 228 | 0 | 16 | 8 | 0 | 24 | 23 | 199 | 3 | 0 | 225 | 7 | 14 | 20 | 0 | 41 | 518 |
| 11:00 AM | 3 | 55 | 2 | 0 | 60 | 2 | 0 | 1 | 0 | 3 | 4 | 46 | 0 | 0 | 50 | 0 | 5 | 4 | 0 | 9 | 122 |
| 11:15 AM | 5 | 57 | 6 | 0 | 68 | 1 | 0 | 4 | 0 | 5 | 4 | 46 | 2 | 0 | 52 | 0 | 1 | 2 | 0 | 3 | 128 |
| 11:30 AM | 14 | 44 | 1 | 0 | 59 | 2 | 1 | 3 | 0 | 6 | 4 | 61 | 1 | 0 | 66 | 0 | 7 | 7 | 0 | 14 | 145 |
| 11:45 AM | 6 | 61 | 0 | 0 | 67 | 1 | 2 | 2 | 0 | 5 | 6 | 54 | 0 | 0 | 60 | 2 | 1 | 6 | 0 | 9 | 141 |
| Total | 28 | 217 | 9 | 0 | 254 | 6 | 3 | 10 | 0 | 19 | 18 | 207 | 3 | 0 | 228 | 2 | 14 | 19 | 0 | 35 | 536 |
| 12:00 PM | 4 | 55 | 1 | 0 | 60 | 2 | 2 | 3 | 0 | 7 | 15 | 51 | 3 | 0 | 69 | 0 | 6 | 2 | 0 | 8 | 144 |
| 12:15 PM | 7 | 45 | 1 | 0 | 53 | 2 | 2 | 11 | 0 | 15 | 3 | 51 | 0 | 0 | 54 | 2 | 7 | 4 | 0 | 13 | 135 |
| 12:30 PM | 10 | 59 | 5 | 0 | 74 | 2 | 4 | 5 | 0 | 11 | 4 | 64 | 1 | 0 | 69 | 1 | 7 | 2 | 0 | 10 | 164 |
| 12:45 PM | 6 | 59 | 1 | 0 | 66 | 1 | 1 | 4 | 0 | 6 | 4 | 51 | 2 | 0 | 57 | 3 | 5 | 2 | 0 | 10 | 139 |
| Total | 27 | 218 | 8 | 0 | 253 | 7 | 9 | 23 | 0 | 39 | 26 | 217 | 6 | 0 | 249 | 6 | 25 | 10 | 0 | 41 | 582 |
| 01:00 PM | 4 | 58 | 1 | 0 | 63 | 0 | 4 | 1 | 0 | 5 | 5 | 48 | 1 | 0 | 54 | 1 | 4 | 5 | 0 | 10 | 132 |
| 01:15 PM | 6 | 52 | 7 | 0 | 65 | 0 | 4 | 2 | 0 | 6 | 4 | 68 | 1 | 0 | 73 | 2 | 4 | 4 | 0 | 10 | 154 |
| 01:30 PM | 9 | 56 | 1 | 0 | 66 | 1 | 1 | 3 | 0 | 5 | 6 | 59 | 0 | 0 | 65 | 1 | 0 | 4 | 0 | 5 | 141 |
| 01:45 PM | 3 | 52 | 3 | 0 | 58 | 2 | 2 | 2 | 0 | 6 | 8 | 45 | 0 | 0 | 53 | 3 | 3 | 4 | 0 | 10 | 127 |
| Total | 22 | 218 | 12 | 0 | 252 | 3 | 11 | 8 | 0 | 22 | 23 | 220 | 2 | 0 | 245 | 7 | 11 | 17 | 0 | 35 | 554 |
| 02:00 PM | 7 | 54 | 4 | 0 | 65 | 0 | 3 | 3 | 0 | 6 | 7 | 58 | 2 | 0 | 67 | 1 | 1 | 5 | 0 | 7 | 145 |
| 02:15 PM | 3 | 50 | 1 | 0 | 54 | 3 | 0 | 3 | 0 | 6 | 9 | 61 | 1 | 0 | 71 | 2 | 1 | 3 | 0 | 6 | 137 |
| 02:30 PM | 4 | 59 | 0 | 0 | 63 | 1 | 0 | 2 | 0 | 3 | 6 | 72 | 3 | 0 | 81 | 1 | 1 | 2 | 0 | 4 | 151 |
| 02:45 PM | 5 | 68 | 1 | 0 | 74 | 2 | 2 | 3 | 0 | 7 | 4 | 52 | 1 | 0 | 57 | 0 | 4 | 2 | 0 | 6 | 144 |
| Total | 19 | 231 | 6 | 0 | 256 | 6 | 5 | 11 | 0 | 22 | 26 | 243 | 7 | 0 | 276 | 4 | 7 | 12 | 0 | 23 | 577 |
| 03:00 PM | 10 | 94 | 3 | 0 | 107 | 1 | 4 | 1 | 0 | 6 | 7 | 59 | 2 | 0 | 68 | 5 | 6 | 7 | 0 | 18 | 199 |
| 03:15 PM | 4 | 83 | 2 | 0 | 89 | 1 | 3 | 4 | 0 | 8 | 11 | 60 | 1 | 0 | 72 | 1 | 3 | 7 | 0 | 11 | 180 |
| 03:30 PM | 12 | 72 | 2 | 0 | 86 | 1 | 3 | 5 | 0 | 9 | 8 | 71 | 1 | 0 | 80 | 2 | 12 | 15 | 0 | 29 | 204 |
| 03:45 PM | 6 | 74 | 6 | 0 | 86 | 0 | 4 | 1 | 0 | 5 | 12 | 84 | 1 | 0 | 97 | 4 | 15 | 2 | 0 | 21 | 209 |
| Total | 32 | 323 | 13 | 0 | 368 | 3 | 14 | 11 | 0 | 28 | 38 | 274 | 5 | 0 | 317 | 12 | 36 | 31 | 0 | 79 | 792 |
| 04:00 PM | 6 | 66 | 4 | 0 | 76 | 2 | 2 | 4 | 0 | 8 | 15 | 67 | 0 | 0 | 82 | 0 | 4 | 5 | 0 | 9 | 175 |
| 04:15 PM | 9 | 73 | 7 | 0 | 89 | 3 | 2 | 4 | 0 | 9 | 11 | 81 | 1 | 0 | 93 | 0 | 8 | 8 | 0 | 16 | 207 |
| 04:30 PM | 10 | 76 | 2 | 0 | 88 | 0 | 5 | 3 | 0 | 8 | 10 | 70 | 1 | 0 | 81 | 1 | 4 | 4 | 0 | 9 | 186 |
| 04:45 PM | 9 | 72 | 5 | 0 | 86 | 1 | 7 | 2 | 0 | 10 | 13 | 81 | 3 | 0 | 97 | 1 | 6 | 8 | 0 | 15 | 208 |
| Total | 34 | 287 | 18 | 0 | 339 | 6 | 16 | 13 | 0 | 35 | 49 | 299 | 5 | 0 | 353 | 2 | 22 | 25 | 0 | 49 | 776 |
| 05:00 PM | 10 | 59 | 8 | 0 | 77 | 2 | 5 | 2 | 0 | 9 | 13 | 89 | 2 | 0 | 104 | 0 | 3 | 5 | 0 | 8 | 198 |
| 05:15 PM | 12 | 78 | 3 | 0 | 93 | 1 | 3 | 6 | 0 | 10 | 18 | 90 | 2 | 0 | 110 | 1 | 8 | 8 | 0 | 17 | 230 |
| 05:30 PM | 8 | 104 | 7 | 0 | 119 | 1 | 4 | 6 | 0 | 11 | 15 | 72 | 4 | 0 | 91 | 3 | 8 | 3 | 0 | 14 | 235 |
| 05:45 PM | 10 | 77 | 5 | 0 | 92 | 1 | 1 | 0 | 0 | 2 | 11 | 83 | 0 | 0 | 94 | 0 | 8 | 4 | 0 | 12 | 200 |
| Total | 40 | 318 | 23 | 0 | 381 | 5 | 13 | 14 | 0 | 32 | 57 | 334 | 8 | 0 | 399 | 4 | 27 | 20 | 0 | 51 | 863 |
| Grand Total | 285 | 2874 | 108 | 0 | 3267 | 68 | 120 | 147 | 0 | 335 | 342 | 2806 | 50 | 0 | 3198 | 70 | 200 | 222 | 0 | 492 | 7292 |
| Apprch % | 8.7 | 88 | 3.3 | 0 | | 20.3 | 35.8 | 43.9 | 0 | | 10.7 | 87.7 | 1.6 | 0 | | 14.2 | 40.7 | 45.1 | 0 | | |
| Total % | 3.9 | 39.4 | 1.5 | 0 | 44.8 | 0.9 | 1.6 | 2 | 0 | 4.6 | 4.7 | 38.5 | 0.7 | 0 | 43.9 | 1 | 2.7 | 3 | 0 | 6.7 | |

Peggy Malone & Associates

(800) 247-8602

File Name : 1-US 220 and Lee Ford Camp
 Site Code :
 Start Date : 5/9/2018
 Page No : 2

| Start Time | US 220 Southbound | | | | Church St Westbound | | | | US 220 Northbound | | | | Lee Ford Camp Rd Eastbound | | | | Int. Total |
|--|-------------------|------|------|------------|---------------------|------|------|------------|-------------------|------|------|------------|----------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 06:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | |
| 07:15 AM | 4 | 51 | 1 | 56 | 8 | 5 | 5 | 18 | 9 | 69 | 0 | 78 | 3 | 2 | 11 | 16 | 168 |
| 07:30 AM | 1 | 51 | 1 | 53 | 3 | 4 | 2 | 9 | 7 | 74 | 0 | 81 | 0 | 3 | 14 | 17 | 160 |
| 07:45 AM | 10 | 58 | 2 | 70 | 3 | 6 | 3 | 12 | 4 | 52 | 2 | 58 | 6 | 4 | 4 | 14 | 154 |
| 08:00 AM | 6 | 48 | 2 | 56 | 1 | 5 | 5 | 11 | 10 | 56 | 1 | 67 | 2 | 1 | 2 | 5 | 139 |
| Total Volume | 21 | 208 | 6 | 235 | 15 | 20 | 15 | 50 | 30 | 251 | 3 | 284 | 11 | 10 | 31 | 52 | 621 |
| % App. Total | 8.9 | 88.5 | 2.6 | | 30 | 40 | 30 | | 10.6 | 88.4 | 1.1 | | 21.2 | 19.2 | 59.6 | | |
| PHF | .525 | .897 | .750 | .839 | .469 | .833 | .750 | .694 | .750 | .848 | .375 | .877 | .458 | .625 | .554 | .765 | .924 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 9 | 72 | 5 | 86 | 1 | 7 | 2 | 10 | 13 | 81 | 3 | 97 | 1 | 6 | 8 | 15 | 208 |
| 05:00 PM | 10 | 59 | 8 | 77 | 2 | 5 | 2 | 9 | 13 | 89 | 2 | 104 | 0 | 3 | 5 | 8 | 198 |
| 05:15 PM | 12 | 78 | 3 | 93 | 1 | 3 | 6 | 10 | 18 | 90 | 2 | 110 | 1 | 8 | 8 | 17 | 230 |
| 05:30 PM | 8 | 104 | 7 | 119 | 1 | 4 | 6 | 11 | 15 | 72 | 4 | 91 | 3 | 8 | 3 | 14 | 235 |
| Total Volume | 39 | 313 | 23 | 375 | 5 | 19 | 16 | 40 | 59 | 332 | 11 | 402 | 5 | 25 | 24 | 54 | 871 |
| % App. Total | 10.4 | 83.5 | 6.1 | | 12.5 | 47.5 | 40 | | 14.7 | 82.6 | 2.7 | | 9.3 | 46.3 | 44.4 | | |
| PHF | .813 | .752 | .719 | .788 | .625 | .679 | .667 | .909 | .819 | .922 | .688 | .914 | .417 | .781 | .750 | .794 | .927 |

Peggy Malone & Associates

(800) 247-8602

File Name : 1-US 220 and Lee Ford Camp
 Site Code :
 Start Date : 5/9/2018
 Page No : 1

Groups Printed- Truck

| Start Time | US 220 Southbound | | | | | Church St Westbound | | | | | US 220 Northbound | | | | | Lee Ford Camp Rd Eastbound | | | | | Int. Total |
|--------------------|-------------------|------------|----------|----------|------------|---------------------|----------|----------|----------|------------|-------------------|------------|----------|----------|------------|----------------------------|----------|----------|----------|------------|-------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 06:00 AM | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 0 | 1 | 0 | 0 | 1 | 22 |
| 06:15 AM | 0 | 16 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 32 |
| 06:30 AM | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 19 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 31 |
| 06:45 AM | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 25 |
| Total | 0 | 47 | 0 | 0 | 47 | 0 | 0 | 0 | 0 | 0 | 1 | 61 | 0 | 0 | 62 | 0 | 1 | 0 | 0 | 1 | 110 |
| 07:00 AM | 1 | 14 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 1 | 0 | 20 | 0 | 1 | 1 | 0 | 2 | 37 |
| 07:15 AM | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 34 |
| 07:30 AM | 0 | 11 | 0 | 0 | 11 | 0 | 1 | 0 | 0 | 1 | 0 | 22 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 34 |
| 07:45 AM | 1 | 14 | 0 | 0 | 15 | 0 | 1 | 0 | 0 | 1 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 41 |
| Total | 2 | 54 | 0 | 0 | 56 | 0 | 2 | 0 | 0 | 2 | 1 | 84 | 1 | 0 | 86 | 0 | 1 | 1 | 0 | 2 | 146 |
| 08:00 AM | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 26 |
| 08:15 AM | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 44 |
| 08:30 AM | 0 | 14 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 40 |
| 08:45 AM | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 35 |
| Total | 0 | 67 | 0 | 0 | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 78 | 0 | 0 | 78 | 0 | 0 | 0 | 0 | 0 | 145 |
| 09:00 AM | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 43 |
| 09:15 AM | 0 | 12 | 0 | 0 | 12 | 1 | 0 | 0 | 0 | 1 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 43 |
| 09:30 AM | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 1 | 0 | 0 | 0 | 1 | 39 |
| 09:45 AM | 3 | 21 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 48 |
| Total | 3 | 75 | 0 | 0 | 78 | 1 | 0 | 0 | 0 | 1 | 0 | 93 | 0 | 0 | 93 | 1 | 0 | 0 | 0 | 1 | 173 |
| 10:00 AM | 0 | 27 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 26 | 0 | 0 | 2 | 0 | 2 | 55 |
| 10:15 AM | 0 | 26 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 1 | 0 | 1 | 45 |
| 10:30 AM | 0 | 29 | 0 | 0 | 29 | 1 | 0 | 0 | 0 | 1 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 49 |
| 10:45 AM | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 48 |
| Total | 0 | 100 | 0 | 0 | 100 | 1 | 0 | 0 | 0 | 1 | 0 | 93 | 0 | 0 | 93 | 0 | 0 | 3 | 0 | 3 | 197 |
| 11:00 AM | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 40 |
| 11:15 AM | 0 | 15 | 1 | 0 | 16 | 0 | 1 | 0 | 0 | 1 | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 28 |
| 11:30 AM | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 53 |
| 11:45 AM | 0 | 28 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 47 |
| Total | 0 | 86 | 1 | 0 | 87 | 0 | 1 | 0 | 0 | 1 | 0 | 80 | 0 | 0 | 80 | 0 | 0 | 0 | 0 | 0 | 168 |
| 12:00 PM | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 2 | 24 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 46 |
| 12:15 PM | 0 | 27 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 45 |
| 12:30 PM | 0 | 21 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 47 |
| 12:45 PM | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 38 |
| Total | 0 | 88 | 0 | 0 | 88 | 0 | 0 | 0 | 0 | 0 | 2 | 86 | 0 | 0 | 88 | 0 | 0 | 0 | 0 | 0 | 176 |
| 01:00 PM | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 37 |
| 01:15 PM | 0 | 29 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 54 |
| 01:30 PM | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 38 |
| 01:45 PM | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 38 |
| Total | 0 | 93 | 0 | 0 | 93 | 0 | 0 | 0 | 0 | 0 | 0 | 74 | 0 | 0 | 74 | 0 | 0 | 0 | 0 | 0 | 167 |
| 02:00 PM | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 1 | 0 | 1 | 38 |
| 02:15 PM | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 37 |
| 02:30 PM | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 3 | 0 | 3 | 0 | 14 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 36 |
| 02:45 PM | 0 | 21 | 0 | 0 | 21 | 0 | 1 | 0 | 0 | 1 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 37 |
| Total | 0 | 78 | 0 | 0 | 78 | 0 | 1 | 3 | 0 | 4 | 0 | 64 | 1 | 0 | 65 | 0 | 0 | 1 | 0 | 1 | 148 |
| 03:00 PM | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 1 | 0 | 1 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 37 |
| 03:15 PM | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 29 |
| 03:30 PM | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 21 | 1 | 3 | 0 | 0 | 4 | 49 |
| 03:45 PM | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 1 | 0 | 1 | 0 | 17 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 37 |
| Total | 0 | 73 | 0 | 0 | 73 | 0 | 0 | 2 | 0 | 2 | 0 | 73 | 0 | 0 | 73 | 1 | 3 | 0 | 0 | 4 | 152 |
| 04:00 PM | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 38 |
| 04:15 PM | 1 | 14 | 0 | 0 | 15 | 0 | 0 | 1 | 0 | 1 | 0 | 14 | 0 | 0 | 14 | 1 | 0 | 0 | 0 | 1 | 31 |
| 04:30 PM | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 31 |
| 04:45 PM | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 32 |
| Total | 1 | 68 | 0 | 0 | 69 | 0 | 0 | 1 | 0 | 1 | 0 | 61 | 0 | 0 | 61 | 1 | 0 | 0 | 0 | 1 | 132 |
| 05:00 PM | 1 | 13 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 30 |
| 05:15 PM | 0 | 23 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 35 |
| 05:30 PM | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 22 |
| 05:45 PM | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 23 |
| Total | 1 | 57 | 0 | 0 | 58 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 0 | 110 |
| Grand Total | 7 | 886 | 1 | 0 | 894 | 2 | 4 | 6 | 0 | 12 | 4 | 899 | 2 | 0 | 905 | 3 | 5 | 5 | 0 | 13 | 1824 |
| Apprch % | 0.8 | 99.1 | 0.1 | 0 | | 16.7 | 33.3 | 50 | 0 | | 0.4 | 99.3 | 0.2 | 0 | | 23.1 | 38.5 | 38.5 | 0 | | |
| Total % | 0.4 | 48.6 | 0.1 | 0 | 49 | 0.1 | 0.2 | 0.3 | 0 | 0.7 | 0.2 | 49.3 | 0.1 | 0 | 49.6 | 0.2 | 0.3 | 0.3 | 0 | 0.7 | |

Peggy Malone & Associates

(800) 247-8602

File Name : 1-US 220 and Lee Ford Camp
 Site Code :
 Start Date : 5/9/2018
 Page No : 2

| Start Time | US 220 Southbound | | | | Church St Westbound | | | | US 220 Northbound | | | | Lee Ford Camp Rd Eastbound | | | | Int. Total |
|--|-------------------|------|------|------------|---------------------|------|------|------------|-------------------|------|------|------------|----------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 06:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 09:45 AM | | | | | | | | | | | | | | | | | |
| 09:45 AM | 3 | 21 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 48 |
| 10:00 AM | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 26 | 0 | 0 | 2 | 2 | 55 |
| 10:15 AM | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 0 | 0 | 1 | 1 | 45 |
| 10:30 AM | 0 | 29 | 0 | 29 | 1 | 0 | 0 | 1 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 49 |
| Total Volume | 3 | 103 | 0 | 106 | 1 | 0 | 0 | 1 | 0 | 87 | 0 | 87 | 0 | 0 | 3 | 3 | 197 |
| % App. Total | 2.8 | 97.2 | 0 | | 100 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 100 | | |
| PHF | .250 | .888 | .000 | .914 | .250 | .000 | .000 | .250 | .000 | .837 | .000 | .837 | .000 | .000 | .375 | .375 | .895 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 2 | 24 | 0 | 26 | 0 | 0 | 0 | 0 | 46 |
| 12:15 PM | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 45 |
| 12:30 PM | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 47 |
| 12:45 PM | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 38 |
| Total Volume | 0 | 88 | 0 | 88 | 0 | 0 | 0 | 0 | 2 | 86 | 0 | 88 | 0 | 0 | 0 | 0 | 176 |
| % App. Total | 0 | 100 | 0 | | 0 | 0 | 0 | | 2.3 | 97.7 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .815 | .000 | .815 | .000 | .000 | .000 | .000 | .250 | .827 | .000 | .846 | .000 | .000 | .000 | .000 | .936 |

Peggy Malone & Associates

(800) 247-8602

File Name : 1-US 220 and Lee Ford Camp
 Site Code :
 Start Date : 5/9/2018
 Page No : 1

Groups Printed- Combined

| Start Time | US 220 Southbound | | | | | Church St Westbound | | | | | US 220 Northbound | | | | | Lee Ford Camp Rd Eastbound | | | | | Int. Total |
|--------------------|-------------------|-------------|------------|----------|-------------|---------------------|------------|------------|----------|------------|-------------------|-------------|-----------|----------|-------------|----------------------------|------------|------------|----------|------------|-------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 06:00 AM | 0 | 61 | 0 | 0 | 61 | 1 | 0 | 3 | 0 | 4 | 1 | 36 | 0 | 0 | 37 | 0 | 2 | 2 | 0 | 4 | 106 |
| 06:15 AM | 2 | 84 | 0 | 0 | 86 | 1 | 1 | 5 | 0 | 7 | 5 | 50 | 0 | 0 | 55 | 4 | 1 | 3 | 0 | 8 | 156 |
| 06:30 AM | 0 | 65 | 0 | 0 | 65 | 2 | 0 | 4 | 0 | 6 | 9 | 68 | 0 | 0 | 77 | 1 | 4 | 3 | 0 | 8 | 156 |
| 06:45 AM | 3 | 66 | 1 | 0 | 70 | 0 | 1 | 5 | 0 | 6 | 2 | 61 | 0 | 0 | 63 | 2 | 1 | 4 | 0 | 7 | 146 |
| Total | 5 | 276 | 1 | 0 | 282 | 4 | 2 | 17 | 0 | 23 | 17 | 215 | 0 | 0 | 232 | 7 | 8 | 12 | 0 | 27 | 564 |
| 07:00 AM | 2 | 88 | 0 | 0 | 90 | 3 | 1 | 3 | 0 | 7 | 3 | 60 | 3 | 0 | 66 | 0 | 2 | 5 | 0 | 7 | 170 |
| 07:15 AM | 4 | 66 | 1 | 0 | 71 | 8 | 5 | 5 | 0 | 18 | 10 | 87 | 0 | 0 | 97 | 3 | 2 | 11 | 0 | 16 | 202 |
| 07:30 AM | 1 | 62 | 1 | 0 | 64 | 3 | 5 | 2 | 0 | 10 | 7 | 96 | 0 | 0 | 103 | 0 | 3 | 14 | 0 | 17 | 194 |
| 07:45 AM | 11 | 72 | 2 | 0 | 85 | 3 | 7 | 3 | 0 | 13 | 4 | 77 | 2 | 0 | 83 | 6 | 4 | 4 | 0 | 14 | 195 |
| Total | 18 | 288 | 4 | 0 | 310 | 17 | 18 | 13 | 0 | 48 | 24 | 320 | 5 | 0 | 349 | 9 | 11 | 34 | 0 | 54 | 761 |
| 08:00 AM | 6 | 63 | 2 | 0 | 71 | 1 | 5 | 5 | 0 | 11 | 10 | 67 | 1 | 0 | 78 | 2 | 1 | 2 | 0 | 5 | 165 |
| 08:15 AM | 4 | 91 | 1 | 0 | 96 | 0 | 3 | 0 | 0 | 3 | 7 | 93 | 3 | 0 | 103 | 3 | 5 | 2 | 0 | 10 | 212 |
| 08:30 AM | 4 | 54 | 0 | 0 | 58 | 2 | 0 | 3 | 0 | 5 | 4 | 98 | 0 | 0 | 102 | 2 | 3 | 2 | 0 | 7 | 172 |
| 08:45 AM | 5 | 71 | 0 | 0 | 76 | 1 | 2 | 3 | 0 | 6 | 5 | 85 | 1 | 0 | 91 | 1 | 5 | 1 | 0 | 7 | 180 |
| Total | 19 | 279 | 3 | 0 | 301 | 4 | 10 | 11 | 0 | 25 | 26 | 343 | 5 | 0 | 374 | 8 | 14 | 7 | 0 | 29 | 729 |
| 09:00 AM | 6 | 73 | 0 | 0 | 79 | 2 | 2 | 0 | 0 | 4 | 4 | 41 | 1 | 0 | 46 | 0 | 3 | 4 | 0 | 7 | 136 |
| 09:15 AM | 4 | 41 | 1 | 0 | 46 | 3 | 1 | 4 | 0 | 8 | 6 | 75 | 0 | 0 | 81 | 1 | 4 | 2 | 0 | 7 | 142 |
| 09:30 AM | 5 | 70 | 0 | 0 | 75 | 0 | 0 | 2 | 0 | 2 | 4 | 67 | 1 | 0 | 72 | 1 | 4 | 4 | 0 | 9 | 158 |
| 09:45 AM | 11 | 77 | 3 | 0 | 91 | 3 | 2 | 2 | 0 | 7 | 3 | 68 | 0 | 0 | 71 | 1 | 2 | 6 | 0 | 9 | 178 |
| Total | 26 | 261 | 4 | 0 | 291 | 8 | 5 | 8 | 0 | 21 | 17 | 251 | 2 | 0 | 270 | 3 | 13 | 16 | 0 | 32 | 614 |
| 10:00 AM | 7 | 83 | 1 | 0 | 91 | 0 | 3 | 2 | 0 | 5 | 6 | 72 | 1 | 0 | 79 | 1 | 3 | 8 | 0 | 12 | 187 |
| 10:15 AM | 6 | 80 | 1 | 0 | 87 | 0 | 5 | 2 | 0 | 7 | 3 | 78 | 1 | 0 | 82 | 2 | 1 | 8 | 0 | 11 | 187 |
| 10:30 AM | 3 | 74 | 1 | 0 | 78 | 1 | 6 | 2 | 0 | 9 | 5 | 69 | 1 | 0 | 75 | 1 | 6 | 4 | 0 | 11 | 173 |
| 10:45 AM | 4 | 64 | 4 | 0 | 72 | 0 | 2 | 2 | 0 | 4 | 9 | 73 | 0 | 0 | 82 | 3 | 4 | 3 | 0 | 10 | 168 |
| Total | 20 | 301 | 7 | 0 | 328 | 1 | 16 | 8 | 0 | 25 | 23 | 292 | 3 | 0 | 318 | 7 | 14 | 23 | 0 | 44 | 715 |
| 11:00 AM | 3 | 73 | 2 | 0 | 78 | 2 | 0 | 1 | 0 | 3 | 4 | 68 | 0 | 0 | 72 | 0 | 5 | 4 | 0 | 9 | 162 |
| 11:15 AM | 5 | 72 | 7 | 0 | 84 | 1 | 1 | 4 | 0 | 6 | 4 | 57 | 2 | 0 | 63 | 0 | 1 | 2 | 0 | 3 | 156 |
| 11:30 AM | 14 | 69 | 1 | 0 | 84 | 2 | 1 | 3 | 0 | 6 | 4 | 89 | 1 | 0 | 94 | 0 | 7 | 7 | 0 | 14 | 198 |
| 11:45 AM | 6 | 89 | 0 | 0 | 95 | 1 | 2 | 2 | 0 | 5 | 6 | 73 | 0 | 0 | 79 | 2 | 1 | 6 | 0 | 9 | 188 |
| Total | 28 | 303 | 10 | 0 | 341 | 6 | 4 | 10 | 0 | 20 | 18 | 287 | 3 | 0 | 308 | 2 | 14 | 19 | 0 | 35 | 704 |
| 12:00 PM | 4 | 75 | 1 | 0 | 80 | 2 | 2 | 3 | 0 | 7 | 17 | 75 | 3 | 0 | 95 | 0 | 6 | 2 | 0 | 8 | 190 |
| 12:15 PM | 7 | 72 | 1 | 0 | 80 | 2 | 2 | 11 | 0 | 15 | 3 | 69 | 0 | 0 | 72 | 2 | 7 | 4 | 0 | 13 | 180 |
| 12:30 PM | 10 | 80 | 5 | 0 | 95 | 2 | 4 | 5 | 0 | 11 | 4 | 90 | 1 | 0 | 95 | 1 | 7 | 2 | 0 | 10 | 211 |
| 12:45 PM | 6 | 79 | 1 | 0 | 86 | 1 | 1 | 4 | 0 | 6 | 4 | 69 | 2 | 0 | 75 | 3 | 5 | 2 | 0 | 10 | 177 |
| Total | 27 | 306 | 8 | 0 | 341 | 7 | 9 | 23 | 0 | 39 | 28 | 303 | 6 | 0 | 337 | 6 | 25 | 10 | 0 | 41 | 758 |
| 01:00 PM | 4 | 83 | 1 | 0 | 88 | 0 | 4 | 1 | 0 | 5 | 5 | 60 | 1 | 0 | 66 | 1 | 4 | 5 | 0 | 10 | 169 |
| 01:15 PM | 6 | 81 | 7 | 0 | 94 | 0 | 4 | 2 | 0 | 6 | 4 | 93 | 1 | 0 | 98 | 2 | 4 | 4 | 0 | 10 | 208 |
| 01:30 PM | 9 | 75 | 1 | 0 | 85 | 1 | 1 | 3 | 0 | 5 | 6 | 78 | 0 | 0 | 84 | 1 | 0 | 4 | 0 | 5 | 179 |
| 01:45 PM | 3 | 72 | 3 | 0 | 78 | 2 | 2 | 2 | 0 | 6 | 8 | 63 | 0 | 0 | 71 | 3 | 3 | 4 | 0 | 10 | 165 |
| Total | 22 | 311 | 12 | 0 | 345 | 3 | 11 | 8 | 0 | 22 | 23 | 294 | 2 | 0 | 319 | 7 | 11 | 17 | 0 | 35 | 721 |
| 02:00 PM | 7 | 73 | 4 | 0 | 84 | 0 | 3 | 3 | 0 | 6 | 7 | 76 | 2 | 0 | 85 | 1 | 1 | 6 | 0 | 8 | 183 |
| 02:15 PM | 3 | 69 | 1 | 0 | 73 | 3 | 0 | 3 | 0 | 6 | 9 | 78 | 2 | 0 | 89 | 2 | 1 | 3 | 0 | 6 | 174 |
| 02:30 PM | 4 | 78 | 0 | 0 | 82 | 1 | 0 | 5 | 0 | 6 | 6 | 86 | 3 | 0 | 95 | 1 | 1 | 2 | 0 | 4 | 187 |
| 02:45 PM | 5 | 89 | 1 | 0 | 95 | 2 | 3 | 3 | 0 | 8 | 4 | 67 | 1 | 0 | 72 | 0 | 4 | 2 | 0 | 6 | 181 |
| Total | 19 | 309 | 6 | 0 | 334 | 6 | 6 | 14 | 0 | 26 | 26 | 307 | 8 | 0 | 341 | 4 | 7 | 13 | 0 | 24 | 725 |
| 03:00 PM | 10 | 112 | 3 | 0 | 125 | 1 | 4 | 2 | 0 | 7 | 7 | 77 | 2 | 0 | 86 | 5 | 6 | 7 | 0 | 18 | 236 |
| 03:15 PM | 4 | 95 | 2 | 0 | 101 | 1 | 3 | 4 | 0 | 8 | 11 | 77 | 1 | 0 | 89 | 1 | 3 | 7 | 0 | 11 | 209 |
| 03:30 PM | 12 | 96 | 2 | 0 | 110 | 1 | 3 | 5 | 0 | 9 | 8 | 92 | 1 | 0 | 101 | 3 | 15 | 15 | 0 | 33 | 253 |
| 03:45 PM | 6 | 93 | 6 | 0 | 105 | 0 | 4 | 2 | 0 | 6 | 12 | 101 | 1 | 0 | 114 | 4 | 15 | 2 | 0 | 21 | 246 |
| Total | 32 | 396 | 13 | 0 | 441 | 3 | 14 | 13 | 0 | 30 | 38 | 347 | 5 | 0 | 390 | 13 | 39 | 31 | 0 | 83 | 944 |
| 04:00 PM | 6 | 85 | 4 | 0 | 95 | 2 | 2 | 4 | 0 | 8 | 15 | 86 | 0 | 0 | 101 | 0 | 4 | 5 | 0 | 9 | 213 |
| 04:15 PM | 10 | 87 | 7 | 0 | 104 | 3 | 2 | 5 | 0 | 10 | 11 | 95 | 1 | 0 | 107 | 1 | 8 | 8 | 0 | 17 | 238 |
| 04:30 PM | 10 | 91 | 2 | 0 | 103 | 0 | 5 | 3 | 0 | 8 | 10 | 86 | 1 | 0 | 97 | 1 | 4 | 4 | 0 | 9 | 217 |
| 04:45 PM | 9 | 92 | 5 | 0 | 106 | 1 | 7 | 2 | 0 | 10 | 13 | 93 | 3 | 0 | 109 | 1 | 6 | 8 | 0 | 15 | 240 |
| Total | 35 | 355 | 18 | 0 | 408 | 6 | 16 | 14 | 0 | 36 | 49 | 360 | 5 | 0 | 414 | 3 | 22 | 25 | 0 | 50 | 908 |
| 05:00 PM | 11 | 72 | 8 | 0 | 91 | 2 | 5 | 2 | 0 | 9 | 13 | 105 | 2 | 0 | 120 | 0 | 3 | 5 | 0 | 8 | 228 |
| 05:15 PM | 12 | 101 | 3 | 0 | 116 | 1 | 3 | 6 | 0 | 10 | 18 | 102 | 2 | 0 | 122 | 1 | 8 | 8 | 0 | 17 | 265 |
| 05:30 PM | 8 | 115 | 7 | 0 | 130 | 1 | 4 | 6 | 0 | 11 | 15 | 83 | 4 | 0 | 102 | 3 | 8 | 3 | 0 | 14 | 257 |
| 05:45 PM | 10 | 87 | 5 | 0 | 102 | 1 | 1 | 0 | 0 | 2 | 11 | 96 | 0 | 0 | 107 | 0 | 8 | 4 | 0 | 12 | 223 |
| Total | 41 | 375 | 23 | 0 | 439 | 5 | 13 | 14 | 0 | 32 | 57 | 386 | 8 | 0 | 451 | 4 | 27 | 20 | 0 | 51 | 973 |
| Grand Total | 292 | 3760 | 109 | 0 | 4161 | 70 | 124 | 153 | 0 | 347 | 346 | 3705 | 52 | 0 | 4103 | 73 | 205 | 227 | 0 | 505 | 9116 |
| Apprch % | 7 | 90.4 | 2.6 | 0 | | 20.2 | 35.7 | 44.1 | 0 | | 8.4 | 90.3 | 1.3 | 0 | | 14.5 | 40.6 | 45 | 0 | | |
| Total % | 3.2 | 41.2 | 1.2 | 0 | 45.6 | 0.8 | 1.4 | 1.7 | 0 | 3.8 | 3.8 | 40.6 | 0.6 | 0 | 45 | 0.8 | 2.2 | 2.5 | 0 | 5.5 | |

Peggy Malone & Associates

(800) 247-8602

File Name : 1-US 220 and Lee Ford Camp
 Site Code :
 Start Date : 5/9/2018
 Page No : 2

| Start Time | US 220 Southbound | | | | Church St Westbound | | | | US 220 Northbound | | | | Lee Ford Camp Rd Eastbound | | | | Int. Total |
|--|-------------------|------|------|------------|---------------------|------|------|------------|-------------------|------|------|------------|----------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 06:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 1 | 62 | 1 | 64 | 3 | 5 | 2 | 10 | 7 | 96 | 0 | 103 | 0 | 3 | 14 | 17 | 194 |
| 07:45 AM | 11 | 72 | 2 | 85 | 3 | 7 | 3 | 13 | 4 | 77 | 2 | 83 | 6 | 4 | 4 | 14 | 195 |
| 08:00 AM | 6 | 63 | 2 | 71 | 1 | 5 | 5 | 11 | 10 | 67 | 1 | 78 | 2 | 1 | 2 | 5 | 165 |
| 08:15 AM | 4 | 91 | 1 | 96 | 0 | 3 | 0 | 3 | 7 | 93 | 3 | 103 | 3 | 5 | 2 | 10 | 212 |
| Total Volume | 22 | 288 | 6 | 316 | 7 | 20 | 10 | 37 | 28 | 333 | 6 | 367 | 11 | 13 | 22 | 46 | 766 |
| % App. Total | 7 | 91.1 | 1.9 | | 18.9 | 54.1 | 27 | | 7.6 | 90.7 | 1.6 | | 23.9 | 28.3 | 47.8 | | |
| PHF | .500 | .791 | .750 | .823 | .583 | .714 | .500 | .712 | .700 | .867 | .500 | .891 | .458 | .650 | .393 | .676 | .903 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 9 | 92 | 5 | 106 | 1 | 7 | 2 | 10 | 13 | 93 | 3 | 109 | 1 | 6 | 8 | 15 | 240 |
| 05:00 PM | 11 | 72 | 8 | 91 | 2 | 5 | 2 | 9 | 13 | 105 | 2 | 120 | 0 | 3 | 5 | 8 | 228 |
| 05:15 PM | 12 | 101 | 3 | 116 | 1 | 3 | 6 | 10 | 18 | 102 | 2 | 122 | 1 | 8 | 8 | 17 | 265 |
| 05:30 PM | 8 | 115 | 7 | 130 | 1 | 4 | 6 | 11 | 15 | 83 | 4 | 102 | 3 | 8 | 3 | 14 | 257 |
| Total Volume | 40 | 380 | 23 | 443 | 5 | 19 | 16 | 40 | 59 | 383 | 11 | 453 | 5 | 25 | 24 | 54 | 990 |
| % App. Total | 9 | 85.8 | 5.2 | | 12.5 | 47.5 | 40 | | 13 | 84.5 | 2.4 | | 9.3 | 46.3 | 44.4 | | |
| PHF | .833 | .826 | .719 | .852 | .625 | .679 | .667 | .909 | .819 | .912 | .688 | .928 | .417 | .781 | .750 | .794 | .934 |

Peggy Malone & Associates

(800) 247-8602

File Name : 2-Joseph Martin Hwy & US 58 EB Ramps
 Site Code :
 Start Date : 5/9/2018
 Page No : 1

Groups Printed- Car

| Start Time | Joseph Martin Hwy Southbound | | | | US 58 Bypass EB Ramps Westbound | | | | Joseph Martin Hwy Northbound | | | | | Int. Total |
|--------------------|------------------------------|------------|----------|-------------|---------------------------------|------------|----------|------------|------------------------------|------------|----------|----------|-------------|-------------|
| | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 06:00 AM | 15 | 4 | 0 | 19 | 8 | 6 | 0 | 14 | 2 | 4 | 0 | 0 | 6 | 39 |
| 06:15 AM | 33 | 4 | 0 | 37 | 9 | 12 | 0 | 21 | 1 | 12 | 0 | 0 | 13 | 71 |
| 06:30 AM | 41 | 3 | 0 | 44 | 23 | 13 | 0 | 36 | 4 | 18 | 0 | 0 | 22 | 102 |
| 06:45 AM | 38 | 2 | 0 | 40 | 23 | 9 | 0 | 32 | 2 | 20 | 0 | 0 | 22 | 94 |
| Total | 127 | 13 | 0 | 140 | 63 | 40 | 0 | 103 | 9 | 54 | 0 | 0 | 63 | 306 |
| 07:00 AM | 14 | 6 | 0 | 20 | 15 | 2 | 0 | 17 | 8 | 16 | 0 | 0 | 24 | 61 |
| 07:15 AM | 15 | 5 | 0 | 20 | 19 | 12 | 0 | 31 | 4 | 25 | 0 | 0 | 29 | 80 |
| 07:30 AM | 31 | 9 | 0 | 40 | 24 | 7 | 0 | 31 | 3 | 17 | 0 | 0 | 20 | 91 |
| 07:45 AM | 55 | 6 | 0 | 61 | 20 | 12 | 0 | 32 | 8 | 26 | 0 | 0 | 34 | 127 |
| Total | 115 | 26 | 0 | 141 | 78 | 33 | 0 | 111 | 23 | 84 | 0 | 0 | 107 | 359 |
| 08:00 AM | 113 | 6 | 0 | 119 | 7 | 15 | 0 | 22 | 6 | 25 | 0 | 0 | 31 | 172 |
| 08:15 AM | 15 | 1 | 0 | 16 | 7 | 1 | 0 | 8 | 11 | 53 | 0 | 0 | 64 | 88 |
| 08:30 AM | 11 | 4 | 0 | 15 | 9 | 0 | 0 | 9 | 2 | 12 | 0 | 0 | 14 | 38 |
| 08:45 AM | 7 | 4 | 0 | 11 | 5 | 1 | 0 | 6 | 2 | 7 | 0 | 0 | 9 | 26 |
| Total | 146 | 15 | 0 | 161 | 28 | 17 | 0 | 45 | 21 | 97 | 0 | 0 | 118 | 324 |
| 09:00 AM | 19 | 2 | 0 | 21 | 7 | 1 | 0 | 8 | 2 | 10 | 0 | 0 | 12 | 41 |
| 09:15 AM | 10 | 2 | 0 | 12 | 5 | 5 | 0 | 10 | 1 | 10 | 0 | 0 | 11 | 33 |
| 09:30 AM | 14 | 3 | 0 | 17 | 3 | 2 | 0 | 5 | 1 | 15 | 0 | 0 | 16 | 38 |
| 09:45 AM | 8 | 3 | 0 | 11 | 6 | 0 | 0 | 6 | 5 | 11 | 0 | 0 | 16 | 33 |
| Total | 51 | 10 | 0 | 61 | 21 | 8 | 0 | 29 | 9 | 46 | 0 | 0 | 55 | 145 |
| 10:00 AM | 6 | 8 | 0 | 14 | 8 | 3 | 0 | 11 | 3 | 12 | 1 | 0 | 16 | 41 |
| 10:15 AM | 6 | 3 | 0 | 9 | 5 | 0 | 0 | 5 | 5 | 11 | 0 | 0 | 16 | 30 |
| 10:30 AM | 13 | 1 | 0 | 14 | 7 | 2 | 0 | 9 | 1 | 11 | 0 | 0 | 12 | 35 |
| 10:45 AM | 12 | 3 | 0 | 15 | 7 | 2 | 0 | 9 | 3 | 13 | 0 | 0 | 16 | 40 |
| Total | 37 | 15 | 0 | 52 | 27 | 7 | 0 | 34 | 12 | 47 | 1 | 0 | 60 | 146 |
| 11:00 AM | 11 | 4 | 0 | 15 | 9 | 3 | 0 | 12 | 3 | 11 | 0 | 0 | 14 | 41 |
| 11:15 AM | 19 | 4 | 0 | 23 | 6 | 0 | 0 | 6 | 4 | 10 | 0 | 0 | 14 | 43 |
| 11:30 AM | 10 | 3 | 0 | 13 | 4 | 2 | 0 | 6 | 1 | 11 | 0 | 0 | 12 | 31 |
| 11:45 AM | 12 | 4 | 0 | 16 | 5 | 1 | 0 | 6 | 4 | 22 | 0 | 0 | 26 | 48 |
| Total | 52 | 15 | 0 | 67 | 24 | 6 | 0 | 30 | 12 | 54 | 0 | 0 | 66 | 163 |
| 12:00 PM | 17 | 4 | 0 | 21 | 5 | 0 | 0 | 5 | 4 | 20 | 0 | 0 | 24 | 50 |
| 12:15 PM | 24 | 1 | 0 | 25 | 5 | 2 | 0 | 7 | 4 | 15 | 0 | 0 | 19 | 51 |
| 12:30 PM | 22 | 6 | 0 | 28 | 2 | 4 | 0 | 6 | 3 | 19 | 0 | 0 | 22 | 56 |
| 12:45 PM | 18 | 2 | 0 | 20 | 9 | 4 | 0 | 13 | 5 | 10 | 0 | 0 | 15 | 48 |
| Total | 81 | 13 | 0 | 94 | 21 | 10 | 0 | 31 | 16 | 64 | 0 | 0 | 80 | 205 |
| 01:00 PM | 17 | 3 | 0 | 20 | 4 | 1 | 0 | 5 | 3 | 10 | 0 | 0 | 13 | 38 |
| 01:15 PM | 25 | 3 | 0 | 28 | 5 | 0 | 0 | 5 | 1 | 15 | 0 | 0 | 16 | 49 |
| 01:30 PM | 12 | 2 | 0 | 14 | 6 | 0 | 0 | 6 | 1 | 21 | 0 | 0 | 22 | 42 |
| 01:45 PM | 6 | 5 | 0 | 11 | 5 | 2 | 0 | 7 | 4 | 11 | 0 | 0 | 15 | 33 |
| Total | 60 | 13 | 0 | 73 | 20 | 3 | 0 | 23 | 9 | 57 | 0 | 0 | 66 | 162 |
| 02:00 PM | 9 | 2 | 0 | 11 | 3 | 1 | 0 | 4 | 4 | 19 | 0 | 0 | 23 | 38 |
| 02:15 PM | 12 | 3 | 0 | 15 | 13 | 2 | 0 | 15 | 3 | 13 | 0 | 0 | 16 | 46 |
| 02:30 PM | 23 | 4 | 0 | 27 | 8 | 3 | 0 | 11 | 2 | 10 | 0 | 0 | 12 | 50 |
| 02:45 PM | 18 | 10 | 0 | 28 | 5 | 2 | 0 | 7 | 4 | 20 | 0 | 0 | 24 | 59 |
| Total | 62 | 19 | 0 | 81 | 29 | 8 | 0 | 37 | 13 | 62 | 0 | 0 | 75 | 193 |
| 03:00 PM | 26 | 5 | 0 | 31 | 8 | 3 | 0 | 11 | 6 | 14 | 0 | 0 | 20 | 62 |
| 03:15 PM | 34 | 3 | 0 | 37 | 13 | 5 | 0 | 18 | 8 | 24 | 0 | 0 | 32 | 87 |
| 03:30 PM | 32 | 12 | 0 | 44 | 10 | 3 | 0 | 13 | 40 | 142 | 0 | 0 | 182 | 239 |
| 03:45 PM | 25 | 3 | 0 | 28 | 11 | 3 | 0 | 14 | 18 | 49 | 0 | 0 | 67 | 109 |
| Total | 117 | 23 | 0 | 140 | 42 | 14 | 0 | 56 | 72 | 229 | 0 | 0 | 301 | 497 |
| 04:00 PM | 24 | 6 | 0 | 30 | 11 | 4 | 0 | 15 | 15 | 24 | 0 | 0 | 39 | 84 |
| 04:15 PM | 25 | 6 | 0 | 31 | 11 | 0 | 0 | 11 | 4 | 23 | 0 | 0 | 27 | 69 |
| 04:30 PM | 26 | 6 | 0 | 32 | 10 | 4 | 0 | 14 | 8 | 26 | 0 | 0 | 34 | 80 |
| 04:45 PM | 36 | 7 | 0 | 43 | 10 | 3 | 0 | 13 | 9 | 19 | 0 | 0 | 28 | 84 |
| Total | 111 | 25 | 0 | 136 | 42 | 11 | 0 | 53 | 36 | 92 | 0 | 0 | 128 | 317 |
| 05:00 PM | 50 | 8 | 0 | 58 | 10 | 6 | 0 | 16 | 8 | 22 | 0 | 0 | 30 | 104 |
| 05:15 PM | 32 | 6 | 0 | 38 | 18 | 9 | 0 | 27 | 15 | 27 | 0 | 0 | 42 | 107 |
| 05:30 PM | 32 | 8 | 0 | 40 | 23 | 4 | 0 | 27 | 19 | 44 | 0 | 0 | 63 | 130 |
| 05:45 PM | 30 | 5 | 0 | 35 | 16 | 3 | 0 | 19 | 6 | 20 | 0 | 0 | 26 | 80 |
| Total | 144 | 27 | 0 | 171 | 67 | 22 | 0 | 89 | 48 | 113 | 0 | 0 | 161 | 421 |
| Grand Total | 1103 | 214 | 0 | 1317 | 462 | 179 | 0 | 641 | 280 | 999 | 1 | 0 | 1280 | 3238 |
| Apprch % | 83.8 | 16.2 | 0 | | 72.1 | 27.9 | 0 | | 21.9 | 78 | 0.1 | 0 | | |
| Total % | 34.1 | 6.6 | 0 | 40.7 | 14.3 | 5.5 | 0 | 19.8 | 8.6 | 30.9 | 0 | 0 | 39.5 | |

Peggy Malone & Associates

(800) 247-8602

File Name : 2-Joseph Martin Hwy & US 58 EB Ramps
 Site Code :
 Start Date : 5/9/2018
 Page No : 2

| Start Time | Joseph Martin Hwy Southbound | | | US 58 Bypass EB Ramps Westbound | | | Joseph Martin Hwy Northbound | | | | Int. Total |
|--|------------------------------|------|------------|---------------------------------|-----------|------------|------------------------------|-----------|------|------------|------------|
| | Thru | Left | App. Total | Right | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 06:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | |
| 07:30 AM | 31 | 9 | 40 | 24 | 7 | 31 | 3 | 17 | 0 | 20 | 91 |
| 07:45 AM | 55 | 6 | 61 | 20 | 12 | 32 | 8 | 26 | 0 | 34 | 127 |
| 08:00 AM | 113 | 6 | 119 | 7 | 15 | 22 | 6 | 25 | 0 | 31 | 172 |
| 08:15 AM | 15 | 1 | 16 | 7 | 1 | 8 | 11 | 53 | 0 | 64 | 88 |
| Total Volume | 214 | 22 | 236 | 58 | 35 | 93 | 28 | 121 | 0 | 149 | 478 |
| % App. Total | 90.7 | 9.3 | | 62.4 | 37.6 | | 18.8 | 81.2 | 0 | | |
| PHF | .473 | .611 | .496 | .604 | .583 | .727 | .636 | .571 | .000 | .582 | .695 |

| | | | | | | | | | | | |
|--|-----------|-----------|-----------|-----------|----------|-----------|-----------|------------|------|------------|------------|
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 03:15 PM | | | | | | | | | | | |
| 03:15 PM | 34 | 3 | 37 | 13 | 5 | 18 | 8 | 24 | 0 | 32 | 87 |
| 03:30 PM | 32 | 12 | 44 | 10 | 3 | 13 | 40 | 142 | 0 | 182 | 239 |
| 03:45 PM | 25 | 3 | 28 | 11 | 3 | 14 | 18 | 49 | 0 | 67 | 109 |
| 04:00 PM | 24 | 6 | 30 | 11 | 4 | 15 | 15 | 24 | 0 | 39 | 84 |
| Total Volume | 115 | 24 | 139 | 45 | 15 | 60 | 81 | 239 | 0 | 320 | 519 |
| % App. Total | 82.7 | 17.3 | | 75 | 25 | | 25.3 | 74.7 | 0 | | |
| PHF | .846 | .500 | .790 | .865 | .750 | .833 | .506 | .421 | .000 | .440 | .543 |

Peggy Malone & Associates

(800) 247-8602

File Name : 2-Joseph Martin Hwy & US 58 EB Ramps
 Site Code :
 Start Date : 5/9/2018
 Page No : 1

Groups Printed- Truck

| Start Time | Joseph Martin Hwy Southbound | | | | US 58 Bypass EB Ramps Westbound | | | | Joseph Martin Hwy Northbound | | | | | Int. Total | |
|--------------------|------------------------------|-------------|----------|-------------|---------------------------------|-------------|----------|-------------|------------------------------|-------------|----------|----------|-------------|------------|----|
| | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | | |
| 06:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06:15 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| 06:30 AM | 1 | 2 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 5 |
| 06:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 2 | 2 | 0 | 4 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 7 | |
| 07:00 AM | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 4 | 4 |
| 07:15 AM | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 2 | 2 | 1 | 0 | 0 | 3 | 6 | 6 |
| 07:30 AM | 6 | 1 | 0 | 7 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 8 |
| 07:45 AM | 2 | 0 | 0 | 2 | 0 | 4 | 0 | 4 | 6 | 4 | 0 | 0 | 10 | 16 | 16 |
| Total | 10 | 1 | 0 | 11 | 2 | 6 | 0 | 8 | 8 | 7 | 0 | 0 | 15 | 34 | |
| 08:00 AM | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 7 | 11 | 11 |
| 08:15 AM | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 4 | 1 | 0 | 0 | 5 | 8 | 8 |
| 08:30 AM | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 7 | 7 |
| 08:45 AM | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Total | 8 | 1 | 0 | 9 | 2 | 1 | 0 | 3 | 6 | 10 | 0 | 0 | 16 | 28 | |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 2 |
| 09:15 AM | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 5 | 5 |
| 09:30 AM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 09:45 AM | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Total | 2 | 2 | 0 | 4 | 2 | 1 | 0 | 3 | 2 | 1 | 0 | 0 | 3 | 10 | |
| 10:00 AM | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 10:15 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 10:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 3 | 3 |
| 10:45 AM | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| Total | 2 | 2 | 0 | 4 | 3 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 3 | 10 | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 2 |
| 11:15 AM | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 5 | 5 |
| 11:30 AM | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 6 | 6 |
| 11:45 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 2 |
| Total | 5 | 0 | 0 | 5 | 1 | 2 | 0 | 3 | 2 | 5 | 0 | 0 | 7 | 15 | |
| 12:00 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 3 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 3 | 3 |
| 12:30 PM | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 5 | 5 |
| 12:45 PM | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| Total | 3 | 2 | 0 | 5 | 2 | 2 | 0 | 4 | 3 | 3 | 0 | 0 | 6 | 15 | |
| 01:00 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 3 | 3 |
| 01:15 PM | 1 | 1 | 0 | 2 | 2 | 1 | 0 | 3 | 0 | 2 | 0 | 0 | 2 | 7 | 7 |
| 01:30 PM | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 01:45 PM | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 1 | 1 | 0 | 0 | 2 | 5 | 5 |
| Total | 2 | 1 | 0 | 3 | 6 | 3 | 0 | 9 | 1 | 5 | 0 | 0 | 6 | 18 | |
| 02:00 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 3 | 3 |
| 02:15 PM | 3 | 1 | 0 | 4 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 7 | 7 |
| 02:30 PM | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 4 | 4 |
| 02:45 PM | 6 | 1 | 0 | 7 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 9 | 9 |
| Total | 9 | 3 | 0 | 12 | 7 | 0 | 0 | 7 | 3 | 1 | 0 | 0 | 4 | 23 | |
| 03:00 PM | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 1 | 1 | 0 | 0 | 2 | 6 | 6 |
| 03:15 PM | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 03:30 PM | 6 | 1 | 0 | 7 | 0 | 1 | 0 | 1 | 7 | 3 | 0 | 0 | 10 | 18 | 18 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 0 | 0 | 9 | 9 | 9 |
| Total | 9 | 1 | 0 | 10 | 1 | 4 | 0 | 5 | 11 | 10 | 0 | 0 | 21 | 36 | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 3 |
| 04:30 PM | 1 | 2 | 0 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| 04:45 PM | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Total | 4 | 2 | 0 | 6 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 9 | |
| 05:00 PM | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| 05:15 PM | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 4 | 6 | 6 |
| 05:30 PM | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 5 | 5 |
| 05:45 PM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 2 |
| Total | 3 | 1 | 0 | 4 | 3 | 4 | 0 | 7 | 3 | 3 | 0 | 0 | 6 | 17 | |
| Grand Total | 59 | 18 | 0 | 77 | 31 | 24 | 0 | 55 | 41 | 49 | 0 | 0 | 90 | 222 | |
| Apprch % | 76.6 | 23.4 | 0 | | 56.4 | 43.6 | 0 | | 45.6 | 54.4 | 0 | 0 | | | |
| Total % | 26.6 | 8.1 | 0 | 34.7 | 14 | 10.8 | 0 | 24.8 | 18.5 | 22.1 | 0 | 0 | 40.5 | | |

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File Name : 2-Joseph Martin Hwy & US 58 EB Ramps
 Site Code :
 Start Date : 5/9/2018
 Page No : 2

| Start Time | Joseph Martin Hwy Southbound | | | US 58 Bypass EB Ramps Westbound | | | Joseph Martin Hwy Northbound | | | | Int. Total |
|--|------------------------------|------|------------|---------------------------------|------|------------|------------------------------|------|------|------------|------------|
| | Thru | Left | App. Total | Right | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 06:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | |
| 07:30 AM | 6 | 1 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| 07:45 AM | 2 | 0 | 2 | 0 | 4 | 4 | 6 | 4 | 0 | 10 | 16 |
| 08:00 AM | 3 | 1 | 4 | 0 | 0 | 0 | 2 | 5 | 0 | 7 | 11 |
| 08:15 AM | 2 | 0 | 2 | 0 | 1 | 1 | 4 | 1 | 0 | 5 | 8 |
| Total Volume | 13 | 2 | 15 | 1 | 5 | 6 | 12 | 10 | 0 | 22 | 43 |
| % App. Total | 86.7 | 13.3 | | 16.7 | 83.3 | | 54.5 | 45.5 | 0 | | |
| PHF | .542 | .500 | .536 | .250 | .313 | .375 | .500 | .500 | .000 | .550 | .672 |

| | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 02:45 PM | | | | | | | | | | | |
| 02:45 PM | 6 | 1 | 7 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 9 |
| 03:00 PM | 2 | 0 | 2 | 0 | 2 | 2 | 1 | 1 | 0 | 2 | 6 |
| 03:15 PM | 1 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 3 |
| 03:30 PM | 6 | 1 | 7 | 0 | 1 | 1 | 7 | 3 | 0 | 10 | 18 |
| Total Volume | 15 | 2 | 17 | 2 | 4 | 6 | 9 | 4 | 0 | 13 | 36 |
| % App. Total | 88.2 | 11.8 | | 33.3 | 66.7 | | 69.2 | 30.8 | 0 | | |
| PHF | .625 | .500 | .607 | .500 | .500 | .750 | .321 | .333 | .000 | .325 | .500 |

Peggy Malone & Associates

(800) 247-8602

File Name : 2-Joseph Martin Hwy & US 58 EB Ramps
 Site Code :
 Start Date : 5/9/2018
 Page No : 1

Groups Printed- Combined

| Start Time | Joseph Martin Hwy Southbound | | | | US 58 Bypass EB Ramps Westbound | | | | Joseph Martin Hwy Northbound | | | | | Int. Total |
|-------------|------------------------------|------|------|------------|---------------------------------|------|------|------------|------------------------------|------|------|------|------------|------------|
| | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 06:00 AM | 15 | 4 | 0 | 19 | 8 | 6 | 0 | 14 | 2 | 4 | 0 | 0 | 6 | 39 |
| 06:15 AM | 34 | 4 | 0 | 38 | 9 | 12 | 0 | 21 | 2 | 12 | 0 | 0 | 14 | 73 |
| 06:30 AM | 42 | 5 | 0 | 47 | 24 | 13 | 0 | 37 | 4 | 19 | 0 | 0 | 23 | 107 |
| 06:45 AM | 38 | 2 | 0 | 40 | 23 | 9 | 0 | 32 | 2 | 20 | 0 | 0 | 22 | 94 |
| Total | 129 | 15 | 0 | 144 | 64 | 40 | 0 | 104 | 10 | 55 | 0 | 0 | 65 | 313 |
| 07:00 AM | 15 | 6 | 0 | 21 | 15 | 3 | 0 | 18 | 8 | 18 | 0 | 0 | 26 | 65 |
| 07:15 AM | 16 | 5 | 0 | 21 | 20 | 13 | 0 | 33 | 6 | 26 | 0 | 0 | 32 | 86 |
| 07:30 AM | 37 | 10 | 0 | 47 | 25 | 7 | 0 | 32 | 3 | 17 | 0 | 0 | 20 | 99 |
| 07:45 AM | 57 | 6 | 0 | 63 | 20 | 16 | 0 | 36 | 14 | 30 | 0 | 0 | 44 | 143 |
| Total | 125 | 27 | 0 | 152 | 80 | 39 | 0 | 119 | 31 | 91 | 0 | 0 | 122 | 393 |
| 08:00 AM | 116 | 7 | 0 | 123 | 7 | 15 | 0 | 22 | 8 | 30 | 0 | 0 | 38 | 183 |
| 08:15 AM | 17 | 1 | 0 | 18 | 7 | 2 | 0 | 9 | 15 | 54 | 0 | 0 | 69 | 96 |
| 08:30 AM | 13 | 4 | 0 | 17 | 10 | 0 | 0 | 10 | 2 | 16 | 0 | 0 | 18 | 45 |
| 08:45 AM | 8 | 4 | 0 | 12 | 6 | 1 | 0 | 7 | 2 | 7 | 0 | 0 | 9 | 28 |
| Total | 154 | 16 | 0 | 170 | 30 | 18 | 0 | 48 | 27 | 107 | 0 | 0 | 134 | 352 |
| 09:00 AM | 19 | 2 | 0 | 21 | 7 | 2 | 0 | 9 | 2 | 11 | 0 | 0 | 13 | 43 |
| 09:15 AM | 11 | 3 | 0 | 14 | 6 | 5 | 0 | 11 | 3 | 10 | 0 | 0 | 13 | 38 |
| 09:30 AM | 14 | 4 | 0 | 18 | 3 | 2 | 0 | 5 | 1 | 15 | 0 | 0 | 16 | 39 |
| 09:45 AM | 9 | 3 | 0 | 12 | 7 | 0 | 0 | 7 | 5 | 11 | 0 | 0 | 16 | 35 |
| Total | 53 | 12 | 0 | 65 | 23 | 9 | 0 | 32 | 11 | 47 | 0 | 0 | 58 | 155 |
| 10:00 AM | 8 | 8 | 0 | 16 | 9 | 3 | 0 | 12 | 3 | 12 | 1 | 0 | 16 | 44 |
| 10:15 AM | 6 | 3 | 0 | 9 | 6 | 0 | 0 | 6 | 5 | 11 | 0 | 0 | 16 | 31 |
| 10:30 AM | 13 | 1 | 0 | 14 | 7 | 2 | 0 | 9 | 2 | 13 | 0 | 0 | 15 | 38 |
| 10:45 AM | 12 | 5 | 0 | 17 | 8 | 2 | 0 | 10 | 3 | 13 | 0 | 0 | 16 | 43 |
| Total | 39 | 17 | 0 | 56 | 30 | 7 | 0 | 37 | 13 | 49 | 1 | 0 | 63 | 156 |
| 11:00 AM | 11 | 4 | 0 | 15 | 9 | 3 | 0 | 12 | 4 | 12 | 0 | 0 | 16 | 43 |
| 11:15 AM | 20 | 4 | 0 | 24 | 7 | 2 | 0 | 9 | 4 | 11 | 0 | 0 | 15 | 48 |
| 11:30 AM | 13 | 3 | 0 | 16 | 4 | 2 | 0 | 6 | 1 | 14 | 0 | 0 | 15 | 37 |
| 11:45 AM | 13 | 4 | 0 | 17 | 5 | 1 | 0 | 6 | 5 | 22 | 0 | 0 | 27 | 50 |
| Total | 57 | 15 | 0 | 72 | 25 | 8 | 0 | 33 | 14 | 59 | 0 | 0 | 73 | 178 |
| 12:00 PM | 17 | 4 | 0 | 21 | 6 | 1 | 0 | 7 | 4 | 21 | 0 | 0 | 25 | 53 |
| 12:15 PM | 24 | 1 | 0 | 25 | 5 | 2 | 0 | 7 | 5 | 17 | 0 | 0 | 22 | 54 |
| 12:30 PM | 24 | 7 | 0 | 31 | 2 | 4 | 0 | 6 | 5 | 19 | 0 | 0 | 24 | 61 |
| 12:45 PM | 19 | 3 | 0 | 22 | 10 | 5 | 0 | 15 | 5 | 10 | 0 | 0 | 15 | 52 |
| Total | 84 | 15 | 0 | 99 | 23 | 12 | 0 | 35 | 19 | 67 | 0 | 0 | 86 | 220 |
| 01:00 PM | 17 | 3 | 0 | 20 | 5 | 1 | 0 | 6 | 3 | 12 | 0 | 0 | 15 | 41 |
| 01:15 PM | 26 | 4 | 0 | 30 | 7 | 1 | 0 | 8 | 1 | 17 | 0 | 0 | 18 | 56 |
| 01:30 PM | 13 | 2 | 0 | 15 | 7 | 1 | 0 | 8 | 1 | 21 | 0 | 0 | 22 | 45 |
| 01:45 PM | 6 | 5 | 0 | 11 | 7 | 3 | 0 | 10 | 5 | 12 | 0 | 0 | 17 | 38 |
| Total | 62 | 14 | 0 | 76 | 26 | 6 | 0 | 32 | 10 | 62 | 0 | 0 | 72 | 180 |
| 02:00 PM | 9 | 2 | 0 | 11 | 4 | 1 | 0 | 5 | 6 | 19 | 0 | 0 | 25 | 41 |
| 02:15 PM | 15 | 4 | 0 | 19 | 16 | 2 | 0 | 18 | 3 | 13 | 0 | 0 | 16 | 53 |
| 02:30 PM | 23 | 5 | 0 | 28 | 10 | 3 | 0 | 13 | 2 | 11 | 0 | 0 | 13 | 54 |
| 02:45 PM | 24 | 11 | 0 | 35 | 6 | 2 | 0 | 8 | 5 | 20 | 0 | 0 | 25 | 68 |
| Total | 71 | 22 | 0 | 93 | 36 | 8 | 0 | 44 | 16 | 63 | 0 | 0 | 79 | 216 |
| 03:00 PM | 28 | 5 | 0 | 33 | 8 | 5 | 0 | 13 | 7 | 15 | 0 | 0 | 22 | 68 |
| 03:15 PM | 35 | 3 | 0 | 38 | 14 | 6 | 0 | 20 | 8 | 24 | 0 | 0 | 32 | 90 |
| 03:30 PM | 38 | 13 | 0 | 51 | 10 | 4 | 0 | 14 | 47 | 145 | 0 | 0 | 192 | 257 |
| 03:45 PM | 25 | 3 | 0 | 28 | 11 | 3 | 0 | 14 | 21 | 55 | 0 | 0 | 76 | 118 |
| Total | 126 | 24 | 0 | 150 | 43 | 18 | 0 | 61 | 83 | 239 | 0 | 0 | 322 | 533 |
| 04:00 PM | 24 | 6 | 0 | 30 | 11 | 4 | 0 | 15 | 15 | 24 | 0 | 0 | 39 | 84 |
| 04:15 PM | 27 | 6 | 0 | 33 | 11 | 0 | 0 | 11 | 4 | 24 | 0 | 0 | 28 | 72 |
| 04:30 PM | 27 | 8 | 0 | 35 | 10 | 5 | 0 | 15 | 8 | 26 | 0 | 0 | 34 | 84 |
| 04:45 PM | 37 | 7 | 0 | 44 | 11 | 3 | 0 | 14 | 9 | 19 | 0 | 0 | 28 | 86 |
| Total | 115 | 27 | 0 | 142 | 43 | 12 | 0 | 55 | 36 | 93 | 0 | 0 | 129 | 326 |
| 05:00 PM | 50 | 8 | 0 | 58 | 11 | 9 | 0 | 20 | 8 | 22 | 0 | 0 | 30 | 108 |
| 05:15 PM | 33 | 6 | 0 | 39 | 19 | 9 | 0 | 28 | 18 | 28 | 0 | 0 | 46 | 113 |
| 05:30 PM | 33 | 9 | 0 | 42 | 24 | 5 | 0 | 29 | 19 | 45 | 0 | 0 | 64 | 135 |
| 05:45 PM | 31 | 5 | 0 | 36 | 16 | 3 | 0 | 19 | 6 | 21 | 0 | 0 | 27 | 82 |
| Total | 147 | 28 | 0 | 175 | 70 | 26 | 0 | 96 | 51 | 116 | 0 | 0 | 167 | 438 |
| Grand Total | 1162 | 232 | 0 | 1394 | 493 | 203 | 0 | 696 | 321 | 1048 | 1 | 0 | 1370 | 3460 |
| Apprch % | 83.4 | 16.6 | 0 | | 70.8 | 29.2 | 0 | | 23.4 | 76.5 | 0.1 | 0 | | |
| Total % | 33.6 | 6.7 | 0 | 40.3 | 14.2 | 5.9 | 0 | 20.1 | 9.3 | 30.3 | 0 | 0 | 39.6 | |

Peggy Malone & Associates

(800) 247-8602

File Name : 2-Joseph Martin Hwy & US 58 EB Ramps
 Site Code :
 Start Date : 5/9/2018
 Page No : 2

| Start Time | Joseph Martin Hwy Southbound | | | US 58 Bypass EB Ramps Westbound | | | Joseph Martin Hwy Northbound | | | | Int. Total |
|--|------------------------------|-----------|------------|---------------------------------|-----------|------------|------------------------------|-----------|------|------------|------------|
| | Thru | Left | App. Total | Right | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 06:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | |
| 07:30 AM | 37 | 10 | 47 | 25 | 7 | 32 | 3 | 17 | 0 | 20 | 99 |
| 07:45 AM | 57 | 6 | 63 | 20 | 16 | 36 | 14 | 30 | 0 | 44 | 143 |
| 08:00 AM | 116 | 7 | 123 | 7 | 15 | 22 | 8 | 30 | 0 | 38 | 183 |
| 08:15 AM | 17 | 1 | 18 | 7 | 2 | 9 | 15 | 54 | 0 | 69 | 96 |
| Total Volume | 227 | 24 | 251 | 59 | 40 | 99 | 40 | 131 | 0 | 171 | 521 |
| % App. Total | 90.4 | 9.6 | | 59.6 | 40.4 | | 23.4 | 76.6 | 0 | | |
| PHF | .489 | .600 | .510 | .590 | .625 | .688 | .667 | .606 | .000 | .620 | .712 |

| | | | | | | | | | | | |
|--|-----------|-----------|-----------|-----------|----------|-----------|-----------|------------|------|------------|------------|
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 03:15 PM | | | | | | | | | | | |
| 03:15 PM | 35 | 3 | 38 | 14 | 6 | 20 | 8 | 24 | 0 | 32 | 90 |
| 03:30 PM | 38 | 13 | 51 | 10 | 4 | 14 | 47 | 145 | 0 | 192 | 257 |
| 03:45 PM | 25 | 3 | 28 | 11 | 3 | 14 | 21 | 55 | 0 | 76 | 118 |
| 04:00 PM | 24 | 6 | 30 | 11 | 4 | 15 | 15 | 24 | 0 | 39 | 84 |
| Total Volume | 122 | 25 | 147 | 46 | 17 | 63 | 91 | 248 | 0 | 339 | 549 |
| % App. Total | 83 | 17 | | 73 | 27 | | 26.8 | 73.2 | 0 | | |
| PHF | .803 | .481 | .721 | .821 | .708 | .788 | .484 | .428 | .000 | .441 | .534 |

Peggy Malone & Associates

(800) 247-8602

File Name : 3-Joseph Martin Hwy and US 58 WB Ramps

Site Code :

Start Date : 5/9/2018

Page No : 1

Groups Printed- Car

| Start Time | Joseph Martin Hwy Southbound | | | | | Fisher Farm Rd Westbound | | | | | Joseph Martin Hwy Northbound | | | | | US 58 Bypass WB Ramps Eastbound | | | | | Int. Total |
|--------------------|------------------------------|------------|------------|----------|-------------|--------------------------|------------|------------|----------|------------|------------------------------|------------|------------|----------|-------------|---------------------------------|-----------|------------|----------|------------|-------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 06:00 AM | 4 | 16 | 0 | 0 | 20 | 0 | 5 | 2 | 0 | 7 | 8 | 4 | 3 | 0 | 15 | 5 | 0 | 0 | 0 | 5 | 47 |
| 06:15 AM | 0 | 27 | 4 | 0 | 31 | 1 | 5 | 3 | 0 | 9 | 11 | 7 | 3 | 0 | 21 | 18 | 0 | 0 | 0 | 18 | 79 |
| 06:30 AM | 4 | 30 | 2 | 0 | 36 | 5 | 6 | 2 | 0 | 13 | 15 | 18 | 4 | 0 | 37 | 21 | 0 | 1 | 0 | 22 | 108 |
| 06:45 AM | 4 | 36 | 1 | 0 | 41 | 0 | 3 | 4 | 0 | 7 | 16 | 18 | 5 | 0 | 39 | 20 | 0 | 2 | 0 | 22 | 109 |
| Total | 12 | 109 | 7 | 0 | 128 | 6 | 19 | 11 | 0 | 36 | 50 | 47 | 15 | 0 | 112 | 64 | 0 | 3 | 0 | 67 | 343 |
| 07:00 AM | 1 | 16 | 5 | 0 | 22 | 4 | 11 | 3 | 0 | 18 | 11 | 15 | 2 | 0 | 28 | 4 | 0 | 0 | 0 | 4 | 72 |
| 07:15 AM | 5 | 11 | 2 | 0 | 18 | 4 | 9 | 3 | 0 | 16 | 9 | 23 | 11 | 0 | 43 | 11 | 0 | 5 | 0 | 16 | 93 |
| 07:30 AM | 11 | 19 | 5 | 0 | 35 | 8 | 11 | 3 | 0 | 22 | 14 | 25 | 5 | 0 | 44 | 16 | 1 | 5 | 0 | 22 | 123 |
| 07:45 AM | 9 | 28 | 3 | 0 | 40 | 12 | 4 | 6 | 0 | 22 | 15 | 27 | 2 | 0 | 44 | 31 | 0 | 6 | 0 | 37 | 143 |
| Total | 26 | 74 | 15 | 0 | 115 | 28 | 35 | 15 | 0 | 78 | 49 | 90 | 20 | 0 | 159 | 62 | 1 | 16 | 0 | 79 | 431 |
| 08:00 AM | 7 | 42 | 4 | 0 | 53 | 4 | 2 | 16 | 0 | 22 | 7 | 24 | 6 | 0 | 37 | 60 | 0 | 3 | 0 | 63 | 175 |
| 08:15 AM | 4 | 7 | 4 | 0 | 15 | 2 | 2 | 2 | 0 | 6 | 7 | 42 | 12 | 0 | 61 | 7 | 0 | 4 | 0 | 11 | 93 |
| 08:30 AM | 1 | 8 | 2 | 0 | 11 | 5 | 6 | 4 | 0 | 15 | 8 | 10 | 2 | 0 | 20 | 6 | 0 | 2 | 0 | 8 | 54 |
| 08:45 AM | 3 | 8 | 4 | 0 | 15 | 5 | 1 | 2 | 0 | 8 | 4 | 8 | 1 | 0 | 13 | 3 | 1 | 2 | 0 | 6 | 42 |
| Total | 15 | 65 | 14 | 0 | 94 | 16 | 11 | 24 | 0 | 51 | 26 | 84 | 21 | 0 | 131 | 76 | 1 | 11 | 0 | 88 | 364 |
| 09:00 AM | 2 | 13 | 6 | 0 | 21 | 4 | 1 | 2 | 0 | 7 | 5 | 8 | 1 | 0 | 14 | 5 | 0 | 3 | 0 | 8 | 50 |
| 09:15 AM | 1 | 5 | 1 | 0 | 7 | 3 | 3 | 1 | 0 | 7 | 6 | 8 | 0 | 0 | 14 | 4 | 0 | 0 | 0 | 4 | 32 |
| 09:30 AM | 2 | 12 | 2 | 0 | 16 | 2 | 3 | 1 | 0 | 6 | 5 | 13 | 1 | 0 | 19 | 3 | 0 | 1 | 0 | 4 | 45 |
| 09:45 AM | 1 | 15 | 3 | 0 | 19 | 4 | 2 | 0 | 0 | 6 | 5 | 14 | 0 | 0 | 19 | 1 | 0 | 2 | 0 | 3 | 47 |
| Total | 6 | 45 | 12 | 0 | 63 | 13 | 9 | 4 | 0 | 26 | 21 | 43 | 2 | 0 | 66 | 13 | 0 | 6 | 0 | 19 | 174 |
| 10:00 AM | 3 | 9 | 0 | 0 | 12 | 6 | 2 | 2 | 0 | 10 | 4 | 15 | 3 | 0 | 22 | 2 | 0 | 0 | 0 | 2 | 46 |
| 10:15 AM | 3 | 8 | 0 | 0 | 11 | 0 | 5 | 2 | 0 | 7 | 6 | 9 | 3 | 0 | 18 | 0 | 0 | 2 | 0 | 2 | 38 |
| 10:30 AM | 3 | 9 | 1 | 0 | 13 | 3 | 3 | 3 | 0 | 9 | 9 | 7 | 4 | 0 | 20 | 4 | 0 | 1 | 0 | 5 | 47 |
| 10:45 AM | 2 | 9 | 2 | 0 | 13 | 4 | 2 | 2 | 0 | 8 | 4 | 12 | 2 | 0 | 18 | 3 | 1 | 2 | 0 | 6 | 45 |
| Total | 11 | 35 | 3 | 0 | 49 | 13 | 12 | 9 | 0 | 34 | 23 | 43 | 12 | 0 | 78 | 9 | 1 | 5 | 0 | 15 | 176 |
| 11:00 AM | 3 | 12 | 3 | 0 | 18 | 5 | 5 | 1 | 0 | 11 | 10 | 13 | 1 | 0 | 24 | 4 | 0 | 3 | 0 | 7 | 60 |
| 11:15 AM | 4 | 15 | 6 | 0 | 25 | 3 | 5 | 2 | 0 | 10 | 4 | 8 | 4 | 0 | 16 | 3 | 0 | 3 | 0 | 6 | 57 |
| 11:30 AM | 3 | 6 | 4 | 0 | 13 | 2 | 3 | 3 | 0 | 8 | 3 | 11 | 0 | 0 | 14 | 4 | 0 | 1 | 0 | 5 | 40 |
| 11:45 AM | 2 | 12 | 3 | 0 | 17 | 4 | 8 | 0 | 0 | 12 | 8 | 14 | 6 | 0 | 28 | 4 | 0 | 1 | 0 | 5 | 62 |
| Total | 12 | 45 | 16 | 0 | 73 | 14 | 21 | 6 | 0 | 41 | 25 | 46 | 11 | 0 | 82 | 15 | 0 | 8 | 0 | 23 | 219 |
| 12:00 PM | 10 | 14 | 2 | 0 | 26 | 1 | 4 | 4 | 0 | 9 | 11 | 21 | 2 | 0 | 34 | 2 | 1 | 0 | 0 | 3 | 72 |
| 12:15 PM | 3 | 18 | 3 | 0 | 24 | 3 | 7 | 8 | 0 | 18 | 7 | 15 | 1 | 0 | 23 | 7 | 0 | 3 | 0 | 10 | 75 |
| 12:30 PM | 3 | 16 | 4 | 0 | 23 | 0 | 1 | 8 | 0 | 9 | 9 | 15 | 1 | 0 | 25 | 4 | 0 | 1 | 0 | 5 | 62 |
| 12:45 PM | 2 | 10 | 6 | 0 | 18 | 3 | 6 | 10 | 0 | 19 | 7 | 12 | 0 | 0 | 19 | 3 | 1 | 2 | 0 | 6 | 62 |
| Total | 18 | 58 | 15 | 0 | 91 | 7 | 18 | 30 | 0 | 55 | 34 | 63 | 4 | 0 | 101 | 16 | 2 | 6 | 0 | 24 | 271 |
| 01:00 PM | 6 | 15 | 5 | 0 | 26 | 4 | 4 | 3 | 0 | 11 | 4 | 11 | 1 | 0 | 16 | 3 | 1 | 3 | 0 | 7 | 60 |
| 01:15 PM | 3 | 17 | 2 | 0 | 22 | 4 | 10 | 7 | 0 | 21 | 4 | 12 | 5 | 0 | 21 | 4 | 1 | 4 | 0 | 9 | 73 |
| 01:30 PM | 3 | 8 | 7 | 0 | 18 | 5 | 6 | 4 | 0 | 15 | 7 | 16 | 3 | 0 | 26 | 3 | 0 | 3 | 0 | 6 | 65 |
| 01:45 PM | 6 | 8 | 6 | 0 | 20 | 6 | 7 | 1 | 0 | 14 | 2 | 12 | 2 | 0 | 16 | 2 | 0 | 2 | 0 | 4 | 54 |
| Total | 18 | 48 | 20 | 0 | 86 | 19 | 27 | 15 | 0 | 61 | 17 | 51 | 11 | 0 | 79 | 12 | 2 | 12 | 0 | 26 | 252 |
| 02:00 PM | 3 | 8 | 4 | 0 | 15 | 4 | 4 | 2 | 0 | 10 | 3 | 17 | 2 | 0 | 22 | 0 | 0 | 2 | 0 | 2 | 49 |
| 02:15 PM | 7 | 12 | 3 | 0 | 22 | 2 | 4 | 2 | 0 | 8 | 6 | 16 | 5 | 0 | 27 | 3 | 0 | 4 | 0 | 7 | 64 |
| 02:30 PM | 3 | 14 | 7 | 0 | 24 | 6 | 7 | 4 | 0 | 17 | 2 | 14 | 2 | 0 | 18 | 8 | 0 | 6 | 0 | 14 | 73 |
| 02:45 PM | 6 | 19 | 15 | 0 | 40 | 6 | 6 | 8 | 0 | 20 | 4 | 15 | 3 | 0 | 22 | 5 | 0 | 3 | 0 | 8 | 90 |
| Total | 19 | 53 | 29 | 0 | 101 | 18 | 21 | 16 | 0 | 55 | 15 | 62 | 12 | 0 | 89 | 16 | 0 | 15 | 0 | 31 | 276 |
| 03:00 PM | 12 | 20 | 6 | 0 | 38 | 7 | 10 | 5 | 0 | 22 | 5 | 11 | 6 | 0 | 22 | 3 | 0 | 0 | 0 | 3 | 85 |
| 03:15 PM | 7 | 28 | 8 | 0 | 43 | 2 | 4 | 4 | 0 | 10 | 12 | 19 | 8 | 0 | 39 | 4 | 2 | 1 | 0 | 7 | 99 |
| 03:30 PM | 9 | 23 | 0 | 0 | 32 | 4 | 11 | 1 | 0 | 16 | 20 | 115 | 31 | 0 | 166 | 8 | 0 | 0 | 0 | 8 | 222 |
| 03:45 PM | 4 | 21 | 6 | 0 | 31 | 10 | 12 | 5 | 0 | 27 | 8 | 45 | 10 | 0 | 63 | 5 | 1 | 5 | 0 | 11 | 132 |
| Total | 32 | 92 | 20 | 0 | 144 | 23 | 37 | 15 | 0 | 75 | 45 | 190 | 55 | 0 | 290 | 20 | 3 | 6 | 0 | 29 | 538 |
| 04:00 PM | 8 | 17 | 1 | 0 | 26 | 5 | 11 | 3 | 0 | 19 | 9 | 27 | 8 | 0 | 44 | 7 | 1 | 5 | 0 | 13 | 102 |
| 04:15 PM | 9 | 21 | 8 | 0 | 38 | 6 | 4 | 3 | 0 | 13 | 8 | 20 | 5 | 0 | 33 | 12 | 0 | 1 | 0 | 13 | 97 |
| 04:30 PM | 6 | 18 | 7 | 0 | 31 | 8 | 9 | 9 | 0 | 26 | 9 | 33 | 6 | 0 | 48 | 6 | 1 | 3 | 0 | 10 | 115 |
| 04:45 PM | 8 | 34 | 5 | 0 | 47 | 4 | 8 | 4 | 0 | 16 | 2 | 22 | 4 | 0 | 28 | 7 | 1 | 4 | 0 | 12 | 103 |
| Total | 31 | 90 | 21 | 0 | 142 | 23 | 32 | 19 | 0 | 74 | 28 | 102 | 23 | 0 | 153 | 32 | 3 | 13 | 0 | 48 | 417 |
| 05:00 PM | 7 | 26 | 3 | 0 | 36 | 10 | 15 | 7 | 0 | 32 | 3 | 29 | 5 | 0 | 37 | 18 | 1 | 5 | 0 | 24 | 129 |
| 05:15 PM | 6 | 31 | 4 | 0 | 41 | 2 | 10 | 2 | 0 | 14 | 7 | 35 | 4 | 0 | 46 | 8 | 0 | 3 | 0 | 11 | 112 |
| 05:30 PM | 7 | 31 | 6 | 0 | 44 | 10 | 9 | 2 | 0 | 21 | 20 | 53 | 12 | 0 | 85 | 4 | 1 | 5 | 0 | 10 | 160 |
| 05:45 PM | 7 | 19 | 3 | 0 | 29 | 9 | 10 | 6 | 0 | 25 | 6 | 31 | 3 | 0 | 40 | 9 | 0 | 11 | 0 | 20 | 114 |
| Total | 27 | 107 | 16 | 0 | 150 | 31 | 44 | 17 | 0 | 92 | 36 | 148 | 24 | 0 | 208 | 39 | 2 | 24 | 0 | 65 | 515 |
| Grand Total | 227 | 821 | 188 | 0 | 1236 | 211 | 286 | 181 | 0 | 678 | 369 | 969 | 210 | 0 | 1548 | 374 | 15 | 125 | 0 | 514 | 3976 |
| Apprch % | 18.4 | 66.4 | 15.2 | 0 | | 31.1 | 42.2 | 26.7 | 0 | | 23.8 | 62.6 | 13.6 | 0 | | 72.8 | 2.9 | 24.3 | 0 | | |
| Total % | 5.7 | 20.6 | 4.7 | 0 | 31.1 | 5.3 | 7.2 | 4.6 | 0 | 17.1 | 9.3 | 24.4 | 5.3 | 0 | 38.9 | 9.4 | 0.4 | 3.1 | 0 | 12.9 | |

Peggy Malone & Associates

(800) 247-8602

File Name : 3-Joseph Martin Hwy and US 58 WB Ramps
 Site Code :
 Start Date : 5/9/2018
 Page No : 2

| Start Time | Joseph Martin Hwy Southbound | | | | Fisher Farm Rd Westbound | | | | Joseph Martin Hwy Northbound | | | | US 58 Bypass WB Ramps Eastbound | | | | Int. Total |
|--|------------------------------|-----------|----------|------------|--------------------------|-----------|----------|------------|------------------------------|------------|-----------|------------|---------------------------------|----------|----------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 06:00 AM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 03:15 PM | | | | | | | | | | | | | | | | | |
| 03:15 PM | 7 | 28 | 8 | 43 | 2 | 4 | 4 | 10 | 12 | 19 | 8 | 39 | 4 | 2 | 1 | 7 | 99 |
| 03:30 PM | 9 | 23 | 0 | 32 | 4 | 11 | 1 | 16 | 20 | 115 | 31 | 166 | 8 | 0 | 0 | 8 | 222 |
| 03:45 PM | 4 | 21 | 6 | 31 | 10 | 12 | 5 | 27 | 8 | 45 | 10 | 63 | 5 | 1 | 5 | 11 | 132 |
| 04:00 PM | 8 | 17 | 1 | 26 | 5 | 11 | 3 | 19 | 9 | 27 | 8 | 44 | 7 | 1 | 5 | 13 | 102 |
| Total Volume | 28 | 89 | 15 | 132 | 21 | 38 | 13 | 72 | 49 | 206 | 57 | 312 | 24 | 4 | 11 | 39 | 555 |
| % App. Total | 21.2 | 67.4 | 11.4 | | 29.2 | 52.8 | 18.1 | | 15.7 | 66 | 18.3 | | 61.5 | 10.3 | 28.2 | | |
| PHF | .778 | .795 | .469 | .767 | .525 | .792 | .650 | .667 | .613 | .448 | .460 | .470 | .750 | .500 | .550 | .750 | .625 |

Peggy Malone & Associates

(800) 247-8602

File Name : 3-Joseph Martin Hwy and US 58 WB Ramps

Site Code :

Start Date : 5/9/2018

Page No : 1

Groups Printed- Truck

| Start Time | Joseph Martin Hwy Southbound | | | | | Fisher Farm Rd Westbound | | | | | Joseph Martin Hwy Northbound | | | | | US 58 Bypass WB Ramps Eastbound | | | | | Int. Total |
|--------------------|------------------------------|------|------|------|------------|--------------------------|------|------|------|------------|------------------------------|------|------|------|------------|---------------------------------|------|------|------|------------|------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 06:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 06:30 AM | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 6 |
| 06:45 AM | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| Total | 1 | 2 | 1 | 0 | 4 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 2 | 10 |
| 07:00 AM | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 5 |
| 07:30 AM | 0 | 5 | 2 | 0 | 7 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 5 | 13 |
| 07:45 AM | 2 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 4 | 0 | 5 | 2 | 0 | 0 | 0 | 2 | 11 |
| Total | 3 | 7 | 2 | 0 | 12 | 3 | 0 | 0 | 0 | 3 | 0 | 4 | 7 | 0 | 11 | 7 | 0 | 1 | 0 | 8 | 34 |
| 08:00 AM | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 4 | 0 | 5 | 3 | 0 | 1 | 0 | 4 | 11 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 5 |
| 08:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 1 | 0 | 1 | 0 | 2 | 7 |
| 08:45 AM | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 1 | 2 | 1 | 0 | 4 | 2 | 0 | 1 | 0 | 3 | 0 | 5 | 5 | 0 | 10 | 5 | 0 | 3 | 0 | 8 | 25 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 09:15 AM | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| 09:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 | 4 |
| 09:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 2 | 0 | 5 | 1 | 0 | 2 | 0 | 3 | 12 |
| 10:00 AM | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 10:15 AM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 10:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 10:45 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 1 | 1 | 1 | 0 | 3 | 1 | 1 | 1 | 0 | 3 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 8 |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:15 AM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 11:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 3 | 0 | 0 | 0 | 3 | 7 |
| 11:45 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 3 |
| Total | 1 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 6 | 4 | 0 | 0 | 0 | 4 | 13 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12:15 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 5 |
| 12:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 3 | 0 | 6 | 2 | 0 | 0 | 0 | 2 | 11 |
| 01:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 01:15 PM | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| 01:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 4 |
| 01:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 0 | 3 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 1 | 4 | 3 | 4 | 0 | 11 | 1 | 0 | 0 | 0 | 1 | 17 |
| 02:00 PM | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 3 | 0 | 1 | 0 | 4 | 8 |
| 02:30 PM | 1 | 1 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 8 |
| 02:45 PM | 0 | 2 | 1 | 0 | 3 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 6 | 0 | 0 | 0 | 6 | 12 |
| Total | 1 | 4 | 4 | 0 | 9 | 1 | 1 | 1 | 0 | 3 | 2 | 5 | 3 | 0 | 10 | 9 | 0 | 2 | 0 | 11 | 33 |
| 03:00 PM | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 6 |
| 03:15 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 4 |
| 03:30 PM | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 4 | 3 | 0 | 0 | 0 | 3 | 11 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total | 0 | 5 | 2 | 0 | 7 | 1 | 1 | 1 | 0 | 3 | 2 | 5 | 4 | 0 | 11 | 6 | 0 | 0 | 0 | 6 | 27 |
| 04:00 PM | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 3 | 6 |
| 04:30 PM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| 04:45 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 3 |
| Total | 0 | 2 | 2 | 0 | 4 | 1 | 3 | 0 | 0 | 4 | 0 | 1 | 2 | 0 | 3 | 3 | 0 | 2 | 0 | 5 | 16 |
| 05:00 PM | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| 05:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 3 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 2 |
| Total | 0 | 2 | 0 | 0 | 2 | 1 | 1 | 1 | 0 | 3 | 0 | 2 | 3 | 0 | 5 | 2 | 0 | 0 | 0 | 2 | 12 |
| Grand Total | 8 | 32 | 17 | 0 | 57 | 11 | 8 | 8 | 0 | 27 | 14 | 30 | 38 | 0 | 82 | 41 | 0 | 11 | 0 | 52 | 218 |
| Apprch % | 14 | 56.1 | 29.8 | 0 | | 40.7 | 29.6 | 29.6 | 0 | | 17.1 | 36.6 | 46.3 | 0 | | 78.8 | 0 | 21.2 | 0 | | |
| Total % | 3.7 | 14.7 | 7.8 | 0 | 26.1 | 5 | 3.7 | 3.7 | 0 | 12.4 | 6.4 | 13.8 | 17.4 | 0 | 37.6 | 18.8 | 0 | 5 | 0 | 23.9 | |

Peggy Malone & Associates

(800) 247-8602

File Name : 3-Joseph Martin Hwy and US 58 WB Ramps
 Site Code :
 Start Date : 5/9/2018
 Page No : 2

| Start Time | Joseph Martin Hwy Southbound | | | | Fisher Farm Rd Westbound | | | | Joseph Martin Hwy Northbound | | | | US 58 Bypass WB Ramps Eastbound | | | | Int. Total |
|--|------------------------------|------|------|------------|--------------------------|------|------|------------|------------------------------|------|------|------------|---------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 06:00 AM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 3 | 1 | 0 | 0 | 1 | 5 |
| 07:30 AM | 0 | 5 | 2 | 7 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 5 | 13 |
| 07:45 AM | 2 | 1 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 1 | 4 | 5 | 2 | 0 | 0 | 2 | 11 |
| 08:00 AM | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 4 | 5 | 3 | 0 | 1 | 4 | 11 |
| Total Volume | 2 | 6 | 3 | 11 | 4 | 0 | 0 | 4 | 0 | 3 | 10 | 13 | 10 | 0 | 2 | 12 | 40 |
| % App. Total | 18.2 | 54.5 | 27.3 | | 100 | 0 | 0 | | 0 | 23.1 | 76.9 | | 83.3 | 0 | 16.7 | | |
| PHF | .250 | .300 | .375 | .393 | 1.00 | .000 | .000 | 1.00 | .000 | .750 | .625 | .650 | .625 | .000 | .500 | .600 | .769 |

Peggy Malone & Associates

(800) 247-8602

File Name : 3-Joseph Martin Hwy and US 58 WB Ramps

Site Code :

Start Date : 5/9/2018

Page No : 1

Groups Printed- Combined

| Start Time | Joseph Martin Hwy Southbound | | | | | Fisher Farm Rd Westbound | | | | | Joseph Martin Hwy Northbound | | | | | US 58 Bypass WB Ramps Eastbound | | | | | Int. Total |
|--------------------|------------------------------|------------|------------|----------|-------------|--------------------------|------------|------------|----------|------------|------------------------------|------------|------------|----------|-------------|---------------------------------|-----------|------------|----------|------------|-------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 06:00 AM | 4 | 16 | 0 | 0 | 20 | 0 | 5 | 2 | 0 | 7 | 8 | 4 | 3 | 0 | 15 | 5 | 0 | 0 | 0 | 5 | 47 |
| 06:15 AM | 0 | 27 | 4 | 0 | 31 | 1 | 5 | 3 | 0 | 9 | 11 | 7 | 3 | 0 | 21 | 19 | 0 | 0 | 0 | 19 | 80 |
| 06:30 AM | 4 | 32 | 3 | 0 | 39 | 5 | 6 | 3 | 0 | 14 | 15 | 19 | 5 | 0 | 39 | 21 | 0 | 1 | 0 | 22 | 114 |
| 06:45 AM | 5 | 36 | 1 | 0 | 42 | 1 | 3 | 4 | 0 | 8 | 16 | 18 | 5 | 0 | 39 | 20 | 0 | 3 | 0 | 23 | 112 |
| Total | 13 | 111 | 8 | 0 | 132 | 7 | 19 | 12 | 0 | 38 | 50 | 48 | 16 | 0 | 114 | 65 | 0 | 4 | 0 | 69 | 353 |
| 07:00 AM | 2 | 17 | 5 | 0 | 24 | 4 | 11 | 3 | 0 | 18 | 11 | 17 | 3 | 0 | 31 | 4 | 0 | 0 | 0 | 4 | 77 |
| 07:15 AM | 5 | 11 | 2 | 0 | 18 | 5 | 9 | 3 | 0 | 17 | 9 | 24 | 13 | 0 | 46 | 12 | 0 | 5 | 0 | 17 | 98 |
| 07:30 AM | 11 | 24 | 7 | 0 | 42 | 9 | 11 | 3 | 0 | 23 | 14 | 25 | 5 | 0 | 44 | 20 | 1 | 6 | 0 | 27 | 136 |
| 07:45 AM | 11 | 29 | 3 | 0 | 43 | 13 | 4 | 6 | 0 | 23 | 15 | 28 | 6 | 0 | 49 | 33 | 0 | 6 | 0 | 39 | 154 |
| Total | 29 | 81 | 17 | 0 | 127 | 31 | 35 | 15 | 0 | 81 | 49 | 94 | 27 | 0 | 170 | 69 | 1 | 17 | 0 | 87 | 465 |
| 08:00 AM | 7 | 42 | 5 | 0 | 54 | 5 | 2 | 16 | 0 | 23 | 7 | 25 | 10 | 0 | 42 | 63 | 0 | 4 | 0 | 67 | 186 |
| 08:15 AM | 4 | 7 | 4 | 0 | 15 | 3 | 2 | 3 | 0 | 8 | 7 | 43 | 12 | 0 | 62 | 8 | 0 | 5 | 0 | 13 | 98 |
| 08:30 AM | 1 | 9 | 2 | 0 | 12 | 5 | 6 | 4 | 0 | 15 | 8 | 13 | 3 | 0 | 24 | 7 | 0 | 3 | 0 | 10 | 61 |
| 08:45 AM | 4 | 9 | 4 | 0 | 17 | 5 | 1 | 2 | 0 | 8 | 4 | 8 | 1 | 0 | 13 | 3 | 1 | 2 | 0 | 6 | 44 |
| Total | 16 | 67 | 15 | 0 | 98 | 18 | 11 | 25 | 0 | 54 | 26 | 89 | 26 | 0 | 141 | 81 | 1 | 14 | 0 | 96 | 389 |
| 09:00 AM | 2 | 13 | 6 | 0 | 21 | 4 | 1 | 2 | 0 | 7 | 6 | 8 | 2 | 0 | 16 | 5 | 0 | 3 | 0 | 8 | 52 |
| 09:15 AM | 1 | 6 | 2 | 0 | 9 | 3 | 3 | 2 | 0 | 8 | 7 | 8 | 1 | 0 | 16 | 4 | 0 | 0 | 0 | 4 | 37 |
| 09:30 AM | 2 | 13 | 2 | 0 | 17 | 2 | 3 | 1 | 0 | 6 | 5 | 13 | 1 | 0 | 19 | 4 | 0 | 3 | 0 | 7 | 49 |
| 09:45 AM | 1 | 15 | 3 | 0 | 19 | 4 | 2 | 0 | 0 | 6 | 6 | 14 | 0 | 0 | 20 | 1 | 0 | 2 | 0 | 3 | 48 |
| Total | 6 | 47 | 13 | 0 | 66 | 13 | 9 | 5 | 0 | 27 | 24 | 43 | 4 | 0 | 71 | 14 | 0 | 8 | 0 | 22 | 186 |
| 10:00 AM | 3 | 10 | 0 | 0 | 13 | 7 | 2 | 3 | 0 | 12 | 4 | 15 | 3 | 0 | 22 | 2 | 0 | 0 | 0 | 2 | 49 |
| 10:15 AM | 3 | 8 | 1 | 0 | 12 | 0 | 5 | 2 | 0 | 7 | 6 | 9 | 3 | 0 | 18 | 0 | 0 | 2 | 0 | 2 | 39 |
| 10:30 AM | 3 | 9 | 1 | 0 | 13 | 3 | 4 | 3 | 0 | 10 | 9 | 8 | 5 | 0 | 22 | 4 | 0 | 1 | 0 | 5 | 50 |
| 10:45 AM | 3 | 9 | 2 | 0 | 14 | 4 | 2 | 2 | 0 | 8 | 4 | 12 | 2 | 0 | 18 | 3 | 1 | 2 | 0 | 6 | 46 |
| Total | 12 | 36 | 4 | 0 | 52 | 14 | 13 | 10 | 0 | 37 | 23 | 44 | 13 | 0 | 80 | 9 | 1 | 5 | 0 | 15 | 184 |
| 11:00 AM | 3 | 12 | 3 | 0 | 18 | 5 | 5 | 1 | 0 | 11 | 10 | 14 | 1 | 0 | 25 | 4 | 0 | 3 | 0 | 7 | 61 |
| 11:15 AM | 4 | 15 | 7 | 0 | 26 | 3 | 5 | 2 | 0 | 10 | 4 | 8 | 5 | 0 | 17 | 3 | 0 | 3 | 0 | 6 | 59 |
| 11:30 AM | 3 | 7 | 4 | 0 | 14 | 2 | 3 | 3 | 0 | 8 | 3 | 13 | 1 | 0 | 17 | 7 | 0 | 1 | 0 | 8 | 47 |
| 11:45 AM | 3 | 12 | 3 | 0 | 18 | 4 | 8 | 0 | 0 | 12 | 8 | 14 | 7 | 0 | 29 | 5 | 0 | 1 | 0 | 6 | 65 |
| Total | 13 | 46 | 17 | 0 | 76 | 14 | 21 | 6 | 0 | 41 | 25 | 49 | 14 | 0 | 88 | 19 | 0 | 8 | 0 | 27 | 232 |
| 12:00 PM | 10 | 14 | 2 | 0 | 26 | 1 | 4 | 4 | 0 | 9 | 13 | 21 | 2 | 0 | 36 | 2 | 1 | 0 | 0 | 3 | 74 |
| 12:15 PM | 3 | 18 | 4 | 0 | 25 | 3 | 7 | 8 | 0 | 18 | 7 | 15 | 4 | 0 | 26 | 8 | 0 | 3 | 0 | 11 | 80 |
| 12:30 PM | 3 | 17 | 4 | 0 | 24 | 0 | 1 | 8 | 0 | 9 | 9 | 15 | 1 | 0 | 25 | 5 | 0 | 1 | 0 | 6 | 64 |
| 12:45 PM | 2 | 10 | 6 | 0 | 18 | 3 | 6 | 11 | 0 | 20 | 8 | 12 | 0 | 0 | 20 | 3 | 1 | 2 | 0 | 6 | 64 |
| Total | 18 | 59 | 16 | 0 | 93 | 7 | 18 | 31 | 0 | 56 | 37 | 63 | 7 | 0 | 107 | 18 | 2 | 6 | 0 | 26 | 282 |
| 01:00 PM | 6 | 15 | 5 | 0 | 26 | 4 | 4 | 3 | 0 | 11 | 5 | 11 | 2 | 0 | 18 | 3 | 1 | 3 | 0 | 7 | 62 |
| 01:15 PM | 3 | 19 | 3 | 0 | 25 | 4 | 10 | 7 | 0 | 21 | 5 | 12 | 7 | 0 | 24 | 4 | 1 | 4 | 0 | 9 | 79 |
| 01:30 PM | 3 | 9 | 7 | 0 | 19 | 5 | 6 | 4 | 0 | 15 | 8 | 17 | 3 | 0 | 28 | 4 | 0 | 3 | 0 | 7 | 69 |
| 01:45 PM | 6 | 8 | 6 | 0 | 20 | 6 | 8 | 1 | 0 | 15 | 3 | 14 | 3 | 0 | 20 | 2 | 0 | 2 | 0 | 4 | 59 |
| Total | 18 | 51 | 21 | 0 | 90 | 19 | 28 | 15 | 0 | 62 | 21 | 54 | 15 | 0 | 90 | 13 | 2 | 12 | 0 | 27 | 269 |
| 02:00 PM | 3 | 8 | 6 | 0 | 17 | 4 | 4 | 2 | 0 | 10 | 3 | 18 | 4 | 0 | 25 | 0 | 0 | 2 | 0 | 2 | 54 |
| 02:15 PM | 7 | 13 | 3 | 0 | 23 | 2 | 4 | 2 | 0 | 8 | 7 | 18 | 5 | 0 | 30 | 6 | 0 | 5 | 0 | 11 | 72 |
| 02:30 PM | 4 | 15 | 8 | 0 | 27 | 6 | 8 | 4 | 0 | 18 | 3 | 16 | 2 | 0 | 21 | 8 | 0 | 7 | 0 | 15 | 81 |
| 02:45 PM | 6 | 21 | 16 | 0 | 43 | 7 | 6 | 9 | 0 | 22 | 4 | 15 | 4 | 0 | 23 | 11 | 0 | 3 | 0 | 14 | 102 |
| Total | 20 | 57 | 33 | 0 | 110 | 19 | 22 | 17 | 0 | 58 | 17 | 67 | 15 | 0 | 99 | 25 | 0 | 17 | 0 | 42 | 309 |
| 03:00 PM | 12 | 21 | 7 | 0 | 40 | 7 | 11 | 6 | 0 | 24 | 5 | 11 | 7 | 0 | 23 | 4 | 0 | 0 | 0 | 4 | 91 |
| 03:15 PM | 7 | 28 | 9 | 0 | 44 | 2 | 4 | 4 | 0 | 10 | 12 | 20 | 8 | 0 | 40 | 6 | 2 | 1 | 0 | 9 | 103 |
| 03:30 PM | 9 | 27 | 0 | 0 | 36 | 4 | 11 | 1 | 0 | 16 | 21 | 116 | 33 | 0 | 170 | 11 | 0 | 0 | 0 | 11 | 233 |
| 03:45 PM | 4 | 21 | 6 | 0 | 31 | 11 | 12 | 5 | 0 | 28 | 9 | 48 | 11 | 0 | 68 | 5 | 1 | 5 | 0 | 11 | 138 |
| Total | 32 | 97 | 22 | 0 | 151 | 24 | 38 | 16 | 0 | 78 | 47 | 195 | 59 | 0 | 301 | 26 | 3 | 6 | 0 | 35 | 565 |
| 04:00 PM | 8 | 17 | 2 | 0 | 27 | 5 | 12 | 3 | 0 | 20 | 9 | 27 | 8 | 0 | 44 | 7 | 1 | 6 | 0 | 14 | 105 |
| 04:15 PM | 9 | 21 | 8 | 0 | 38 | 7 | 5 | 3 | 0 | 15 | 8 | 20 | 6 | 0 | 34 | 14 | 0 | 2 | 0 | 16 | 103 |
| 04:30 PM | 6 | 20 | 7 | 0 | 33 | 8 | 10 | 9 | 0 | 27 | 9 | 33 | 7 | 0 | 49 | 6 | 1 | 3 | 0 | 10 | 119 |
| 04:45 PM | 8 | 34 | 6 | 0 | 48 | 4 | 8 | 4 | 0 | 16 | 2 | 23 | 4 | 0 | 29 | 8 | 1 | 4 | 0 | 13 | 106 |
| Total | 31 | 92 | 23 | 0 | 146 | 24 | 35 | 19 | 0 | 78 | 28 | 103 | 25 | 0 | 156 | 35 | 3 | 15 | 0 | 53 | 433 |
| 05:00 PM | 7 | 27 | 3 | 0 | 37 | 11 | 15 | 7 | 0 | 33 | 3 | 29 | 5 | 0 | 37 | 18 | 1 | 5 | 0 | 24 | 131 |
| 05:15 PM | 6 | 31 | 4 | 0 | 41 | 2 | 11 | 3 | 0 | 16 | 7 | 37 | 5 | 0 | 49 | 8 | 0 | 3 | 0 | 11 | 117 |
| 05:30 PM | 7 | 32 | 6 | 0 | 45 | 10 | 9 | 2 | 0 | 21 | 20 | 53 | 13 | 0 | 86 | 5 | 1 | 5 | 0 | 11 | 163 |
| 05:45 PM | 7 | 19 | 3 | 0 | 29 | 9 | 10 | 6 | 0 | 25 | 6 | 31 | 4 | 0 | 41 | 10 | 0 | 11 | 0 | 21 | 116 |
| Total | 27 | 109 | 16 | 0 | 152 | 32 | 45 | 18 | 0 | 95 | 36 | 150 | 27 | 0 | 213 | 41 | 2 | 24 | 0 | 67 | 527 |
| Grand Total | 235 | 853 | 205 | 0 | 1293 | 222 | 294 | 189 | 0 | 705 | 383 | 999 | 248 | 0 | 1630 | 415 | 15 | 136 | 0 | 566 | 4194 |
| Apprch % | 18.2 | 66 | 15.9 | 0 | | 31.5 | 41.7 | 26.8 | 0 | | 23.5 | 61.3 | 15.2 | 0 | | 73.3 | 2.7 | 24 | 0 | | |
| Total % | 5.6 | 20.3 | 4.9 | 0 | 30.8 | 5.3 | 7 | 4.5 | 0 | 16.8 | 9.1 | 23.8 | 5.9 | 0 | 38.9 | 9.9 | 0.4 | 3.2 | 0 | 13.5 | |

Peggy Malone & Associates

(800) 247-8602

File Name : 3-Joseph Martin Hwy and US 58 WB Ramps
 Site Code :
 Start Date : 5/9/2018
 Page No : 2

| Start Time | Joseph Martin Hwy Southbound | | | | Fisher Farm Rd Westbound | | | | Joseph Martin Hwy Northbound | | | | US 58 Bypass WB Ramps Eastbound | | | | Int. Total |
|--|------------------------------|-----------|----------|------------|--------------------------|-----------|----------|------------|------------------------------|------------|-----------|------------|---------------------------------|----------|----------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 06:00 AM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 03:15 PM | | | | | | | | | | | | | | | | | |
| 03:15 PM | 7 | 28 | 9 | 44 | 2 | 4 | 4 | 10 | 12 | 20 | 8 | 40 | 6 | 2 | 1 | 9 | 103 |
| 03:30 PM | 9 | 27 | 0 | 36 | 4 | 11 | 1 | 16 | 21 | 116 | 33 | 170 | 11 | 0 | 0 | 11 | 233 |
| 03:45 PM | 4 | 21 | 6 | 31 | 11 | 12 | 5 | 28 | 9 | 48 | 11 | 68 | 5 | 1 | 5 | 11 | 138 |
| 04:00 PM | 8 | 17 | 2 | 27 | 5 | 12 | 3 | 20 | 9 | 27 | 8 | 44 | 7 | 1 | 6 | 14 | 105 |
| Total Volume | 28 | 93 | 17 | 138 | 22 | 39 | 13 | 74 | 51 | 211 | 60 | 322 | 29 | 4 | 12 | 45 | 579 |
| % App. Total | 20.3 | 67.4 | 12.3 | | 29.7 | 52.7 | 17.6 | | 15.8 | 65.5 | 18.6 | | 64.4 | 8.9 | 26.7 | | |
| PHF | .778 | .830 | .472 | .784 | .500 | .813 | .650 | .661 | .607 | .455 | .455 | .474 | .659 | .500 | .500 | .804 | .621 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 WB Ramp
Start Date : 5/23/2018
Page No : 1

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 WB Exit Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 WB Entrance Ramp From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|---------------------------------|------|------|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 15 | 41 | 0 | 56 | 15 | 0 | 32 | 47 | 26 | 53 | 0 | 79 | 0 | 0 | 0 | 0 | 182 |
| 06:15 | 11 | 58 | 0 | 69 | 26 | 0 | 43 | 69 | 30 | 73 | 0 | 103 | 0 | 0 | 0 | 0 | 241 |
| 06:30 | 10 | 63 | 0 | 73 | 35 | 0 | 41 | 76 | 36 | 124 | 0 | 160 | 0 | 0 | 0 | 0 | 309 |
| 06:45 | 11 | 58 | 0 | 69 | 43 | 0 | 31 | 74 | 45 | 102 | 0 | 147 | 0 | 0 | 0 | 0 | 290 |
| Total | 47 | 220 | 0 | 267 | 119 | 0 | 147 | 266 | 137 | 352 | 0 | 489 | 0 | 0 | 0 | 0 | 1022 |
| 07:00 | 11 | 73 | 0 | 84 | 18 | 0 | 31 | 49 | 47 | 81 | 0 | 128 | 0 | 0 | 0 | 0 | 261 |
| 07:15 | 8 | 58 | 0 | 66 | 20 | 0 | 34 | 54 | 50 | 113 | 0 | 163 | 0 | 0 | 0 | 0 | 283 |
| 07:30 | 7 | 88 | 0 | 95 | 29 | 0 | 49 | 78 | 56 | 116 | 0 | 172 | 0 | 0 | 0 | 0 | 345 |
| 07:45 | 7 | 82 | 0 | 89 | 31 | 0 | 81 | 112 | 68 | 145 | 0 | 213 | 0 | 0 | 0 | 0 | 414 |
| Total | 33 | 301 | 0 | 334 | 98 | 0 | 195 | 293 | 221 | 455 | 0 | 676 | 0 | 0 | 0 | 0 | 1303 |
| 08:00 | 7 | 102 | 0 | 109 | 23 | 0 | 76 | 99 | 52 | 112 | 0 | 164 | 0 | 0 | 0 | 0 | 372 |
| 08:15 | 8 | 60 | 0 | 68 | 19 | 0 | 38 | 57 | 69 | 114 | 0 | 183 | 0 | 0 | 0 | 0 | 308 |
| 08:30 | 7 | 60 | 0 | 67 | 15 | 0 | 24 | 39 | 60 | 89 | 0 | 149 | 0 | 0 | 0 | 0 | 255 |
| 08:45 | 8 | 47 | 0 | 55 | 33 | 0 | 22 | 55 | 35 | 95 | 0 | 130 | 0 | 0 | 0 | 0 | 240 |
| Total | 30 | 269 | 0 | 299 | 90 | 0 | 160 | 250 | 216 | 410 | 0 | 626 | 0 | 0 | 0 | 0 | 1175 |
| 09:00 | 13 | 80 | 0 | 93 | 15 | 0 | 25 | 40 | 43 | 88 | 0 | 131 | 0 | 0 | 0 | 0 | 264 |
| 09:15 | 7 | 63 | 0 | 70 | 19 | 0 | 20 | 39 | 37 | 108 | 0 | 145 | 0 | 0 | 0 | 0 | 254 |
| 09:30 | 8 | 73 | 0 | 81 | 12 | 0 | 23 | 35 | 55 | 89 | 0 | 144 | 0 | 0 | 0 | 0 | 260 |
| 09:45 | 12 | 95 | 0 | 107 | 23 | 0 | 24 | 47 | 46 | 87 | 0 | 133 | 0 | 0 | 0 | 0 | 287 |
| Total | 40 | 311 | 0 | 351 | 69 | 0 | 92 | 161 | 181 | 372 | 0 | 553 | 0 | 0 | 0 | 0 | 1065 |
| 10:00 | 6 | 56 | 0 | 62 | 15 | 0 | 17 | 32 | 45 | 67 | 0 | 112 | 0 | 0 | 0 | 0 | 206 |
| 10:15 | 8 | 78 | 0 | 86 | 8 | 0 | 20 | 28 | 40 | 85 | 0 | 125 | 0 | 0 | 0 | 0 | 239 |
| 10:30 | 9 | 89 | 0 | 98 | 14 | 0 | 22 | 36 | 40 | 96 | 0 | 136 | 0 | 0 | 0 | 0 | 270 |
| 10:45 | 3 | 84 | 0 | 87 | 14 | 0 | 22 | 36 | 26 | 76 | 0 | 102 | 0 | 0 | 0 | 0 | 225 |
| Total | 26 | 307 | 0 | 333 | 51 | 0 | 81 | 132 | 151 | 324 | 0 | 475 | 0 | 0 | 0 | 0 | 940 |
| 11:00 | 10 | 82 | 0 | 92 | 17 | 0 | 14 | 31 | 35 | 77 | 0 | 112 | 0 | 0 | 0 | 0 | 235 |
| 11:15 | 7 | 68 | 0 | 75 | 26 | 0 | 28 | 54 | 29 | 81 | 0 | 110 | 0 | 0 | 0 | 0 | 239 |
| 11:30 | 19 | 77 | 0 | 96 | 19 | 0 | 24 | 43 | 41 | 92 | 0 | 133 | 0 | 0 | 0 | 0 | 272 |
| 11:45 | 16 | 110 | 0 | 126 | 31 | 0 | 26 | 57 | 37 | 98 | 0 | 135 | 0 | 0 | 0 | 0 | 318 |
| Total | 52 | 337 | 0 | 389 | 93 | 0 | 92 | 185 | 142 | 348 | 0 | 490 | 0 | 0 | 0 | 0 | 1064 |
| 12:00 | 16 | 106 | 0 | 122 | 22 | 0 | 35 | 57 | 44 | 99 | 0 | 143 | 0 | 0 | 0 | 0 | 322 |
| 12:15 | 3 | 118 | 0 | 121 | 28 | 0 | 20 | 48 | 44 | 100 | 0 | 144 | 0 | 0 | 0 | 0 | 313 |
| 12:30 | 7 | 87 | 0 | 94 | 26 | 0 | 27 | 53 | 46 | 82 | 0 | 128 | 0 | 0 | 0 | 0 | 275 |
| 12:45 | 8 | 87 | 0 | 95 | 15 | 0 | 29 | 44 | 49 | 83 | 0 | 132 | 0 | 0 | 0 | 0 | 271 |
| Total | 34 | 398 | 0 | 432 | 91 | 0 | 111 | 202 | 183 | 364 | 0 | 547 | 0 | 0 | 0 | 0 | 1181 |
| 13:00 | 12 | 103 | 0 | 115 | 15 | 0 | 33 | 48 | 53 | 73 | 0 | 126 | 0 | 0 | 0 | 0 | 289 |
| 13:15 | 8 | 109 | 0 | 117 | 32 | 0 | 28 | 60 | 39 | 107 | 0 | 146 | 0 | 0 | 0 | 0 | 323 |
| 13:30 | 11 | 99 | 0 | 110 | 24 | 0 | 25 | 49 | 22 | 82 | 0 | 104 | 0 | 0 | 0 | 0 | 263 |
| 13:45 | 18 | 98 | 0 | 116 | 18 | 0 | 39 | 57 | 36 | 95 | 0 | 131 | 0 | 0 | 0 | 0 | 304 |
| Total | 49 | 409 | 0 | 458 | 89 | 0 | 125 | 214 | 150 | 357 | 0 | 507 | 0 | 0 | 0 | 0 | 1179 |
| 14:00 | 18 | 96 | 0 | 114 | 28 | 0 | 32 | 60 | 40 | 79 | 0 | 119 | 0 | 0 | 0 | 0 | 293 |
| 14:15 | 11 | 92 | 0 | 103 | 24 | 0 | 42 | 66 | 37 | 76 | 0 | 113 | 0 | 0 | 0 | 0 | 282 |
| 14:30 | 11 | 108 | 0 | 119 | 22 | 0 | 29 | 51 | 52 | 88 | 0 | 140 | 0 | 0 | 0 | 0 | 310 |
| 14:45 | 13 | 100 | 0 | 113 | 17 | 0 | 45 | 62 | 33 | 84 | 0 | 117 | 0 | 0 | 0 | 0 | 292 |
| Total | 53 | 396 | 0 | 449 | 91 | 0 | 148 | 239 | 162 | 327 | 0 | 489 | 0 | 0 | 0 | 0 | 1177 |
| 15:00 | 25 | 115 | 0 | 140 | 23 | 0 | 34 | 57 | 50 | 90 | 0 | 140 | 0 | 0 | 0 | 0 | 337 |
| 15:15 | 15 | 109 | 0 | 124 | 19 | 0 | 27 | 46 | 52 | 81 | 0 | 133 | 0 | 0 | 0 | 0 | 303 |
| 15:30 | 11 | 122 | 0 | 133 | 23 | 0 | 48 | 71 | 65 | 122 | 0 | 187 | 0 | 0 | 0 | 0 | 391 |
| 15:45 | 21 | 149 | 0 | 170 | 28 | 0 | 38 | 66 | 58 | 146 | 0 | 204 | 0 | 0 | 0 | 0 | 440 |
| Total | 72 | 495 | 0 | 567 | 93 | 0 | 147 | 240 | 225 | 439 | 0 | 664 | 0 | 0 | 0 | 0 | 1471 |
| 16:00 | 19 | 109 | 0 | 128 | 20 | 0 | 43 | 63 | 48 | 132 | 0 | 180 | 0 | 0 | 0 | 0 | 371 |

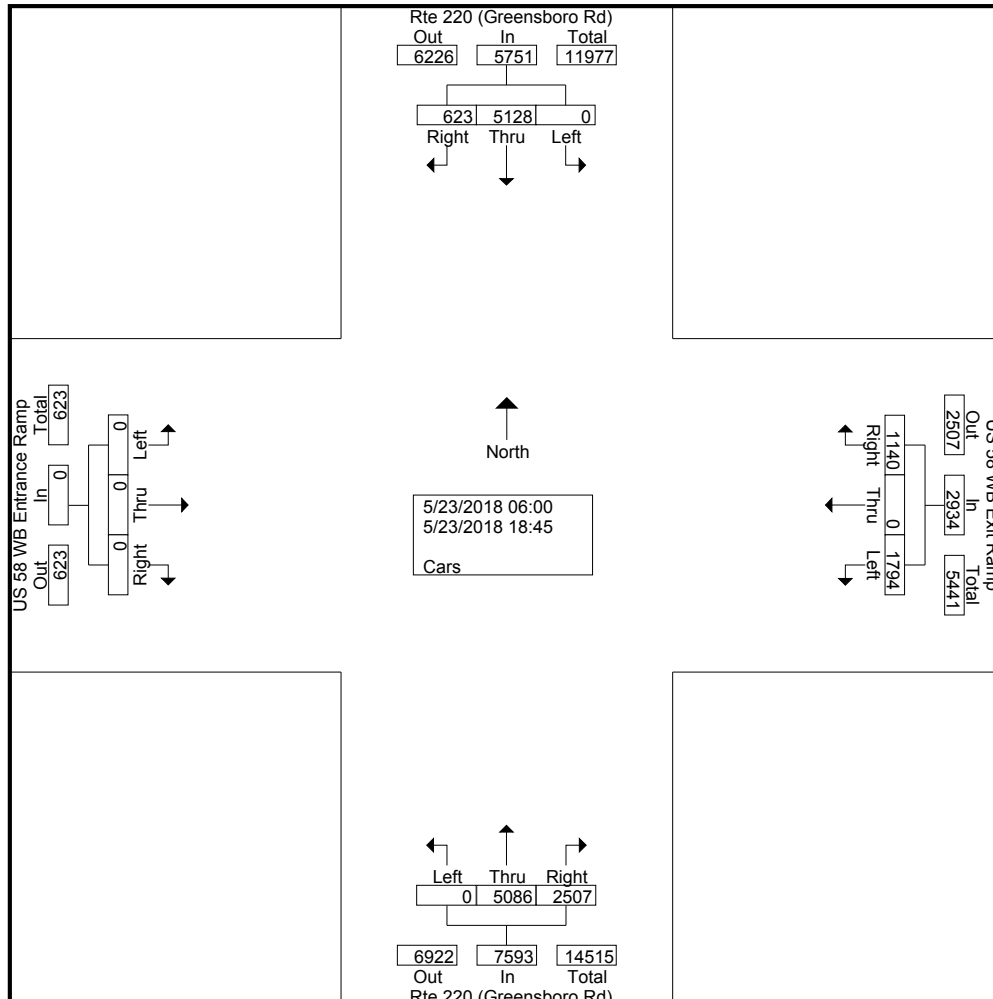
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 WB Ramp
Start Date : 5/23/2018
Page No : 2

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 WB Exit Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 WB Entrance Ramp From West | | | | Int. Total |
|-------------|---------------------------------------|------|------|------------|---------------------------------|------|------|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 17 | 144 | 0 | 161 | 20 | 0 | 37 | 57 | 67 | 131 | 0 | 198 | 0 | 0 | 0 | 0 | 416 |
| 16:30 | 22 | 133 | 0 | 155 | 13 | 0 | 27 | 40 | 44 | 91 | 0 | 135 | 0 | 0 | 0 | 0 | 330 |
| 16:45 | 10 | 157 | 0 | 167 | 20 | 0 | 44 | 64 | 60 | 121 | 0 | 181 | 0 | 0 | 0 | 0 | 412 |
| Total | 68 | 543 | 0 | 611 | 73 | 0 | 151 | 224 | 219 | 475 | 0 | 694 | 0 | 0 | 0 | 0 | 1529 |
| 17:00 | 19 | 154 | 0 | 173 | 18 | 0 | 48 | 66 | 80 | 98 | 0 | 178 | 0 | 0 | 0 | 0 | 417 |
| 17:15 | 19 | 192 | 0 | 211 | 22 | 0 | 59 | 81 | 74 | 104 | 0 | 178 | 0 | 0 | 0 | 0 | 470 |
| 17:30 | 20 | 153 | 0 | 173 | 20 | 0 | 66 | 86 | 85 | 108 | 0 | 193 | 0 | 0 | 0 | 0 | 452 |
| 17:45 | 19 | 174 | 0 | 193 | 25 | 0 | 54 | 79 | 75 | 138 | 0 | 213 | 0 | 0 | 0 | 0 | 485 |
| Total | 77 | 673 | 0 | 750 | 85 | 0 | 227 | 312 | 314 | 448 | 0 | 762 | 0 | 0 | 0 | 0 | 1824 |
| 18:00 | 13 | 135 | 0 | 148 | 28 | 0 | 32 | 60 | 57 | 119 | 0 | 176 | 0 | 0 | 0 | 0 | 384 |
| 18:15 | 8 | 120 | 0 | 128 | 18 | 0 | 34 | 52 | 48 | 102 | 0 | 150 | 0 | 0 | 0 | 0 | 330 |
| 18:30 | 11 | 101 | 0 | 112 | 24 | 0 | 26 | 50 | 49 | 116 | 0 | 165 | 0 | 0 | 0 | 0 | 327 |
| 18:45 | 10 | 113 | 0 | 123 | 28 | 0 | 26 | 54 | 52 | 78 | 0 | 130 | 0 | 0 | 0 | 0 | 307 |
| Total | 42 | 469 | 0 | 511 | 98 | 0 | 118 | 216 | 206 | 415 | 0 | 621 | 0 | 0 | 0 | 0 | 1348 |
| Grand Total | 623 | 5128 | 0 | 5751 | 1140 | 0 | 1794 | 2934 | 2507 | 5086 | 0 | 7593 | 0 | 0 | 0 | 0 | 16278 |
| Apprch % | 10.8 | 89.2 | 0 | | 38.9 | 0 | 61.1 | | 33 | 67 | 0 | | 0 | 0 | 0 | | |
| Total % | 3.8 | 31.5 | 0 | 35.3 | 7 | 0 | 11 | 18 | 15.4 | 31.2 | 0 | 46.6 | 0 | 0 | 0 | 0 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 WB Ramp

Start Date : 5/23/2018

Page No : 3

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 WB Exit Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 WB Entrance Ramp From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|---------------------------------|------|------|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 7 | 88 | 0 | 95 | 29 | 0 | 49 | 78 | 56 | 116 | 0 | 172 | 0 | 0 | 0 | 0 | 345 |
| 07:45 | 7 | 82 | 0 | 89 | 31 | 0 | 81 | 112 | 68 | 145 | 0 | 213 | 0 | 0 | 0 | 0 | 414 |
| 08:00 | 7 | 102 | 0 | 109 | 23 | 0 | 76 | 99 | 52 | 112 | 0 | 164 | 0 | 0 | 0 | 0 | 372 |
| 08:15 | 8 | 60 | 0 | 68 | 19 | 0 | 38 | 57 | 69 | 114 | 0 | 183 | 0 | 0 | 0 | 0 | 308 |
| Total Volume | 29 | 332 | 0 | 361 | 102 | 0 | 244 | 346 | 245 | 487 | 0 | 732 | 0 | 0 | 0 | 0 | 1439 |
| % App. Total | 8 | 92 | 0 | | 29.5 | 0 | 70.5 | | 33.5 | 66.5 | 0 | | 0 | 0 | 0 | | |
| PHF | .906 | .814 | .000 | .828 | .823 | .000 | .753 | .772 | .888 | .840 | .000 | .859 | .000 | .000 | .000 | .000 | .869 |

Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 17:00

| | | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 17:00 | 19 | 154 | 0 | 173 | 18 | 0 | 48 | 66 | 80 | 98 | 0 | 178 | 0 | 0 | 0 | 0 | 417 |
| 17:15 | 19 | 192 | 0 | 211 | 22 | 0 | 59 | 81 | 74 | 104 | 0 | 178 | 0 | 0 | 0 | 0 | 470 |
| 17:30 | 20 | 153 | 0 | 173 | 20 | 0 | 66 | 86 | 85 | 108 | 0 | 193 | 0 | 0 | 0 | 0 | 452 |
| 17:45 | 19 | 174 | 0 | 193 | 25 | 0 | 54 | 79 | 75 | 138 | 0 | 213 | 0 | 0 | 0 | 0 | 485 |
| Total Volume | 77 | 673 | 0 | 750 | 85 | 0 | 227 | 312 | 314 | 448 | 0 | 762 | 0 | 0 | 0 | 0 | 1824 |
| % App. Total | 10.3 | 89.7 | 0 | | 27.2 | 0 | 72.8 | | 41.2 | 58.8 | 0 | | 0 | 0 | 0 | | |
| PHF | .963 | .876 | .000 | .889 | .850 | .000 | .860 | .907 | .924 | .812 | .000 | .894 | .000 | .000 | .000 | .000 | .940 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 WB Ramp

Start Date : 5/23/2018

Page No : 1

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 WB Exit Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 WB Entrance Ramp From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|---------------------------------|------|------|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 3 | 5 | 0 | 8 | 0 | 0 | 0 | 0 | 12 | 1 | 0 | 13 | 0 | 0 | 0 | 0 | 21 |
| 06:15 | 1 | 5 | 0 | 6 | 1 | 0 | 0 | 1 | 10 | 3 | 0 | 13 | 0 | 0 | 0 | 0 | 20 |
| 06:30 | 1 | 5 | 0 | 6 | 0 | 0 | 1 | 1 | 16 | 6 | 0 | 22 | 0 | 0 | 0 | 0 | 29 |
| 06:45 | 2 | 4 | 0 | 6 | 2 | 0 | 1 | 3 | 16 | 7 | 0 | 23 | 0 | 0 | 0 | 0 | 32 |
| Total | 7 | 19 | 0 | 26 | 3 | 0 | 2 | 5 | 54 | 17 | 0 | 71 | 0 | 0 | 0 | 0 | 102 |
| 07:00 | 2 | 7 | 0 | 9 | 3 | 0 | 1 | 4 | 14 | 8 | 0 | 22 | 0 | 0 | 0 | 0 | 35 |
| 07:15 | 1 | 3 | 0 | 4 | 2 | 0 | 2 | 4 | 13 | 5 | 0 | 18 | 0 | 0 | 0 | 0 | 26 |
| 07:30 | 0 | 8 | 0 | 8 | 3 | 0 | 6 | 9 | 9 | 8 | 0 | 17 | 0 | 0 | 0 | 0 | 34 |
| 07:45 | 3 | 5 | 0 | 8 | 2 | 0 | 4 | 6 | 21 | 7 | 0 | 28 | 0 | 0 | 0 | 0 | 42 |
| Total | 6 | 23 | 0 | 29 | 10 | 0 | 13 | 23 | 57 | 28 | 0 | 85 | 0 | 0 | 0 | 0 | 137 |
| 08:00 | 2 | 8 | 0 | 10 | 1 | 0 | 7 | 8 | 12 | 11 | 0 | 23 | 0 | 0 | 0 | 0 | 41 |
| 08:15 | 1 | 9 | 0 | 10 | 3 | 0 | 4 | 7 | 14 | 12 | 0 | 26 | 0 | 0 | 0 | 0 | 43 |
| 08:30 | 4 | 8 | 0 | 12 | 1 | 0 | 4 | 5 | 27 | 10 | 0 | 37 | 0 | 0 | 0 | 0 | 54 |
| 08:45 | 4 | 9 | 0 | 13 | 0 | 0 | 3 | 3 | 17 | 9 | 0 | 26 | 0 | 0 | 0 | 0 | 42 |
| Total | 11 | 34 | 0 | 45 | 5 | 0 | 18 | 23 | 70 | 42 | 0 | 112 | 0 | 0 | 0 | 0 | 180 |
| 09:00 | 1 | 8 | 0 | 9 | 0 | 0 | 1 | 1 | 30 | 16 | 0 | 46 | 0 | 0 | 0 | 0 | 56 |
| 09:15 | 4 | 11 | 0 | 15 | 4 | 0 | 2 | 6 | 18 | 8 | 0 | 26 | 0 | 0 | 0 | 0 | 47 |
| 09:30 | 4 | 9 | 0 | 13 | 3 | 0 | 5 | 8 | 23 | 8 | 0 | 31 | 0 | 0 | 0 | 0 | 52 |
| 09:45 | 2 | 12 | 0 | 14 | 2 | 0 | 2 | 4 | 17 | 10 | 0 | 27 | 0 | 0 | 0 | 0 | 45 |
| Total | 11 | 40 | 0 | 51 | 9 | 0 | 10 | 19 | 88 | 42 | 0 | 130 | 0 | 0 | 0 | 0 | 200 |
| 10:00 | 3 | 4 | 0 | 7 | 4 | 0 | 1 | 5 | 19 | 8 | 0 | 27 | 0 | 0 | 0 | 0 | 39 |
| 10:15 | 6 | 8 | 0 | 14 | 5 | 0 | 4 | 9 | 14 | 10 | 0 | 24 | 0 | 0 | 0 | 0 | 47 |
| 10:30 | 2 | 5 | 0 | 7 | 1 | 0 | 5 | 6 | 18 | 14 | 0 | 32 | 0 | 0 | 0 | 0 | 45 |
| 10:45 | 6 | 10 | 0 | 16 | 1 | 0 | 3 | 4 | 20 | 14 | 0 | 34 | 0 | 0 | 0 | 0 | 54 |
| Total | 17 | 27 | 0 | 44 | 11 | 0 | 13 | 24 | 71 | 46 | 0 | 117 | 0 | 0 | 0 | 0 | 185 |
| 11:00 | 6 | 10 | 0 | 16 | 2 | 0 | 1 | 3 | 15 | 11 | 0 | 26 | 0 | 0 | 0 | 0 | 45 |
| 11:15 | 1 | 8 | 0 | 9 | 1 | 0 | 2 | 3 | 28 | 7 | 0 | 35 | 0 | 0 | 0 | 0 | 47 |
| 11:30 | 4 | 6 | 0 | 10 | 3 | 0 | 2 | 5 | 5 | 10 | 0 | 15 | 0 | 0 | 0 | 0 | 30 |
| 11:45 | 3 | 9 | 0 | 12 | 1 | 0 | 0 | 1 | 27 | 10 | 0 | 37 | 0 | 0 | 0 | 0 | 50 |
| Total | 14 | 33 | 0 | 47 | 7 | 0 | 5 | 12 | 75 | 38 | 0 | 113 | 0 | 0 | 0 | 0 | 172 |
| 12:00 | 0 | 12 | 0 | 12 | 7 | 0 | 6 | 13 | 8 | 17 | 0 | 25 | 0 | 0 | 0 | 0 | 50 |
| 12:15 | 6 | 13 | 0 | 19 | 2 | 0 | 2 | 4 | 25 | 9 | 0 | 34 | 0 | 0 | 0 | 0 | 57 |
| 12:30 | 2 | 14 | 0 | 16 | 1 | 0 | 3 | 4 | 24 | 12 | 0 | 36 | 0 | 0 | 0 | 0 | 56 |
| 12:45 | 4 | 12 | 0 | 16 | 2 | 0 | 5 | 7 | 22 | 7 | 0 | 29 | 0 | 0 | 0 | 0 | 52 |
| Total | 12 | 51 | 0 | 63 | 12 | 0 | 16 | 28 | 79 | 45 | 0 | 124 | 0 | 0 | 0 | 0 | 215 |
| 13:00 | 4 | 5 | 0 | 9 | 1 | 0 | 0 | 1 | 21 | 8 | 0 | 29 | 0 | 0 | 0 | 0 | 39 |
| 13:15 | 0 | 7 | 0 | 7 | 3 | 0 | 5 | 8 | 21 | 8 | 0 | 29 | 0 | 0 | 0 | 0 | 44 |
| 13:30 | 0 | 12 | 0 | 12 | 3 | 0 | 6 | 9 | 21 | 13 | 0 | 34 | 0 | 0 | 0 | 0 | 55 |
| 13:45 | 5 | 7 | 0 | 12 | 2 | 0 | 1 | 3 | 22 | 6 | 0 | 28 | 0 | 0 | 0 | 0 | 43 |
| Total | 9 | 31 | 0 | 40 | 9 | 0 | 12 | 21 | 85 | 35 | 0 | 120 | 0 | 0 | 0 | 0 | 181 |
| 14:00 | 4 | 9 | 0 | 13 | 3 | 0 | 2 | 5 | 21 | 8 | 0 | 29 | 0 | 0 | 0 | 0 | 47 |
| 14:15 | 2 | 12 | 0 | 14 | 1 | 0 | 8 | 9 | 17 | 13 | 0 | 30 | 0 | 0 | 0 | 0 | 53 |
| 14:30 | 3 | 4 | 0 | 7 | 0 | 0 | 6 | 6 | 20 | 12 | 0 | 32 | 0 | 0 | 0 | 0 | 45 |
| 14:45 | 1 | 9 | 0 | 10 | 2 | 0 | 4 | 6 | 21 | 12 | 0 | 33 | 0 | 0 | 0 | 0 | 49 |
| Total | 10 | 34 | 0 | 44 | 6 | 0 | 20 | 26 | 79 | 45 | 0 | 124 | 0 | 0 | 0 | 0 | 194 |
| 15:00 | 1 | 5 | 0 | 6 | 3 | 0 | 4 | 7 | 12 | 11 | 0 | 23 | 0 | 0 | 0 | 0 | 36 |
| 15:15 | 4 | 8 | 0 | 12 | 0 | 0 | 1 | 1 | 14 | 11 | 0 | 25 | 0 | 0 | 0 | 0 | 38 |
| 15:30 | 1 | 6 | 0 | 7 | 9 | 0 | 5 | 14 | 18 | 6 | 0 | 24 | 0 | 0 | 0 | 0 | 45 |
| 15:45 | 3 | 6 | 0 | 9 | 7 | 0 | 1 | 8 | 16 | 10 | 0 | 26 | 0 | 0 | 0 | 0 | 43 |
| Total | 9 | 25 | 0 | 34 | 19 | 0 | 11 | 30 | 60 | 38 | 0 | 98 | 0 | 0 | 0 | 0 | 162 |
| 16:00 | 2 | 7 | 0 | 9 | 4 | 0 | 1 | 5 | 14 | 10 | 0 | 24 | 0 | 0 | 0 | 0 | 38 |

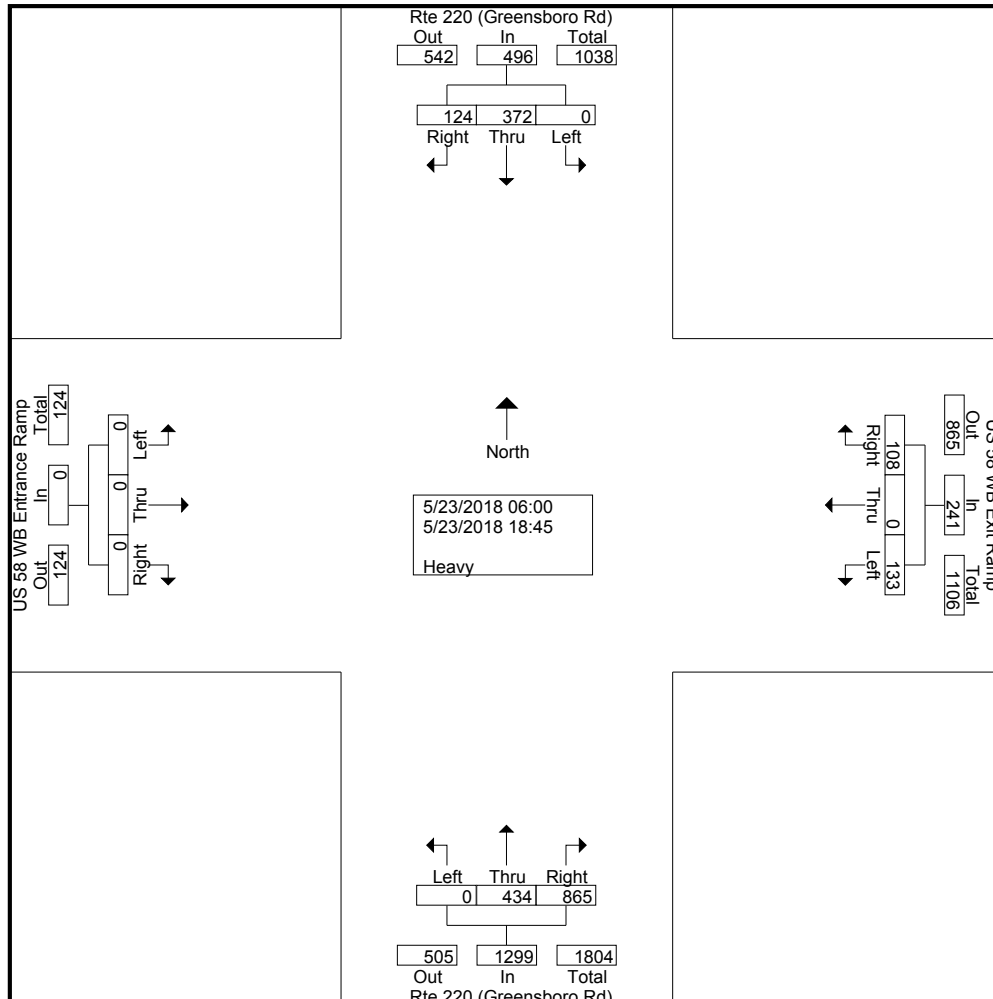
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 WB Ramp
Start Date : 5/23/2018
Page No : 2

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 WB Exit Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 WB Entrance Ramp From West | | | | Int. Total |
|--------------------|---------------------------------------|------------|----------|------------|---------------------------------|----------|------------|------------|---------------------------------------|------------|----------|-------------|-------------------------------------|----------|----------|------------|-------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 3 | 6 | 0 | 9 | 3 | 0 | 1 | 4 | 22 | 6 | 0 | 28 | 0 | 0 | 0 | 0 | 41 |
| 16:30 | 5 | 6 | 0 | 11 | 0 | 0 | 2 | 2 | 7 | 6 | 0 | 13 | 0 | 0 | 0 | 0 | 26 |
| 16:45 | 2 | 8 | 0 | 10 | 4 | 0 | 0 | 4 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 27 |
| Total | 12 | 27 | 0 | 39 | 11 | 0 | 4 | 15 | 56 | 22 | 0 | 78 | 0 | 0 | 0 | 0 | 132 |
| 17:00 | 1 | 5 | 0 | 6 | 2 | 0 | 3 | 5 | 17 | 6 | 0 | 23 | 0 | 0 | 0 | 0 | 34 |
| 17:15 | 0 | 4 | 0 | 4 | 1 | 0 | 0 | 1 | 13 | 6 | 0 | 19 | 0 | 0 | 0 | 0 | 24 |
| 17:30 | 1 | 4 | 0 | 5 | 1 | 0 | 1 | 2 | 15 | 2 | 0 | 17 | 0 | 0 | 0 | 0 | 24 |
| 17:45 | 0 | 5 | 0 | 5 | 1 | 0 | 2 | 3 | 8 | 5 | 0 | 13 | 0 | 0 | 0 | 0 | 21 |
| Total | 2 | 18 | 0 | 20 | 5 | 0 | 6 | 11 | 53 | 19 | 0 | 72 | 0 | 0 | 0 | 0 | 103 |
| 18:00 | 1 | 4 | 0 | 5 | 0 | 0 | 0 | 0 | 9 | 6 | 0 | 15 | 0 | 0 | 0 | 0 | 20 |
| 18:15 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 12 | 3 | 0 | 15 | 0 | 0 | 0 | 0 | 18 |
| 18:30 | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 3 | 12 | 6 | 0 | 18 | 0 | 0 | 0 | 0 | 22 |
| 18:45 | 2 | 3 | 0 | 5 | 1 | 0 | 0 | 1 | 5 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 13 |
| Total | 4 | 10 | 0 | 14 | 1 | 0 | 3 | 4 | 38 | 17 | 0 | 55 | 0 | 0 | 0 | 0 | 73 |
| Grand Total | 124 | 372 | 0 | 496 | 108 | 0 | 133 | 241 | 865 | 434 | 0 | 1299 | 0 | 0 | 0 | 0 | 2036 |
| Apprch % | 25 | 75 | 0 | | 44.8 | 0 | 55.2 | | 66.6 | 33.4 | 0 | | 0 | 0 | 0 | | |
| Total % | 6.1 | 18.3 | 0 | 24.4 | 5.3 | 0 | 6.5 | 11.8 | 42.5 | 21.3 | 0 | 63.8 | 0 | 0 | 0 | 0 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 WB Ramp

Start Date : 5/23/2018

Page No : 3

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 WB Exit Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 WB Entrance Ramp From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|---------------------------------|------|------|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 8 | 0 | 8 | 3 | 0 | 6 | 9 | 9 | 8 | 0 | 17 | 0 | 0 | 0 | 0 | 34 |
| 07:45 | 3 | 5 | 0 | 8 | 2 | 0 | 4 | 6 | 21 | 7 | 0 | 28 | 0 | 0 | 0 | 0 | 42 |
| 08:00 | 2 | 8 | 0 | 10 | 1 | 0 | 7 | 8 | 12 | 11 | 0 | 23 | 0 | 0 | 0 | 0 | 41 |
| 08:15 | 1 | 9 | 0 | 10 | 3 | 0 | 4 | 7 | 14 | 12 | 0 | 26 | 0 | 0 | 0 | 0 | 43 |
| Total Volume | 6 | 30 | 0 | 36 | 9 | 0 | 21 | 30 | 56 | 38 | 0 | 94 | 0 | 0 | 0 | 0 | 160 |
| % App. Total | 16.7 | 83.3 | 0 | | 30 | 0 | 70 | | 59.6 | 40.4 | 0 | | 0 | 0 | 0 | | |
| PHF | .500 | .833 | .000 | .900 | .750 | .000 | .750 | .833 | .667 | .792 | .000 | .839 | .000 | .000 | .000 | .000 | .930 |

Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 17:00

| | | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 17:00 | 1 | 5 | 0 | 6 | 2 | 0 | 3 | 5 | 17 | 6 | 0 | 23 | 0 | 0 | 0 | 0 | 34 |
| 17:15 | 0 | 4 | 0 | 4 | 1 | 0 | 0 | 1 | 13 | 6 | 0 | 19 | 0 | 0 | 0 | 0 | 24 |
| 17:30 | 1 | 4 | 0 | 5 | 1 | 0 | 1 | 2 | 15 | 2 | 0 | 17 | 0 | 0 | 0 | 0 | 24 |
| 17:45 | 0 | 5 | 0 | 5 | 1 | 0 | 2 | 3 | 8 | 5 | 0 | 13 | 0 | 0 | 0 | 0 | 21 |
| Total Volume | 2 | 18 | 0 | 20 | 5 | 0 | 6 | 11 | 53 | 19 | 0 | 72 | 0 | 0 | 0 | 0 | 103 |
| % App. Total | 10 | 90 | 0 | | 45.5 | 0 | 54.5 | | 73.6 | 26.4 | 0 | | 0 | 0 | 0 | | |
| PHF | .500 | .900 | .000 | .833 | .625 | .000 | .500 | .550 | .779 | .792 | .000 | .783 | .000 | .000 | .000 | .000 | .757 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 WB Ramp

Start Date : 5/23/2018

Page No : 1

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 WB Exit Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 WB Entrance Ramp From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|---------------------------------|------|------|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 18 | 46 | 0 | 64 | 15 | 0 | 32 | 47 | 38 | 54 | 0 | 92 | 0 | 0 | 0 | 0 | 203 |
| 06:15 | 12 | 63 | 0 | 75 | 27 | 0 | 43 | 70 | 40 | 76 | 0 | 116 | 0 | 0 | 0 | 0 | 261 |
| 06:30 | 11 | 68 | 0 | 79 | 35 | 0 | 42 | 77 | 52 | 130 | 0 | 182 | 0 | 0 | 0 | 0 | 338 |
| 06:45 | 13 | 62 | 0 | 75 | 45 | 0 | 32 | 77 | 61 | 109 | 0 | 170 | 0 | 0 | 0 | 0 | 322 |
| Total | 54 | 239 | 0 | 293 | 122 | 0 | 149 | 271 | 191 | 369 | 0 | 560 | 0 | 0 | 0 | 0 | 1124 |
| 07:00 | 13 | 80 | 0 | 93 | 21 | 0 | 32 | 53 | 61 | 89 | 0 | 150 | 0 | 0 | 0 | 0 | 296 |
| 07:15 | 9 | 61 | 0 | 70 | 22 | 0 | 36 | 58 | 63 | 118 | 0 | 181 | 0 | 0 | 0 | 0 | 309 |
| 07:30 | 7 | 96 | 0 | 103 | 32 | 0 | 55 | 87 | 65 | 124 | 0 | 189 | 0 | 0 | 0 | 0 | 379 |
| 07:45 | 10 | 87 | 0 | 97 | 33 | 0 | 85 | 118 | 89 | 152 | 0 | 241 | 0 | 0 | 0 | 0 | 456 |
| Total | 39 | 324 | 0 | 363 | 108 | 0 | 208 | 316 | 278 | 483 | 0 | 761 | 0 | 0 | 0 | 0 | 1440 |
| 08:00 | 9 | 110 | 0 | 119 | 24 | 0 | 83 | 107 | 64 | 123 | 0 | 187 | 0 | 0 | 0 | 0 | 413 |
| 08:15 | 9 | 69 | 0 | 78 | 22 | 0 | 42 | 64 | 83 | 126 | 0 | 209 | 0 | 0 | 0 | 0 | 351 |
| 08:30 | 11 | 68 | 0 | 79 | 16 | 0 | 28 | 44 | 87 | 99 | 0 | 186 | 0 | 0 | 0 | 0 | 309 |
| 08:45 | 12 | 56 | 0 | 68 | 33 | 0 | 25 | 58 | 52 | 104 | 0 | 156 | 0 | 0 | 0 | 0 | 282 |
| Total | 41 | 303 | 0 | 344 | 95 | 0 | 178 | 273 | 286 | 452 | 0 | 738 | 0 | 0 | 0 | 0 | 1355 |
| 09:00 | 14 | 88 | 0 | 102 | 15 | 0 | 26 | 41 | 73 | 104 | 0 | 177 | 0 | 0 | 0 | 0 | 320 |
| 09:15 | 11 | 74 | 0 | 85 | 23 | 0 | 22 | 45 | 55 | 116 | 0 | 171 | 0 | 0 | 0 | 0 | 301 |
| 09:30 | 12 | 82 | 0 | 94 | 15 | 0 | 28 | 43 | 78 | 97 | 0 | 175 | 0 | 0 | 0 | 0 | 312 |
| 09:45 | 14 | 107 | 0 | 121 | 25 | 0 | 26 | 51 | 63 | 97 | 0 | 160 | 0 | 0 | 0 | 0 | 332 |
| Total | 51 | 351 | 0 | 402 | 78 | 0 | 102 | 180 | 269 | 414 | 0 | 683 | 0 | 0 | 0 | 0 | 1265 |
| 10:00 | 9 | 60 | 0 | 69 | 19 | 0 | 18 | 37 | 64 | 75 | 0 | 139 | 0 | 0 | 0 | 0 | 245 |
| 10:15 | 14 | 86 | 0 | 100 | 13 | 0 | 24 | 37 | 54 | 95 | 0 | 149 | 0 | 0 | 0 | 0 | 286 |
| 10:30 | 11 | 94 | 0 | 105 | 15 | 0 | 27 | 42 | 58 | 110 | 0 | 168 | 0 | 0 | 0 | 0 | 315 |
| 10:45 | 9 | 94 | 0 | 103 | 15 | 0 | 25 | 40 | 46 | 90 | 0 | 136 | 0 | 0 | 0 | 0 | 279 |
| Total | 43 | 334 | 0 | 377 | 62 | 0 | 94 | 156 | 222 | 370 | 0 | 592 | 0 | 0 | 0 | 0 | 1125 |
| 11:00 | 16 | 92 | 0 | 108 | 19 | 0 | 15 | 34 | 50 | 88 | 0 | 138 | 0 | 0 | 0 | 0 | 280 |
| 11:15 | 8 | 76 | 0 | 84 | 27 | 0 | 30 | 57 | 57 | 88 | 0 | 145 | 0 | 0 | 0 | 0 | 286 |
| 11:30 | 23 | 83 | 0 | 106 | 22 | 0 | 26 | 48 | 46 | 102 | 0 | 148 | 0 | 0 | 0 | 0 | 302 |
| 11:45 | 19 | 119 | 0 | 138 | 32 | 0 | 26 | 58 | 64 | 108 | 0 | 172 | 0 | 0 | 0 | 0 | 368 |
| Total | 66 | 370 | 0 | 436 | 100 | 0 | 97 | 197 | 217 | 386 | 0 | 603 | 0 | 0 | 0 | 0 | 1236 |
| 12:00 | 16 | 118 | 0 | 134 | 29 | 0 | 41 | 70 | 52 | 116 | 0 | 168 | 0 | 0 | 0 | 0 | 372 |
| 12:15 | 9 | 131 | 0 | 140 | 30 | 0 | 22 | 52 | 69 | 109 | 0 | 178 | 0 | 0 | 0 | 0 | 370 |
| 12:30 | 9 | 101 | 0 | 110 | 27 | 0 | 30 | 57 | 70 | 94 | 0 | 164 | 0 | 0 | 0 | 0 | 331 |
| 12:45 | 12 | 99 | 0 | 111 | 17 | 0 | 34 | 51 | 71 | 90 | 0 | 161 | 0 | 0 | 0 | 0 | 323 |
| Total | 46 | 449 | 0 | 495 | 103 | 0 | 127 | 230 | 262 | 409 | 0 | 671 | 0 | 0 | 0 | 0 | 1396 |
| 13:00 | 16 | 108 | 0 | 124 | 16 | 0 | 33 | 49 | 74 | 81 | 0 | 155 | 0 | 0 | 0 | 0 | 328 |
| 13:15 | 8 | 116 | 0 | 124 | 35 | 0 | 33 | 68 | 60 | 115 | 0 | 175 | 0 | 0 | 0 | 0 | 367 |
| 13:30 | 11 | 111 | 0 | 122 | 27 | 0 | 31 | 58 | 43 | 95 | 0 | 138 | 0 | 0 | 0 | 0 | 318 |
| 13:45 | 23 | 105 | 0 | 128 | 20 | 0 | 40 | 60 | 58 | 101 | 0 | 159 | 0 | 0 | 0 | 0 | 347 |
| Total | 58 | 440 | 0 | 498 | 98 | 0 | 137 | 235 | 235 | 392 | 0 | 627 | 0 | 0 | 0 | 0 | 1360 |
| 14:00 | 22 | 105 | 0 | 127 | 31 | 0 | 34 | 65 | 61 | 87 | 0 | 148 | 0 | 0 | 0 | 0 | 340 |
| 14:15 | 13 | 104 | 0 | 117 | 25 | 0 | 50 | 75 | 54 | 89 | 0 | 143 | 0 | 0 | 0 | 0 | 335 |
| 14:30 | 14 | 112 | 0 | 126 | 22 | 0 | 35 | 57 | 72 | 100 | 0 | 172 | 0 | 0 | 0 | 0 | 355 |
| 14:45 | 14 | 109 | 0 | 123 | 19 | 0 | 49 | 68 | 54 | 96 | 0 | 150 | 0 | 0 | 0 | 0 | 341 |
| Total | 63 | 430 | 0 | 493 | 97 | 0 | 168 | 265 | 241 | 372 | 0 | 613 | 0 | 0 | 0 | 0 | 1371 |
| 15:00 | 26 | 120 | 0 | 146 | 26 | 0 | 38 | 64 | 62 | 101 | 0 | 163 | 0 | 0 | 0 | 0 | 373 |
| 15:15 | 19 | 117 | 0 | 136 | 19 | 0 | 28 | 47 | 66 | 92 | 0 | 158 | 0 | 0 | 0 | 0 | 341 |
| 15:30 | 12 | 128 | 0 | 140 | 32 | 0 | 53 | 85 | 83 | 128 | 0 | 211 | 0 | 0 | 0 | 0 | 436 |
| 15:45 | 24 | 155 | 0 | 179 | 35 | 0 | 39 | 74 | 74 | 156 | 0 | 230 | 0 | 0 | 0 | 0 | 483 |
| Total | 81 | 520 | 0 | 601 | 112 | 0 | 158 | 270 | 285 | 477 | 0 | 762 | 0 | 0 | 0 | 0 | 1633 |
| 16:00 | 21 | 116 | 0 | 137 | 24 | 0 | 44 | 68 | 62 | 142 | 0 | 204 | 0 | 0 | 0 | 0 | 409 |

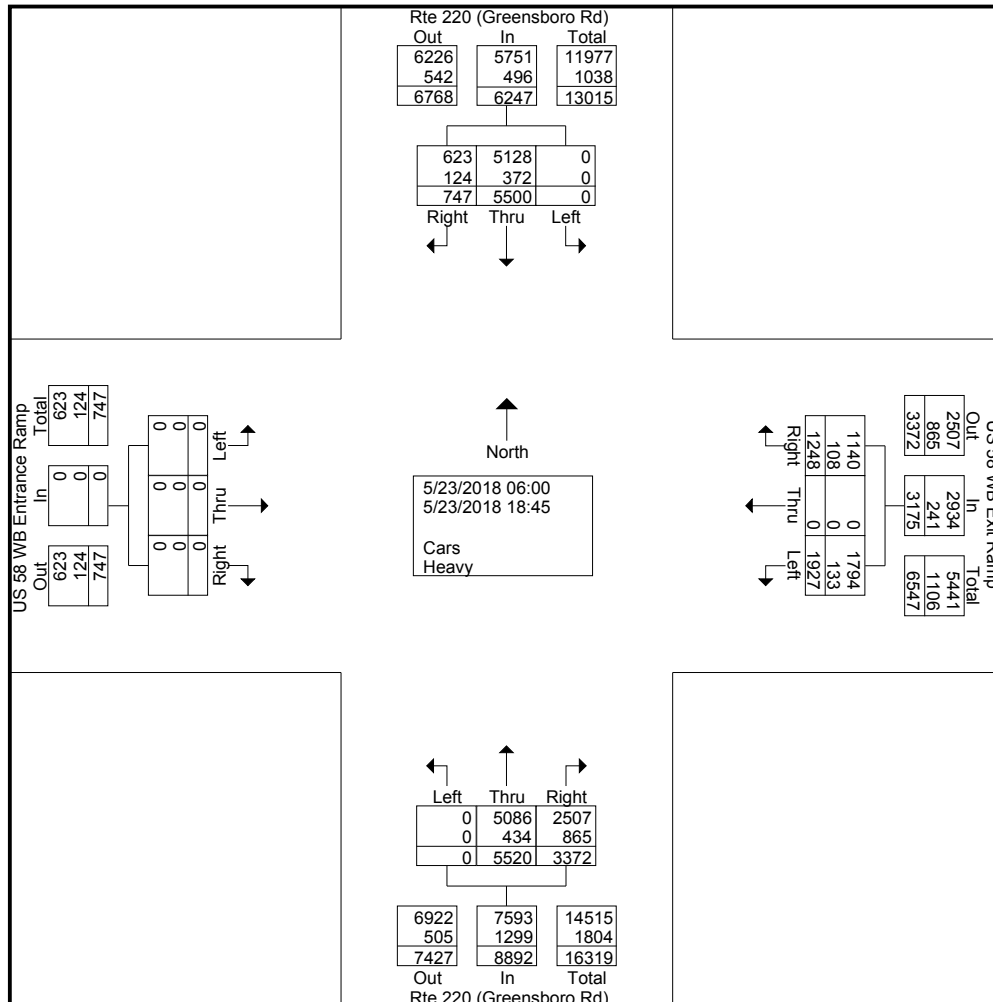
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 WB Ramp
Start Date : 5/23/2018
Page No : 2

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 WB Exit Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 WB Entrance Ramp From West | | | | Int. Total |
|--------------------|---------------------------------------|-------------|----------|-------------|---------------------------------|----------|-------------|-------------|---------------------------------------|-------------|----------|-------------|-------------------------------------|----------|----------|------------|--------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 20 | 150 | 0 | 170 | 23 | 0 | 38 | 61 | 89 | 137 | 0 | 226 | 0 | 0 | 0 | 0 | 457 |
| 16:30 | 27 | 139 | 0 | 166 | 13 | 0 | 29 | 42 | 51 | 97 | 0 | 148 | 0 | 0 | 0 | 0 | 356 |
| 16:45 | 12 | 165 | 0 | 177 | 24 | 0 | 44 | 68 | 73 | 121 | 0 | 194 | 0 | 0 | 0 | 0 | 439 |
| Total | 80 | 570 | 0 | 650 | 84 | 0 | 155 | 239 | 275 | 497 | 0 | 772 | 0 | 0 | 0 | 0 | 1661 |
| 17:00 | 20 | 159 | 0 | 179 | 20 | 0 | 51 | 71 | 97 | 104 | 0 | 201 | 0 | 0 | 0 | 0 | 451 |
| 17:15 | 19 | 196 | 0 | 215 | 23 | 0 | 59 | 82 | 87 | 110 | 0 | 197 | 0 | 0 | 0 | 0 | 494 |
| 17:30 | 21 | 157 | 0 | 178 | 21 | 0 | 67 | 88 | 100 | 110 | 0 | 210 | 0 | 0 | 0 | 0 | 476 |
| 17:45 | 19 | 179 | 0 | 198 | 26 | 0 | 56 | 82 | 83 | 143 | 0 | 226 | 0 | 0 | 0 | 0 | 506 |
| Total | 79 | 691 | 0 | 770 | 90 | 0 | 233 | 323 | 367 | 467 | 0 | 834 | 0 | 0 | 0 | 0 | 1927 |
| 18:00 | 14 | 139 | 0 | 153 | 28 | 0 | 32 | 60 | 66 | 125 | 0 | 191 | 0 | 0 | 0 | 0 | 404 |
| 18:15 | 9 | 122 | 0 | 131 | 18 | 0 | 34 | 52 | 60 | 105 | 0 | 165 | 0 | 0 | 0 | 0 | 348 |
| 18:30 | 11 | 102 | 0 | 113 | 24 | 0 | 29 | 53 | 61 | 122 | 0 | 183 | 0 | 0 | 0 | 0 | 349 |
| 18:45 | 12 | 116 | 0 | 128 | 29 | 0 | 26 | 55 | 57 | 80 | 0 | 137 | 0 | 0 | 0 | 0 | 320 |
| Total | 46 | 479 | 0 | 525 | 99 | 0 | 121 | 220 | 244 | 432 | 0 | 676 | 0 | 0 | 0 | 0 | 1421 |
| Grand Total | 747 | 5500 | 0 | 6247 | 1248 | 0 | 1927 | 3175 | 3372 | 5520 | 0 | 8892 | 0 | 0 | 0 | 0 | 18314 |
| Apprch % | 12 | 88 | 0 | | 39.3 | 0 | 60.7 | | 37.9 | 62.1 | 0 | | 0 | 0 | 0 | | |
| Total % | 4.1 | 30 | 0 | 34.1 | 6.8 | 0 | 10.5 | 17.3 | 18.4 | 30.1 | 0 | 48.6 | 0 | 0 | 0 | 0 | |
| Cars | 623 | 5128 | 0 | 5751 | 1140 | 0 | 1794 | 2934 | 2507 | 5086 | 0 | 7593 | 0 | 0 | 0 | 0 | 16278 |
| % Cars | 83.4 | 93.2 | 0 | 92.1 | 91.3 | 0 | 93.1 | 92.4 | 74.3 | 92.1 | 0 | 85.4 | 0 | 0 | 0 | 0 | 88.9 |
| Heavy | 124 | 372 | 0 | 496 | 108 | 0 | 133 | 241 | 865 | 434 | 0 | 1299 | 0 | 0 | 0 | 0 | 2036 |
| % Heavy | 16.6 | 6.8 | 0 | 7.9 | 8.7 | 0 | 6.9 | 7.6 | 25.7 | 7.9 | 0 | 14.6 | 0 | 0 | 0 | 0 | 11.1 |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 WB Ramp
Start Date : 5/23/2018
Page No : 3

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 WB Exit Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 WB Entrance Ramp From West | | | | Int. Total |
|--|---------------------------------------|------------|------|------------|---------------------------------|------|-----------|------------|---------------------------------------|------------|------|------------|-------------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 7 | 96 | 0 | 103 | 32 | 0 | 55 | 87 | 65 | 124 | 0 | 189 | 0 | 0 | 0 | 0 | 379 |
| 07:45 | 10 | 87 | 0 | 97 | 33 | 0 | 85 | 118 | 89 | 152 | 0 | 241 | 0 | 0 | 0 | 0 | 456 |
| 08:00 | 9 | 110 | 0 | 119 | 24 | 0 | 83 | 107 | 64 | 123 | 0 | 187 | 0 | 0 | 0 | 0 | 413 |
| 08:15 | 9 | 69 | 0 | 78 | 22 | 0 | 42 | 64 | 83 | 126 | 0 | 209 | 0 | 0 | 0 | 0 | 351 |
| Total Volume | 35 | 362 | 0 | 397 | 111 | 0 | 265 | 376 | 301 | 525 | 0 | 826 | 0 | 0 | 0 | 0 | 1599 |
| % App. Total | 8.8 | 91.2 | 0 | | 29.5 | 0 | 70.5 | | 36.4 | 63.6 | 0 | | 0 | 0 | 0 | | |
| PHF | .875 | .823 | .000 | .834 | .841 | .000 | .779 | .797 | .846 | .863 | .000 | .857 | .000 | .000 | .000 | .000 | .877 |

| | | | | | | | | | | | | | | | | | |
|--|-----------|------------|------|------------|-----------|------|-----------|-----------|------------|------------|------|------------|------|------|------|------|------------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 20 | 159 | 0 | 179 | 20 | 0 | 51 | 71 | 97 | 104 | 0 | 201 | 0 | 0 | 0 | 0 | 451 |
| 17:15 | 19 | 196 | 0 | 215 | 23 | 0 | 59 | 82 | 87 | 110 | 0 | 197 | 0 | 0 | 0 | 0 | 494 |
| 17:30 | 21 | 157 | 0 | 178 | 21 | 0 | 67 | 88 | 100 | 110 | 0 | 210 | 0 | 0 | 0 | 0 | 476 |
| 17:45 | 19 | 179 | 0 | 198 | 26 | 0 | 56 | 82 | 83 | 143 | 0 | 226 | 0 | 0 | 0 | 0 | 506 |
| Total Volume | 79 | 691 | 0 | 770 | 90 | 0 | 233 | 323 | 367 | 467 | 0 | 834 | 0 | 0 | 0 | 0 | 1927 |
| % App. Total | 10.3 | 89.7 | 0 | | 27.9 | 0 | 72.1 | | 44 | 56 | 0 | | 0 | 0 | 0 | | |
| PHF | .940 | .881 | .000 | .895 | .865 | .000 | .869 | .918 | .918 | .816 | .000 | .923 | .000 | .000 | .000 | .000 | .952 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 EB Ramp
Start Date : 5/22/2018
Page No : 1

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 EB Entrance Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 EB Exit Ramp From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|---------------------------------|------|------|------------|--------------|--------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | | | |
| 06:00 | 0 | 56 | 7 | 63 | 0 | 0 | 0 | 0 | 11 | 56 | 0 | 67 | 33 | 3 | 7 | 43 | 0 | 173 | 173 |
| 06:15 | 0 | 87 | 9 | 96 | 0 | 0 | 0 | 0 | 18 | 80 | 0 | 98 | 39 | 0 | 20 | 59 | 0 | 253 | 253 |
| 06:30 | 0 | 83 | 4 | 87 | 0 | 0 | 0 | 0 | 22 | 122 | 0 | 144 | 61 | 1 | 21 | 83 | 0 | 314 | 314 |
| 06:45 | 0 | 101 | 4 | 105 | 0 | 0 | 0 | 0 | 37 | 153 | 0 | 190 | 54 | 0 | 32 | 86 | 0 | 381 | 381 |
| Total | 0 | 327 | 24 | 351 | 0 | 0 | 0 | 0 | 88 | 411 | 0 | 499 | 187 | 4 | 80 | 271 | 0 | 1121 | 1121 |
| 07:00 | 0 | 63 | 14 | 77 | 0 | 0 | 0 | 0 | 21 | 104 | 0 | 125 | 46 | 0 | 18 | 64 | 0 | 266 | 266 |
| 07:15 | 0 | 94 | 10 | 104 | 0 | 0 | 0 | 0 | 40 | 152 | 0 | 192 | 47 | 0 | 14 | 61 | 0 | 357 | 357 |
| 07:30 | 0 | 86 | 17 | 103 | 0 | 0 | 0 | 0 | 53 | 185 | 0 | 238 | 58 | 0 | 17 | 75 | 0 | 416 | 416 |
| 07:45 | 0 | 112 | 18 | 130 | 0 | 0 | 0 | 0 | 69 | 205 | 0 | 274 | 49 | 0 | 26 | 75 | 0 | 479 | 479 |
| Total | 0 | 355 | 59 | 414 | 0 | 0 | 0 | 0 | 183 | 646 | 0 | 829 | 200 | 0 | 75 | 275 | 0 | 1518 | 1518 |
| 08:00 | 0 | 136 | 14 | 150 | 0 | 0 | 0 | 0 | 60 | 183 | 0 | 243 | 52 | 0 | 11 | 63 | 0 | 456 | 456 |
| 08:15 | 0 | 112 | 9 | 121 | 0 | 0 | 0 | 0 | 53 | 156 | 0 | 209 | 59 | 0 | 14 | 73 | 0 | 403 | 403 |
| 08:30 | 0 | 65 | 10 | 75 | 0 | 0 | 0 | 0 | 52 | 137 | 0 | 189 | 63 | 0 | 10 | 73 | 0 | 337 | 337 |
| 08:45 | 0 | 75 | 14 | 89 | 0 | 0 | 0 | 0 | 46 | 131 | 0 | 177 | 46 | 0 | 6 | 52 | 0 | 318 | 318 |
| Total | 0 | 388 | 47 | 435 | 0 | 0 | 0 | 0 | 211 | 607 | 0 | 818 | 220 | 0 | 41 | 261 | 0 | 1514 | 1514 |
| 09:00 | 0 | 68 | 9 | 77 | 0 | 0 | 0 | 0 | 43 | 119 | 0 | 162 | 51 | 0 | 10 | 61 | 0 | 300 | 300 |
| 09:15 | 0 | 86 | 10 | 96 | 0 | 0 | 0 | 0 | 25 | 138 | 0 | 163 | 32 | 2 | 9 | 43 | 0 | 302 | 302 |
| 09:30 | 0 | 72 | 15 | 87 | 0 | 0 | 0 | 0 | 25 | 109 | 0 | 134 | 32 | 0 | 15 | 47 | 0 | 268 | 268 |
| 09:45 | 0 | 82 | 15 | 97 | 0 | 0 | 0 | 0 | 19 | 116 | 0 | 135 | 42 | 0 | 11 | 53 | 0 | 285 | 285 |
| Total | 0 | 308 | 49 | 357 | 0 | 0 | 0 | 0 | 112 | 482 | 0 | 594 | 157 | 2 | 45 | 204 | 0 | 1155 | 1155 |
| 10:00 | 0 | 82 | 19 | 101 | 0 | 0 | 0 | 0 | 18 | 101 | 0 | 119 | 40 | 0 | 3 | 43 | 0 | 263 | 263 |
| 10:15 | 0 | 95 | 11 | 106 | 0 | 0 | 0 | 0 | 19 | 121 | 0 | 140 | 43 | 0 | 8 | 51 | 0 | 297 | 297 |
| 10:30 | 0 | 67 | 12 | 79 | 0 | 0 | 0 | 0 | 12 | 113 | 0 | 125 | 34 | 0 | 6 | 40 | 0 | 244 | 244 |
| 10:45 | 0 | 104 | 14 | 118 | 0 | 0 | 0 | 0 | 22 | 121 | 0 | 143 | 32 | 0 | 6 | 38 | 0 | 299 | 299 |
| Total | 0 | 348 | 56 | 404 | 0 | 0 | 0 | 0 | 71 | 456 | 0 | 527 | 149 | 0 | 23 | 172 | 0 | 1103 | 1103 |
| 11:00 | 0 | 119 | 19 | 138 | 0 | 0 | 0 | 0 | 19 | 98 | 0 | 117 | 40 | 0 | 5 | 45 | 0 | 300 | 300 |
| 11:15 | 0 | 63 | 15 | 78 | 0 | 0 | 0 | 0 | 18 | 102 | 0 | 120 | 39 | 0 | 7 | 46 | 0 | 244 | 244 |
| 11:30 | 0 | 82 | 13 | 95 | 0 | 0 | 0 | 0 | 18 | 115 | 0 | 133 | 32 | 0 | 8 | 40 | 0 | 268 | 268 |
| 11:45 | 0 | 95 | 16 | 111 | 0 | 0 | 0 | 0 | 24 | 125 | 0 | 149 | 39 | 0 | 7 | 46 | 0 | 306 | 306 |
| Total | 0 | 359 | 63 | 422 | 0 | 0 | 0 | 0 | 79 | 440 | 0 | 519 | 150 | 0 | 27 | 177 | 0 | 1118 | 1118 |
| 12:00 | 0 | 88 | 19 | 107 | 0 | 0 | 0 | 0 | 18 | 124 | 0 | 142 | 32 | 0 | 6 | 38 | 0 | 287 | 287 |
| 12:15 | 0 | 108 | 15 | 123 | 0 | 0 | 0 | 0 | 22 | 128 | 0 | 150 | 41 | 0 | 6 | 47 | 0 | 320 | 320 |
| 12:30 | 0 | 93 | 12 | 105 | 0 | 0 | 0 | 0 | 28 | 113 | 0 | 141 | 39 | 0 | 14 | 53 | 0 | 299 | 299 |
| 12:45 | 0 | 101 | 13 | 114 | 0 | 0 | 0 | 0 | 41 | 160 | 0 | 201 | 40 | 0 | 7 | 47 | 0 | 362 | 362 |
| Total | 0 | 390 | 59 | 449 | 0 | 0 | 0 | 0 | 109 | 525 | 0 | 634 | 152 | 0 | 33 | 185 | 0 | 1268 | 1268 |
| 13:00 | 0 | 94 | 13 | 107 | 0 | 0 | 0 | 0 | 25 | 136 | 0 | 161 | 36 | 0 | 7 | 43 | 0 | 311 | 311 |
| 13:15 | 0 | 105 | 17 | 122 | 0 | 0 | 0 | 0 | 15 | 149 | 0 | 164 | 28 | 0 | 7 | 35 | 0 | 321 | 321 |
| 13:30 | 0 | 102 | 13 | 115 | 0 | 0 | 0 | 0 | 17 | 126 | 0 | 143 | 27 | 0 | 10 | 37 | 0 | 295 | 295 |
| 13:45 | 0 | 97 | 12 | 109 | 0 | 0 | 0 | 0 | 20 | 122 | 0 | 142 | 37 | 0 | 12 | 49 | 0 | 300 | 300 |
| Total | 0 | 398 | 55 | 453 | 0 | 0 | 0 | 0 | 77 | 533 | 0 | 610 | 128 | 0 | 36 | 164 | 0 | 1227 | 1227 |
| 14:00 | 0 | 111 | 9 | 120 | 0 | 0 | 0 | 0 | 25 | 143 | 0 | 168 | 41 | 0 | 9 | 50 | 0 | 338 | 338 |
| 14:15 | 0 | 118 | 24 | 142 | 0 | 0 | 0 | 0 | 12 | 113 | 0 | 125 | 61 | 0 | 6 | 67 | 0 | 334 | 334 |
| 14:30 | 0 | 110 | 17 | 127 | 0 | 0 | 0 | 0 | 32 | 114 | 0 | 146 | 53 | 0 | 11 | 64 | 0 | 337 | 337 |
| 14:45 | 0 | 116 | 22 | 138 | 0 | 0 | 0 | 0 | 32 | 138 | 0 | 170 | 67 | 0 | 11 | 78 | 0 | 386 | 386 |
| Total | 0 | 455 | 72 | 527 | 0 | 0 | 0 | 0 | 101 | 508 | 0 | 609 | 222 | 0 | 37 | 259 | 0 | 1395 | 1395 |
| 15:00 | 0 | 111 | 20 | 131 | 0 | 0 | 0 | 0 | 38 | 149 | 0 | 187 | 69 | 0 | 6 | 75 | 0 | 393 | 393 |
| 15:15 | 0 | 143 | 14 | 157 | 0 | 0 | 0 | 0 | 25 | 133 | 0 | 158 | 73 | 0 | 8 | 81 | 0 | 396 | 396 |
| 15:30 | 0 | 161 | 31 | 192 | 0 | 0 | 0 | 0 | 43 | 158 | 0 | 201 | 66 | 0 | 2 | 68 | 0 | 461 | 461 |
| 15:45 | 0 | 144 | 22 | 166 | 0 | 0 | 0 | 0 | 40 | 173 | 0 | 213 | 59 | 0 | 9 | 68 | 0 | 447 | 447 |
| Total | 0 | 559 | 87 | 646 | 0 | 0 | 0 | 0 | 146 | 613 | 0 | 759 | 267 | 0 | 25 | 292 | 0 | 1697 | 1697 |
| 16:00 | 0 | 135 | 30 | 165 | 0 | 0 | 0 | 0 | 48 | 189 | 0 | 237 | 50 | 0 | 9 | 59 | 0 | 461 | 461 |

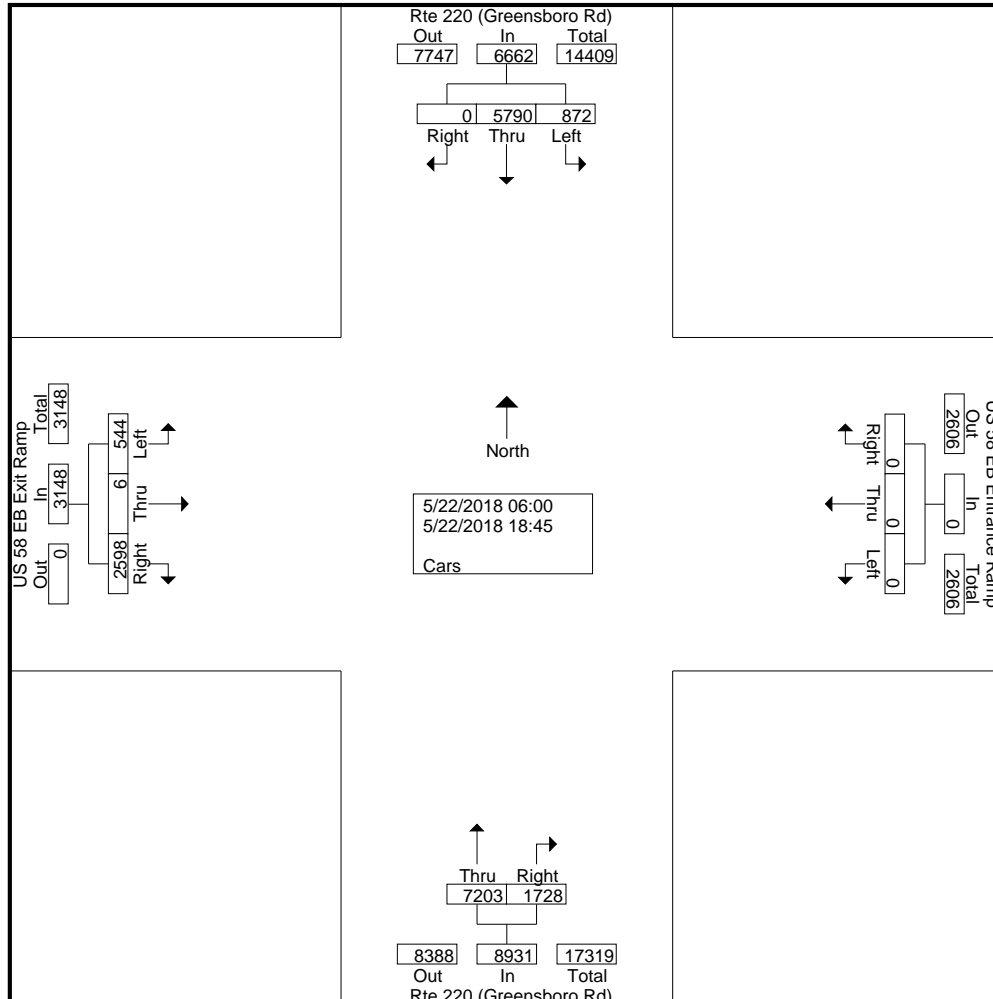
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 EB Ramp
Start Date : 5/22/2018
Page No : 2

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 EB Entrance Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 EB Exit Ramp From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|---------------------------------------|-------------|------------|-------------|-------------------------------------|----------|----------|------------|---------------------------------------|-------------|----------|-------------|---------------------------------|----------|------------|-------------|--------------|--------------|--------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | | | |
| 16:15 | 0 | 157 | 26 | 183 | 0 | 0 | 0 | 0 | 41 | 188 | 0 | 229 | 69 | 0 | 12 | 81 | 0 | 493 | 493 |
| 16:30 | 0 | 136 | 22 | 158 | 0 | 0 | 0 | 0 | 36 | 164 | 0 | 200 | 69 | 0 | 7 | 76 | 0 | 434 | 434 |
| 16:45 | 0 | 155 | 22 | 177 | 0 | 0 | 0 | 0 | 54 | 162 | 0 | 216 | 68 | 0 | 1 | 69 | 0 | 462 | 462 |
| Total | 0 | 583 | 100 | 683 | 0 | 0 | 0 | 0 | 179 | 703 | 0 | 882 | 256 | 0 | 29 | 285 | 0 | 1850 | 1850 |
| 17:00 | 0 | 204 | 43 | 247 | 0 | 0 | 0 | 0 | 54 | 168 | 0 | 222 | 56 | 0 | 8 | 64 | 0 | 533 | 533 |
| 17:15 | 0 | 204 | 33 | 237 | 0 | 0 | 0 | 0 | 55 | 176 | 0 | 231 | 102 | 0 | 16 | 118 | 0 | 586 | 586 |
| 17:30 | 0 | 203 | 22 | 225 | 0 | 0 | 0 | 0 | 48 | 184 | 0 | 232 | 83 | 0 | 16 | 99 | 0 | 556 | 556 |
| 17:45 | 0 | 203 | 32 | 235 | 0 | 0 | 0 | 0 | 52 | 161 | 0 | 213 | 67 | 0 | 21 | 88 | 0 | 536 | 536 |
| Total | 0 | 814 | 130 | 944 | 0 | 0 | 0 | 0 | 209 | 689 | 0 | 898 | 308 | 0 | 61 | 369 | 0 | 2211 | 2211 |
| 18:00 | 0 | 149 | 17 | 166 | 0 | 0 | 0 | 0 | 43 | 139 | 0 | 182 | 55 | 0 | 10 | 65 | 0 | 413 | 413 |
| 18:15 | 0 | 130 | 16 | 146 | 0 | 0 | 0 | 0 | 49 | 148 | 0 | 197 | 59 | 0 | 5 | 64 | 0 | 407 | 407 |
| 18:30 | 0 | 105 | 24 | 129 | 0 | 0 | 0 | 0 | 36 | 138 | 0 | 174 | 51 | 0 | 8 | 59 | 0 | 362 | 362 |
| 18:45 | 0 | 122 | 14 | 136 | 0 | 0 | 0 | 0 | 35 | 165 | 0 | 200 | 37 | 0 | 9 | 46 | 0 | 382 | 382 |
| Total | 0 | 506 | 71 | 577 | 0 | 0 | 0 | 0 | 163 | 590 | 0 | 753 | 202 | 0 | 32 | 234 | 0 | 1564 | 1564 |
| Grand Total | 0 | 5790 | 872 | 6662 | 0 | 0 | 0 | 0 | 1728 | 7203 | 0 | 8931 | 2598 | 6 | 544 | 3148 | 0 | 18741 | 18741 |
| Apprch % | 0 | 86.9 | 13.1 | | 0 | 0 | 0 | | 19.3 | 80.7 | | | 82.5 | 0.2 | 17.3 | | | | |
| Total % | 0 | 30.9 | 4.7 | 35.5 | 0 | 0 | 0 | 0 | 9.2 | 38.4 | 47.7 | 13.9 | 0 | 2.9 | 16.8 | 0 | 100 | | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 EB Ramp

Start Date : 5/22/2018

Page No : 3

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 EB Entrance Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | US 58 EB Exit Ramp From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------------|---------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 86 | 17 | 103 | 0 | 0 | 0 | 0 | 53 | 185 | 238 | 58 | 0 | 17 | 75 | 416 |
| 07:45 | 0 | 112 | 18 | 130 | 0 | 0 | 0 | 0 | 69 | 205 | 274 | 49 | 0 | 26 | 75 | 479 |
| 08:00 | 0 | 136 | 14 | 150 | 0 | 0 | 0 | 0 | 60 | 183 | 243 | 52 | 0 | 11 | 63 | 456 |
| 08:15 | 0 | 112 | 9 | 121 | 0 | 0 | 0 | 0 | 53 | 156 | 209 | 59 | 0 | 14 | 73 | 403 |
| Total Volume | 0 | 446 | 58 | 504 | 0 | 0 | 0 | 0 | 235 | 729 | 964 | 218 | 0 | 68 | 286 | 1754 |
| % App. Total | 0 | 88.5 | 11.5 | | 0 | 0 | 0 | | 24.4 | 75.6 | | 76.2 | 0 | 23.8 | | |
| PHF | .000 | .820 | .806 | .840 | .000 | .000 | .000 | .000 | .851 | .889 | .880 | .924 | .000 | .654 | .953 | .915 |

Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 17:00

| | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 17:00 | 0 | 204 | 43 | 247 | 0 | 0 | 0 | 0 | 54 | 168 | 222 | 56 | 0 | 8 | 64 | 533 |
| 17:15 | 0 | 204 | 33 | 237 | 0 | 0 | 0 | 0 | 55 | 176 | 231 | 102 | 0 | 16 | 118 | 586 |
| 17:30 | 0 | 203 | 22 | 225 | 0 | 0 | 0 | 0 | 48 | 184 | 232 | 83 | 0 | 16 | 99 | 556 |
| 17:45 | 0 | 203 | 32 | 235 | 0 | 0 | 0 | 0 | 52 | 161 | 213 | 67 | 0 | 21 | 88 | 536 |
| Total Volume | 0 | 814 | 130 | 944 | 0 | 0 | 0 | 0 | 209 | 689 | 898 | 308 | 0 | 61 | 369 | 2211 |
| % App. Total | 0 | 86.2 | 13.8 | | 0 | 0 | 0 | | 23.3 | 76.7 | | 83.5 | 0 | 16.5 | | |
| PHF | .000 | .998 | .756 | .955 | .000 | .000 | .000 | .000 | .950 | .936 | .968 | .755 | .000 | .726 | .782 | .943 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 EB Ramp
Start Date : 5/22/2018
Page No : 1

Groups Printed- Heavy Vehicle

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 EB Entrance Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 EB Exit Ramp From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|---------------------------------|------|------|------------|--------------|--------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | | | |
| 06:00 | 0 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 2 | 13 | 0 | 15 | 19 | 1 | 0 | 20 | 0 | 41 | 41 |
| 06:15 | 0 | 7 | 2 | 9 | 0 | 0 | 0 | 0 | 1 | 22 | 0 | 23 | 11 | 0 | 0 | 11 | 0 | 43 | 43 |
| 06:30 | 0 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 1 | 17 | 0 | 18 | 14 | 0 | 1 | 15 | 0 | 40 | 40 |
| 06:45 | 0 | 8 | 2 | 10 | 0 | 0 | 0 | 0 | 6 | 18 | 0 | 24 | 18 | 0 | 1 | 19 | 0 | 53 | 53 |
| Total | 0 | 23 | 9 | 32 | 0 | 0 | 0 | 0 | 10 | 70 | 0 | 80 | 62 | 1 | 2 | 65 | 0 | 177 | 177 |
| 07:00 | 0 | 13 | 2 | 15 | 0 | 0 | 0 | 0 | 3 | 21 | 0 | 24 | 7 | 0 | 0 | 7 | 0 | 46 | 46 |
| 07:15 | 0 | 7 | 2 | 9 | 0 | 0 | 0 | 0 | 4 | 25 | 0 | 29 | 19 | 0 | 1 | 20 | 0 | 58 | 58 |
| 07:30 | 0 | 11 | 1 | 12 | 0 | 0 | 0 | 0 | 4 | 27 | 0 | 31 | 15 | 0 | 5 | 20 | 0 | 63 | 63 |
| 07:45 | 0 | 11 | 6 | 17 | 0 | 0 | 0 | 0 | 6 | 24 | 0 | 30 | 21 | 0 | 2 | 23 | 0 | 70 | 70 |
| Total | 0 | 42 | 11 | 53 | 0 | 0 | 0 | 0 | 17 | 97 | 0 | 114 | 62 | 0 | 8 | 70 | 0 | 237 | 237 |
| 08:00 | 0 | 17 | 5 | 22 | 0 | 0 | 0 | 0 | 6 | 27 | 0 | 33 | 16 | 0 | 1 | 17 | 0 | 72 | 72 |
| 08:15 | 0 | 13 | 1 | 14 | 0 | 0 | 0 | 0 | 6 | 31 | 0 | 37 | 19 | 0 | 2 | 21 | 0 | 72 | 72 |
| 08:30 | 0 | 14 | 4 | 18 | 0 | 0 | 0 | 0 | 7 | 32 | 0 | 39 | 14 | 0 | 6 | 20 | 0 | 77 | 77 |
| 08:45 | 0 | 17 | 4 | 21 | 0 | 0 | 0 | 0 | 5 | 20 | 0 | 25 | 20 | 0 | 3 | 23 | 0 | 69 | 69 |
| Total | 0 | 61 | 14 | 75 | 0 | 0 | 0 | 0 | 24 | 110 | 0 | 134 | 69 | 0 | 12 | 81 | 0 | 290 | 290 |
| 09:00 | 0 | 11 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 35 | 11 | 0 | 5 | 16 | 0 | 63 | 63 |
| 09:15 | 0 | 7 | 4 | 11 | 0 | 0 | 0 | 0 | 1 | 31 | 0 | 32 | 18 | 0 | 1 | 19 | 0 | 62 | 62 |
| 09:30 | 0 | 16 | 4 | 20 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 25 | 21 | 0 | 2 | 23 | 0 | 68 | 68 |
| 09:45 | 0 | 12 | 4 | 16 | 0 | 0 | 0 | 0 | 2 | 20 | 0 | 22 | 27 | 0 | 2 | 29 | 0 | 67 | 67 |
| Total | 0 | 46 | 13 | 59 | 0 | 0 | 0 | 0 | 4 | 110 | 0 | 114 | 77 | 0 | 10 | 87 | 0 | 260 | 260 |
| 10:00 | 0 | 9 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 29 | 31 | 0 | 5 | 36 | 0 | 75 | 75 |
| 10:15 | 0 | 14 | 3 | 17 | 0 | 0 | 0 | 0 | 6 | 20 | 0 | 26 | 16 | 0 | 3 | 19 | 0 | 62 | 62 |
| 10:30 | 0 | 14 | 3 | 17 | 0 | 0 | 0 | 0 | 4 | 22 | 0 | 26 | 23 | 0 | 0 | 23 | 0 | 66 | 66 |
| 10:45 | 0 | 7 | 2 | 9 | 0 | 0 | 0 | 0 | 1 | 33 | 0 | 34 | 33 | 0 | 4 | 37 | 0 | 80 | 80 |
| Total | 0 | 44 | 9 | 53 | 0 | 0 | 0 | 0 | 11 | 104 | 0 | 115 | 103 | 0 | 12 | 115 | 0 | 283 | 283 |
| 11:00 | 0 | 11 | 4 | 15 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 25 | 25 | 0 | 3 | 28 | 0 | 68 | 68 |
| 11:15 | 0 | 9 | 4 | 13 | 0 | 0 | 0 | 0 | 3 | 22 | 0 | 25 | 21 | 0 | 3 | 24 | 0 | 62 | 62 |
| 11:30 | 0 | 11 | 1 | 12 | 0 | 0 | 0 | 0 | 1 | 34 | 0 | 35 | 20 | 0 | 4 | 24 | 0 | 71 | 71 |
| 11:45 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 31 | 21 | 0 | 5 | 26 | 0 | 66 | 66 |
| Total | 0 | 40 | 9 | 49 | 0 | 0 | 0 | 0 | 5 | 111 | 0 | 116 | 87 | 0 | 15 | 102 | 0 | 267 | 267 |
| 12:00 | 0 | 16 | 2 | 18 | 0 | 0 | 0 | 0 | 1 | 31 | 0 | 32 | 25 | 0 | 5 | 30 | 0 | 80 | 80 |
| 12:15 | 0 | 9 | 1 | 10 | 0 | 0 | 0 | 0 | 2 | 21 | 0 | 23 | 32 | 0 | 5 | 37 | 0 | 70 | 70 |
| 12:30 | 0 | 4 | 4 | 8 | 0 | 0 | 0 | 0 | 4 | 34 | 0 | 38 | 28 | 0 | 2 | 30 | 0 | 76 | 76 |
| 12:45 | 0 | 14 | 5 | 19 | 0 | 0 | 0 | 0 | 3 | 22 | 0 | 25 | 23 | 0 | 1 | 24 | 0 | 68 | 68 |
| Total | 0 | 43 | 12 | 55 | 0 | 0 | 0 | 0 | 10 | 108 | 0 | 118 | 108 | 0 | 13 | 121 | 0 | 294 | 294 |
| 13:00 | 0 | 14 | 1 | 15 | 0 | 0 | 0 | 0 | 3 | 30 | 0 | 33 | 18 | 0 | 3 | 21 | 0 | 69 | 69 |
| 13:15 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 38 | 22 | 2 | 5 | 29 | 0 | 80 | 80 |
| 13:30 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 1 | 20 | 0 | 21 | 22 | 0 | 2 | 24 | 0 | 54 | 54 |
| 13:45 | 0 | 10 | 4 | 14 | 0 | 0 | 0 | 0 | 2 | 30 | 0 | 32 | 17 | 0 | 3 | 20 | 0 | 66 | 66 |
| Total | 0 | 46 | 5 | 51 | 0 | 0 | 0 | 0 | 6 | 118 | 0 | 124 | 79 | 2 | 13 | 94 | 0 | 269 | 269 |
| 14:00 | 0 | 6 | 4 | 10 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 17 | 20 | 0 | 1 | 21 | 0 | 48 | 48 |
| 14:15 | 0 | 12 | 4 | 16 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 23 | 0 | 1 | 24 | 0 | 67 | 67 |
| 14:30 | 0 | 10 | 1 | 11 | 0 | 0 | 0 | 0 | 6 | 34 | 0 | 40 | 15 | 0 | 2 | 17 | 0 | 68 | 68 |
| 14:45 | 0 | 8 | 2 | 10 | 0 | 0 | 0 | 0 | 2 | 26 | 0 | 28 | 15 | 0 | 2 | 17 | 0 | 55 | 55 |
| Total | 0 | 36 | 11 | 47 | 0 | 0 | 0 | 0 | 8 | 104 | 0 | 112 | 73 | 0 | 6 | 79 | 0 | 238 | 238 |
| 15:00 | 0 | 14 | 2 | 16 | 0 | 0 | 0 | 0 | 2 | 29 | 0 | 31 | 26 | 0 | 0 | 26 | 0 | 73 | 73 |
| 15:15 | 0 | 12 | 1 | 13 | 0 | 0 | 0 | 0 | 3 | 29 | 0 | 32 | 12 | 0 | 4 | 16 | 0 | 61 | 61 |
| 15:30 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 5 | 19 | 0 | 24 | 18 | 0 | 0 | 18 | 0 | 53 | 53 |
| 15:45 | 0 | 5 | 3 | 8 | 0 | 0 | 0 | 0 | 7 | 21 | 0 | 28 | 24 | 0 | 3 | 27 | 0 | 63 | 63 |
| Total | 0 | 42 | 6 | 48 | 0 | 0 | 0 | 0 | 17 | 98 | 0 | 115 | 80 | 0 | 7 | 87 | 0 | 250 | 250 |
| 16:00 | 0 | 9 | 2 | 11 | 0 | 0 | 0 | 0 | 2 | 24 | 0 | 26 | 15 | 0 | 1 | 16 | 0 | 53 | 53 |

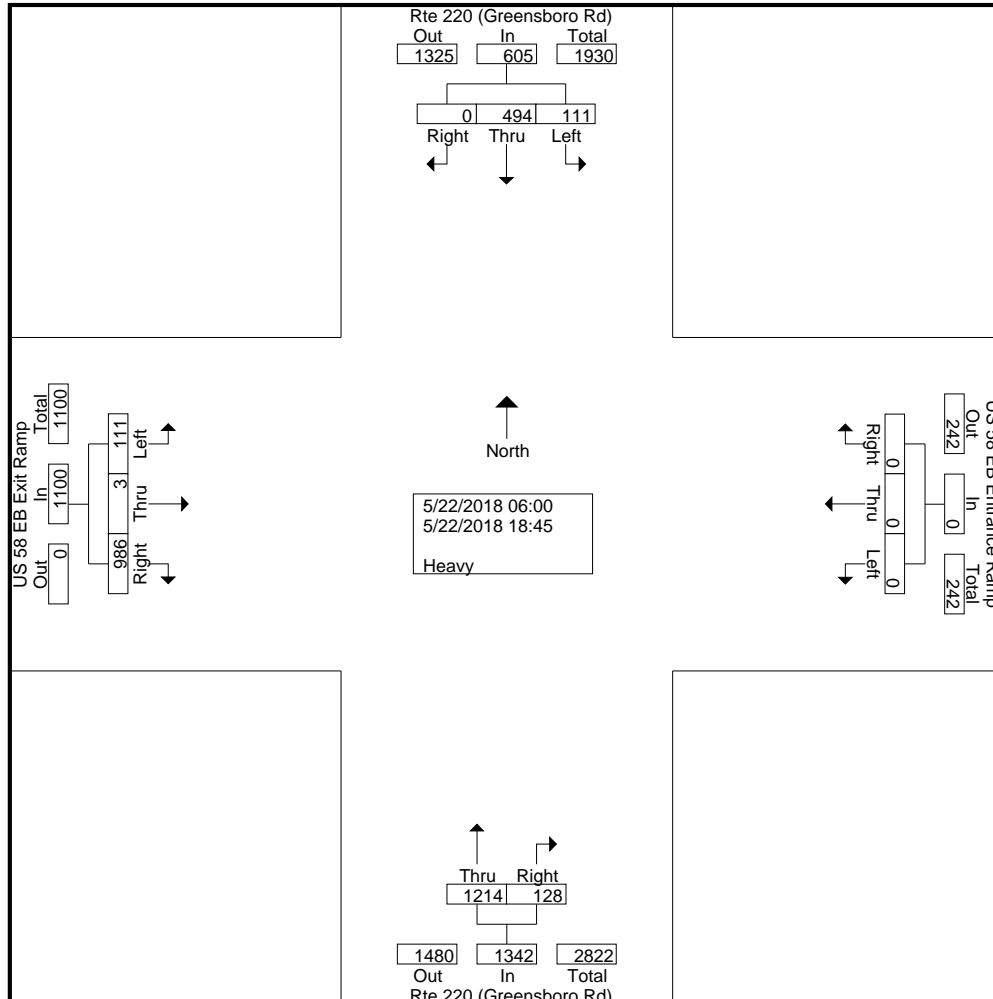
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 EB Ramp
Start Date : 5/22/2018
Page No : 2

Groups Printed- Heavy Vehicle

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 EB Entrance Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 EB Exit Ramp From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|---------------------------------------|------------|------------|------------|-------------------------------------|----------|----------|------------|---------------------------------------|-------------|----------|-------------|---------------------------------|----------|------------|-------------|--------------|--------------|-------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | | | |
| 16:15 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 22 | 0 | 25 | 15 | 0 | 0 | 15 | 0 | 42 | 42 |
| 16:30 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 20 | 0 | 2 | 22 | 0 | 47 | 47 |
| 16:45 | 0 | 7 | 2 | 9 | 0 | 0 | 0 | 0 | 2 | 12 | 0 | 14 | 17 | 0 | 0 | 17 | 0 | 40 | 40 |
| Total | 0 | 22 | 5 | 27 | 0 | 0 | 0 | 0 | 7 | 78 | 0 | 85 | 67 | 0 | 3 | 70 | 0 | 182 | 182 |
| 17:00 | 0 | 8 | 1 | 9 | 0 | 0 | 0 | 0 | 3 | 19 | 0 | 22 | 16 | 0 | 0 | 16 | 0 | 47 | 47 |
| 17:15 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 1 | 18 | 0 | 19 | 18 | 0 | 1 | 19 | 0 | 43 | 43 |
| 17:30 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 16 | 0 | 17 | 14 | 0 | 1 | 15 | 0 | 38 | 38 |
| 17:45 | 0 | 13 | 1 | 14 | 0 | 0 | 0 | 0 | 1 | 11 | 0 | 12 | 17 | 0 | 2 | 19 | 0 | 45 | 45 |
| Total | 0 | 31 | 3 | 34 | 0 | 0 | 0 | 0 | 6 | 64 | 0 | 70 | 65 | 0 | 4 | 69 | 0 | 173 | 173 |
| 18:00 | 0 | 7 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 11 | 13 | 0 | 1 | 14 | 0 | 33 | 33 |
| 18:15 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 3 | 12 | 0 | 15 | 16 | 0 | 1 | 17 | 0 | 36 | 36 |
| 18:30 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 11 | 14 | 0 | 1 | 15 | 0 | 30 | 30 |
| 18:45 | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 11 | 0 | 3 | 14 | 0 | 28 | 28 |
| Total | 0 | 18 | 4 | 22 | 0 | 0 | 0 | 0 | 3 | 42 | 0 | 45 | 54 | 0 | 6 | 60 | 0 | 127 | 127 |
| Grand Total | 0 | 494 | 111 | 605 | 0 | 0 | 0 | 0 | 128 | 1214 | 0 | 1342 | 986 | 3 | 111 | 1100 | 0 | 3047 | 3047 |
| Apprch % | 0 | 81.7 | 18.3 | | 0 | 0 | 0 | | 9.5 | 90.5 | | | 89.6 | 0.3 | 10.1 | | | | |
| Total % | 0 | 16.2 | 3.6 | 19.9 | 0 | 0 | 0 | 0 | 4.2 | 39.8 | | 44 | 32.4 | 0.1 | 3.6 | 36.1 | 0 | 100 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 EB Ramp

Start Date : 5/22/2018

Page No : 3

Groups Printed- Heavy Vehicle

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 EB Entrance Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | US 58 EB Exit Ramp From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------------|---------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 11 | 1 | 12 | 0 | 0 | 0 | 0 | 4 | 27 | 31 | 15 | 0 | 5 | 20 | 63 |
| 07:45 | 0 | 11 | 6 | 17 | 0 | 0 | 0 | 0 | 6 | 24 | 30 | 21 | 0 | 2 | 23 | 70 |
| 08:00 | 0 | 17 | 5 | 22 | 0 | 0 | 0 | 0 | 6 | 27 | 33 | 16 | 0 | 1 | 17 | 72 |
| 08:15 | 0 | 13 | 1 | 14 | 0 | 0 | 0 | 0 | 6 | 31 | 37 | 19 | 0 | 2 | 21 | 72 |
| Total Volume | 0 | 52 | 13 | 65 | 0 | 0 | 0 | 0 | 22 | 109 | 131 | 71 | 0 | 10 | 81 | 277 |
| % App. Total | 0 | 80 | 20 | | 0 | 0 | 0 | | 16.8 | 83.2 | | 87.7 | 0 | 12.3 | | |
| PHF | .000 | .765 | .542 | .739 | .000 | .000 | .000 | .000 | .917 | .879 | .885 | .845 | .000 | .500 | .880 | .962 |

| | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | |
| 17:00 | 0 | 8 | 1 | 9 | 0 | 0 | 0 | 0 | 3 | 19 | 22 | 16 | 0 | 0 | 16 | 47 |
| 17:15 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 1 | 18 | 19 | 18 | 0 | 1 | 19 | 43 |
| 17:30 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 16 | 17 | 14 | 0 | 1 | 15 | 38 |
| 17:45 | 0 | 13 | 1 | 14 | 0 | 0 | 0 | 0 | 1 | 11 | 12 | 17 | 0 | 2 | 19 | 45 |
| Total Volume | 0 | 31 | 3 | 34 | 0 | 0 | 0 | 0 | 6 | 64 | 70 | 65 | 0 | 4 | 69 | 173 |
| % App. Total | 0 | 91.2 | 8.8 | | 0 | 0 | 0 | | 8.6 | 91.4 | | 94.2 | 0 | 5.8 | | |
| PHF | .000 | .596 | .750 | .607 | .000 | .000 | .000 | .000 | .500 | .842 | .795 | .903 | .000 | .500 | .908 | .920 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 EB Ramp
Start Date : 5/22/2018
Page No : 1

Groups Printed- CCombined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 EB Entrance Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 EB Exit Ramp From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|---------------------------------|------|------|------------|--------------|--------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | | | |
| 06:00 | 0 | 60 | 9 | 69 | 0 | 0 | 0 | 0 | 13 | 69 | 0 | 82 | 52 | 4 | 7 | 63 | 0 | 214 | 214 |
| 06:15 | 0 | 94 | 11 | 105 | 0 | 0 | 0 | 0 | 19 | 102 | 0 | 121 | 50 | 0 | 20 | 70 | 0 | 296 | 296 |
| 06:30 | 0 | 87 | 7 | 94 | 0 | 0 | 0 | 0 | 23 | 139 | 0 | 162 | 75 | 1 | 22 | 98 | 0 | 354 | 354 |
| 06:45 | 0 | 109 | 6 | 115 | 0 | 0 | 0 | 0 | 43 | 171 | 0 | 214 | 72 | 0 | 33 | 105 | 0 | 434 | 434 |
| Total | 0 | 350 | 33 | 383 | 0 | 0 | 0 | 0 | 98 | 481 | 0 | 579 | 249 | 5 | 82 | 336 | 0 | 1298 | 1298 |
| 07:00 | 0 | 76 | 16 | 92 | 0 | 0 | 0 | 0 | 24 | 125 | 0 | 149 | 53 | 0 | 18 | 71 | 0 | 312 | 312 |
| 07:15 | 0 | 101 | 12 | 113 | 0 | 0 | 0 | 0 | 44 | 177 | 0 | 221 | 66 | 0 | 15 | 81 | 0 | 415 | 415 |
| 07:30 | 0 | 97 | 18 | 115 | 0 | 0 | 0 | 0 | 57 | 212 | 0 | 269 | 73 | 0 | 22 | 95 | 0 | 479 | 479 |
| 07:45 | 0 | 123 | 24 | 147 | 0 | 0 | 0 | 0 | 75 | 229 | 0 | 304 | 70 | 0 | 28 | 98 | 0 | 549 | 549 |
| Total | 0 | 397 | 70 | 467 | 0 | 0 | 0 | 0 | 200 | 743 | 0 | 943 | 262 | 0 | 83 | 345 | 0 | 1755 | 1755 |
| 08:00 | 0 | 153 | 19 | 172 | 0 | 0 | 0 | 0 | 66 | 210 | 0 | 276 | 68 | 0 | 12 | 80 | 0 | 528 | 528 |
| 08:15 | 0 | 125 | 10 | 135 | 0 | 0 | 0 | 0 | 59 | 187 | 0 | 246 | 78 | 0 | 16 | 94 | 0 | 475 | 475 |
| 08:30 | 0 | 79 | 14 | 93 | 0 | 0 | 0 | 0 | 59 | 169 | 0 | 228 | 77 | 0 | 16 | 93 | 0 | 414 | 414 |
| 08:45 | 0 | 92 | 18 | 110 | 0 | 0 | 0 | 0 | 51 | 151 | 0 | 202 | 66 | 0 | 9 | 75 | 0 | 387 | 387 |
| Total | 0 | 449 | 61 | 510 | 0 | 0 | 0 | 0 | 235 | 717 | 0 | 952 | 289 | 0 | 53 | 342 | 0 | 1804 | 1804 |
| 09:00 | 0 | 79 | 10 | 89 | 0 | 0 | 0 | 0 | 43 | 154 | 0 | 197 | 62 | 0 | 15 | 77 | 0 | 363 | 363 |
| 09:15 | 0 | 93 | 14 | 107 | 0 | 0 | 0 | 0 | 26 | 169 | 0 | 195 | 50 | 2 | 10 | 62 | 0 | 364 | 364 |
| 09:30 | 0 | 88 | 19 | 107 | 0 | 0 | 0 | 0 | 26 | 133 | 0 | 159 | 53 | 0 | 17 | 70 | 0 | 336 | 336 |
| 09:45 | 0 | 94 | 19 | 113 | 0 | 0 | 0 | 0 | 21 | 136 | 0 | 157 | 69 | 0 | 13 | 82 | 0 | 352 | 352 |
| Total | 0 | 354 | 62 | 416 | 0 | 0 | 0 | 0 | 116 | 592 | 0 | 708 | 234 | 2 | 55 | 291 | 0 | 1415 | 1415 |
| 10:00 | 0 | 91 | 20 | 111 | 0 | 0 | 0 | 0 | 18 | 130 | 0 | 148 | 71 | 0 | 8 | 79 | 0 | 338 | 338 |
| 10:15 | 0 | 109 | 14 | 123 | 0 | 0 | 0 | 0 | 25 | 141 | 0 | 166 | 59 | 0 | 11 | 70 | 0 | 359 | 359 |
| 10:30 | 0 | 81 | 15 | 96 | 0 | 0 | 0 | 0 | 16 | 135 | 0 | 151 | 57 | 0 | 6 | 63 | 0 | 310 | 310 |
| 10:45 | 0 | 111 | 16 | 127 | 0 | 0 | 0 | 0 | 23 | 154 | 0 | 177 | 65 | 0 | 10 | 75 | 0 | 379 | 379 |
| Total | 0 | 392 | 65 | 457 | 0 | 0 | 0 | 0 | 82 | 560 | 0 | 642 | 252 | 0 | 35 | 287 | 0 | 1386 | 1386 |
| 11:00 | 0 | 130 | 23 | 153 | 0 | 0 | 0 | 0 | 20 | 122 | 0 | 142 | 65 | 0 | 8 | 73 | 0 | 368 | 368 |
| 11:15 | 0 | 72 | 19 | 91 | 0 | 0 | 0 | 0 | 21 | 124 | 0 | 145 | 60 | 0 | 10 | 70 | 0 | 306 | 306 |
| 11:30 | 0 | 93 | 14 | 107 | 0 | 0 | 0 | 0 | 19 | 149 | 0 | 168 | 52 | 0 | 12 | 64 | 0 | 339 | 339 |
| 11:45 | 0 | 104 | 16 | 120 | 0 | 0 | 0 | 0 | 24 | 156 | 0 | 180 | 60 | 0 | 12 | 72 | 0 | 372 | 372 |
| Total | 0 | 399 | 72 | 471 | 0 | 0 | 0 | 0 | 84 | 551 | 0 | 635 | 237 | 0 | 42 | 279 | 0 | 1385 | 1385 |
| 12:00 | 0 | 104 | 21 | 125 | 0 | 0 | 0 | 0 | 19 | 155 | 0 | 174 | 57 | 0 | 11 | 68 | 0 | 367 | 367 |
| 12:15 | 0 | 117 | 16 | 133 | 0 | 0 | 0 | 0 | 24 | 149 | 0 | 173 | 73 | 0 | 11 | 84 | 0 | 390 | 390 |
| 12:30 | 0 | 97 | 16 | 113 | 0 | 0 | 0 | 0 | 32 | 147 | 0 | 179 | 67 | 0 | 16 | 83 | 0 | 375 | 375 |
| 12:45 | 0 | 115 | 18 | 133 | 0 | 0 | 0 | 0 | 44 | 182 | 0 | 226 | 63 | 0 | 8 | 71 | 0 | 430 | 430 |
| Total | 0 | 433 | 71 | 504 | 0 | 0 | 0 | 0 | 119 | 633 | 0 | 752 | 260 | 0 | 46 | 306 | 0 | 1562 | 1562 |
| 13:00 | 0 | 108 | 14 | 122 | 0 | 0 | 0 | 0 | 28 | 166 | 0 | 194 | 54 | 0 | 10 | 64 | 0 | 380 | 380 |
| 13:15 | 0 | 118 | 17 | 135 | 0 | 0 | 0 | 0 | 15 | 187 | 0 | 202 | 50 | 2 | 12 | 64 | 0 | 401 | 401 |
| 13:30 | 0 | 111 | 13 | 124 | 0 | 0 | 0 | 0 | 18 | 146 | 0 | 164 | 49 | 0 | 12 | 61 | 0 | 349 | 349 |
| 13:45 | 0 | 107 | 16 | 123 | 0 | 0 | 0 | 0 | 22 | 152 | 0 | 174 | 54 | 0 | 15 | 69 | 0 | 366 | 366 |
| Total | 0 | 444 | 60 | 504 | 0 | 0 | 0 | 0 | 83 | 651 | 0 | 734 | 207 | 2 | 49 | 258 | 0 | 1496 | 1496 |
| 14:00 | 0 | 117 | 13 | 130 | 0 | 0 | 0 | 0 | 25 | 160 | 0 | 185 | 61 | 0 | 10 | 71 | 0 | 386 | 386 |
| 14:15 | 0 | 130 | 28 | 158 | 0 | 0 | 0 | 0 | 12 | 140 | 0 | 152 | 84 | 0 | 7 | 91 | 0 | 401 | 401 |
| 14:30 | 0 | 120 | 18 | 138 | 0 | 0 | 0 | 0 | 38 | 148 | 0 | 186 | 68 | 0 | 13 | 81 | 0 | 405 | 405 |
| 14:45 | 0 | 124 | 24 | 148 | 0 | 0 | 0 | 0 | 34 | 164 | 0 | 198 | 82 | 0 | 13 | 95 | 0 | 441 | 441 |
| Total | 0 | 491 | 83 | 574 | 0 | 0 | 0 | 0 | 109 | 612 | 0 | 721 | 295 | 0 | 43 | 338 | 0 | 1633 | 1633 |
| 15:00 | 0 | 125 | 22 | 147 | 0 | 0 | 0 | 0 | 40 | 178 | 0 | 218 | 95 | 0 | 6 | 101 | 0 | 466 | 466 |
| 15:15 | 0 | 155 | 15 | 170 | 0 | 0 | 0 | 0 | 28 | 162 | 0 | 190 | 85 | 0 | 12 | 97 | 0 | 457 | 457 |
| 15:30 | 0 | 172 | 31 | 203 | 0 | 0 | 0 | 0 | 48 | 177 | 0 | 225 | 84 | 0 | 2 | 86 | 0 | 514 | 514 |
| 15:45 | 0 | 149 | 25 | 174 | 0 | 0 | 0 | 0 | 47 | 194 | 0 | 241 | 83 | 0 | 12 | 95 | 0 | 510 | 510 |
| Total | 0 | 601 | 93 | 694 | 0 | 0 | 0 | 0 | 163 | 711 | 0 | 874 | 347 | 0 | 32 | 379 | 0 | 1947 | 1947 |
| 16:00 | 0 | 144 | 32 | 176 | 0 | 0 | 0 | 0 | 50 | 213 | 0 | 263 | 65 | 0 | 10 | 75 | 0 | 514 | 514 |

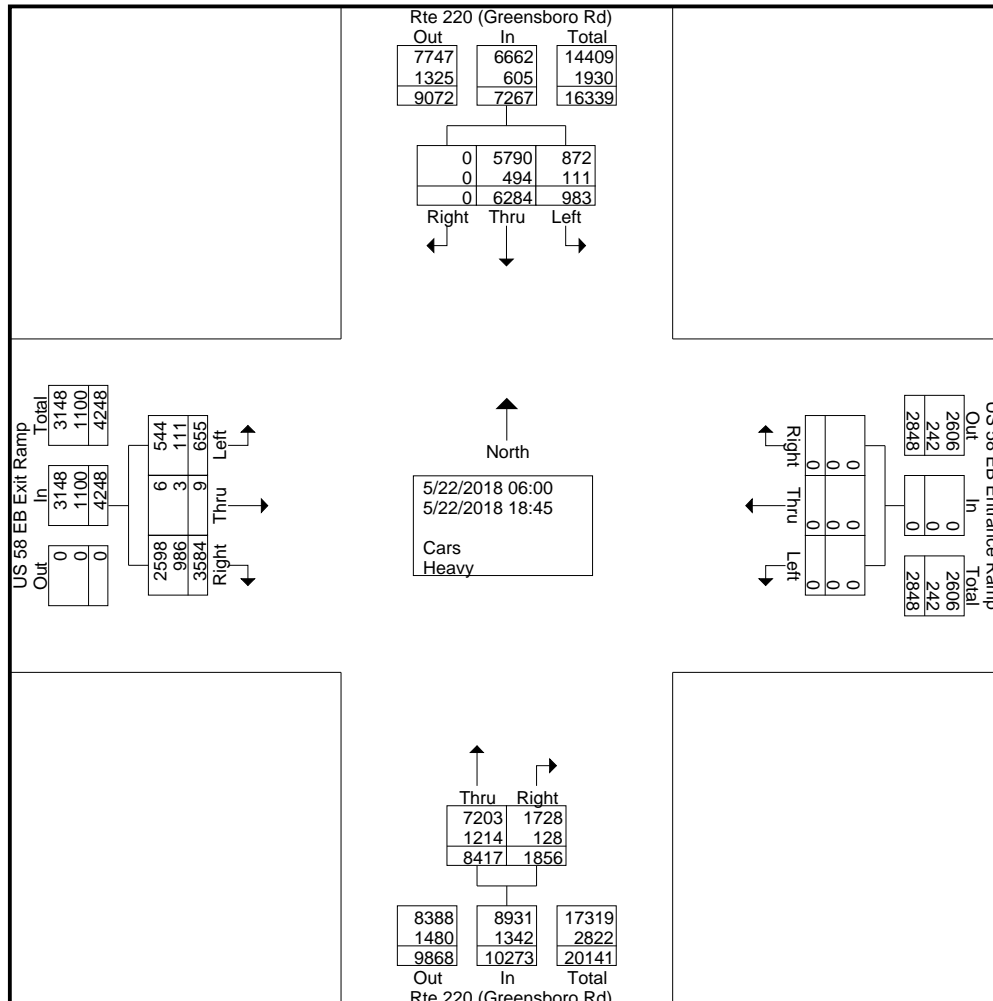
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 EB Ramp
Start Date : 5/22/2018
Page No : 2

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 EB Entrance Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | | US 58 EB Exit Ramp From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|-------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|---------------------------------|------|------|------------|--------------|--------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | | | |
| 16:15 | 0 | 158 | 27 | 185 | 0 | 0 | 0 | 0 | 44 | 210 | 0 | 254 | 84 | 0 | 12 | 96 | 0 | 535 | 535 |
| 16:30 | 0 | 141 | 22 | 163 | 0 | 0 | 0 | 0 | 36 | 184 | 0 | 220 | 89 | 0 | 9 | 98 | 0 | 481 | 481 |
| 16:45 | 0 | 162 | 24 | 186 | 0 | 0 | 0 | 0 | 56 | 174 | 0 | 230 | 85 | 0 | 1 | 86 | 0 | 502 | 502 |
| Total | 0 | 605 | 105 | 710 | 0 | 0 | 0 | 0 | 186 | 781 | 0 | 967 | 323 | 0 | 32 | 355 | 0 | 2032 | 2032 |
| 17:00 | 0 | 212 | 44 | 256 | 0 | 0 | 0 | 0 | 57 | 187 | 0 | 244 | 72 | 0 | 8 | 80 | 0 | 580 | 580 |
| 17:15 | 0 | 208 | 34 | 242 | 0 | 0 | 0 | 0 | 56 | 194 | 0 | 250 | 120 | 0 | 17 | 137 | 0 | 629 | 629 |
| 17:30 | 0 | 209 | 22 | 231 | 0 | 0 | 0 | 0 | 49 | 200 | 0 | 249 | 97 | 0 | 17 | 114 | 0 | 594 | 594 |
| 17:45 | 0 | 216 | 33 | 249 | 0 | 0 | 0 | 0 | 53 | 172 | 0 | 225 | 84 | 0 | 23 | 107 | 0 | 581 | 581 |
| Total | 0 | 845 | 133 | 978 | 0 | 0 | 0 | 0 | 215 | 753 | 0 | 968 | 373 | 0 | 65 | 438 | 0 | 2384 | 2384 |
| 18:00 | 0 | 156 | 18 | 174 | 0 | 0 | 0 | 0 | 43 | 150 | 0 | 193 | 68 | 0 | 11 | 79 | 0 | 446 | 446 |
| 18:15 | 0 | 133 | 17 | 150 | 0 | 0 | 0 | 0 | 52 | 160 | 0 | 212 | 75 | 0 | 6 | 81 | 0 | 443 | 443 |
| 18:30 | 0 | 108 | 25 | 133 | 0 | 0 | 0 | 0 | 36 | 149 | 0 | 185 | 65 | 0 | 9 | 74 | 0 | 392 | 392 |
| 18:45 | 0 | 127 | 15 | 142 | 0 | 0 | 0 | 0 | 35 | 173 | 0 | 208 | 48 | 0 | 12 | 60 | 0 | 410 | 410 |
| Total | 0 | 524 | 75 | 599 | 0 | 0 | 0 | 0 | 166 | 632 | 0 | 798 | 256 | 0 | 38 | 294 | 0 | 1691 | 1691 |
| Grand Total | 0 | 6284 | 983 | 7267 | 0 | 0 | 0 | 0 | 1856 | 8417 | 0 | 10273 | 3584 | 9 | 655 | 4248 | 0 | 21788 | 21788 |
| Apprch % | 0 | 86.5 | 13.5 | | 0 | 0 | 0 | | 18.1 | 81.9 | | | 84.4 | 0.2 | 15.4 | | | | |
| Total % | 0 | 28.8 | 4.5 | 33.4 | 0 | 0 | 0 | 0 | 8.5 | 38.6 | | 47.1 | 16.4 | 0 | 3 | 19.5 | 0 | 100 | |
| Cars | 0 | 5790 | 872 | 6662 | 0 | 0 | 0 | 0 | 1728 | 7203 | | 8931 | 2598 | 6 | 544 | 3148 | 0 | 0 | 18741 |
| % Cars | 0 | 92.1 | 88.7 | 91.7 | 0 | 0 | 0 | 0 | 93.1 | 85.6 | 0 | 86.9 | 72.5 | 66.7 | 83.1 | 74.1 | 0 | 0 | 86 |
| Heavy | 0 | 494 | 111 | 605 | 0 | 0 | 0 | 0 | 128 | 1214 | | 1342 | 986 | 3 | 111 | 1100 | 0 | 0 | 3047 |
| % Heavy | 0 | 7.9 | 11.3 | 8.3 | 0 | 0 | 0 | 0 | 6.9 | 14.4 | 0 | 13.1 | 27.5 | 33.3 | 16.9 | 25.9 | 0 | 0 | 14 |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at US 58 EB Ramp

Start Date : 5/22/2018

Page No : 3

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | US 58 EB Entrance Ramp From East | | | | Rte 220 (Greensboro Rd) From South | | | US 58 EB Exit Ramp From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------------|---------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 97 | 18 | 115 | 0 | 0 | 0 | 0 | 57 | 212 | 269 | 73 | 0 | 22 | 95 | 479 |
| 07:45 | 0 | 123 | 24 | 147 | 0 | 0 | 0 | 0 | 75 | 229 | 304 | 70 | 0 | 28 | 98 | 549 |
| 08:00 | 0 | 153 | 19 | 172 | 0 | 0 | 0 | 0 | 66 | 210 | 276 | 68 | 0 | 12 | 80 | 528 |
| 08:15 | 0 | 125 | 10 | 135 | 0 | 0 | 0 | 0 | 59 | 187 | 246 | 78 | 0 | 16 | 94 | 475 |
| Total Volume | 0 | 498 | 71 | 569 | 0 | 0 | 0 | 0 | 257 | 838 | 1095 | 289 | 0 | 78 | 367 | 2031 |
| % App. Total | 0 | 87.5 | 12.5 | | 0 | 0 | 0 | | 23.5 | 76.5 | | 78.7 | 0 | 21.3 | | |
| PHF | .000 | .814 | .740 | .827 | .000 | .000 | .000 | .000 | .857 | .915 | .900 | .926 | .000 | .696 | .936 | .925 |

Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 17:00

| | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 17:00 | 0 | 212 | 44 | 256 | 0 | 0 | 0 | 0 | 57 | 187 | 244 | 72 | 0 | 8 | 80 | 580 |
| 17:15 | 0 | 208 | 34 | 242 | 0 | 0 | 0 | 0 | 56 | 194 | 250 | 120 | 0 | 17 | 137 | 629 |
| 17:30 | 0 | 209 | 22 | 231 | 0 | 0 | 0 | 0 | 49 | 200 | 249 | 97 | 0 | 17 | 114 | 594 |
| 17:45 | 0 | 216 | 33 | 249 | 0 | 0 | 0 | 0 | 53 | 172 | 225 | 84 | 0 | 23 | 107 | 581 |
| Total Volume | 0 | 845 | 133 | 978 | 0 | 0 | 0 | 0 | 215 | 753 | 968 | 373 | 0 | 65 | 438 | 2384 |
| % App. Total | 0 | 86.4 | 13.6 | | 0 | 0 | 0 | | 22.2 | 77.8 | | 85.2 | 0 | 14.8 | | |
| PHF | .000 | .978 | .756 | .955 | .000 | .000 | .000 | .000 | .943 | .941 | .968 | .777 | .000 | .707 | .799 | .948 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Kilarney Ct
Start Date : 5/22/2018
Page No : 1

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Villa Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Kilarney Ct From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|-----------------------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 93 | 0 | 93 | 1 | 0 | 1 | 2 | 0 | 64 | 0 | 64 | 1 | 0 | 0 | 1 | 160 |
| 06:15 | 0 | 143 | 1 | 144 | 3 | 0 | 0 | 3 | 0 | 102 | 0 | 102 | 0 | 0 | 1 | 1 | 250 |
| 06:30 | 0 | 148 | 1 | 149 | 7 | 0 | 1 | 8 | 1 | 154 | 0 | 155 | 0 | 0 | 0 | 0 | 312 |
| 06:45 | 0 | 134 | 0 | 134 | 5 | 0 | 0 | 5 | 0 | 131 | 0 | 131 | 0 | 1 | 2 | 3 | 273 |
| Total | 0 | 518 | 2 | 520 | 16 | 0 | 2 | 18 | 1 | 451 | 0 | 452 | 1 | 1 | 3 | 5 | 995 |
| 07:00 | 1 | 121 | 1 | 123 | 2 | 0 | 0 | 2 | 0 | 132 | 0 | 132 | 0 | 0 | 0 | 0 | 257 |
| 07:15 | 0 | 137 | 1 | 138 | 6 | 0 | 0 | 6 | 0 | 185 | 0 | 185 | 2 | 0 | 5 | 7 | 336 |
| 07:30 | 0 | 157 | 3 | 160 | 1 | 0 | 2 | 3 | 0 | 248 | 0 | 248 | 3 | 0 | 3 | 6 | 417 |
| 07:45 | 0 | 195 | 0 | 195 | 1 | 0 | 2 | 3 | 1 | 254 | 1 | 256 | 2 | 1 | 3 | 6 | 460 |
| Total | 1 | 610 | 5 | 616 | 10 | 0 | 4 | 14 | 1 | 819 | 1 | 821 | 7 | 1 | 11 | 19 | 1470 |
| 08:00 | 1 | 192 | 0 | 193 | 1 | 0 | 0 | 1 | 0 | 234 | 0 | 234 | 2 | 0 | 3 | 5 | 433 |
| 08:15 | 1 | 145 | 1 | 147 | 1 | 0 | 0 | 1 | 0 | 209 | 1 | 210 | 1 | 0 | 1 | 2 | 360 |
| 08:30 | 0 | 120 | 2 | 122 | 4 | 0 | 0 | 4 | 0 | 168 | 1 | 169 | 0 | 0 | 3 | 3 | 298 |
| 08:45 | 2 | 136 | 0 | 138 | 3 | 0 | 0 | 3 | 0 | 162 | 0 | 162 | 0 | 0 | 0 | 0 | 303 |
| Total | 4 | 593 | 3 | 600 | 9 | 0 | 0 | 9 | 0 | 773 | 2 | 775 | 3 | 0 | 7 | 10 | 1394 |
| 09:00 | 1 | 104 | 3 | 108 | 1 | 0 | 1 | 2 | 0 | 148 | 0 | 148 | 0 | 0 | 5 | 5 | 263 |
| 09:15 | 5 | 108 | 1 | 114 | 1 | 0 | 0 | 1 | 0 | 150 | 0 | 150 | 0 | 0 | 1 | 1 | 266 |
| 09:30 | 0 | 114 | 1 | 115 | 2 | 0 | 1 | 3 | 0 | 163 | 0 | 163 | 1 | 0 | 0 | 1 | 282 |
| 09:45 | 0 | 123 | 2 | 125 | 1 | 0 | 0 | 1 | 1 | 128 | 0 | 129 | 5 | 0 | 2 | 7 | 262 |
| Total | 6 | 449 | 7 | 462 | 5 | 0 | 2 | 7 | 1 | 589 | 0 | 590 | 6 | 0 | 8 | 14 | 1073 |
| 10:00 | 2 | 117 | 1 | 120 | 0 | 0 | 0 | 0 | 0 | 100 | 1 | 101 | 0 | 0 | 0 | 0 | 221 |
| 10:15 | 0 | 137 | 2 | 139 | 0 | 0 | 0 | 0 | 0 | 138 | 2 | 140 | 1 | 0 | 0 | 1 | 280 |
| 10:30 | 0 | 93 | 1 | 94 | 0 | 0 | 0 | 0 | 1 | 132 | 0 | 133 | 1 | 0 | 2 | 3 | 230 |
| 10:45 | 0 | 141 | 1 | 142 | 1 | 0 | 1 | 2 | 0 | 130 | 1 | 131 | 0 | 0 | 3 | 3 | 278 |
| Total | 2 | 488 | 5 | 495 | 1 | 0 | 1 | 2 | 1 | 500 | 4 | 505 | 2 | 0 | 5 | 7 | 1009 |
| 11:00 | 1 | 139 | 1 | 141 | 1 | 0 | 1 | 2 | 0 | 113 | 1 | 114 | 0 | 0 | 1 | 1 | 258 |
| 11:15 | 1 | 107 | 0 | 108 | 3 | 0 | 0 | 3 | 0 | 115 | 4 | 119 | 1 | 0 | 1 | 2 | 232 |
| 11:30 | 0 | 101 | 3 | 104 | 3 | 0 | 0 | 3 | 0 | 114 | 1 | 115 | 0 | 0 | 6 | 6 | 228 |
| 11:45 | 3 | 128 | 1 | 132 | 0 | 0 | 0 | 0 | 0 | 137 | 0 | 137 | 1 | 0 | 0 | 1 | 270 |
| Total | 5 | 475 | 5 | 485 | 7 | 0 | 1 | 8 | 0 | 479 | 6 | 485 | 2 | 0 | 8 | 10 | 988 |
| 12:00 | 4 | 123 | 2 | 129 | 0 | 0 | 0 | 0 | 0 | 146 | 1 | 147 | 0 | 0 | 2 | 2 | 278 |
| 12:15 | 1 | 139 | 3 | 143 | 1 | 0 | 0 | 1 | 0 | 146 | 1 | 147 | 0 | 0 | 3 | 3 | 294 |
| 12:30 | 0 | 121 | 2 | 123 | 1 | 0 | 0 | 1 | 1 | 139 | 1 | 141 | 0 | 0 | 4 | 4 | 269 |
| 12:45 | 2 | 144 | 0 | 146 | 0 | 0 | 0 | 0 | 1 | 216 | 1 | 218 | 0 | 1 | 1 | 2 | 366 |
| Total | 7 | 527 | 7 | 541 | 2 | 0 | 0 | 2 | 2 | 647 | 4 | 653 | 0 | 1 | 10 | 11 | 1207 |
| 13:00 | 3 | 124 | 3 | 130 | 2 | 0 | 1 | 3 | 0 | 134 | 0 | 134 | 0 | 0 | 0 | 0 | 267 |
| 13:15 | 2 | 127 | 3 | 132 | 2 | 0 | 0 | 2 | 0 | 152 | 0 | 152 | 0 | 0 | 1 | 1 | 287 |
| 13:30 | 0 | 139 | 0 | 139 | 5 | 0 | 0 | 5 | 0 | 166 | 0 | 166 | 1 | 0 | 2 | 3 | 313 |
| 13:45 | 2 | 148 | 2 | 152 | 1 | 0 | 1 | 2 | 1 | 147 | 1 | 149 | 0 | 0 | 2 | 2 | 305 |
| Total | 7 | 538 | 8 | 553 | 10 | 0 | 2 | 12 | 1 | 599 | 1 | 601 | 1 | 0 | 5 | 6 | 1172 |
| 14:00 | 3 | 149 | 2 | 154 | 0 | 0 | 1 | 1 | 1 | 157 | 0 | 158 | 1 | 0 | 5 | 6 | 319 |
| 14:15 | 5 | 185 | 0 | 190 | 2 | 0 | 0 | 2 | 0 | 124 | 1 | 125 | 1 | 0 | 1 | 2 | 319 |
| 14:30 | 3 | 151 | 2 | 156 | 0 | 0 | 1 | 1 | 0 | 142 | 0 | 142 | 3 | 0 | 1 | 4 | 303 |
| 14:45 | 1 | 190 | 3 | 194 | 2 | 0 | 0 | 2 | 0 | 179 | 2 | 181 | 4 | 0 | 2 | 6 | 383 |
| Total | 12 | 675 | 7 | 694 | 4 | 0 | 2 | 6 | 1 | 602 | 3 | 606 | 9 | 0 | 9 | 18 | 1324 |
| 15:00 | 6 | 165 | 2 | 173 | 4 | 0 | 1 | 5 | 0 | 170 | 1 | 171 | 3 | 0 | 2 | 5 | 354 |
| 15:15 | 1 | 203 | 3 | 207 | 1 | 0 | 0 | 1 | 0 | 176 | 2 | 178 | 2 | 0 | 1 | 3 | 389 |
| 15:30 | 2 | 202 | 4 | 208 | 0 | 0 | 1 | 1 | 0 | 181 | 3 | 184 | 1 | 0 | 0 | 1 | 394 |
| 15:45 | 2 | 184 | 3 | 189 | 1 | 0 | 2 | 3 | 1 | 229 | 2 | 232 | 2 | 0 | 2 | 4 | 428 |
| Total | 11 | 754 | 12 | 777 | 6 | 0 | 4 | 10 | 1 | 756 | 8 | 765 | 8 | 0 | 5 | 13 | 1565 |
| 16:00 | 3 | 185 | 8 | 196 | 0 | 0 | 1 | 1 | 1 | 254 | 2 | 257 | 1 | 0 | 0 | 1 | 455 |

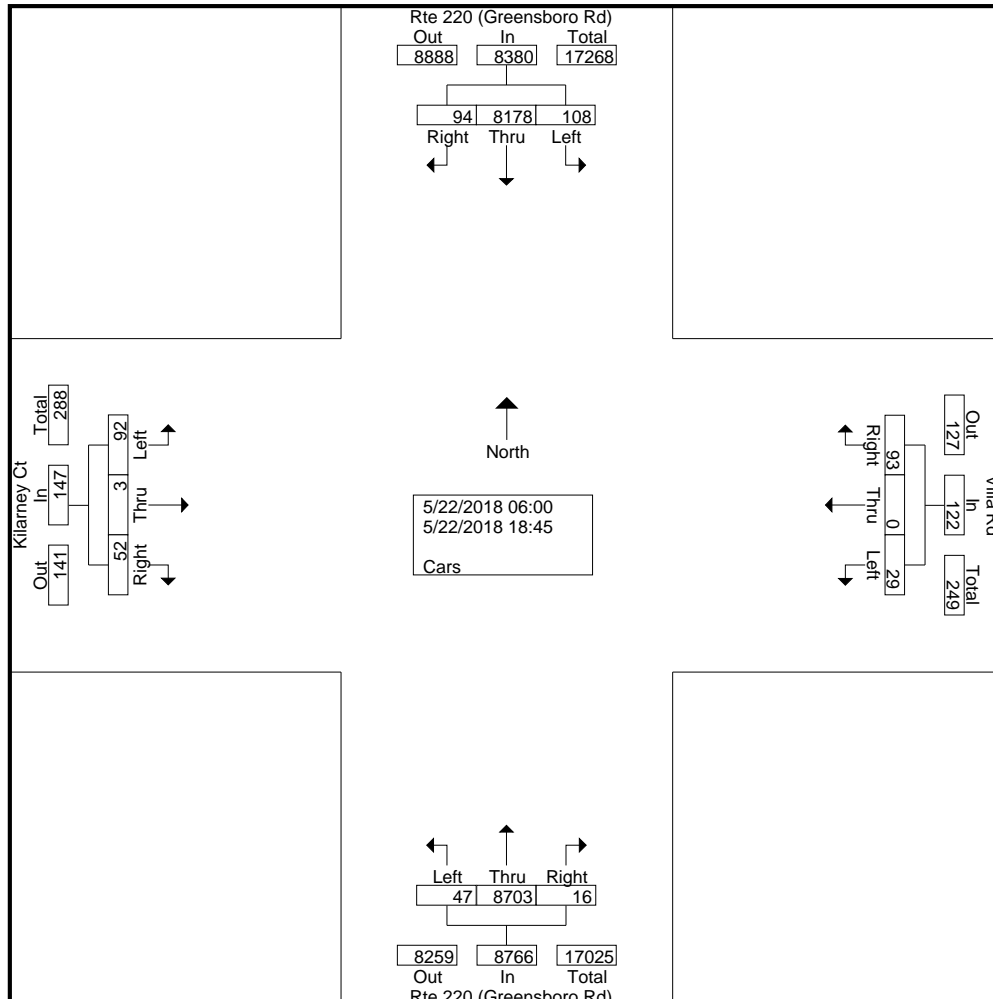
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Kilarney Ct
Start Date : 5/22/2018
Page No : 2

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Villa Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Kilarney Ct From West | | | | Int. Total |
|--------------------|---------------------------------------|-------------|------------|-------------|-----------------------|----------|-----------|------------|---------------------------------------|-------------|-----------|-------------|--------------------------|----------|-----------|------------|--------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 2 | 213 | 6 | 221 | 1 | 0 | 2 | 3 | 1 | 216 | 1 | 218 | 0 | 0 | 3 | 3 | 445 |
| 16:30 | 1 | 173 | 1 | 175 | 3 | 0 | 0 | 3 | 0 | 202 | 2 | 204 | 0 | 0 | 3 | 3 | 385 |
| 16:45 | 5 | 217 | 3 | 225 | 4 | 0 | 1 | 5 | 0 | 213 | 0 | 213 | 3 | 0 | 3 | 6 | 449 |
| Total | 11 | 788 | 18 | 817 | 8 | 0 | 4 | 12 | 2 | 885 | 5 | 892 | 4 | 0 | 9 | 13 | 1734 |
| 17:00 | 5 | 249 | 5 | 259 | 4 | 0 | 0 | 4 | 0 | 238 | 2 | 240 | 0 | 0 | 2 | 2 | 505 |
| 17:15 | 3 | 304 | 4 | 311 | 1 | 0 | 0 | 1 | 0 | 228 | 2 | 230 | 0 | 0 | 2 | 2 | 544 |
| 17:30 | 3 | 261 | 9 | 273 | 1 | 0 | 0 | 1 | 1 | 201 | 1 | 203 | 1 | 0 | 2 | 3 | 480 |
| 17:45 | 4 | 271 | 5 | 280 | 2 | 0 | 1 | 3 | 1 | 216 | 0 | 217 | 1 | 0 | 1 | 2 | 502 |
| Total | 15 | 1085 | 23 | 1123 | 8 | 0 | 1 | 9 | 2 | 883 | 5 | 890 | 2 | 0 | 7 | 9 | 2031 |
| 18:00 | 2 | 188 | 2 | 192 | 2 | 0 | 4 | 6 | 1 | 175 | 3 | 179 | 2 | 0 | 2 | 4 | 381 |
| 18:15 | 3 | 184 | 0 | 187 | 2 | 0 | 0 | 2 | 2 | 193 | 1 | 196 | 1 | 0 | 1 | 2 | 387 |
| 18:30 | 2 | 163 | 1 | 166 | 2 | 0 | 0 | 2 | 0 | 172 | 3 | 175 | 3 | 0 | 1 | 4 | 347 |
| 18:45 | 6 | 143 | 3 | 152 | 1 | 0 | 2 | 3 | 0 | 180 | 1 | 181 | 1 | 0 | 1 | 2 | 338 |
| Total | 13 | 678 | 6 | 697 | 7 | 0 | 6 | 13 | 3 | 720 | 8 | 731 | 7 | 0 | 5 | 12 | 1453 |
| Grand Total | 94 | 8178 | 108 | 8380 | 93 | 0 | 29 | 122 | 16 | 8703 | 47 | 8766 | 52 | 3 | 92 | 147 | 17415 |
| Apprch % | 1.1 | 97.6 | 1.3 | | 76.2 | 0 | 23.8 | | 0.2 | 99.3 | 0.5 | | 35.4 | 2 | 62.6 | | |
| Total % | 0.5 | 47 | 0.6 | 48.1 | 0.5 | 0 | 0.2 | 0.7 | 0.1 | 50 | 0.3 | 50.3 | 0.3 | 0 | 0.5 | 0.8 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Kilarney Ct
Start Date : 5/22/2018
Page No : 3

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Villa Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Kilarney Ct From West | | | | Int. Total |
|--|---------------------------------------|------------|------|------------|-----------------------|------|------|------------|---------------------------------------|------------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 157 | 3 | 160 | 1 | 0 | 2 | 3 | 0 | 248 | 0 | 248 | 3 | 0 | 3 | 6 | 417 |
| 07:45 | 0 | 195 | 0 | 195 | 1 | 0 | 2 | 3 | 1 | 254 | 1 | 256 | 2 | 1 | 3 | 6 | 460 |
| 08:00 | 1 | 192 | 0 | 193 | 1 | 0 | 0 | 1 | 0 | 234 | 0 | 234 | 2 | 0 | 3 | 5 | 433 |
| 08:15 | 1 | 145 | 1 | 147 | 1 | 0 | 0 | 1 | 0 | 209 | 1 | 210 | 1 | 0 | 1 | 2 | 360 |
| Total Volume | 2 | 689 | 4 | 695 | 4 | 0 | 4 | 8 | 1 | 945 | 2 | 948 | 8 | 1 | 10 | 19 | 1670 |
| % App. Total | 0.3 | 99.1 | 0.6 | | 50 | 0 | 50 | | 0.1 | 99.7 | 0.2 | | 42.1 | 5.3 | 52.6 | | |
| PHF | .500 | .883 | .333 | .891 | 1.00 | .000 | .500 | .667 | .250 | .930 | .500 | .926 | .667 | .250 | .833 | .792 | .908 |

| | | | | | | | | | | | | | | | | | |
|--|------|------------|------|------------|------|------|------|------|------|------------|------|------------|------|------|------|------|------------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 5 | 249 | 5 | 259 | 4 | 0 | 0 | 4 | 0 | 238 | 2 | 240 | 0 | 0 | 2 | 2 | 505 |
| 17:15 | 3 | 304 | 4 | 311 | 1 | 0 | 0 | 1 | 0 | 228 | 2 | 230 | 0 | 0 | 2 | 2 | 544 |
| 17:30 | 3 | 261 | 9 | 273 | 1 | 0 | 0 | 1 | 1 | 201 | 1 | 203 | 1 | 0 | 2 | 3 | 480 |
| 17:45 | 4 | 271 | 5 | 280 | 2 | 0 | 1 | 3 | 1 | 216 | 0 | 217 | 1 | 0 | 1 | 2 | 502 |
| Total Volume | 15 | 1085 | 23 | 1123 | 8 | 0 | 1 | 9 | 2 | 883 | 5 | 890 | 2 | 0 | 7 | 9 | 2031 |
| % App. Total | 1.3 | 96.6 | 2 | | 88.9 | 0 | 11.1 | | 0.2 | 99.2 | 0.6 | | 22.2 | 0 | 77.8 | | |
| PHF | .750 | .892 | .639 | .903 | .500 | .000 | .250 | .563 | .500 | .928 | .625 | .927 | .500 | .000 | .875 | .750 | .933 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Kilarney Ct
Start Date : 5/22/2018
Page No : 1

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Villa Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Kilarney Ct From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|-----------------------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 24 | 0 | 24 | 1 | 0 | 0 | 1 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 40 |
| 06:15 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 43 |
| 06:30 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 1 | 1 | 42 |
| 06:45 | 1 | 26 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 56 |
| Total | 1 | 87 | 0 | 88 | 1 | 0 | 0 | 1 | 0 | 91 | 0 | 91 | 0 | 0 | 1 | 1 | 181 |
| 07:00 | 0 | 25 | 1 | 26 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 53 |
| 07:15 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 36 | 1 | 37 | 1 | 0 | 0 | 1 | 69 |
| 07:30 | 0 | 29 | 0 | 29 | 1 | 0 | 0 | 1 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 59 |
| 07:45 | 0 | 38 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 39 | 0 | 0 | 0 | 0 | 77 |
| Total | 0 | 123 | 1 | 124 | 1 | 0 | 0 | 1 | 0 | 131 | 1 | 132 | 1 | 0 | 0 | 1 | 258 |
| 08:00 | 1 | 39 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 41 | 1 | 0 | 0 | 1 | 82 |
| 08:15 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 49 | 0 | 0 | 0 | 0 | 82 |
| 08:30 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 41 | 0 | 0 | 0 | 0 | 74 |
| 08:45 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 64 |
| Total | 1 | 138 | 0 | 139 | 0 | 0 | 0 | 0 | 0 | 162 | 0 | 162 | 1 | 0 | 0 | 1 | 302 |
| 09:00 | 0 | 23 | 1 | 24 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 32 | 0 | 0 | 0 | 0 | 56 |
| 09:15 | 0 | 18 | 0 | 18 | 1 | 0 | 0 | 1 | 0 | 40 | 0 | 40 | 0 | 0 | 0 | 0 | 59 |
| 09:30 | 0 | 46 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 30 | 0 | 0 | 0 | 0 | 76 |
| 09:45 | 0 | 44 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 30 | 0 | 0 | 0 | 0 | 74 |
| Total | 0 | 131 | 1 | 132 | 1 | 0 | 0 | 1 | 0 | 132 | 0 | 132 | 0 | 0 | 0 | 0 | 265 |
| 10:00 | 0 | 43 | 0 | 43 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 72 |
| 10:15 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 68 |
| 10:30 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 64 |
| 10:45 | 0 | 44 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 75 |
| Total | 0 | 152 | 0 | 152 | 0 | 0 | 0 | 0 | 0 | 127 | 0 | 127 | 0 | 0 | 0 | 0 | 279 |
| 11:00 | 0 | 36 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 64 |
| 11:15 | 0 | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 32 | 0 | 0 | 0 | 0 | 67 |
| 11:30 | 0 | 32 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 36 | 0 | 0 | 0 | 0 | 68 |
| 11:45 | 0 | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 69 |
| Total | 0 | 138 | 0 | 138 | 0 | 0 | 0 | 0 | 0 | 130 | 0 | 130 | 0 | 0 | 0 | 0 | 268 |
| 12:00 | 1 | 39 | 1 | 41 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 38 | 0 | 0 | 0 | 0 | 79 |
| 12:15 | 0 | 42 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 67 |
| 12:30 | 0 | 36 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 36 | 0 | 0 | 0 | 0 | 72 |
| 12:45 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 30 | 0 | 0 | 0 | 0 | 63 |
| Total | 1 | 150 | 1 | 152 | 0 | 0 | 0 | 0 | 0 | 129 | 0 | 129 | 0 | 0 | 0 | 0 | 281 |
| 13:00 | 0 | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 31 | 0 | 0 | 1 | 1 | 67 |
| 13:15 | 0 | 40 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 40 | 1 | 41 | 0 | 0 | 0 | 0 | 81 |
| 13:30 | 0 | 36 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 38 | 1 | 0 | 0 | 1 | 75 |
| 13:45 | 1 | 29 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 64 |
| Total | 1 | 140 | 0 | 141 | 0 | 0 | 0 | 0 | 0 | 143 | 1 | 144 | 1 | 0 | 1 | 2 | 287 |
| 14:00 | 0 | 32 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 21 | 1 | 0 | 0 | 1 | 54 |
| 14:15 | 0 | 32 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 66 |
| 14:30 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 37 | 0 | 0 | 0 | 0 | 62 |
| 14:45 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 34 | 1 | 35 | 1 | 0 | 0 | 1 | 65 |
| Total | 0 | 118 | 0 | 118 | 0 | 0 | 0 | 0 | 0 | 126 | 1 | 127 | 2 | 0 | 0 | 2 | 247 |
| 15:00 | 0 | 41 | 0 | 41 | 1 | 0 | 0 | 1 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 70 |
| 15:15 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 32 | 0 | 0 | 0 | 0 | 60 |
| 15:30 | 1 | 29 | 1 | 31 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 29 | 1 | 0 | 0 | 1 | 61 |
| 15:45 | 0 | 31 | 1 | 32 | 0 | 0 | 0 | 0 | 0 | 26 | 1 | 27 | 0 | 0 | 0 | 0 | 59 |
| Total | 1 | 129 | 2 | 132 | 1 | 0 | 0 | 1 | 0 | 115 | 1 | 116 | 1 | 0 | 0 | 1 | 250 |
| 16:00 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 1 | 1 | 49 |

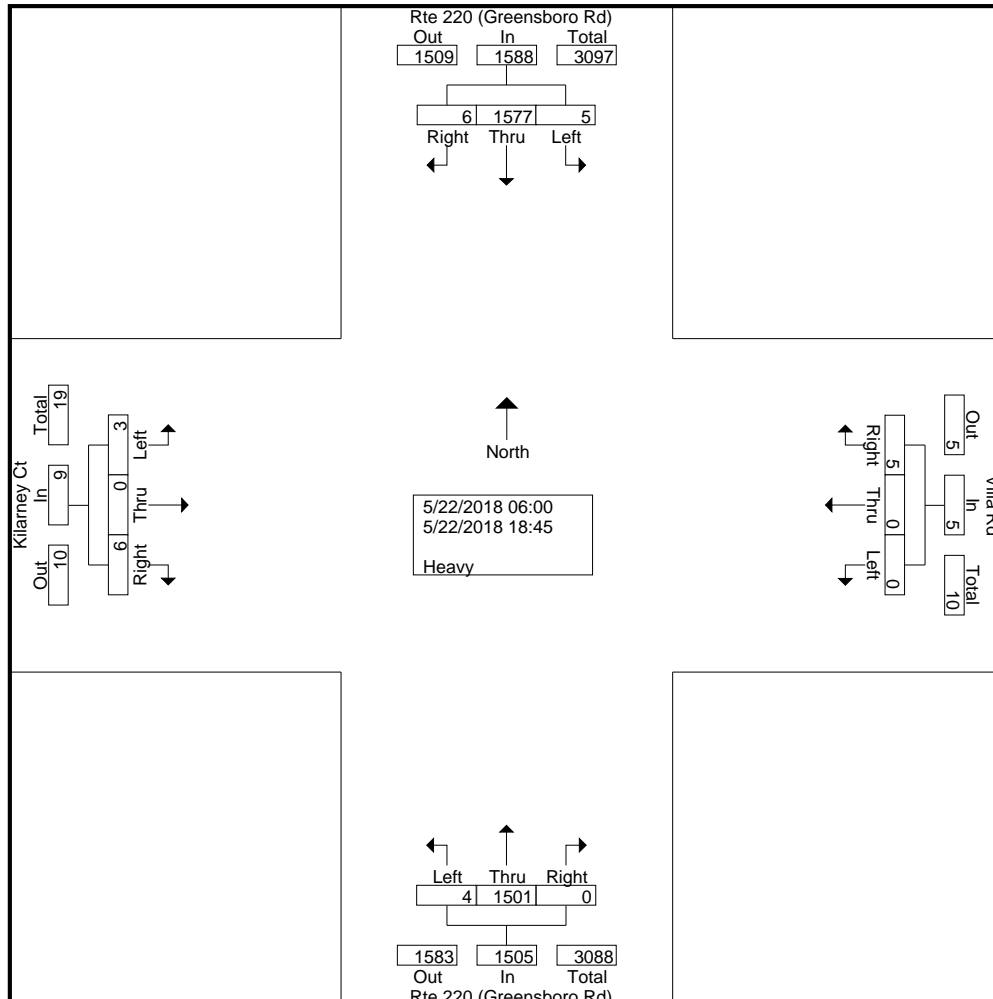
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Kilarney Ct
Start Date : 5/22/2018
Page No : 2

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Villa Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Kilarney Ct From West | | | | Int. Total |
|--------------------|---------------------------------------|-------------|----------|-------------|-----------------------|----------|----------|------------|---------------------------------------|-------------|----------|-------------|--------------------------|----------|----------|------------|-------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 53 |
| 16:30 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 43 |
| 16:45 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 42 |
| Total | 0 | 99 | 0 | 99 | 0 | 0 | 0 | 0 | 0 | 87 | 0 | 87 | 0 | 0 | 1 | 1 | 187 |
| 17:00 | 1 | 30 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 57 |
| 17:15 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 37 |
| 17:30 | 0 | 19 | 0 | 19 | 1 | 0 | 0 | 1 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 36 |
| 17:45 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 38 |
| Total | 1 | 90 | 0 | 91 | 1 | 0 | 0 | 1 | 0 | 76 | 0 | 76 | 0 | 0 | 0 | 0 | 168 |
| 18:00 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 39 |
| 18:15 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 32 |
| 18:30 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 | 0 | 0 | 0 | 0 | 29 |
| 18:45 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 34 |
| Total | 0 | 82 | 0 | 82 | 0 | 0 | 0 | 0 | 0 | 52 | 0 | 52 | 0 | 0 | 0 | 0 | 134 |
| Grand Total | 6 | 1577 | 5 | 1588 | 5 | 0 | 0 | 5 | 0 | 1501 | 4 | 1505 | 6 | 0 | 3 | 9 | 3107 |
| Apprch % | 0.4 | 99.3 | 0.3 | | 100 | 0 | 0 | | 0 | 99.7 | 0.3 | | 66.7 | 0 | 33.3 | | |
| Total % | 0.2 | 50.8 | 0.2 | 51.1 | 0.2 | 0 | 0 | 0.2 | 0 | 48.3 | 0.1 | 48.4 | 0.2 | 0 | 0.1 | 0.3 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Kilarney Ct

Start Date : 5/22/2018

Page No : 3

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Villa Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Kilarney Ct From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-----------------------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 29 | 0 | 29 | 1 | 0 | 0 | 1 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 59 |
| 07:45 | 0 | 38 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 39 | 0 | 0 | 0 | 0 | 77 |
| 08:00 | 1 | 39 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 41 | 1 | 0 | 0 | 1 | 82 |
| 08:15 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 49 | 0 | 0 | 0 | 0 | 82 |
| Total Volume | 1 | 139 | 0 | 140 | 1 | 0 | 0 | 1 | 0 | 158 | 0 | 158 | 1 | 0 | 0 | 1 | 300 |
| % App. Total | 0.7 | 99.3 | 0 | | 100 | 0 | 0 | | 0 | 100 | 0 | | 100 | 0 | 0 | | |
| PHF | .250 | .891 | .000 | .875 | .250 | .000 | .000 | .250 | .000 | .806 | .000 | .806 | .250 | .000 | .000 | .250 | .915 |

Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 17:00

| | | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 17:00 | 1 | 30 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 57 |
| 17:15 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 37 |
| 17:30 | 0 | 19 | 0 | 19 | 1 | 0 | 0 | 1 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 36 |
| 17:45 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 38 |
| Total Volume | 1 | 90 | 0 | 91 | 1 | 0 | 0 | 1 | 0 | 76 | 0 | 76 | 0 | 0 | 0 | 0 | 168 |
| % App. Total | 1.1 | 98.9 | 0 | | 100 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | |
| PHF | .250 | .750 | .000 | .734 | .250 | .000 | .000 | .250 | .000 | .731 | .000 | .731 | .000 | .000 | .000 | .000 | .737 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Kilarney Ct
Start Date : 5/22/2018
Page No : 1

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Villa Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Kilarney Ct From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|-----------------------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 117 | 0 | 117 | 2 | 0 | 1 | 3 | 0 | 79 | 0 | 79 | 1 | 0 | 0 | 1 | 200 |
| 06:15 | 0 | 164 | 1 | 165 | 3 | 0 | 0 | 3 | 0 | 124 | 0 | 124 | 0 | 0 | 1 | 1 | 293 |
| 06:30 | 0 | 164 | 1 | 165 | 7 | 0 | 1 | 8 | 1 | 179 | 0 | 180 | 0 | 0 | 1 | 1 | 354 |
| 06:45 | 1 | 160 | 0 | 161 | 5 | 0 | 0 | 5 | 0 | 160 | 0 | 160 | 0 | 1 | 2 | 3 | 329 |
| Total | 1 | 605 | 2 | 608 | 17 | 0 | 2 | 19 | 1 | 542 | 0 | 543 | 1 | 1 | 4 | 6 | 1176 |
| 07:00 | 1 | 146 | 2 | 149 | 2 | 0 | 0 | 2 | 0 | 159 | 0 | 159 | 0 | 0 | 0 | 0 | 310 |
| 07:15 | 0 | 168 | 1 | 169 | 6 | 0 | 0 | 6 | 0 | 221 | 1 | 222 | 3 | 0 | 5 | 8 | 405 |
| 07:30 | 0 | 186 | 3 | 189 | 2 | 0 | 2 | 4 | 0 | 277 | 0 | 277 | 3 | 0 | 3 | 6 | 476 |
| 07:45 | 0 | 233 | 0 | 233 | 1 | 0 | 2 | 3 | 1 | 293 | 1 | 295 | 2 | 1 | 3 | 6 | 537 |
| Total | 1 | 733 | 6 | 740 | 11 | 0 | 4 | 15 | 1 | 950 | 2 | 953 | 8 | 1 | 11 | 20 | 1728 |
| 08:00 | 2 | 231 | 0 | 233 | 1 | 0 | 0 | 1 | 0 | 275 | 0 | 275 | 3 | 0 | 3 | 6 | 515 |
| 08:15 | 1 | 178 | 1 | 180 | 1 | 0 | 0 | 1 | 0 | 258 | 1 | 259 | 1 | 0 | 1 | 2 | 442 |
| 08:30 | 0 | 153 | 2 | 155 | 4 | 0 | 0 | 4 | 0 | 209 | 1 | 210 | 0 | 0 | 3 | 3 | 372 |
| 08:45 | 2 | 169 | 0 | 171 | 3 | 0 | 0 | 3 | 0 | 193 | 0 | 193 | 0 | 0 | 0 | 0 | 367 |
| Total | 5 | 731 | 3 | 739 | 9 | 0 | 0 | 9 | 0 | 935 | 2 | 937 | 4 | 0 | 7 | 11 | 1696 |
| 09:00 | 1 | 127 | 4 | 132 | 1 | 0 | 1 | 2 | 0 | 180 | 0 | 180 | 0 | 0 | 5 | 5 | 319 |
| 09:15 | 5 | 126 | 1 | 132 | 2 | 0 | 0 | 2 | 0 | 190 | 0 | 190 | 0 | 0 | 1 | 1 | 325 |
| 09:30 | 0 | 160 | 1 | 161 | 2 | 0 | 1 | 3 | 0 | 193 | 0 | 193 | 1 | 0 | 0 | 1 | 358 |
| 09:45 | 0 | 167 | 2 | 169 | 1 | 0 | 0 | 1 | 1 | 158 | 0 | 159 | 5 | 0 | 2 | 7 | 336 |
| Total | 6 | 580 | 8 | 594 | 6 | 0 | 2 | 8 | 1 | 721 | 0 | 722 | 6 | 0 | 8 | 14 | 1338 |
| 10:00 | 2 | 160 | 1 | 163 | 0 | 0 | 0 | 0 | 0 | 129 | 1 | 130 | 0 | 0 | 0 | 0 | 293 |
| 10:15 | 0 | 171 | 2 | 173 | 0 | 0 | 0 | 0 | 0 | 172 | 2 | 174 | 1 | 0 | 0 | 1 | 348 |
| 10:30 | 0 | 124 | 1 | 125 | 0 | 0 | 0 | 0 | 1 | 165 | 0 | 166 | 1 | 0 | 2 | 3 | 294 |
| 10:45 | 0 | 185 | 1 | 186 | 1 | 0 | 1 | 2 | 0 | 161 | 1 | 162 | 0 | 0 | 3 | 3 | 353 |
| Total | 2 | 640 | 5 | 647 | 1 | 0 | 1 | 2 | 1 | 627 | 4 | 632 | 2 | 0 | 5 | 7 | 1288 |
| 11:00 | 1 | 175 | 1 | 177 | 1 | 0 | 1 | 2 | 0 | 141 | 1 | 142 | 0 | 0 | 1 | 1 | 322 |
| 11:15 | 1 | 142 | 0 | 143 | 3 | 0 | 0 | 3 | 0 | 147 | 4 | 151 | 1 | 0 | 1 | 2 | 299 |
| 11:30 | 0 | 133 | 3 | 136 | 3 | 0 | 0 | 3 | 0 | 150 | 1 | 151 | 0 | 0 | 6 | 6 | 296 |
| 11:45 | 3 | 163 | 1 | 167 | 0 | 0 | 0 | 0 | 0 | 171 | 0 | 171 | 1 | 0 | 0 | 1 | 339 |
| Total | 5 | 613 | 5 | 623 | 7 | 0 | 1 | 8 | 0 | 609 | 6 | 615 | 2 | 0 | 8 | 10 | 1256 |
| 12:00 | 5 | 162 | 3 | 170 | 0 | 0 | 0 | 0 | 0 | 184 | 1 | 185 | 0 | 0 | 2 | 2 | 357 |
| 12:15 | 1 | 181 | 3 | 185 | 1 | 0 | 0 | 1 | 0 | 171 | 1 | 172 | 0 | 0 | 3 | 3 | 361 |
| 12:30 | 0 | 157 | 2 | 159 | 1 | 0 | 0 | 1 | 1 | 175 | 1 | 177 | 0 | 0 | 4 | 4 | 341 |
| 12:45 | 2 | 177 | 0 | 179 | 0 | 0 | 0 | 0 | 1 | 246 | 1 | 248 | 0 | 1 | 1 | 2 | 429 |
| Total | 8 | 677 | 8 | 693 | 2 | 0 | 0 | 2 | 2 | 776 | 4 | 782 | 0 | 1 | 10 | 11 | 1488 |
| 13:00 | 3 | 159 | 3 | 165 | 2 | 0 | 1 | 3 | 0 | 165 | 0 | 165 | 0 | 0 | 1 | 1 | 334 |
| 13:15 | 2 | 167 | 3 | 172 | 2 | 0 | 0 | 2 | 0 | 192 | 1 | 193 | 0 | 0 | 1 | 1 | 368 |
| 13:30 | 0 | 175 | 0 | 175 | 5 | 0 | 0 | 5 | 0 | 204 | 0 | 204 | 2 | 0 | 2 | 4 | 388 |
| 13:45 | 3 | 177 | 2 | 182 | 1 | 0 | 1 | 2 | 1 | 181 | 1 | 183 | 0 | 0 | 2 | 2 | 369 |
| Total | 8 | 678 | 8 | 694 | 10 | 0 | 2 | 12 | 1 | 742 | 2 | 745 | 2 | 0 | 6 | 8 | 1459 |
| 14:00 | 3 | 181 | 2 | 186 | 0 | 0 | 1 | 1 | 1 | 178 | 0 | 179 | 2 | 0 | 5 | 7 | 373 |
| 14:15 | 5 | 217 | 0 | 222 | 2 | 0 | 0 | 2 | 0 | 158 | 1 | 159 | 1 | 0 | 1 | 2 | 385 |
| 14:30 | 3 | 176 | 2 | 181 | 0 | 0 | 1 | 1 | 0 | 179 | 0 | 179 | 3 | 0 | 1 | 4 | 365 |
| 14:45 | 1 | 219 | 3 | 223 | 2 | 0 | 0 | 2 | 0 | 213 | 3 | 216 | 5 | 0 | 2 | 7 | 448 |
| Total | 12 | 793 | 7 | 812 | 4 | 0 | 2 | 6 | 1 | 728 | 4 | 733 | 11 | 0 | 9 | 20 | 1571 |
| 15:00 | 6 | 206 | 2 | 214 | 5 | 0 | 1 | 6 | 0 | 198 | 1 | 199 | 3 | 0 | 2 | 5 | 424 |
| 15:15 | 1 | 231 | 3 | 235 | 1 | 0 | 0 | 1 | 0 | 208 | 2 | 210 | 2 | 0 | 1 | 3 | 449 |
| 15:30 | 3 | 231 | 5 | 239 | 0 | 0 | 1 | 1 | 0 | 210 | 3 | 213 | 2 | 0 | 0 | 2 | 455 |
| 15:45 | 2 | 215 | 4 | 221 | 1 | 0 | 2 | 3 | 1 | 255 | 3 | 259 | 2 | 0 | 2 | 4 | 487 |
| Total | 12 | 883 | 14 | 909 | 7 | 0 | 4 | 11 | 1 | 871 | 9 | 881 | 9 | 0 | 5 | 14 | 1815 |
| 16:00 | 3 | 209 | 8 | 220 | 0 | 0 | 1 | 1 | 1 | 278 | 2 | 281 | 1 | 0 | 1 | 2 | 504 |

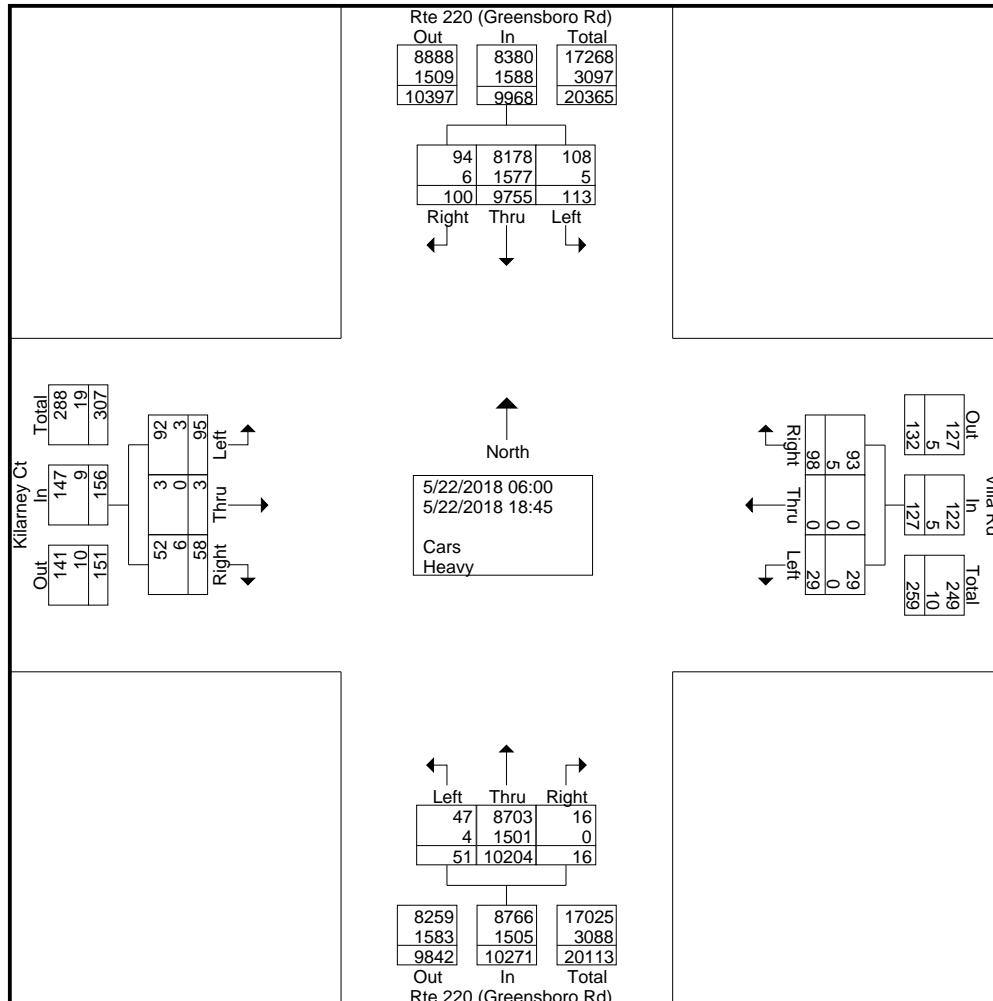
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Kilarney Ct
Start Date : 5/22/2018
Page No : 2

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Villa Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Kilarney Ct From West | | | | Int. Total |
|--------------------|---------------------------------------|-------------|------------|-------------|-----------------------|----------|-----------|------------|---------------------------------------|--------------|-----------|--------------|--------------------------|----------|-----------|------------|--------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 2 | 239 | 6 | 247 | 1 | 0 | 2 | 3 | 1 | 243 | 1 | 245 | 0 | 0 | 3 | 3 | 498 |
| 16:30 | 1 | 198 | 1 | 200 | 3 | 0 | 0 | 3 | 0 | 220 | 2 | 222 | 0 | 0 | 3 | 3 | 428 |
| 16:45 | 5 | 241 | 3 | 249 | 4 | 0 | 1 | 5 | 0 | 231 | 0 | 231 | 3 | 0 | 3 | 6 | 491 |
| Total | 11 | 887 | 18 | 916 | 8 | 0 | 4 | 12 | 2 | 972 | 5 | 979 | 4 | 0 | 10 | 14 | 1921 |
| 17:00 | 6 | 279 | 5 | 290 | 4 | 0 | 0 | 4 | 0 | 264 | 2 | 266 | 0 | 0 | 2 | 2 | 562 |
| 17:15 | 3 | 322 | 4 | 329 | 1 | 0 | 0 | 1 | 0 | 247 | 2 | 249 | 0 | 0 | 2 | 2 | 581 |
| 17:30 | 3 | 280 | 9 | 292 | 2 | 0 | 0 | 2 | 1 | 217 | 1 | 219 | 1 | 0 | 2 | 3 | 516 |
| 17:45 | 4 | 294 | 5 | 303 | 2 | 0 | 1 | 3 | 1 | 231 | 0 | 232 | 1 | 0 | 1 | 2 | 540 |
| Total | 16 | 1175 | 23 | 1214 | 9 | 0 | 1 | 10 | 2 | 959 | 5 | 966 | 2 | 0 | 7 | 9 | 2199 |
| 18:00 | 2 | 214 | 2 | 218 | 2 | 0 | 4 | 6 | 1 | 188 | 3 | 192 | 2 | 0 | 2 | 4 | 420 |
| 18:15 | 3 | 203 | 0 | 206 | 2 | 0 | 0 | 2 | 2 | 206 | 1 | 209 | 1 | 0 | 1 | 2 | 419 |
| 18:30 | 2 | 180 | 1 | 183 | 2 | 0 | 0 | 2 | 0 | 184 | 3 | 187 | 3 | 0 | 1 | 4 | 376 |
| 18:45 | 6 | 163 | 3 | 172 | 1 | 0 | 2 | 3 | 0 | 194 | 1 | 195 | 1 | 0 | 1 | 2 | 372 |
| Total | 13 | 760 | 6 | 779 | 7 | 0 | 6 | 13 | 3 | 772 | 8 | 783 | 7 | 0 | 5 | 12 | 1587 |
| Grand Total | 100 | 9755 | 113 | 9968 | 98 | 0 | 29 | 127 | 16 | 10204 | 51 | 10271 | 58 | 3 | 95 | 156 | 20522 |
| Apprch % | 1 | 97.9 | 1.1 | | 77.2 | 0 | 22.8 | | 0.2 | 99.3 | 0.5 | | 37.2 | 1.9 | 60.9 | | |
| Total % | 0.5 | 47.5 | 0.6 | 48.6 | 0.5 | 0 | 0.1 | 0.6 | 0.1 | 49.7 | 0.2 | 50 | 0.3 | 0 | 0.5 | 0.8 | |
| Cars | 94 | 8178 | 108 | 8380 | 93 | 0 | 29 | 122 | 16 | 8703 | 47 | 8766 | 52 | 3 | 92 | 147 | 17415 |
| % Cars | 94 | 83.8 | 95.6 | 84.1 | 94.9 | 0 | 100 | 96.1 | 100 | 85.3 | 92.2 | 85.3 | 89.7 | 100 | 96.8 | 94.2 | 84.9 |
| Heavy | 6 | 1577 | 5 | 1588 | 5 | 0 | 0 | 5 | 0 | 1501 | 4 | 1505 | 6 | 0 | 3 | 9 | 3107 |
| % Heavy | 6 | 16.2 | 4.4 | 15.9 | 5.1 | 0 | 0 | 3.9 | 0 | 14.7 | 7.8 | 14.7 | 10.3 | 0 | 3.2 | 5.8 | 15.1 |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Kilarney Ct
Start Date : 5/22/2018
Page No : 3

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Villa Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Kilarney Ct From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-----------------------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 186 | 3 | 189 | 2 | 0 | 2 | 4 | 0 | 277 | 0 | 277 | 3 | 0 | 3 | 6 | 476 |
| 07:45 | 0 | 233 | 0 | 233 | 1 | 0 | 2 | 3 | 1 | 293 | 1 | 295 | 2 | 1 | 3 | 6 | 537 |
| 08:00 | 2 | 231 | 0 | 233 | 1 | 0 | 0 | 1 | 0 | 275 | 0 | 275 | 3 | 0 | 3 | 6 | 515 |
| 08:15 | 1 | 178 | 1 | 180 | 1 | 0 | 0 | 1 | 0 | 258 | 1 | 259 | 1 | 0 | 1 | 2 | 442 |
| Total Volume | 3 | 828 | 4 | 835 | 5 | 0 | 4 | 9 | 1 | 1103 | 2 | 1106 | 9 | 1 | 10 | 20 | 1970 |
| % App. Total | 0.4 | 99.2 | 0.5 | | 55.6 | 0 | 44.4 | | 0.1 | 99.7 | 0.2 | | 45 | 5 | 50 | | |
| PHF | .375 | .888 | .333 | .896 | .625 | .000 | .500 | .563 | .250 | .941 | .500 | .937 | .750 | .250 | .833 | .833 | .917 |

Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 17:00

| | | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 17:00 | 6 | 279 | 5 | 290 | 4 | 0 | 0 | 4 | 0 | 264 | 2 | 266 | 0 | 0 | 2 | 2 | 562 |
| 17:15 | 3 | 322 | 4 | 329 | 1 | 0 | 0 | 1 | 0 | 247 | 2 | 249 | 0 | 0 | 2 | 2 | 581 |
| 17:30 | 3 | 280 | 9 | 292 | 2 | 0 | 0 | 2 | 1 | 217 | 1 | 219 | 1 | 0 | 2 | 3 | 516 |
| 17:45 | 4 | 294 | 5 | 303 | 2 | 0 | 1 | 3 | 1 | 231 | 0 | 232 | 1 | 0 | 1 | 2 | 540 |
| Total Volume | 16 | 1175 | 23 | 1214 | 9 | 0 | 1 | 10 | 2 | 959 | 5 | 966 | 2 | 0 | 7 | 9 | 2199 |
| % App. Total | 1.3 | 96.8 | 1.9 | | 90 | 0 | 10 | | 0.2 | 99.3 | 0.5 | | 22.2 | 0 | 77.8 | | |
| PHF | .667 | .912 | .639 | .922 | .563 | .000 | .250 | .625 | .500 | .908 | .625 | .908 | .500 | .000 | .875 | .750 | .946 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Marrowbone Cir
Start Date : 5/22/2018
Page No : 1

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Marrowbone Cir From East | | | | Rte 220 (Greensboro Rd) From South | | | | Gas Station Entrance From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|-----------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 68 | 1 | 69 | 1 | 1 | 0 | 2 | 0 | 50 | 1 | 51 | 0 | 0 | 0 | 0 | 122 |
| 06:15 | 7 | 140 | 0 | 147 | 3 | 0 | 0 | 3 | 0 | 98 | 2 | 100 | 0 | 0 | 2 | 2 | 252 |
| 06:30 | 9 | 141 | 1 | 151 | 3 | 0 | 1 | 4 | 1 | 171 | 3 | 175 | 0 | 0 | 2 | 2 | 332 |
| 06:45 | 5 | 138 | 2 | 145 | 1 | 1 | 1 | 3 | 0 | 126 | 3 | 129 | 0 | 0 | 2 | 2 | 279 |
| Total | 21 | 487 | 4 | 512 | 8 | 2 | 2 | 12 | 1 | 445 | 9 | 455 | 0 | 0 | 6 | 6 | 985 |
| 07:00 | 2 | 125 | 1 | 128 | 1 | 0 | 1 | 2 | 0 | 138 | 6 | 144 | 0 | 0 | 0 | 0 | 274 |
| 07:15 | 8 | 150 | 1 | 159 | 5 | 0 | 1 | 6 | 0 | 181 | 6 | 187 | 0 | 0 | 1 | 1 | 353 |
| 07:30 | 8 | 148 | 2 | 158 | 5 | 0 | 3 | 8 | 0 | 227 | 11 | 238 | 0 | 0 | 6 | 6 | 410 |
| 07:45 | 7 | 198 | 0 | 205 | 1 | 1 | 5 | 7 | 3 | 256 | 6 | 265 | 0 | 0 | 2 | 2 | 479 |
| Total | 25 | 621 | 4 | 650 | 12 | 1 | 10 | 23 | 3 | 802 | 29 | 834 | 0 | 0 | 9 | 9 | 1516 |
| 08:00 | 8 | 205 | 0 | 213 | 10 | 0 | 1 | 11 | 1 | 224 | 7 | 232 | 0 | 1 | 3 | 4 | 460 |
| 08:15 | 7 | 143 | 0 | 150 | 0 | 0 | 0 | 0 | 2 | 197 | 4 | 203 | 0 | 0 | 1 | 1 | 354 |
| 08:30 | 4 | 126 | 1 | 131 | 5 | 0 | 1 | 6 | 1 | 179 | 7 | 187 | 0 | 0 | 0 | 0 | 324 |
| 08:45 | 3 | 126 | 1 | 130 | 3 | 0 | 2 | 5 | 1 | 163 | 6 | 170 | 0 | 0 | 1 | 1 | 306 |
| Total | 22 | 600 | 2 | 624 | 18 | 0 | 4 | 22 | 5 | 763 | 24 | 792 | 0 | 1 | 5 | 6 | 1444 |
| 09:00 | 2 | 111 | 2 | 115 | 5 | 0 | 0 | 5 | 1 | 141 | 3 | 145 | 0 | 0 | 3 | 3 | 268 |
| 09:15 | 4 | 108 | 1 | 113 | 3 | 0 | 0 | 3 | 1 | 157 | 6 | 164 | 0 | 0 | 5 | 5 | 285 |
| 09:30 | 7 | 109 | 1 | 117 | 2 | 0 | 1 | 3 | 1 | 124 | 3 | 128 | 0 | 0 | 2 | 2 | 250 |
| 09:45 | 6 | 136 | 4 | 146 | 0 | 0 | 5 | 5 | 2 | 155 | 2 | 159 | 0 | 0 | 2 | 2 | 312 |
| Total | 19 | 464 | 8 | 491 | 10 | 0 | 6 | 16 | 5 | 577 | 14 | 596 | 0 | 0 | 12 | 12 | 1115 |
| 10:00 | 7 | 117 | 4 | 128 | 3 | 0 | 1 | 4 | 0 | 112 | 0 | 112 | 0 | 0 | 1 | 1 | 245 |
| 10:15 | 10 | 128 | 2 | 140 | 1 | 0 | 1 | 2 | 0 | 140 | 5 | 145 | 0 | 0 | 0 | 0 | 287 |
| 10:30 | 2 | 108 | 1 | 111 | 1 | 1 | 0 | 2 | 2 | 129 | 1 | 132 | 0 | 0 | 0 | 0 | 245 |
| 10:45 | 6 | 126 | 1 | 133 | 3 | 0 | 2 | 5 | 2 | 135 | 5 | 142 | 0 | 1 | 0 | 1 | 281 |
| Total | 25 | 479 | 8 | 512 | 8 | 1 | 4 | 13 | 4 | 516 | 11 | 531 | 0 | 1 | 1 | 2 | 1058 |
| 11:00 | 9 | 128 | 3 | 140 | 0 | 0 | 2 | 2 | 0 | 118 | 2 | 120 | 0 | 0 | 1 | 1 | 263 |
| 11:15 | 4 | 102 | 2 | 108 | 3 | 0 | 0 | 3 | 1 | 104 | 4 | 109 | 0 | 0 | 1 | 1 | 221 |
| 11:30 | 6 | 112 | 2 | 120 | 2 | 0 | 1 | 3 | 0 | 119 | 2 | 121 | 0 | 0 | 1 | 1 | 245 |
| 11:45 | 6 | 115 | 3 | 124 | 3 | 0 | 2 | 5 | 1 | 130 | 1 | 132 | 0 | 1 | 2 | 3 | 264 |
| Total | 25 | 457 | 10 | 492 | 8 | 0 | 5 | 13 | 2 | 471 | 9 | 482 | 0 | 1 | 5 | 6 | 993 |
| 12:00 | 13 | 113 | 4 | 130 | 3 | 0 | 0 | 3 | 0 | 145 | 2 | 147 | 0 | 0 | 2 | 2 | 282 |
| 12:15 | 4 | 143 | 0 | 147 | 1 | 0 | 1 | 2 | 2 | 137 | 1 | 140 | 0 | 0 | 1 | 1 | 290 |
| 12:30 | 10 | 107 | 0 | 117 | 6 | 1 | 0 | 7 | 1 | 143 | 4 | 148 | 0 | 0 | 3 | 3 | 275 |
| 12:45 | 7 | 145 | 1 | 153 | 2 | 0 | 0 | 2 | 0 | 197 | 7 | 204 | 0 | 0 | 3 | 3 | 362 |
| Total | 34 | 508 | 5 | 547 | 12 | 1 | 1 | 14 | 3 | 622 | 14 | 639 | 0 | 0 | 9 | 9 | 1209 |
| 13:00 | 8 | 123 | 0 | 131 | 2 | 0 | 1 | 3 | 0 | 141 | 5 | 146 | 0 | 0 | 0 | 0 | 280 |
| 13:15 | 4 | 125 | 3 | 132 | 4 | 0 | 1 | 5 | 2 | 143 | 5 | 150 | 0 | 0 | 7 | 7 | 294 |
| 13:30 | 5 | 135 | 4 | 144 | 3 | 0 | 0 | 3 | 2 | 151 | 2 | 155 | 0 | 0 | 1 | 1 | 303 |
| 13:45 | 4 | 150 | 4 | 158 | 3 | 1 | 3 | 7 | 2 | 144 | 2 | 148 | 0 | 0 | 2 | 2 | 315 |
| Total | 21 | 533 | 11 | 565 | 12 | 1 | 5 | 18 | 6 | 579 | 14 | 599 | 0 | 0 | 10 | 10 | 1192 |
| 14:00 | 10 | 143 | 4 | 157 | 5 | 0 | 2 | 7 | 2 | 150 | 1 | 153 | 0 | 0 | 0 | 0 | 317 |
| 14:15 | 6 | 184 | 4 | 194 | 6 | 1 | 1 | 8 | 1 | 106 | 4 | 111 | 0 | 0 | 0 | 0 | 313 |
| 14:30 | 7 | 145 | 3 | 155 | 2 | 0 | 3 | 5 | 2 | 164 | 7 | 173 | 0 | 0 | 2 | 2 | 335 |
| 14:45 | 13 | 179 | 4 | 196 | 3 | 0 | 0 | 3 | 2 | 160 | 0 | 162 | 0 | 0 | 1 | 1 | 362 |
| Total | 36 | 651 | 15 | 702 | 16 | 1 | 6 | 23 | 7 | 580 | 12 | 599 | 0 | 0 | 3 | 3 | 1327 |
| 15:00 | 8 | 162 | 2 | 172 | 2 | 1 | 0 | 3 | 1 | 153 | 3 | 157 | 0 | 0 | 4 | 4 | 336 |
| 15:15 | 6 | 199 | 8 | 213 | 5 | 0 | 2 | 7 | 1 | 170 | 4 | 175 | 0 | 1 | 1 | 2 | 397 |
| 15:30 | 4 | 201 | 3 | 208 | 4 | 0 | 4 | 8 | 0 | 174 | 0 | 174 | 0 | 0 | 2 | 2 | 392 |
| 15:45 | 4 | 194 | 6 | 204 | 0 | 0 | 4 | 4 | 0 | 257 | 3 | 260 | 0 | 0 | 0 | 0 | 468 |
| Total | 22 | 756 | 19 | 797 | 11 | 1 | 10 | 22 | 2 | 754 | 10 | 766 | 0 | 1 | 7 | 8 | 1593 |
| 16:00 | 8 | 168 | 2 | 178 | 3 | 0 | 0 | 3 | 2 | 220 | 6 | 228 | 0 | 0 | 0 | 0 | 409 |

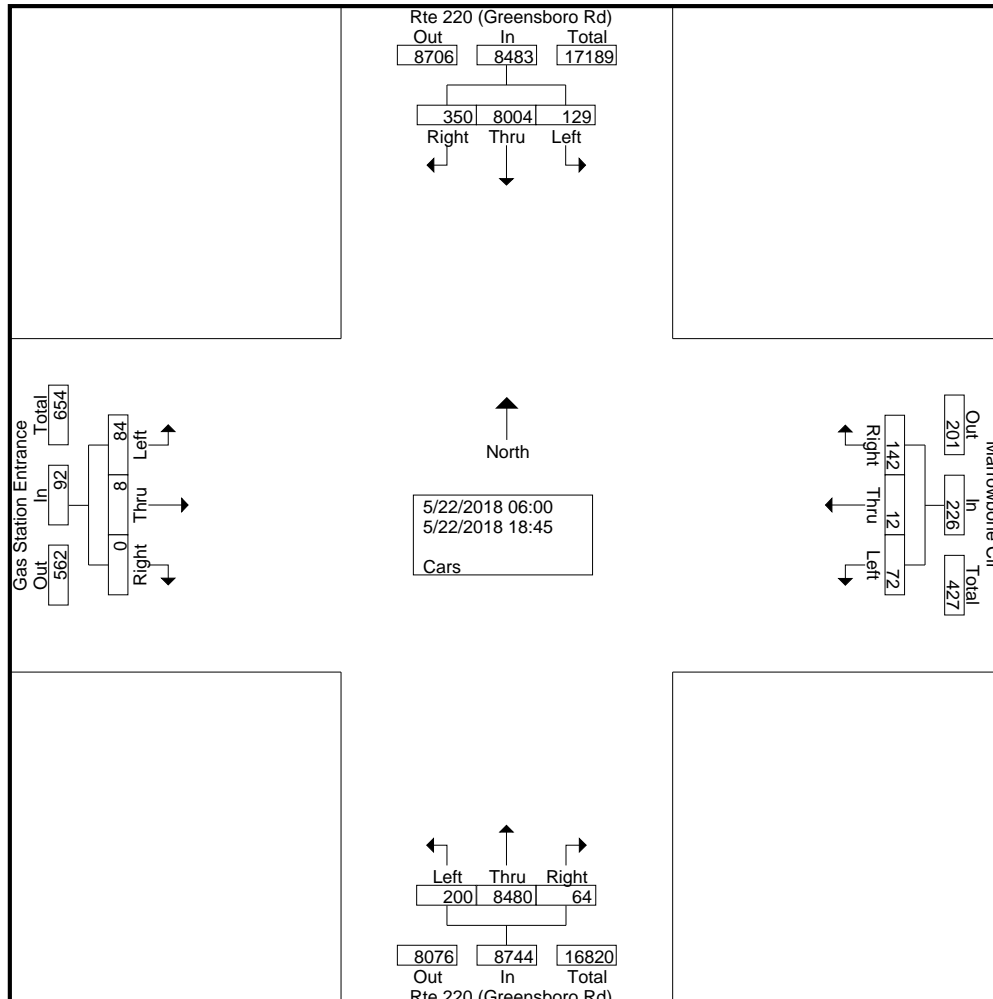
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Marrowbone Cir
Start Date : 5/22/2018
Page No : 2

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Marrowbone Cir From East | | | | Rte 220 (Greensboro Rd) From South | | | | Gas Station Entrance From West | | | | Int. Total |
|--------------------|---------------------------------------|-------------|------------|-------------|-----------------------------|-----------|-----------|------------|---------------------------------------|-------------|------------|-------------|-----------------------------------|----------|-----------|------------|--------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 9 | 211 | 4 | 224 | 2 | 0 | 1 | 3 | 5 | 187 | 2 | 194 | 0 | 0 | 5 | 5 | 426 |
| 16:30 | 4 | 176 | 5 | 185 | 1 | 0 | 1 | 2 | 0 | 206 | 5 | 211 | 0 | 0 | 0 | 0 | 398 |
| 16:45 | 11 | 212 | 4 | 227 | 3 | 0 | 7 | 10 | 0 | 185 | 4 | 189 | 0 | 0 | 0 | 0 | 426 |
| Total | 32 | 767 | 15 | 814 | 9 | 0 | 9 | 18 | 7 | 798 | 17 | 822 | 0 | 0 | 5 | 5 | 1659 |
| | | | | | | | | | | | | | | | | | |
| 17:00 | 6 | 237 | 5 | 248 | 4 | 1 | 1 | 6 | 5 | 236 | 5 | 246 | 0 | 1 | 0 | 1 | 501 |
| 17:15 | 4 | 306 | 9 | 319 | 2 | 0 | 4 | 6 | 1 | 212 | 5 | 218 | 0 | 1 | 1 | 2 | 545 |
| 17:30 | 12 | 249 | 1 | 262 | 5 | 1 | 0 | 6 | 0 | 214 | 4 | 218 | 0 | 0 | 1 | 1 | 487 |
| 17:45 | 12 | 241 | 3 | 256 | 1 | 0 | 2 | 3 | 4 | 202 | 6 | 212 | 0 | 0 | 1 | 1 | 472 |
| Total | 34 | 1033 | 18 | 1085 | 12 | 2 | 7 | 21 | 10 | 864 | 20 | 894 | 0 | 2 | 3 | 5 | 2005 |
| | | | | | | | | | | | | | | | | | |
| 18:00 | 10 | 178 | 3 | 191 | 2 | 0 | 1 | 3 | 1 | 181 | 5 | 187 | 0 | 1 | 2 | 3 | 384 |
| 18:15 | 6 | 183 | 2 | 191 | 1 | 0 | 1 | 2 | 0 | 175 | 5 | 180 | 0 | 1 | 1 | 2 | 375 |
| 18:30 | 9 | 148 | 2 | 159 | 3 | 2 | 0 | 5 | 2 | 195 | 3 | 200 | 0 | 0 | 0 | 0 | 364 |
| 18:45 | 9 | 139 | 3 | 151 | 0 | 0 | 1 | 1 | 6 | 158 | 4 | 168 | 0 | 0 | 6 | 6 | 326 |
| Total | 34 | 648 | 10 | 692 | 6 | 2 | 3 | 11 | 9 | 709 | 17 | 735 | 0 | 2 | 9 | 11 | 1449 |
| | | | | | | | | | | | | | | | | | |
| Grand Total | 350 | 8004 | 129 | 8483 | 142 | 12 | 72 | 226 | 64 | 8480 | 200 | 8744 | 0 | 8 | 84 | 92 | 17545 |
| Apprch % | 4.1 | 94.4 | 1.5 | 48.3 | 62.8 | 5.3 | 31.9 | 1.3 | 0.7 | 97 | 2.3 | 49.8 | 0 | 8.7 | 91.3 | 0.5 | |
| Total % | 2 | 45.6 | 0.7 | 48.3 | 0.8 | 0.1 | 0.4 | 1.3 | 0.4 | 48.3 | 1.1 | 49.8 | 0 | 0 | 0.5 | 0.5 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Marrowbone Cir
Start Date : 5/22/2018
Page No : 3

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Marrowbone Cir From East | | | | Rte 220 (Greensboro Rd) From South | | | | Gas Station Entrance From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-----------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 8 | 148 | 2 | 158 | 5 | 0 | 3 | 8 | 0 | 227 | 11 | 238 | 0 | 0 | 6 | 6 | 410 |
| 07:45 | 7 | 198 | 0 | 205 | 1 | 1 | 5 | 7 | 3 | 256 | 6 | 265 | 0 | 0 | 2 | 2 | 479 |
| 08:00 | 8 | 205 | 0 | 213 | 10 | 0 | 1 | 11 | 1 | 224 | 7 | 232 | 0 | 1 | 3 | 4 | 460 |
| 08:15 | 7 | 143 | 0 | 150 | 0 | 0 | 0 | 0 | 2 | 197 | 4 | 203 | 0 | 0 | 1 | 1 | 354 |
| Total Volume | 30 | 694 | 2 | 726 | 16 | 1 | 9 | 26 | 6 | 904 | 28 | 938 | 0 | 1 | 12 | 13 | 1703 |
| % App. Total | 4.1 | 95.6 | 0.3 | | 61.5 | 3.8 | 34.6 | | 0.6 | 96.4 | 3 | | 0 | 7.7 | 92.3 | | |
| PHF | .938 | .846 | .250 | .852 | .400 | .250 | .450 | .591 | .500 | .883 | .636 | .885 | .000 | .250 | .500 | .542 | .889 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 6 | 237 | 5 | 248 | 4 | 1 | 1 | 6 | 5 | 236 | 5 | 246 | 0 | 1 | 0 | 1 | 501 |
| 17:15 | 4 | 306 | 9 | 319 | 2 | 0 | 4 | 6 | 1 | 212 | 5 | 218 | 0 | 1 | 1 | 2 | 545 |
| 17:30 | 12 | 249 | 1 | 262 | 5 | 1 | 0 | 6 | 0 | 214 | 4 | 218 | 0 | 0 | 1 | 1 | 487 |
| 17:45 | 12 | 241 | 3 | 256 | 1 | 0 | 2 | 3 | 4 | 202 | 6 | 212 | 0 | 0 | 1 | 1 | 472 |
| Total Volume | 34 | 1033 | 18 | 1085 | 12 | 2 | 7 | 21 | 10 | 864 | 20 | 894 | 0 | 2 | 3 | 5 | 2005 |
| % App. Total | 3.1 | 95.2 | 1.7 | | 57.1 | 9.5 | 33.3 | | 1.1 | 96.6 | 2.2 | | 0 | 40 | 60 | | |
| PHF | .708 | .844 | .500 | .850 | .600 | .500 | .438 | .875 | .500 | .915 | .833 | .909 | .000 | .500 | .750 | .625 | .920 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

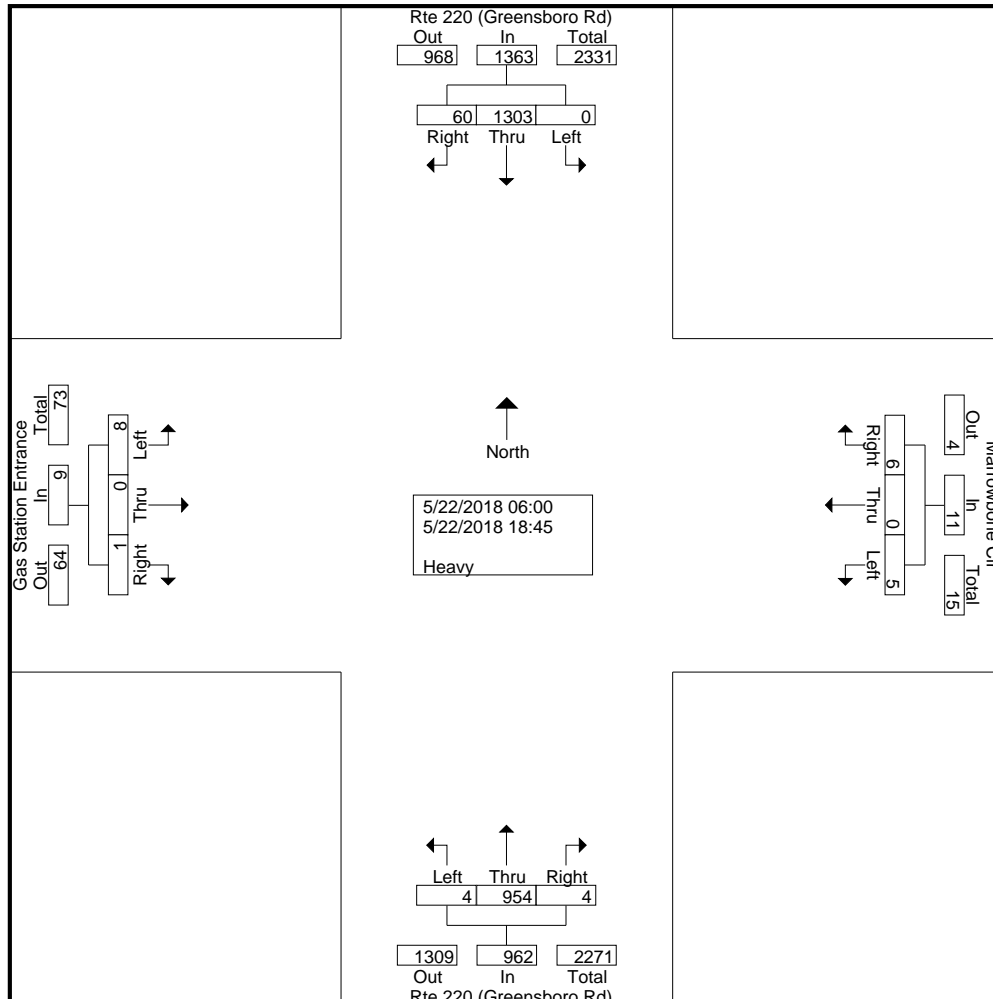
File Name : Rte 220 at Marrowbone Cir

Start Date : 5/22/2018

Page No : 2

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Marrowbone Cir From East | | | | Rte 220 (Greensboro Rd) From South | | | | Gas Station Entrance From West | | | | Int. Total | |
|-------------|---------------------------------------|------|------|------------|-----------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------------------|------|------|------------|------------|------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | | |
| 16:15 | 1 | 26 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 16:30 | 1 | 21 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 16:45 | 1 | 24 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| Total | 4 | 91 | 0 | 95 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 96 |
| 17:00 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 17:15 | 1 | 15 | 0 | 16 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 17:30 | 1 | 19 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 17:45 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| Total | 2 | 80 | 0 | 82 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| 18:00 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 18:15 | 1 | 15 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 18:30 | 1 | 16 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 18:45 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Total | 2 | 69 | 0 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| Grand Total | 60 | 1303 | 0 | 1363 | 6 | 0 | 5 | 11 | 4 | 954 | 4 | 962 | 1 | 0 | 8 | 9 | | 2345 |
| Apprch % | 4.4 | 95.6 | 0 | | 54.5 | 0 | 45.5 | | 0.4 | 99.2 | 0.4 | | 11.1 | 0 | 88.9 | | | |
| Total % | 2.6 | 55.6 | 0 | 58.1 | 0.3 | 0 | 0.2 | 0.5 | 0.2 | 40.7 | 0.2 | 41 | 0 | 0 | 0.3 | 0.4 | | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Marrowbone Cir
Start Date : 5/22/2018
Page No : 1

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Marrowbone Cir From East | | | | Rte 220 (Greensboro Rd) From South | | | | Gas Station Entrance From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|-----------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 82 | 1 | 83 | 1 | 1 | 0 | 2 | 0 | 76 | 1 | 77 | 0 | 0 | 1 | 1 | 163 |
| 06:15 | 7 | 155 | 0 | 162 | 3 | 0 | 0 | 3 | 0 | 131 | 2 | 133 | 0 | 0 | 2 | 2 | 300 |
| 06:30 | 10 | 153 | 1 | 164 | 3 | 0 | 1 | 4 | 1 | 190 | 3 | 194 | 0 | 0 | 2 | 2 | 364 |
| 06:45 | 6 | 157 | 2 | 165 | 1 | 1 | 2 | 4 | 0 | 157 | 4 | 161 | 0 | 0 | 2 | 2 | 332 |
| Total | 23 | 547 | 4 | 574 | 8 | 2 | 3 | 13 | 1 | 554 | 10 | 565 | 0 | 0 | 7 | 7 | 1159 |
| 07:00 | 2 | 142 | 1 | 145 | 1 | 0 | 2 | 3 | 0 | 167 | 6 | 173 | 0 | 0 | 1 | 1 | 322 |
| 07:15 | 8 | 173 | 1 | 182 | 6 | 0 | 2 | 8 | 0 | 206 | 7 | 213 | 0 | 0 | 2 | 2 | 405 |
| 07:30 | 11 | 172 | 2 | 185 | 5 | 0 | 3 | 8 | 0 | 257 | 11 | 268 | 0 | 0 | 6 | 6 | 467 |
| 07:45 | 8 | 228 | 0 | 236 | 2 | 1 | 5 | 8 | 3 | 287 | 6 | 296 | 0 | 0 | 2 | 2 | 542 |
| Total | 29 | 715 | 4 | 748 | 14 | 1 | 12 | 27 | 3 | 917 | 30 | 950 | 0 | 0 | 11 | 11 | 1736 |
| 08:00 | 10 | 236 | 0 | 246 | 10 | 0 | 1 | 11 | 1 | 259 | 8 | 268 | 0 | 1 | 3 | 4 | 529 |
| 08:15 | 8 | 168 | 0 | 176 | 0 | 0 | 0 | 0 | 2 | 229 | 4 | 235 | 0 | 0 | 1 | 1 | 412 |
| 08:30 | 4 | 154 | 1 | 159 | 5 | 0 | 1 | 6 | 1 | 198 | 7 | 206 | 0 | 0 | 1 | 1 | 372 |
| 08:45 | 4 | 153 | 1 | 158 | 3 | 0 | 2 | 5 | 1 | 198 | 6 | 205 | 0 | 0 | 1 | 1 | 369 |
| Total | 26 | 711 | 2 | 739 | 18 | 0 | 4 | 22 | 5 | 884 | 25 | 914 | 0 | 1 | 6 | 7 | 1682 |
| 09:00 | 3 | 129 | 2 | 134 | 5 | 0 | 0 | 5 | 1 | 168 | 3 | 172 | 0 | 0 | 3 | 3 | 314 |
| 09:15 | 4 | 134 | 1 | 139 | 3 | 0 | 0 | 3 | 1 | 190 | 6 | 197 | 0 | 0 | 5 | 5 | 344 |
| 09:30 | 9 | 138 | 1 | 148 | 2 | 0 | 1 | 3 | 1 | 149 | 3 | 153 | 1 | 0 | 2 | 3 | 307 |
| 09:45 | 11 | 174 | 4 | 189 | 0 | 0 | 5 | 5 | 3 | 185 | 2 | 190 | 0 | 0 | 2 | 2 | 386 |
| Total | 27 | 575 | 8 | 610 | 10 | 0 | 6 | 16 | 6 | 692 | 14 | 712 | 1 | 0 | 12 | 13 | 1351 |
| 10:00 | 8 | 152 | 4 | 164 | 3 | 0 | 1 | 4 | 0 | 144 | 0 | 144 | 0 | 0 | 1 | 1 | 313 |
| 10:15 | 10 | 153 | 2 | 165 | 1 | 0 | 1 | 2 | 0 | 158 | 5 | 163 | 0 | 0 | 0 | 0 | 330 |
| 10:30 | 3 | 132 | 1 | 136 | 1 | 1 | 0 | 2 | 2 | 164 | 1 | 167 | 0 | 0 | 0 | 0 | 305 |
| 10:45 | 8 | 167 | 1 | 176 | 3 | 0 | 2 | 5 | 2 | 165 | 5 | 172 | 0 | 1 | 0 | 1 | 354 |
| Total | 29 | 604 | 8 | 641 | 8 | 1 | 4 | 13 | 4 | 631 | 11 | 646 | 0 | 1 | 1 | 2 | 1302 |
| 11:00 | 10 | 156 | 3 | 169 | 0 | 0 | 2 | 2 | 1 | 150 | 2 | 153 | 0 | 0 | 1 | 1 | 325 |
| 11:15 | 6 | 129 | 2 | 137 | 3 | 0 | 0 | 3 | 1 | 131 | 4 | 136 | 0 | 0 | 1 | 1 | 277 |
| 11:30 | 6 | 139 | 2 | 147 | 2 | 0 | 1 | 3 | 0 | 154 | 2 | 156 | 0 | 0 | 2 | 2 | 308 |
| 11:45 | 6 | 142 | 3 | 151 | 3 | 0 | 2 | 5 | 1 | 155 | 1 | 157 | 0 | 1 | 2 | 3 | 316 |
| Total | 28 | 566 | 10 | 604 | 8 | 0 | 5 | 13 | 3 | 590 | 9 | 602 | 0 | 1 | 6 | 7 | 1226 |
| 12:00 | 17 | 149 | 4 | 170 | 3 | 0 | 0 | 3 | 0 | 170 | 2 | 172 | 0 | 0 | 2 | 2 | 347 |
| 12:15 | 8 | 175 | 0 | 183 | 1 | 0 | 1 | 2 | 3 | 162 | 1 | 166 | 0 | 0 | 1 | 1 | 352 |
| 12:30 | 11 | 137 | 0 | 148 | 6 | 1 | 0 | 7 | 1 | 181 | 5 | 187 | 0 | 0 | 3 | 3 | 345 |
| 12:45 | 9 | 175 | 1 | 185 | 2 | 0 | 0 | 2 | 0 | 221 | 7 | 228 | 0 | 0 | 3 | 3 | 418 |
| Total | 45 | 636 | 5 | 686 | 12 | 1 | 1 | 14 | 4 | 734 | 15 | 753 | 0 | 0 | 9 | 9 | 1462 |
| 13:00 | 10 | 150 | 0 | 160 | 2 | 0 | 1 | 3 | 0 | 166 | 5 | 171 | 0 | 0 | 3 | 3 | 337 |
| 13:15 | 5 | 152 | 3 | 160 | 5 | 0 | 1 | 6 | 2 | 167 | 5 | 174 | 0 | 0 | 7 | 7 | 347 |
| 13:30 | 7 | 162 | 4 | 173 | 4 | 0 | 0 | 4 | 3 | 167 | 2 | 172 | 0 | 0 | 1 | 1 | 350 |
| 13:45 | 5 | 178 | 4 | 187 | 3 | 1 | 3 | 7 | 2 | 161 | 2 | 165 | 0 | 0 | 2 | 2 | 361 |
| Total | 27 | 642 | 11 | 680 | 14 | 1 | 5 | 20 | 7 | 661 | 14 | 682 | 0 | 0 | 13 | 13 | 1395 |
| 14:00 | 12 | 170 | 4 | 186 | 6 | 0 | 2 | 8 | 2 | 163 | 1 | 166 | 0 | 0 | 0 | 0 | 360 |
| 14:15 | 6 | 215 | 4 | 225 | 6 | 1 | 1 | 8 | 1 | 120 | 4 | 125 | 0 | 0 | 0 | 0 | 358 |
| 14:30 | 8 | 164 | 3 | 175 | 2 | 0 | 3 | 5 | 2 | 177 | 7 | 186 | 0 | 0 | 2 | 2 | 368 |
| 14:45 | 14 | 203 | 4 | 221 | 3 | 0 | 0 | 3 | 2 | 171 | 0 | 173 | 0 | 0 | 1 | 1 | 398 |
| Total | 40 | 752 | 15 | 807 | 17 | 1 | 6 | 24 | 7 | 631 | 12 | 650 | 0 | 0 | 3 | 3 | 1484 |
| 15:00 | 10 | 199 | 2 | 211 | 2 | 1 | 0 | 3 | 1 | 168 | 3 | 172 | 0 | 0 | 4 | 4 | 390 |
| 15:15 | 7 | 223 | 8 | 238 | 5 | 0 | 2 | 7 | 1 | 170 | 4 | 175 | 0 | 1 | 1 | 2 | 422 |
| 15:30 | 4 | 230 | 3 | 237 | 4 | 0 | 5 | 9 | 0 | 174 | 0 | 174 | 0 | 0 | 2 | 2 | 422 |
| 15:45 | 7 | 219 | 6 | 232 | 0 | 0 | 4 | 4 | 0 | 257 | 3 | 260 | 0 | 0 | 0 | 0 | 496 |
| Total | 28 | 871 | 19 | 918 | 11 | 1 | 11 | 23 | 2 | 769 | 10 | 781 | 0 | 1 | 7 | 8 | 1730 |
| 16:00 | 9 | 188 | 2 | 199 | 3 | 0 | 1 | 4 | 2 | 220 | 6 | 228 | 0 | 0 | 0 | 0 | 431 |

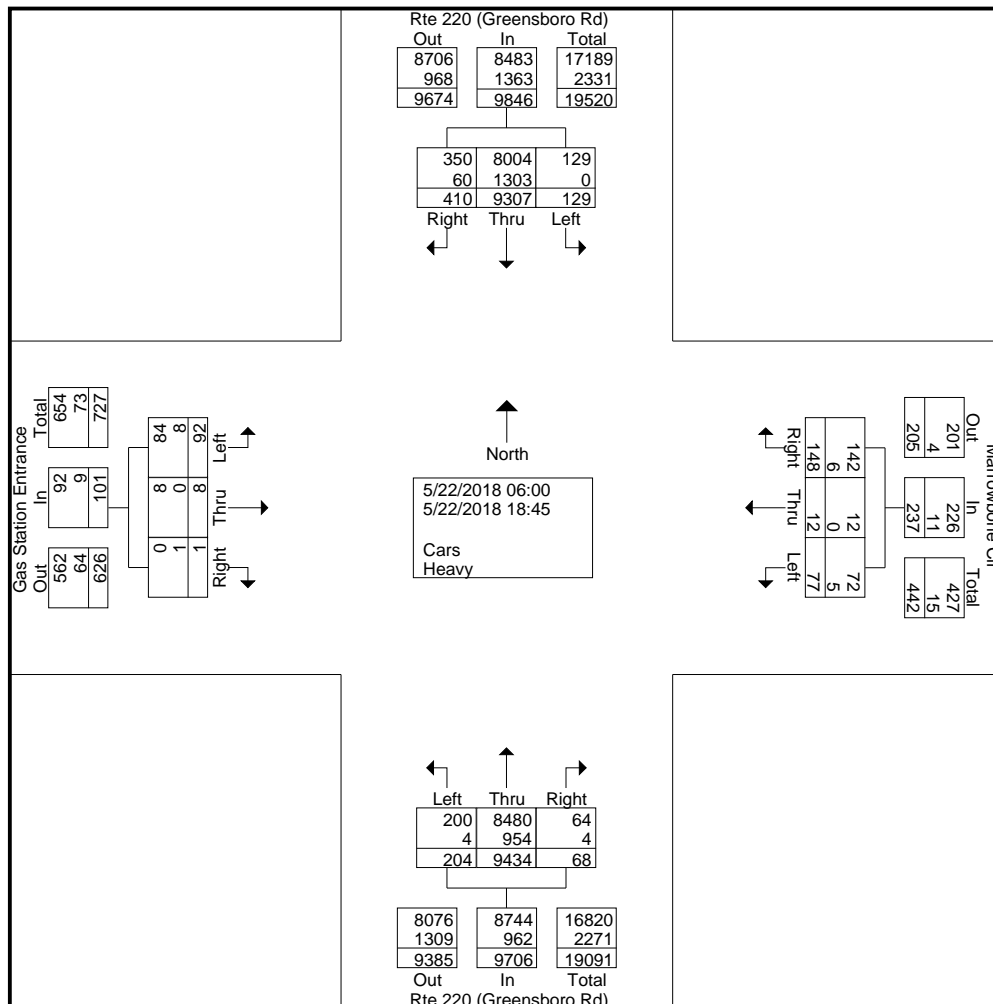
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Marrowbone Cir
Start Date : 5/22/2018
Page No : 2

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Marrowbone Cir From East | | | | Rte 220 (Greensboro Rd) From South | | | | Gas Station Entrance From West | | | | Int. Total |
|--------------------|---------------------------------------|-------------|------------|-------------|-----------------------------|-----------|-----------|------------|---------------------------------------|-------------|------------|-------------|-----------------------------------|----------|-----------|------------|--------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 10 | 237 | 4 | 251 | 2 | 0 | 1 | 3 | 5 | 187 | 2 | 194 | 0 | 0 | 5 | 5 | 453 |
| 16:30 | 5 | 197 | 5 | 207 | 1 | 0 | 1 | 2 | 0 | 206 | 5 | 211 | 0 | 0 | 0 | 0 | 420 |
| 16:45 | 12 | 236 | 4 | 252 | 3 | 0 | 7 | 10 | 0 | 185 | 4 | 189 | 0 | 0 | 0 | 0 | 451 |
| Total | 36 | 858 | 15 | 909 | 9 | 0 | 10 | 19 | 7 | 798 | 17 | 822 | 0 | 0 | 5 | 5 | 1755 |
| 17:00 | 6 | 264 | 5 | 275 | 4 | 1 | 1 | 6 | 5 | 236 | 5 | 246 | 0 | 1 | 0 | 1 | 528 |
| 17:15 | 5 | 321 | 9 | 335 | 3 | 0 | 4 | 7 | 1 | 212 | 5 | 218 | 0 | 1 | 1 | 2 | 562 |
| 17:30 | 13 | 268 | 1 | 282 | 5 | 1 | 0 | 6 | 0 | 214 | 4 | 218 | 0 | 0 | 1 | 1 | 507 |
| 17:45 | 12 | 260 | 3 | 275 | 1 | 0 | 2 | 3 | 4 | 202 | 6 | 212 | 0 | 0 | 1 | 1 | 491 |
| Total | 36 | 1113 | 18 | 1167 | 13 | 2 | 7 | 22 | 10 | 864 | 20 | 894 | 0 | 2 | 3 | 5 | 2088 |
| 18:00 | 10 | 199 | 3 | 212 | 2 | 0 | 1 | 3 | 1 | 181 | 5 | 187 | 0 | 1 | 2 | 3 | 405 |
| 18:15 | 7 | 198 | 2 | 207 | 1 | 0 | 1 | 2 | 0 | 175 | 5 | 180 | 0 | 1 | 1 | 2 | 391 |
| 18:30 | 10 | 164 | 2 | 176 | 3 | 2 | 0 | 5 | 2 | 195 | 3 | 200 | 0 | 0 | 0 | 0 | 381 |
| 18:45 | 9 | 156 | 3 | 168 | 0 | 0 | 1 | 1 | 6 | 158 | 4 | 168 | 0 | 0 | 6 | 6 | 343 |
| Total | 36 | 717 | 10 | 763 | 6 | 2 | 3 | 11 | 9 | 709 | 17 | 735 | 0 | 2 | 9 | 11 | 1520 |
| Grand Total | 410 | 9307 | 129 | 9846 | 148 | 12 | 77 | 237 | 68 | 9434 | 204 | 9706 | 1 | 8 | 92 | 101 | 19890 |
| Apprch % | 4.2 | 94.5 | 1.3 | | 62.4 | 5.1 | 32.5 | | 0.7 | 97.2 | 2.1 | | 1 | 7.9 | 91.1 | | |
| Total % | 2.1 | 46.8 | 0.6 | 49.5 | 0.7 | 0.1 | 0.4 | 1.2 | 0.3 | 47.4 | 1 | 48.8 | 0 | 0 | 0.5 | 0.5 | |
| Cars | 350 | 8004 | 129 | 8483 | 142 | 12 | 72 | 226 | 64 | 8480 | 200 | 8744 | 0 | 8 | 84 | 92 | 17545 |
| % Cars | 85.4 | 86 | 100 | 86.2 | 95.9 | 100 | 93.5 | 95.4 | 94.1 | 89.9 | 98 | 90.1 | 0 | 100 | 91.3 | 91.1 | 88.2 |
| Heavy | 60 | 1303 | 0 | 1363 | 6 | 0 | 5 | 11 | 4 | 954 | 4 | 962 | 1 | 0 | 8 | 9 | 2345 |
| % Heavy | 14.6 | 14 | 0 | 13.8 | 4.1 | 0 | 6.5 | 4.6 | 5.9 | 10.1 | 2 | 9.9 | 100 | 0 | 8.7 | 8.9 | 11.8 |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Marrowbone Cir
Start Date : 5/22/2018
Page No : 3

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Marrowbone Cir From East | | | | Rte 220 (Greensboro Rd) From South | | | | Gas Station Entrance From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-----------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 11 | 172 | 2 | 185 | 5 | 0 | 3 | 8 | 0 | 257 | 11 | 268 | 0 | 0 | 6 | 6 | 467 |
| 07:45 | 8 | 228 | 0 | 236 | 2 | 1 | 5 | 8 | 3 | 287 | 6 | 296 | 0 | 0 | 2 | 2 | 542 |
| 08:00 | 10 | 236 | 0 | 246 | 10 | 0 | 1 | 11 | 1 | 259 | 8 | 268 | 0 | 1 | 3 | 4 | 529 |
| 08:15 | 8 | 168 | 0 | 176 | 0 | 0 | 0 | 0 | 2 | 229 | 4 | 235 | 0 | 0 | 1 | 1 | 412 |
| Total Volume | 37 | 804 | 2 | 843 | 17 | 1 | 9 | 27 | 6 | 1032 | 29 | 1067 | 0 | 1 | 12 | 13 | 1950 |
| % App. Total | 4.4 | 95.4 | 0.2 | | 63 | 3.7 | 33.3 | | 0.6 | 96.7 | 2.7 | | 0 | 7.7 | 92.3 | | |
| PHF | .841 | .852 | .250 | .857 | .425 | .250 | .450 | .614 | .500 | .899 | .659 | .901 | .000 | .250 | .500 | .542 | .899 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 6 | 264 | 5 | 275 | 4 | 1 | 1 | 6 | 5 | 236 | 5 | 246 | 0 | 1 | 0 | 1 | 528 |
| 17:15 | 5 | 321 | 9 | 335 | 3 | 0 | 4 | 7 | 1 | 212 | 5 | 218 | 0 | 1 | 1 | 2 | 562 |
| 17:30 | 13 | 268 | 1 | 282 | 5 | 1 | 0 | 6 | 0 | 214 | 4 | 218 | 0 | 0 | 1 | 1 | 507 |
| 17:45 | 12 | 260 | 3 | 275 | 1 | 0 | 2 | 3 | 4 | 202 | 6 | 212 | 0 | 0 | 1 | 1 | 491 |
| Total Volume | 36 | 1113 | 18 | 1167 | 13 | 2 | 7 | 22 | 10 | 864 | 20 | 894 | 0 | 2 | 3 | 5 | 2088 |
| % App. Total | 3.1 | 95.4 | 1.5 | | 59.1 | 9.1 | 31.8 | | 1.1 | 96.6 | 2.2 | | 0 | 40 | 60 | | |
| PHF | .692 | .867 | .500 | .871 | .650 | .500 | .438 | .786 | .500 | .915 | .833 | .909 | .000 | .500 | .750 | .625 | .929 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Shamrock Dr
Start Date : 6/6/2018
Page No : 1

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | From East | | | | Rte 220 (Greensboro Rd) From South | | | | Shamrock Dr From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|-----------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 85 | 0 | 85 | 0 | 0 | 0 | 0 | 0 | 69 | 1 | 70 | 0 | 0 | 2 | 2 | 157 |
| 06:15 | 0 | 111 | 0 | 111 | 0 | 0 | 0 | 0 | 0 | 96 | 0 | 96 | 0 | 0 | 2 | 2 | 209 |
| 06:30 | 0 | 100 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 136 | 1 | 137 | 1 | 0 | 3 | 4 | 241 |
| 06:45 | 0 | 83 | 0 | 83 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 117 | 3 | 0 | 2 | 5 | 205 |
| Total | 0 | 379 | 0 | 379 | 0 | 0 | 0 | 0 | 0 | 418 | 2 | 420 | 4 | 0 | 9 | 13 | 812 |
| 07:00 | 1 | 109 | 0 | 110 | 0 | 0 | 0 | 0 | 0 | 129 | 0 | 129 | 4 | 0 | 2 | 6 | 245 |
| 07:15 | 1 | 118 | 0 | 119 | 0 | 0 | 0 | 0 | 0 | 160 | 2 | 162 | 1 | 0 | 6 | 7 | 288 |
| 07:30 | 1 | 138 | 0 | 139 | 0 | 0 | 0 | 0 | 0 | 180 | 0 | 180 | 5 | 0 | 8 | 13 | 332 |
| 07:45 | 5 | 120 | 0 | 125 | 0 | 0 | 0 | 0 | 0 | 175 | 0 | 175 | 1 | 0 | 8 | 9 | 309 |
| Total | 8 | 485 | 0 | 493 | 0 | 0 | 0 | 0 | 0 | 644 | 2 | 646 | 11 | 0 | 24 | 35 | 1174 |
| 08:00 | 2 | 110 | 0 | 112 | 0 | 0 | 0 | 0 | 0 | 157 | 0 | 157 | 1 | 0 | 9 | 10 | 279 |
| 08:15 | 1 | 126 | 0 | 127 | 0 | 0 | 0 | 0 | 0 | 153 | 1 | 154 | 1 | 0 | 5 | 6 | 287 |
| 08:30 | 0 | 96 | 0 | 96 | 0 | 0 | 0 | 0 | 0 | 123 | 2 | 125 | 2 | 0 | 11 | 13 | 234 |
| 08:45 | 2 | 110 | 0 | 112 | 0 | 0 | 0 | 0 | 0 | 117 | 2 | 119 | 6 | 0 | 8 | 14 | 245 |
| Total | 5 | 442 | 0 | 447 | 0 | 0 | 0 | 0 | 0 | 550 | 5 | 555 | 10 | 0 | 33 | 43 | 1045 |
| 09:00 | 2 | 94 | 0 | 96 | 0 | 0 | 0 | 0 | 0 | 126 | 1 | 127 | 1 | 0 | 4 | 5 | 228 |
| 09:15 | 4 | 90 | 0 | 94 | 0 | 0 | 0 | 0 | 0 | 120 | 2 | 122 | 0 | 0 | 7 | 7 | 223 |
| 09:30 | 4 | 70 | 0 | 74 | 0 | 0 | 0 | 0 | 0 | 133 | 0 | 133 | 0 | 0 | 12 | 12 | 219 |
| 09:45 | 3 | 110 | 0 | 113 | 0 | 0 | 0 | 0 | 0 | 105 | 1 | 106 | 0 | 0 | 4 | 4 | 223 |
| Total | 13 | 364 | 0 | 377 | 0 | 0 | 0 | 0 | 0 | 484 | 4 | 488 | 1 | 0 | 27 | 28 | 893 |
| 10:00 | 1 | 99 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 105 | 0 | 105 | 1 | 0 | 6 | 7 | 212 |
| 10:15 | 3 | 115 | 0 | 118 | 0 | 0 | 0 | 0 | 0 | 134 | 3 | 137 | 2 | 0 | 3 | 5 | 260 |
| 10:30 | 6 | 105 | 0 | 111 | 0 | 0 | 0 | 0 | 0 | 128 | 0 | 128 | 1 | 0 | 3 | 4 | 243 |
| 10:45 | 4 | 107 | 0 | 111 | 0 | 0 | 0 | 0 | 0 | 132 | 1 | 133 | 4 | 0 | 1 | 5 | 249 |
| Total | 14 | 426 | 0 | 440 | 0 | 0 | 0 | 0 | 0 | 499 | 4 | 503 | 8 | 0 | 13 | 21 | 964 |
| 11:00 | 5 | 117 | 0 | 122 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 117 | 3 | 0 | 3 | 6 | 245 |
| 11:15 | 4 | 93 | 0 | 97 | 0 | 0 | 0 | 0 | 0 | 111 | 1 | 112 | 1 | 0 | 1 | 2 | 211 |
| 11:30 | 5 | 119 | 0 | 124 | 0 | 0 | 0 | 0 | 0 | 119 | 1 | 120 | 1 | 0 | 4 | 5 | 249 |
| 11:45 | 2 | 105 | 0 | 107 | 0 | 0 | 0 | 0 | 0 | 110 | 0 | 110 | 2 | 0 | 4 | 6 | 223 |
| Total | 16 | 434 | 0 | 450 | 0 | 0 | 0 | 0 | 0 | 457 | 2 | 459 | 7 | 0 | 12 | 19 | 928 |
| 12:00 | 3 | 128 | 0 | 131 | 0 | 0 | 0 | 0 | 0 | 162 | 1 | 163 | 3 | 0 | 9 | 12 | 306 |
| 12:15 | 6 | 137 | 0 | 143 | 0 | 0 | 0 | 0 | 0 | 124 | 2 | 126 | 1 | 0 | 5 | 6 | 275 |
| 12:30 | 3 | 107 | 0 | 110 | 0 | 0 | 0 | 0 | 0 | 131 | 0 | 131 | 1 | 0 | 10 | 11 | 252 |
| 12:45 | 6 | 115 | 0 | 121 | 0 | 0 | 0 | 0 | 0 | 130 | 1 | 131 | 0 | 0 | 6 | 6 | 258 |
| Total | 18 | 487 | 0 | 505 | 0 | 0 | 0 | 0 | 0 | 547 | 4 | 551 | 5 | 0 | 30 | 35 | 1091 |
| 13:00 | 5 | 109 | 0 | 114 | 0 | 0 | 0 | 0 | 0 | 114 | 1 | 115 | 2 | 0 | 7 | 9 | 238 |
| 13:15 | 4 | 126 | 0 | 130 | 0 | 0 | 0 | 0 | 0 | 133 | 0 | 133 | 2 | 0 | 4 | 6 | 269 |
| 13:30 | 2 | 127 | 0 | 129 | 0 | 0 | 0 | 0 | 0 | 148 | 1 | 149 | 1 | 0 | 7 | 8 | 286 |
| 13:45 | 1 | 115 | 0 | 116 | 0 | 0 | 0 | 0 | 0 | 104 | 1 | 105 | 2 | 0 | 2 | 4 | 225 |
| Total | 12 | 477 | 0 | 489 | 0 | 0 | 0 | 0 | 0 | 499 | 3 | 502 | 7 | 0 | 20 | 27 | 1018 |
| 14:00 | 3 | 118 | 0 | 121 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 120 | 2 | 0 | 4 | 6 | 247 |
| 14:15 | 1 | 134 | 0 | 135 | 0 | 0 | 0 | 0 | 0 | 120 | 1 | 121 | 4 | 0 | 2 | 6 | 262 |
| 14:30 | 10 | 144 | 0 | 154 | 0 | 0 | 0 | 0 | 0 | 120 | 1 | 121 | 0 | 0 | 4 | 4 | 279 |
| 14:45 | 5 | 165 | 0 | 170 | 0 | 0 | 0 | 0 | 0 | 136 | 0 | 136 | 3 | 0 | 1 | 4 | 310 |
| Total | 19 | 561 | 0 | 580 | 0 | 0 | 0 | 0 | 0 | 496 | 2 | 498 | 9 | 0 | 11 | 20 | 1098 |
| 15:00 | 5 | 146 | 0 | 151 | 0 | 0 | 0 | 0 | 0 | 129 | 4 | 133 | 1 | 0 | 6 | 7 | 291 |
| 15:15 | 8 | 142 | 0 | 150 | 0 | 0 | 0 | 0 | 0 | 155 | 4 | 159 | 0 | 0 | 2 | 2 | 311 |
| 15:30 | 3 | 170 | 0 | 173 | 0 | 0 | 0 | 0 | 0 | 146 | 0 | 146 | 2 | 0 | 7 | 9 | 328 |
| 15:45 | 6 | 184 | 0 | 190 | 0 | 0 | 0 | 0 | 0 | 149 | 3 | 152 | 1 | 0 | 2 | 3 | 345 |
| Total | 22 | 642 | 0 | 664 | 0 | 0 | 0 | 0 | 0 | 579 | 11 | 590 | 4 | 0 | 17 | 21 | 1275 |
| 16:00 | 4 | 163 | 0 | 167 | 0 | 0 | 0 | 0 | 0 | 135 | 2 | 137 | 2 | 0 | 3 | 5 | 309 |

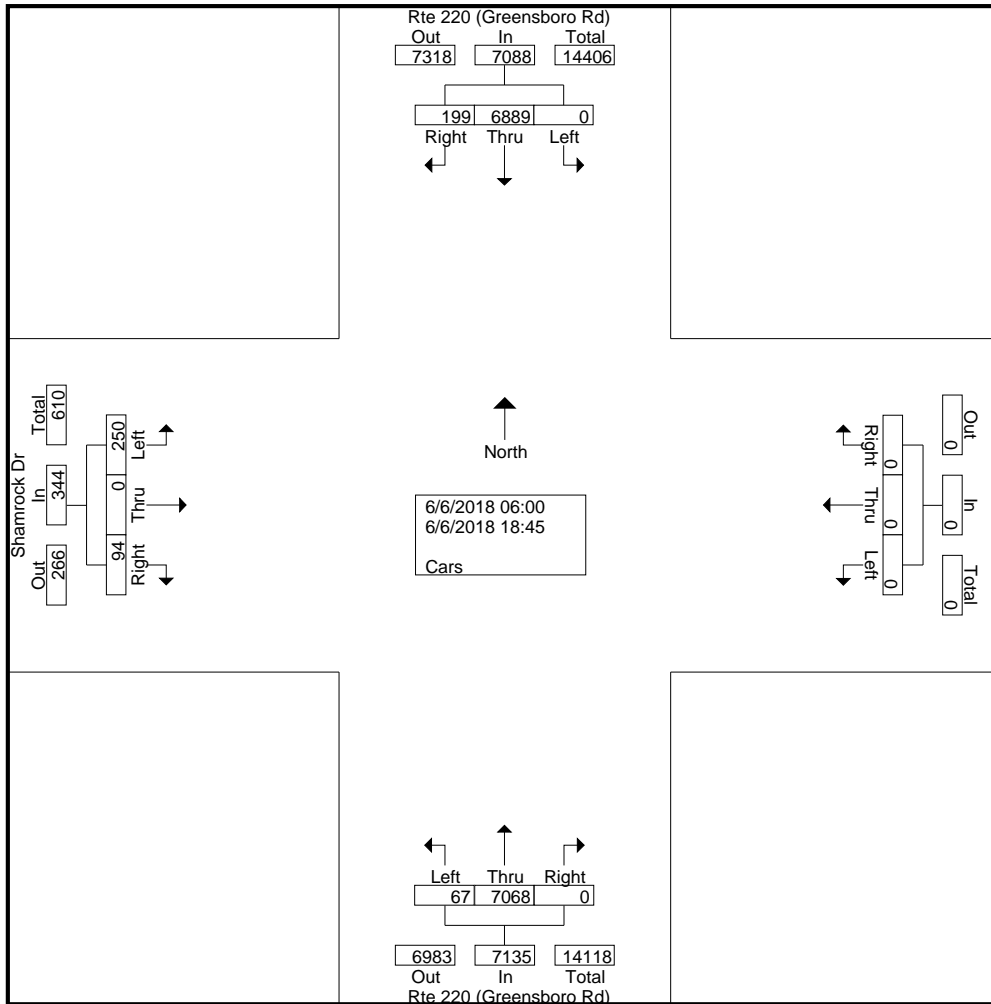
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Shamrock Dr
Start Date : 6/6/2018
Page No : 2

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | From East | | | | Rte 220 (Greensboro Rd) From South | | | | Shamrock Dr From West | | | | Int. Total |
|-------------|---------------------------------------|------|------|------------|-----------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 5 | 164 | 0 | 169 | 0 | 0 | 0 | 0 | 0 | 182 | 1 | 183 | 2 | 0 | 3 | 5 | 357 |
| 16:30 | 6 | 157 | 0 | 163 | 0 | 0 | 0 | 0 | 0 | 165 | 1 | 166 | 2 | 0 | 4 | 6 | 335 |
| 16:45 | 10 | 178 | 0 | 188 | 0 | 0 | 0 | 0 | 0 | 153 | 4 | 157 | 2 | 0 | 2 | 4 | 349 |
| Total | 25 | 662 | 0 | 687 | 0 | 0 | 0 | 0 | 0 | 635 | 8 | 643 | 8 | 0 | 12 | 20 | 1350 |
| 17:00 | 1 | 223 | 0 | 224 | 0 | 0 | 0 | 0 | 0 | 174 | 0 | 174 | 0 | 0 | 1 | 1 | 399 |
| 17:15 | 10 | 264 | 0 | 274 | 0 | 0 | 0 | 0 | 0 | 172 | 4 | 176 | 1 | 0 | 11 | 12 | 462 |
| 17:30 | 8 | 217 | 0 | 225 | 0 | 0 | 0 | 0 | 0 | 186 | 2 | 188 | 3 | 0 | 4 | 7 | 420 |
| 17:45 | 6 | 200 | 0 | 206 | 0 | 0 | 0 | 0 | 0 | 162 | 2 | 164 | 3 | 0 | 5 | 8 | 378 |
| Total | 25 | 904 | 0 | 929 | 0 | 0 | 0 | 0 | 0 | 694 | 8 | 702 | 7 | 0 | 21 | 28 | 1659 |
| 18:00 | 7 | 136 | 0 | 143 | 0 | 0 | 0 | 0 | 0 | 157 | 3 | 160 | 2 | 0 | 3 | 5 | 308 |
| 18:15 | 5 | 165 | 0 | 170 | 0 | 0 | 0 | 0 | 0 | 153 | 3 | 156 | 2 | 0 | 8 | 10 | 336 |
| 18:30 | 7 | 177 | 0 | 184 | 0 | 0 | 0 | 0 | 0 | 132 | 5 | 137 | 6 | 0 | 3 | 9 | 330 |
| 18:45 | 3 | 148 | 0 | 151 | 0 | 0 | 0 | 0 | 0 | 124 | 1 | 125 | 3 | 0 | 7 | 10 | 286 |
| Total | 22 | 626 | 0 | 648 | 0 | 0 | 0 | 0 | 0 | 566 | 12 | 578 | 13 | 0 | 21 | 34 | 1260 |
| Grand Total | 199 | 6889 | 0 | 7088 | 0 | 0 | 0 | 0 | 0 | 7068 | 67 | 7135 | 94 | 0 | 250 | 344 | 14567 |
| Apprch % | 2.8 | 97.2 | 0 | | 0 | 0 | 0 | | 0 | 99.1 | 0.9 | | 27.3 | 0 | 72.7 | | |
| Total % | 1.4 | 47.3 | 0 | 48.7 | 0 | 0 | 0 | 0 | 0 | 48.5 | 0.5 | 49 | 0.6 | 0 | 1.7 | 2.4 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Shamrock Dr
Start Date : 6/6/2018
Page No : 3

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | From East | | | | Rte 220 (Greensboro Rd) From South | | | | Shamrock Dr From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-----------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 1 | 138 | 0 | 139 | 0 | 0 | 0 | 0 | 0 | 180 | 0 | 180 | 5 | 0 | 8 | 13 | 332 |
| 07:45 | 5 | 120 | 0 | 125 | 0 | 0 | 0 | 0 | 0 | 175 | 0 | 175 | 1 | 0 | 8 | 9 | 309 |
| 08:00 | 2 | 110 | 0 | 112 | 0 | 0 | 0 | 0 | 0 | 157 | 0 | 157 | 1 | 0 | 9 | 10 | 279 |
| 08:15 | 1 | 126 | 0 | 127 | 0 | 0 | 0 | 0 | 0 | 153 | 1 | 154 | 1 | 0 | 5 | 6 | 287 |
| Total Volume | 9 | 494 | 0 | 503 | 0 | 0 | 0 | 0 | 0 | 665 | 1 | 666 | 8 | 0 | 30 | 38 | 1207 |
| % App. Total | 1.8 | 98.2 | 0 | | 0 | 0 | 0 | | 0 | 99.8 | 0.2 | | 21.1 | 0 | 78.9 | | |
| PHF | .450 | .895 | .000 | .905 | .000 | .000 | .000 | .000 | .000 | .924 | .250 | .925 | .400 | .000 | .833 | .731 | .909 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 1 | 223 | 0 | 224 | 0 | 0 | 0 | 0 | 0 | 174 | 0 | 174 | 0 | 0 | 1 | 1 | 399 |
| 17:15 | 10 | 264 | 0 | 274 | 0 | 0 | 0 | 0 | 0 | 172 | 4 | 176 | 1 | 0 | 11 | 12 | 462 |
| 17:30 | 8 | 217 | 0 | 225 | 0 | 0 | 0 | 0 | 0 | 186 | 2 | 188 | 3 | 0 | 4 | 7 | 420 |
| 17:45 | 6 | 200 | 0 | 206 | 0 | 0 | 0 | 0 | 0 | 162 | 2 | 164 | 3 | 0 | 5 | 8 | 378 |
| Total Volume | 25 | 904 | 0 | 929 | 0 | 0 | 0 | 0 | 0 | 694 | 8 | 702 | 7 | 0 | 21 | 28 | 1659 |
| % App. Total | 2.7 | 97.3 | 0 | | 0 | 0 | 0 | | 0 | 98.9 | 1.1 | | 25 | 0 | 75 | | |
| PHF | .625 | .856 | .000 | .848 | .000 | .000 | .000 | .000 | .000 | .933 | .500 | .934 | .583 | .000 | .477 | .583 | .898 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Shamrock Dr
Start Date : 6/6/2018
Page No : 1

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | From East | | | | Rte 220 (Greensboro Rd) From South | | | | Shamrock Dr From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|-----------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 28 |
| 06:15 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 37 |
| 06:30 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 30 |
| 06:45 | 1 | 23 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 46 |
| Total | 1 | 71 | 0 | 72 | 0 | 0 | 0 | 0 | 0 | 69 | 0 | 69 | 0 | 0 | 0 | 0 | 141 |
| 07:00 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 52 |
| 07:15 | 2 | 24 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 51 |
| 07:30 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 48 |
| 07:45 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 39 |
| Total | 2 | 90 | 0 | 92 | 0 | 0 | 0 | 0 | 0 | 98 | 0 | 98 | 0 | 0 | 0 | 0 | 190 |
| 08:00 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 38 |
| 08:15 | 0 | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 59 |
| 08:30 | 3 | 37 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 32 | 0 | 0 | 3 | 3 | 75 |
| 08:45 | 2 | 31 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 36 | 0 | 0 | 7 | 7 | 76 |
| Total | 5 | 121 | 0 | 126 | 0 | 0 | 0 | 0 | 0 | 112 | 0 | 112 | 0 | 0 | 10 | 10 | 248 |
| 09:00 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 21 | 2 | 23 | 0 | 0 | 0 | 0 | 47 |
| 09:15 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 23 | 0 | 0 | 1 | 1 | 55 |
| 09:30 | 4 | 28 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 1 | 1 | 60 |
| 09:45 | 1 | 30 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 25 | 1 | 26 | 0 | 0 | 1 | 1 | 58 |
| Total | 5 | 113 | 0 | 118 | 0 | 0 | 0 | 0 | 0 | 96 | 3 | 99 | 0 | 0 | 3 | 3 | 220 |
| 10:00 | 2 | 39 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 1 | 1 | 66 |
| 10:15 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 21 | 2 | 23 | 0 | 0 | 0 | 0 | 44 |
| 10:30 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 52 |
| 10:45 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 59 |
| Total | 2 | 115 | 0 | 117 | 0 | 0 | 0 | 0 | 0 | 101 | 2 | 103 | 0 | 0 | 1 | 1 | 221 |
| 11:00 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 59 |
| 11:15 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 36 | 0 | 0 | 1 | 1 | 63 |
| 11:30 | 2 | 33 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 0 | 0 | 1 | 1 | 64 |
| 11:45 | 1 | 37 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 66 |
| Total | 3 | 120 | 0 | 123 | 0 | 0 | 0 | 0 | 0 | 127 | 0 | 127 | 0 | 0 | 2 | 2 | 252 |
| 12:00 | 1 | 42 | 0 | 43 | 0 | 0 | 0 | 0 | 0 | 31 | 1 | 32 | 1 | 0 | 0 | 1 | 76 |
| 12:15 | 0 | 30 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 55 |
| 12:30 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 61 |
| 12:45 | 4 | 24 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 1 | 1 | 56 |
| Total | 5 | 124 | 0 | 129 | 0 | 0 | 0 | 0 | 0 | 116 | 1 | 117 | 1 | 0 | 1 | 2 | 248 |
| 13:00 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 1 | 1 | 57 |
| 13:15 | 1 | 30 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 26 | 1 | 0 | 1 | 2 | 59 |
| 13:30 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 21 | 1 | 22 | 0 | 0 | 3 | 3 | 51 |
| 13:45 | 1 | 36 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 0 | 0 | 2 | 2 | 67 |
| Total | 2 | 121 | 0 | 123 | 0 | 0 | 0 | 0 | 0 | 102 | 1 | 103 | 1 | 0 | 7 | 8 | 234 |
| 14:00 | 1 | 36 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 26 | 1 | 27 | 0 | 0 | 0 | 0 | 64 |
| 14:15 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 57 |
| 14:30 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 59 |
| 14:45 | 0 | 32 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 57 |
| Total | 1 | 132 | 0 | 133 | 0 | 0 | 0 | 0 | 0 | 103 | 1 | 104 | 0 | 0 | 0 | 0 | 237 |
| 15:00 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 61 |
| 15:15 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 31 | 1 | 32 | 0 | 0 | 0 | 0 | 55 |
| 15:30 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 47 |
| 15:45 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 1 | 0 | 0 | 1 | 55 |
| Total | 0 | 114 | 0 | 114 | 0 | 0 | 0 | 0 | 0 | 102 | 1 | 103 | 1 | 0 | 0 | 1 | 218 |
| 16:00 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 | 0 | 0 | 5 | 5 | 47 |

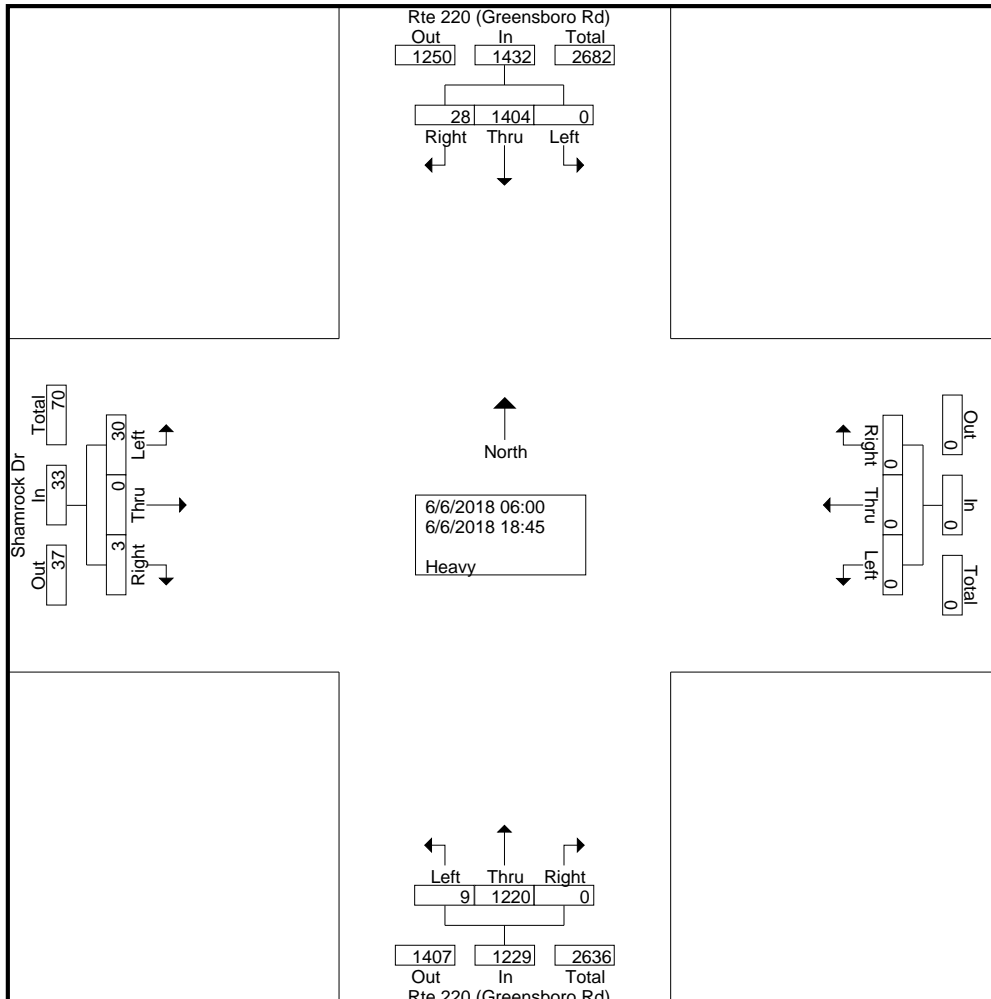
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Shamrock Dr
Start Date : 6/6/2018
Page No : 2

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | From East | | | | Rte 220 (Greensboro Rd) From South | | | | Shamrock Dr From West | | | | Int. Total |
|-------------|---------------------------------------|------|------|------------|-----------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 1 | 23 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 43 |
| 16:30 | 1 | 34 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 54 |
| 16:45 | 0 | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 0 | 1 | 1 | 50 |
| Total | 2 | 118 | 0 | 120 | 0 | 0 | 0 | 0 | 0 | 68 | 0 | 68 | 0 | 0 | 6 | 6 | 194 |
| 17:00 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 37 |
| 17:15 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 41 |
| 17:30 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 45 |
| 17:45 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 28 |
| Total | 0 | 77 | 0 | 77 | 0 | 0 | 0 | 0 | 0 | 74 | 0 | 74 | 0 | 0 | 0 | 0 | 151 |
| 18:00 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 33 |
| 18:15 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 38 |
| 18:30 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 33 |
| 18:45 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 36 |
| Total | 0 | 88 | 0 | 88 | 0 | 0 | 0 | 0 | 0 | 52 | 0 | 52 | 0 | 0 | 0 | 0 | 140 |
| Grand Total | 28 | 1404 | 0 | 1432 | 0 | 0 | 0 | 0 | 0 | 1220 | 9 | 1229 | 3 | 0 | 30 | 33 | 2694 |
| Apprch % | 2 | 98 | 0 | | 0 | 0 | 0 | | 0 | 99.3 | 0.7 | | 9.1 | 0 | 90.9 | | |
| Total % | 1 | 52.1 | 0 | 53.2 | 0 | 0 | 0 | 0 | 0 | 45.3 | 0.3 | 45.6 | 0.1 | 0 | 1.1 | 1.2 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Shamrock Dr
Start Date : 6/6/2018
Page No : 3

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | From East | | | | Rte 220 (Greensboro Rd) From South | | | | Shamrock Dr From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-----------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 48 |
| 07:45 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 39 |
| 08:00 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 38 |
| 08:15 | 0 | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 59 |
| Total Volume | 0 | 96 | 0 | 96 | 0 | 0 | 0 | 0 | 0 | 88 | 0 | 88 | 0 | 0 | 0 | 0 | 184 |
| % App. Total | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .686 | .000 | .686 | .000 | .000 | .000 | .000 | .000 | .815 | .000 | .815 | .000 | .000 | .000 | .000 | .780 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 37 |
| 17:15 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 41 |
| 17:30 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 45 |
| 17:45 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 28 |
| Total Volume | 0 | 77 | 0 | 77 | 0 | 0 | 0 | 0 | 0 | 74 | 0 | 74 | 0 | 0 | 0 | 0 | 151 |
| % App. Total | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .802 | .000 | .802 | .000 | .000 | .000 | .000 | .000 | .771 | .000 | .771 | .000 | .000 | .000 | .000 | .839 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Shamrock Dr

Start Date : 6/6/2018

Page No : 1

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | From East | | | | Rte 220 (Greensboro Rd) From South | | | | Shamrock Dr From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|-----------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 98 | 0 | 98 | 0 | 0 | 0 | 0 | 0 | 84 | 1 | 85 | 0 | 0 | 2 | 2 | 185 |
| 06:15 | 0 | 133 | 0 | 133 | 0 | 0 | 0 | 0 | 0 | 111 | 0 | 111 | 0 | 0 | 2 | 2 | 246 |
| 06:30 | 0 | 113 | 0 | 113 | 0 | 0 | 0 | 0 | 0 | 153 | 1 | 154 | 1 | 0 | 3 | 4 | 271 |
| 06:45 | 1 | 106 | 0 | 107 | 0 | 0 | 0 | 0 | 0 | 139 | 0 | 139 | 3 | 0 | 2 | 5 | 251 |
| Total | 1 | 450 | 0 | 451 | 0 | 0 | 0 | 0 | 0 | 487 | 2 | 489 | 4 | 0 | 9 | 13 | 953 |
| 07:00 | 1 | 132 | 0 | 133 | 0 | 0 | 0 | 0 | 0 | 158 | 0 | 158 | 4 | 0 | 2 | 6 | 297 |
| 07:15 | 3 | 142 | 0 | 145 | 0 | 0 | 0 | 0 | 0 | 185 | 2 | 187 | 1 | 0 | 6 | 7 | 339 |
| 07:30 | 1 | 159 | 0 | 160 | 0 | 0 | 0 | 0 | 0 | 207 | 0 | 207 | 5 | 0 | 8 | 13 | 380 |
| 07:45 | 5 | 142 | 0 | 147 | 0 | 0 | 0 | 0 | 0 | 192 | 0 | 192 | 1 | 0 | 8 | 9 | 348 |
| Total | 10 | 575 | 0 | 585 | 0 | 0 | 0 | 0 | 0 | 742 | 2 | 744 | 11 | 0 | 24 | 35 | 1364 |
| 08:00 | 2 | 128 | 0 | 130 | 0 | 0 | 0 | 0 | 0 | 177 | 0 | 177 | 1 | 0 | 9 | 10 | 317 |
| 08:15 | 1 | 161 | 0 | 162 | 0 | 0 | 0 | 0 | 0 | 177 | 1 | 178 | 1 | 0 | 5 | 6 | 346 |
| 08:30 | 3 | 133 | 0 | 136 | 0 | 0 | 0 | 0 | 0 | 155 | 2 | 157 | 2 | 0 | 14 | 16 | 309 |
| 08:45 | 4 | 141 | 0 | 145 | 0 | 0 | 0 | 0 | 0 | 153 | 2 | 155 | 6 | 0 | 15 | 21 | 321 |
| Total | 10 | 563 | 0 | 573 | 0 | 0 | 0 | 0 | 0 | 662 | 5 | 667 | 10 | 0 | 43 | 53 | 1293 |
| 09:00 | 2 | 118 | 0 | 120 | 0 | 0 | 0 | 0 | 0 | 147 | 3 | 150 | 1 | 0 | 4 | 5 | 275 |
| 09:15 | 4 | 121 | 0 | 125 | 0 | 0 | 0 | 0 | 0 | 143 | 2 | 145 | 0 | 0 | 8 | 8 | 278 |
| 09:30 | 8 | 98 | 0 | 106 | 0 | 0 | 0 | 0 | 0 | 160 | 0 | 160 | 0 | 0 | 13 | 13 | 279 |
| 09:45 | 4 | 140 | 0 | 144 | 0 | 0 | 0 | 0 | 0 | 130 | 2 | 132 | 0 | 0 | 5 | 5 | 281 |
| Total | 18 | 477 | 0 | 495 | 0 | 0 | 0 | 0 | 0 | 580 | 7 | 587 | 1 | 0 | 30 | 31 | 1113 |
| 10:00 | 3 | 138 | 0 | 141 | 0 | 0 | 0 | 0 | 0 | 129 | 0 | 129 | 1 | 0 | 7 | 8 | 278 |
| 10:15 | 3 | 136 | 0 | 139 | 0 | 0 | 0 | 0 | 0 | 155 | 5 | 160 | 2 | 0 | 3 | 5 | 304 |
| 10:30 | 6 | 126 | 0 | 132 | 0 | 0 | 0 | 0 | 0 | 159 | 0 | 159 | 1 | 0 | 3 | 4 | 295 |
| 10:45 | 4 | 141 | 0 | 145 | 0 | 0 | 0 | 0 | 0 | 157 | 1 | 158 | 4 | 0 | 1 | 5 | 308 |
| Total | 16 | 541 | 0 | 557 | 0 | 0 | 0 | 0 | 0 | 600 | 6 | 606 | 8 | 0 | 14 | 22 | 1185 |
| 11:00 | 5 | 141 | 0 | 146 | 0 | 0 | 0 | 0 | 0 | 152 | 0 | 152 | 3 | 0 | 3 | 6 | 304 |
| 11:15 | 4 | 119 | 0 | 123 | 0 | 0 | 0 | 0 | 0 | 147 | 1 | 148 | 1 | 0 | 2 | 3 | 274 |
| 11:30 | 7 | 152 | 0 | 159 | 0 | 0 | 0 | 0 | 0 | 147 | 1 | 148 | 1 | 0 | 5 | 6 | 313 |
| 11:45 | 3 | 142 | 0 | 145 | 0 | 0 | 0 | 0 | 0 | 138 | 0 | 138 | 2 | 0 | 4 | 6 | 289 |
| Total | 19 | 554 | 0 | 573 | 0 | 0 | 0 | 0 | 0 | 584 | 2 | 586 | 7 | 0 | 14 | 21 | 1180 |
| 12:00 | 4 | 170 | 0 | 174 | 0 | 0 | 0 | 0 | 0 | 193 | 2 | 195 | 4 | 0 | 9 | 13 | 382 |
| 12:15 | 6 | 167 | 0 | 173 | 0 | 0 | 0 | 0 | 0 | 149 | 2 | 151 | 1 | 0 | 5 | 6 | 330 |
| 12:30 | 3 | 135 | 0 | 138 | 0 | 0 | 0 | 0 | 0 | 164 | 0 | 164 | 1 | 0 | 10 | 11 | 313 |
| 12:45 | 10 | 139 | 0 | 149 | 0 | 0 | 0 | 0 | 0 | 157 | 1 | 158 | 0 | 0 | 7 | 7 | 314 |
| Total | 23 | 611 | 0 | 634 | 0 | 0 | 0 | 0 | 0 | 663 | 5 | 668 | 6 | 0 | 31 | 37 | 1339 |
| 13:00 | 5 | 138 | 0 | 143 | 0 | 0 | 0 | 0 | 0 | 141 | 1 | 142 | 2 | 0 | 8 | 10 | 295 |
| 13:15 | 5 | 156 | 0 | 161 | 0 | 0 | 0 | 0 | 0 | 159 | 0 | 159 | 3 | 0 | 5 | 8 | 328 |
| 13:30 | 2 | 153 | 0 | 155 | 0 | 0 | 0 | 0 | 0 | 169 | 2 | 171 | 1 | 0 | 10 | 11 | 337 |
| 13:45 | 2 | 151 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 132 | 1 | 133 | 2 | 0 | 4 | 6 | 292 |
| Total | 14 | 598 | 0 | 612 | 0 | 0 | 0 | 0 | 0 | 601 | 4 | 605 | 8 | 0 | 27 | 35 | 1252 |
| 14:00 | 4 | 154 | 0 | 158 | 0 | 0 | 0 | 0 | 0 | 146 | 1 | 147 | 2 | 0 | 4 | 6 | 311 |
| 14:15 | 1 | 167 | 0 | 168 | 0 | 0 | 0 | 0 | 0 | 144 | 1 | 145 | 4 | 0 | 2 | 6 | 319 |
| 14:30 | 10 | 175 | 0 | 185 | 0 | 0 | 0 | 0 | 0 | 148 | 1 | 149 | 0 | 0 | 4 | 4 | 338 |
| 14:45 | 5 | 197 | 0 | 202 | 0 | 0 | 0 | 0 | 0 | 161 | 0 | 161 | 3 | 0 | 1 | 4 | 367 |
| Total | 20 | 693 | 0 | 713 | 0 | 0 | 0 | 0 | 0 | 599 | 3 | 602 | 9 | 0 | 11 | 20 | 1335 |
| 15:00 | 5 | 180 | 0 | 185 | 0 | 0 | 0 | 0 | 0 | 156 | 4 | 160 | 1 | 0 | 6 | 7 | 352 |
| 15:15 | 8 | 165 | 0 | 173 | 0 | 0 | 0 | 0 | 0 | 186 | 5 | 191 | 0 | 0 | 2 | 2 | 366 |
| 15:30 | 3 | 198 | 0 | 201 | 0 | 0 | 0 | 0 | 0 | 165 | 0 | 165 | 2 | 0 | 7 | 9 | 375 |
| 15:45 | 6 | 213 | 0 | 219 | 0 | 0 | 0 | 0 | 0 | 174 | 3 | 177 | 2 | 0 | 2 | 4 | 400 |
| Total | 22 | 756 | 0 | 778 | 0 | 0 | 0 | 0 | 0 | 681 | 12 | 693 | 5 | 0 | 17 | 22 | 1493 |
| 16:00 | 4 | 189 | 0 | 193 | 0 | 0 | 0 | 0 | 0 | 151 | 2 | 153 | 2 | 0 | 8 | 10 | 356 |

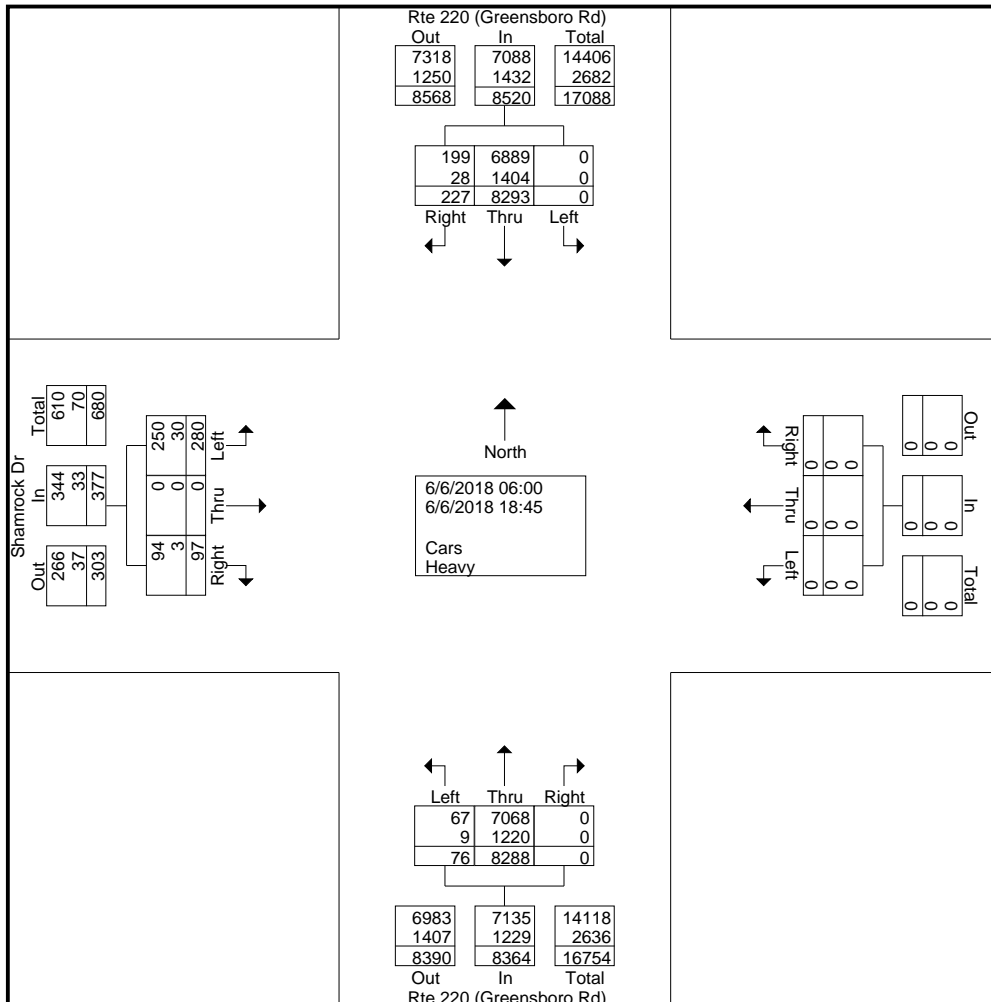
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Shamrock Dr
Start Date : 6/6/2018
Page No : 2

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | From East | | | | Rte 220 (Greensboro Rd) From South | | | | Shamrock Dr From West | | | | Int. Total |
|-------------|---------------------------------------|------|------|------------|-----------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 6 | 187 | 0 | 193 | 0 | 0 | 0 | 0 | 0 | 201 | 1 | 202 | 2 | 0 | 3 | 5 | 400 |
| 16:30 | 7 | 191 | 0 | 198 | 0 | 0 | 0 | 0 | 0 | 184 | 1 | 185 | 2 | 0 | 4 | 6 | 389 |
| 16:45 | 10 | 213 | 0 | 223 | 0 | 0 | 0 | 0 | 0 | 167 | 4 | 171 | 2 | 0 | 3 | 5 | 399 |
| Total | 27 | 780 | 0 | 807 | 0 | 0 | 0 | 0 | 0 | 703 | 8 | 711 | 8 | 0 | 18 | 26 | 1544 |
| 17:00 | 1 | 240 | 0 | 241 | 0 | 0 | 0 | 0 | 0 | 194 | 0 | 194 | 0 | 0 | 1 | 1 | 436 |
| 17:15 | 10 | 288 | 0 | 298 | 0 | 0 | 0 | 0 | 0 | 189 | 4 | 193 | 1 | 0 | 11 | 12 | 503 |
| 17:30 | 8 | 238 | 0 | 246 | 0 | 0 | 0 | 0 | 0 | 210 | 2 | 212 | 3 | 0 | 4 | 7 | 465 |
| 17:45 | 6 | 215 | 0 | 221 | 0 | 0 | 0 | 0 | 0 | 175 | 2 | 177 | 3 | 0 | 5 | 8 | 406 |
| Total | 25 | 981 | 0 | 1006 | 0 | 0 | 0 | 0 | 0 | 768 | 8 | 776 | 7 | 0 | 21 | 28 | 1810 |
| 18:00 | 7 | 154 | 0 | 161 | 0 | 0 | 0 | 0 | 0 | 172 | 3 | 175 | 2 | 0 | 3 | 5 | 341 |
| 18:15 | 5 | 194 | 0 | 199 | 0 | 0 | 0 | 0 | 0 | 162 | 3 | 165 | 2 | 0 | 8 | 10 | 374 |
| 18:30 | 7 | 196 | 0 | 203 | 0 | 0 | 0 | 0 | 0 | 146 | 5 | 151 | 6 | 0 | 3 | 9 | 363 |
| 18:45 | 3 | 170 | 0 | 173 | 0 | 0 | 0 | 0 | 0 | 138 | 1 | 139 | 3 | 0 | 7 | 10 | 322 |
| Total | 22 | 714 | 0 | 736 | 0 | 0 | 0 | 0 | 0 | 618 | 12 | 630 | 13 | 0 | 21 | 34 | 1400 |
| Grand Total | 227 | 8293 | 0 | 8520 | 0 | 0 | 0 | 0 | 0 | 8288 | 76 | 8364 | 97 | 0 | 280 | 377 | 17261 |
| Apprch % | 2.7 | 97.3 | 0 | | 0 | 0 | 0 | | 0 | 99.1 | 0.9 | | 25.7 | 0 | 74.3 | | |
| Total % | 1.3 | 48 | 0 | 49.4 | 0 | 0 | 0 | 0 | 0 | 48 | 0.4 | 48.5 | 0.6 | 0 | 1.6 | 2.2 | |
| Cars | 199 | 6889 | 0 | 7088 | 0 | 0 | 0 | 0 | 0 | 7068 | 67 | 7135 | 94 | 0 | 250 | 344 | 14567 |
| % Cars | 87.7 | 83.1 | 0 | 83.2 | 0 | 0 | 0 | 0 | 0 | 85.3 | 88.2 | 85.3 | 96.9 | 0 | 89.3 | 91.2 | 84.4 |
| Heavy | 28 | 1404 | 0 | 1432 | 0 | 0 | 0 | 0 | 0 | 1220 | 9 | 1229 | 3 | 0 | 30 | 33 | 2694 |
| % Heavy | 12.3 | 16.9 | 0 | 16.8 | 0 | 0 | 0 | 0 | 0 | 14.7 | 11.8 | 14.7 | 3.1 | 0 | 10.7 | 8.8 | 15.6 |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Shamrock Dr

Start Date : 6/6/2018

Page No : 3

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | From East | | | | Rte 220 (Greensboro Rd) From South | | | | Shamrock Dr From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-----------|------|------|------------|---------------------------------------|------|------|------------|--------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 1 | 159 | 0 | 160 | 0 | 0 | 0 | 0 | 0 | 207 | 0 | 207 | 5 | 0 | 8 | 13 | 380 |
| 07:45 | 5 | 142 | 0 | 147 | 0 | 0 | 0 | 0 | 0 | 192 | 0 | 192 | 1 | 0 | 8 | 9 | 348 |
| 08:00 | 2 | 128 | 0 | 130 | 0 | 0 | 0 | 0 | 0 | 177 | 0 | 177 | 1 | 0 | 9 | 10 | 317 |
| 08:15 | 1 | 161 | 0 | 162 | 0 | 0 | 0 | 0 | 0 | 177 | 1 | 178 | 1 | 0 | 5 | 6 | 346 |
| Total Volume | 9 | 590 | 0 | 599 | 0 | 0 | 0 | 0 | 0 | 753 | 1 | 754 | 8 | 0 | 30 | 38 | 1391 |
| % App. Total | 1.5 | 98.5 | 0 | | 0 | 0 | 0 | | 0 | 99.9 | 0.1 | | 21.1 | 0 | 78.9 | | |
| PHF | .450 | .916 | .000 | .924 | .000 | .000 | .000 | .000 | .000 | .909 | .250 | .911 | .400 | .000 | .833 | .731 | .915 |

Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 17:00

| | | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 17:00 | 1 | 240 | 0 | 241 | 0 | 0 | 0 | 0 | 0 | 194 | 0 | 194 | 0 | 0 | 1 | 1 | 436 |
| 17:15 | 10 | 288 | 0 | 298 | 0 | 0 | 0 | 0 | 0 | 189 | 4 | 193 | 1 | 0 | 11 | 12 | 503 |
| 17:30 | 8 | 238 | 0 | 246 | 0 | 0 | 0 | 0 | 0 | 210 | 2 | 212 | 3 | 0 | 4 | 7 | 465 |
| 17:45 | 6 | 215 | 0 | 221 | 0 | 0 | 0 | 0 | 0 | 175 | 2 | 177 | 3 | 0 | 5 | 8 | 406 |
| Total Volume | 25 | 981 | 0 | 1006 | 0 | 0 | 0 | 0 | 0 | 768 | 8 | 776 | 7 | 0 | 21 | 28 | 1810 |
| % App. Total | 2.5 | 97.5 | 0 | | 0 | 0 | 0 | | 0 | 99 | 1 | | 25 | 0 | 75 | | |
| PHF | .625 | .852 | .000 | .844 | .000 | .000 | .000 | .000 | .000 | .914 | .500 | .915 | .583 | .000 | .477 | .583 | .900 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Covington Ln

Start Date : 5/15/2018

Page No : 1

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Covington Ln From East | | | | Rte 220 (Greensboro Rd) From South | | | | From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|---------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 75 | 0 | 75 | 1 | 0 | 1 | 2 | 1 | 67 | 0 | 68 | 0 | 0 | 0 | 0 | 145 |
| 06:15 | 0 | 111 | 0 | 111 | 1 | 0 | 1 | 2 | 1 | 94 | 0 | 95 | 0 | 0 | 0 | 0 | 208 |
| 06:30 | 0 | 106 | 0 | 106 | 7 | 0 | 1 | 8 | 1 | 123 | 0 | 124 | 0 | 0 | 0 | 0 | 238 |
| 06:45 | 0 | 110 | 2 | 112 | 3 | 0 | 3 | 6 | 1 | 125 | 0 | 126 | 0 | 0 | 0 | 0 | 244 |
| Total | 0 | 402 | 2 | 404 | 12 | 0 | 6 | 18 | 4 | 409 | 0 | 413 | 0 | 0 | 0 | 0 | 835 |
| 07:00 | 0 | 93 | 1 | 94 | 8 | 0 | 3 | 11 | 2 | 116 | 0 | 118 | 0 | 0 | 0 | 0 | 223 |
| 07:15 | 0 | 144 | 1 | 145 | 7 | 0 | 3 | 10 | 0 | 148 | 0 | 148 | 0 | 0 | 0 | 0 | 303 |
| 07:30 | 0 | 134 | 3 | 137 | 13 | 0 | 6 | 19 | 2 | 211 | 0 | 213 | 0 | 0 | 0 | 0 | 369 |
| 07:45 | 0 | 149 | 2 | 151 | 22 | 0 | 6 | 28 | 1 | 237 | 0 | 238 | 0 | 0 | 0 | 0 | 417 |
| Total | 0 | 520 | 7 | 527 | 50 | 0 | 18 | 68 | 5 | 712 | 0 | 717 | 0 | 0 | 0 | 0 | 1312 |
| 08:00 | 0 | 157 | 4 | 161 | 5 | 0 | 8 | 13 | 0 | 170 | 0 | 170 | 0 | 0 | 0 | 0 | 344 |
| 08:15 | 0 | 117 | 4 | 121 | 5 | 0 | 0 | 5 | 0 | 154 | 0 | 154 | 0 | 0 | 0 | 0 | 280 |
| 08:30 | 0 | 107 | 1 | 108 | 6 | 0 | 1 | 7 | 2 | 136 | 0 | 138 | 0 | 0 | 0 | 0 | 253 |
| 08:45 | 0 | 122 | 2 | 124 | 2 | 0 | 2 | 4 | 0 | 106 | 0 | 106 | 0 | 0 | 0 | 0 | 234 |
| Total | 0 | 503 | 11 | 514 | 18 | 0 | 11 | 29 | 2 | 566 | 0 | 568 | 0 | 0 | 0 | 0 | 1111 |
| 09:00 | 0 | 86 | 4 | 90 | 4 | 0 | 0 | 4 | 2 | 97 | 0 | 99 | 0 | 0 | 0 | 0 | 193 |
| 09:15 | 0 | 91 | 1 | 92 | 0 | 0 | 3 | 3 | 2 | 107 | 0 | 109 | 0 | 0 | 0 | 0 | 204 |
| 09:30 | 0 | 125 | 3 | 128 | 3 | 0 | 2 | 5 | 0 | 137 | 0 | 137 | 0 | 0 | 0 | 0 | 270 |
| 09:45 | 0 | 91 | 0 | 91 | 7 | 0 | 1 | 8 | 3 | 128 | 0 | 131 | 0 | 0 | 0 | 0 | 230 |
| Total | 0 | 393 | 8 | 401 | 14 | 0 | 6 | 20 | 7 | 469 | 0 | 476 | 0 | 0 | 0 | 0 | 897 |
| 10:00 | 0 | 103 | 0 | 103 | 3 | 0 | 1 | 4 | 1 | 86 | 0 | 87 | 0 | 0 | 0 | 0 | 194 |
| 10:15 | 0 | 117 | 0 | 117 | 4 | 0 | 0 | 4 | 0 | 119 | 0 | 119 | 0 | 0 | 0 | 0 | 240 |
| 10:30 | 0 | 111 | 7 | 118 | 4 | 0 | 3 | 7 | 2 | 108 | 0 | 110 | 0 | 0 | 0 | 0 | 235 |
| 10:45 | 0 | 107 | 3 | 110 | 1 | 0 | 0 | 1 | 1 | 107 | 0 | 108 | 0 | 0 | 0 | 0 | 219 |
| Total | 0 | 438 | 10 | 448 | 12 | 0 | 4 | 16 | 4 | 420 | 0 | 424 | 0 | 0 | 0 | 0 | 888 |
| 11:00 | 0 | 104 | 4 | 108 | 8 | 0 | 1 | 9 | 2 | 101 | 0 | 103 | 0 | 0 | 0 | 0 | 220 |
| 11:15 | 0 | 123 | 4 | 127 | 3 | 0 | 2 | 5 | 2 | 118 | 0 | 120 | 0 | 0 | 0 | 0 | 252 |
| 11:30 | 0 | 115 | 6 | 121 | 3 | 0 | 3 | 6 | 0 | 122 | 0 | 122 | 0 | 0 | 0 | 0 | 249 |
| 11:45 | 0 | 97 | 4 | 101 | 7 | 0 | 1 | 8 | 2 | 109 | 0 | 111 | 0 | 0 | 0 | 0 | 220 |
| Total | 0 | 439 | 18 | 457 | 21 | 0 | 7 | 28 | 6 | 450 | 0 | 456 | 0 | 0 | 0 | 0 | 941 |
| 12:00 | 0 | 136 | 5 | 141 | 4 | 0 | 5 | 9 | 1 | 103 | 0 | 104 | 0 | 0 | 0 | 0 | 254 |
| 12:15 | 0 | 129 | 4 | 133 | 4 | 0 | 0 | 4 | 0 | 121 | 0 | 121 | 0 | 0 | 0 | 0 | 258 |
| 12:30 | 0 | 124 | 3 | 127 | 4 | 0 | 0 | 4 | 4 | 105 | 0 | 109 | 0 | 0 | 0 | 0 | 240 |
| 12:45 | 0 | 125 | 3 | 128 | 1 | 0 | 1 | 2 | 0 | 134 | 0 | 134 | 0 | 0 | 0 | 0 | 264 |
| Total | 0 | 514 | 15 | 529 | 13 | 0 | 6 | 19 | 5 | 463 | 0 | 468 | 0 | 0 | 0 | 0 | 1016 |
| 13:00 | 0 | 102 | 4 | 106 | 4 | 0 | 0 | 4 | 1 | 132 | 0 | 133 | 0 | 0 | 0 | 0 | 243 |
| 13:15 | 0 | 114 | 7 | 121 | 9 | 0 | 3 | 12 | 5 | 118 | 0 | 123 | 0 | 0 | 0 | 0 | 256 |
| 13:30 | 0 | 135 | 4 | 139 | 2 | 0 | 0 | 2 | 0 | 115 | 0 | 115 | 0 | 0 | 0 | 0 | 256 |
| 13:45 | 0 | 150 | 4 | 154 | 10 | 0 | 3 | 13 | 0 | 111 | 0 | 111 | 0 | 0 | 0 | 0 | 278 |
| Total | 0 | 501 | 19 | 520 | 25 | 0 | 6 | 31 | 6 | 476 | 0 | 482 | 0 | 0 | 0 | 0 | 1033 |
| 14:00 | 0 | 134 | 13 | 147 | 6 | 0 | 0 | 6 | 2 | 122 | 0 | 124 | 0 | 0 | 0 | 0 | 277 |
| 14:15 | 0 | 139 | 2 | 141 | 8 | 0 | 2 | 10 | 1 | 125 | 0 | 126 | 0 | 0 | 0 | 0 | 277 |
| 14:30 | 0 | 151 | 9 | 160 | 6 | 0 | 1 | 7 | 2 | 133 | 0 | 135 | 0 | 0 | 0 | 0 | 302 |
| 14:45 | 0 | 149 | 5 | 154 | 4 | 0 | 2 | 6 | 3 | 159 | 0 | 162 | 0 | 0 | 0 | 0 | 322 |
| Total | 0 | 573 | 29 | 602 | 24 | 0 | 5 | 29 | 8 | 539 | 0 | 547 | 0 | 0 | 0 | 0 | 1178 |
| 15:00 | 0 | 157 | 4 | 161 | 4 | 0 | 1 | 5 | 1 | 148 | 0 | 149 | 0 | 0 | 0 | 0 | 315 |
| 15:15 | 0 | 173 | 3 | 176 | 5 | 0 | 2 | 7 | 2 | 130 | 0 | 132 | 0 | 0 | 0 | 0 | 315 |
| 15:30 | 0 | 175 | 5 | 180 | 1 | 0 | 0 | 1 | 3 | 155 | 1 | 159 | 0 | 0 | 0 | 0 | 340 |
| 15:45 | 0 | 167 | 9 | 176 | 10 | 0 | 1 | 11 | 8 | 184 | 0 | 192 | 0 | 0 | 0 | 0 | 379 |
| Total | 0 | 672 | 21 | 693 | 20 | 0 | 4 | 24 | 14 | 617 | 1 | 632 | 0 | 0 | 0 | 0 | 1349 |
| 16:00 | 0 | 173 | 7 | 180 | 8 | 0 | 5 | 13 | 5 | 143 | 0 | 148 | 0 | 0 | 0 | 0 | 341 |

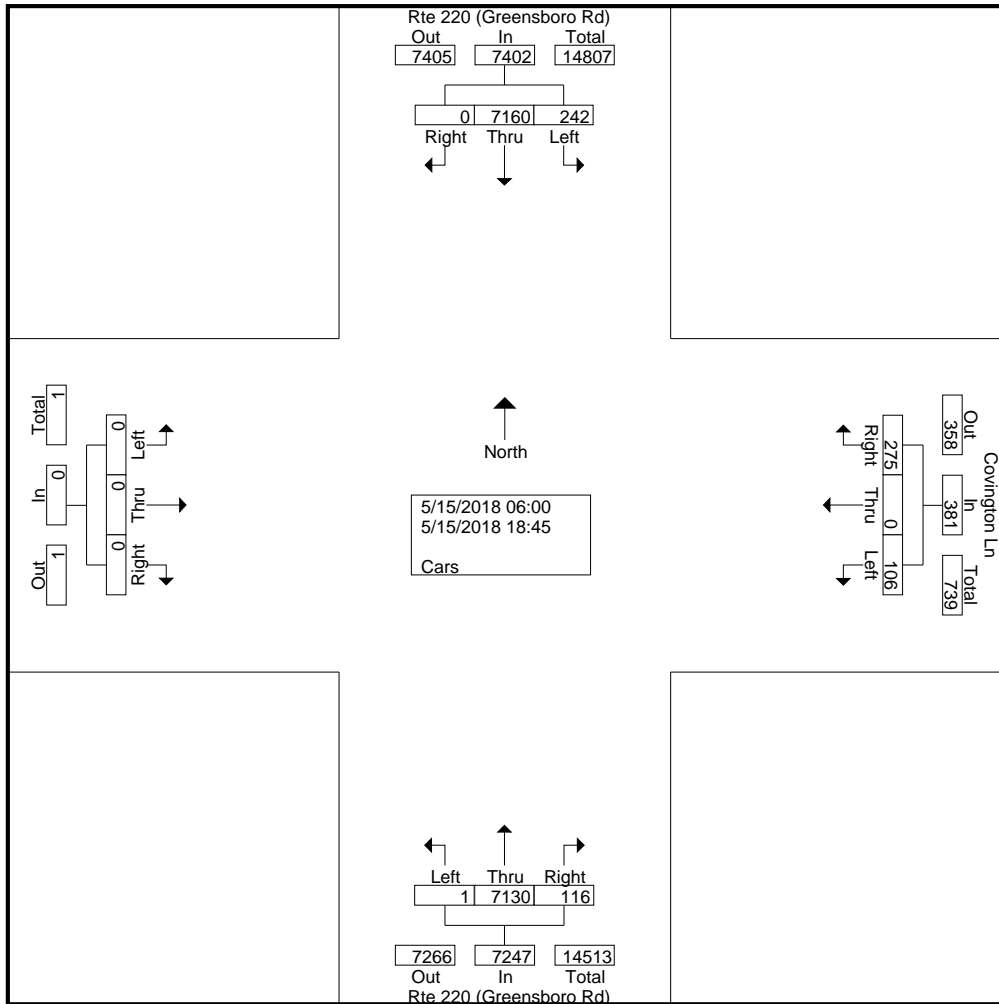
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Covington Ln
Start Date : 5/15/2018
Page No: 2

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Covington Ln From East | | | | Rte 220 (Greensboro Rd) From South | | | | From West | | | | Int. Total |
|--------------------|---------------------------------------|------|------|------------|---------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 0 | 166 | 3 | 169 | 5 | 0 | 3 | 8 | 1 | 175 | 0 | 176 | 0 | 0 | 0 | 0 | 353 |
| 16:30 | 0 | 165 | 10 | 175 | 2 | 0 | 2 | 4 | 8 | 186 | 0 | 194 | 0 | 0 | 0 | 0 | 373 |
| 16:45 | 0 | 223 | 8 | 231 | 8 | 0 | 0 | 8 | 6 | 178 | 0 | 184 | 0 | 0 | 0 | 0 | 423 |
| Total | 0 | 727 | 28 | 755 | 23 | 0 | 10 | 33 | 20 | 682 | 0 | 702 | 0 | 0 | 0 | 0 | 1490 |
| | | | | | | | | | | | | | | | | | |
| 17:00 | 0 | 231 | 14 | 245 | 3 | 0 | 2 | 5 | 2 | 170 | 0 | 172 | 0 | 0 | 0 | 0 | 422 |
| 17:15 | 0 | 266 | 10 | 276 | 8 | 0 | 4 | 12 | 4 | 175 | 0 | 179 | 0 | 0 | 0 | 0 | 467 |
| 17:30 | 0 | 247 | 7 | 254 | 5 | 0 | 1 | 6 | 1 | 183 | 0 | 184 | 0 | 0 | 0 | 0 | 444 |
| 17:45 | 0 | 192 | 12 | 204 | 10 | 0 | 3 | 13 | 8 | 168 | 0 | 176 | 0 | 0 | 0 | 0 | 393 |
| Total | 0 | 936 | 43 | 979 | 26 | 0 | 10 | 36 | 15 | 696 | 0 | 711 | 0 | 0 | 0 | 0 | 1726 |
| | | | | | | | | | | | | | | | | | |
| 18:00 | 0 | 152 | 12 | 164 | 6 | 0 | 2 | 8 | 4 | 185 | 0 | 189 | 0 | 0 | 0 | 0 | 361 |
| 18:15 | 0 | 128 | 8 | 136 | 1 | 0 | 4 | 5 | 3 | 177 | 0 | 180 | 0 | 0 | 0 | 0 | 321 |
| 18:30 | 0 | 124 | 8 | 132 | 3 | 0 | 3 | 6 | 6 | 140 | 0 | 146 | 0 | 0 | 0 | 0 | 284 |
| 18:45 | 0 | 138 | 3 | 141 | 7 | 0 | 4 | 11 | 7 | 129 | 0 | 136 | 0 | 0 | 0 | 0 | 288 |
| Total | 0 | 542 | 31 | 573 | 17 | 0 | 13 | 30 | 20 | 631 | 0 | 651 | 0 | 0 | 0 | 0 | 1254 |
| | | | | | | | | | | | | | | | | | |
| Grand Total | 0 | 7160 | 242 | 7402 | 275 | 0 | 106 | 381 | 116 | 7130 | 1 | 7247 | 0 | 0 | 0 | 0 | 15030 |
| Apprch % | 0 | 96.7 | 3.3 | | 72.2 | 0 | 27.8 | | 1.6 | 98.4 | 0 | | 0 | 0 | 0 | | |
| Total % | 0 | 47.6 | 1.6 | 49.2 | 1.8 | 0 | 0.7 | 2.5 | 0.8 | 47.4 | 0 | 48.2 | 0 | 0 | 0 | 0 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Covington Ln
Start Date : 5/15/2018
Page No: 3

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Covington Ln From East | | | | Rte 220 (Greensboro Rd) From South | | | | From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|---------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 0 | 144 | 1 | 145 | 7 | 0 | 3 | 10 | 0 | 148 | 0 | 148 | 0 | 0 | 0 | 0 | 303 |
| 07:30 | 0 | 134 | 3 | 137 | 13 | 0 | 6 | 19 | 2 | 211 | 0 | 213 | 0 | 0 | 0 | 0 | 369 |
| 07:45 | 0 | 149 | 2 | 151 | 22 | 0 | 6 | 28 | 1 | 237 | 0 | 238 | 0 | 0 | 0 | 0 | 417 |
| 08:00 | 0 | 157 | 4 | 161 | 5 | 0 | 8 | 13 | 0 | 170 | 0 | 170 | 0 | 0 | 0 | 0 | 344 |
| Total Volume | 0 | 584 | 10 | 594 | 47 | 0 | 23 | 70 | 3 | 766 | 0 | 769 | 0 | 0 | 0 | 0 | 1433 |
| % App. Total | 0 | 98.3 | 1.7 | | 67.1 | 0 | 32.9 | | 0.4 | 99.6 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .930 | .625 | .922 | .534 | .000 | .719 | .625 | .375 | .808 | .000 | .808 | .000 | .000 | .000 | .000 | .859 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 16:45 to 17:30 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:45 | | | | | | | | | | | | | | | | | |
| 16:45 | 0 | 223 | 8 | 231 | 8 | 0 | 0 | 8 | 6 | 178 | 0 | 184 | 0 | 0 | 0 | 0 | 423 |
| 17:00 | 0 | 231 | 14 | 245 | 3 | 0 | 2 | 5 | 2 | 170 | 0 | 172 | 0 | 0 | 0 | 0 | 422 |
| 17:15 | 0 | 266 | 10 | 276 | 8 | 0 | 4 | 12 | 4 | 175 | 0 | 179 | 0 | 0 | 0 | 0 | 467 |
| 17:30 | 0 | 247 | 7 | 254 | 5 | 0 | 1 | 6 | 1 | 183 | 0 | 184 | 0 | 0 | 0 | 0 | 444 |
| Total Volume | 0 | 967 | 39 | 1006 | 24 | 0 | 7 | 31 | 13 | 706 | 0 | 719 | 0 | 0 | 0 | 0 | 1756 |
| % App. Total | 0 | 96.1 | 3.9 | | 77.4 | 0 | 22.6 | | 1.8 | 98.2 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .909 | .696 | .911 | .750 | .000 | .438 | .646 | .542 | .964 | .000 | .977 | .000 | .000 | .000 | .000 | .940 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Covington Ln
Start Date : 5/15/2018
Page No: 1

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Covington Ln From East | | | | Rte 220 (Greensboro Rd) From South | | | | From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|---------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 38 |
| 06:15 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 39 |
| 06:30 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 23 | 1 | 24 | 0 | 0 | 0 | 0 | 44 |
| 06:45 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 36 |
| Total | 0 | 74 | 0 | 74 | 0 | 0 | 0 | 0 | 0 | 82 | 1 | 83 | 0 | 0 | 0 | 0 | 157 |
| 07:00 | 0 | 25 | 2 | 27 | 0 | 0 | 1 | 1 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 45 |
| 07:15 | 0 | 14 | 0 | 14 | 2 | 0 | 0 | 2 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 38 |
| 07:30 | 0 | 26 | 0 | 26 | 2 | 0 | 0 | 2 | 2 | 17 | 0 | 19 | 0 | 0 | 0 | 0 | 47 |
| 07:45 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 42 |
| Total | 0 | 86 | 2 | 88 | 4 | 0 | 1 | 5 | 2 | 77 | 0 | 79 | 0 | 0 | 0 | 0 | 172 |
| 08:00 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 51 |
| 08:15 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 51 |
| 08:30 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 53 |
| 08:45 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 47 |
| Total | 0 | 98 | 0 | 98 | 0 | 0 | 0 | 0 | 0 | 104 | 0 | 104 | 0 | 0 | 0 | 0 | 202 |
| 09:00 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 56 |
| 09:15 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 48 |
| 09:30 | 0 | 30 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 58 |
| 09:45 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 46 |
| Total | 0 | 109 | 0 | 109 | 0 | 0 | 0 | 0 | 0 | 99 | 0 | 99 | 0 | 0 | 0 | 0 | 208 |
| 10:00 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 53 |
| 10:15 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 52 |
| 10:30 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 47 |
| 10:45 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 55 |
| Total | 0 | 101 | 0 | 101 | 0 | 0 | 0 | 0 | 0 | 106 | 0 | 106 | 0 | 0 | 0 | 0 | 207 |
| 11:00 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 30 | 0 | 0 | 0 | 0 | 59 |
| 11:15 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 61 |
| 11:30 | 0 | 26 | 0 | 26 | 1 | 0 | 0 | 1 | 1 | 25 | 0 | 26 | 0 | 0 | 0 | 0 | 53 |
| 11:45 | 0 | 25 | 0 | 25 | 2 | 0 | 0 | 2 | 0 | 30 | 0 | 30 | 0 | 0 | 0 | 0 | 57 |
| Total | 0 | 108 | 0 | 108 | 3 | 0 | 0 | 3 | 1 | 118 | 0 | 119 | 0 | 0 | 0 | 0 | 230 |
| 12:00 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 56 |
| 12:15 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 47 |
| 12:30 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 45 |
| 12:45 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 1 | 19 | 0 | 20 | 0 | 0 | 0 | 0 | 45 |
| Total | 0 | 96 | 0 | 96 | 0 | 0 | 0 | 0 | 1 | 96 | 0 | 97 | 0 | 0 | 0 | 0 | 193 |
| 13:00 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 47 |
| 13:15 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 53 |
| 13:30 | 0 | 33 | 0 | 33 | 1 | 0 | 0 | 1 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 59 |
| 13:45 | 0 | 29 | 1 | 30 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 57 |
| Total | 0 | 113 | 1 | 114 | 1 | 0 | 0 | 1 | 0 | 101 | 0 | 101 | 0 | 0 | 0 | 0 | 216 |
| 14:00 | 0 | 34 | 0 | 34 | 2 | 0 | 0 | 2 | 2 | 31 | 0 | 33 | 0 | 0 | 0 | 0 | 69 |
| 14:15 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 59 |
| 14:30 | 0 | 23 | 1 | 24 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 46 |
| 14:45 | 0 | 26 | 0 | 26 | 1 | 0 | 0 | 1 | 1 | 25 | 0 | 26 | 0 | 0 | 0 | 0 | 53 |
| Total | 0 | 111 | 1 | 112 | 3 | 0 | 0 | 3 | 3 | 109 | 0 | 112 | 0 | 0 | 0 | 0 | 227 |
| 15:00 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 54 |
| 15:15 | 0 | 24 | 1 | 25 | 1 | 0 | 0 | 1 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 48 |
| 15:30 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 44 |
| 15:45 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 1 | 21 | 0 | 22 | 0 | 0 | 0 | 0 | 42 |
| Total | 0 | 95 | 1 | 96 | 1 | 0 | 0 | 1 | 1 | 90 | 0 | 91 | 0 | 0 | 0 | 0 | 188 |
| 16:00 | 0 | 25 | 0 | 25 | 1 | 0 | 0 | 1 | 0 | 12 | 0 | 12 | 0 | 0 | 0 | 0 | 38 |

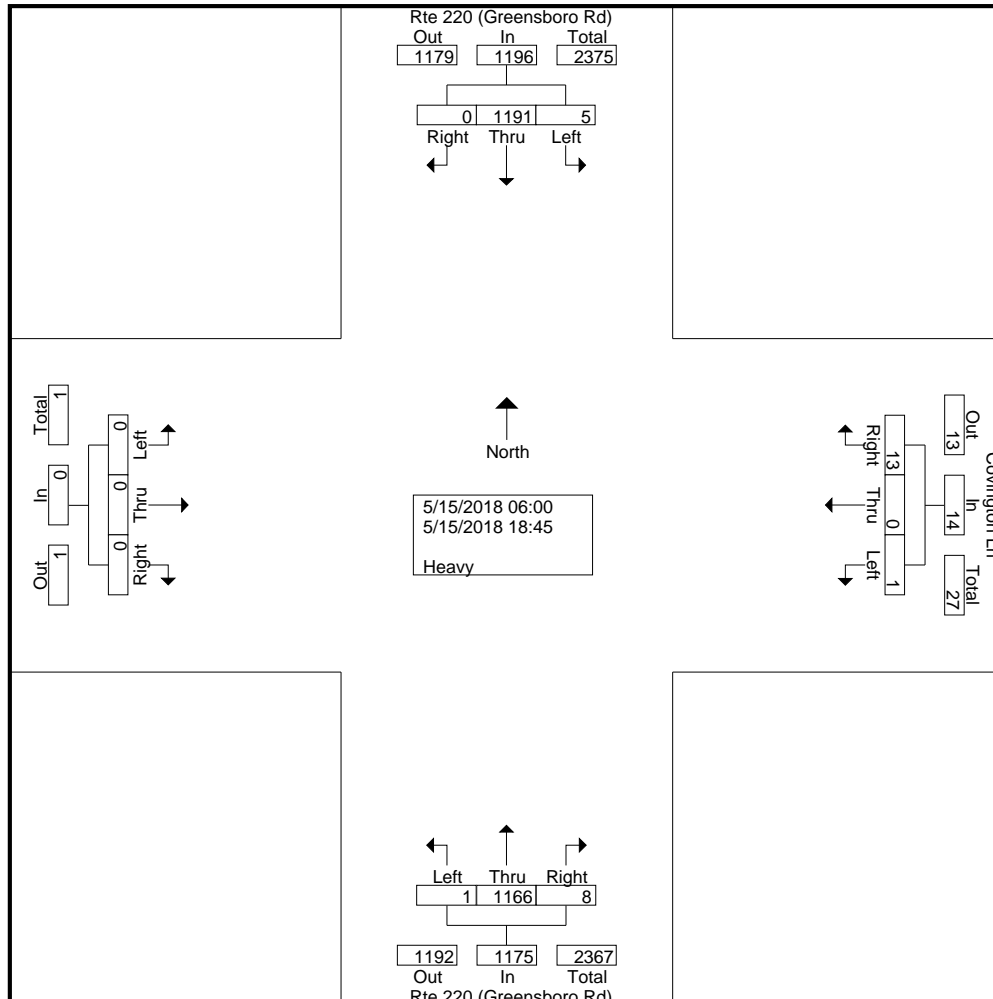
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Covington Ln
Start Date : 5/15/2018
Page No : 2

Groups Printed- Heavy Vehicle

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Covington Ln From East | | | | Rte 220 (Greensboro Rd) From South | | | | From West | | | | Int. Total |
|--------------------|---------------------------------------|------|------|------------|---------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 52 |
| 16:30 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 38 |
| 16:45 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 31 |
| Total | 0 | 87 | 0 | 87 | 1 | 0 | 0 | 1 | 0 | 71 | 0 | 71 | 0 | 0 | 0 | 0 | 159 |
| 17:00 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 38 |
| 17:15 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 30 |
| 17:30 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 28 |
| 17:45 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 | 0 | 0 | 0 | 0 | 20 |
| Total | 0 | 56 | 0 | 56 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 60 | 0 | 0 | 0 | 0 | 116 |
| 18:00 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 26 |
| 18:15 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 33 |
| 18:30 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 23 |
| 18:45 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 28 |
| Total | 0 | 57 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 53 | 0 | 53 | 0 | 0 | 0 | 0 | 110 |
| Grand Total | 0 | 1191 | 5 | 1196 | 13 | 0 | 1 | 14 | 8 | 1166 | 1 | 1175 | 0 | 0 | 0 | 0 | 2385 |
| Apprch % | 0 | 99.6 | 0.4 | | 92.9 | 0 | 7.1 | | 0.7 | 99.2 | 0.1 | | 0 | 0 | 0 | | |
| Total % | 0 | 49.9 | 0.2 | 50.1 | 0.5 | 0 | 0 | 0.6 | 0.3 | 48.9 | 0 | 49.3 | 0 | 0 | 0 | 0 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Covington Ln
Start Date : 5/15/2018
Page No : 3

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Covington Ln From East | | | | Rte 220 (Greensboro Rd) From South | | | | From West | | | | Int. Total |
|--|---------------------------------------|-----------|------|------------|---------------------------|------|------|------------|---------------------------------------|-----------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 0 | 14 | 0 | 14 | 2 | 0 | 0 | 2 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 38 |
| 07:30 | 0 | 26 | 0 | 26 | 2 | 0 | 0 | 2 | 2 | 17 | 0 | 19 | 0 | 0 | 0 | 0 | 47 |
| 07:45 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 42 |
| 08:00 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 51 |
| Total Volume | 0 | 89 | 0 | 89 | 4 | 0 | 0 | 4 | 2 | 83 | 0 | 85 | 0 | 0 | 0 | 0 | 178 |
| % App. Total | 0 | 100 | 0 | | 100 | 0 | 0 | | 2.4 | 97.6 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .795 | .000 | .795 | .500 | .000 | .000 | .500 | .250 | .902 | .000 | .924 | .000 | .000 | .000 | .000 | .873 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 16:45 to 17:30 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:45 | | | | | | | | | | | | | | | | | |
| 16:45 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 31 |
| 17:00 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 38 |
| 17:15 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 30 |
| 17:30 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 28 |
| Total Volume | 0 | 63 | 0 | 63 | 0 | 0 | 0 | 0 | 0 | 64 | 0 | 64 | 0 | 0 | 0 | 0 | 127 |
| % App. Total | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .926 | .000 | .926 | .000 | .000 | .000 | .000 | .000 | .762 | .000 | .762 | .000 | .000 | .000 | .000 | .836 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Covington Ln
Start Date : 5/15/2018
Page No : 1

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Covington Ln From East | | | | Rte 220 (Greensboro Rd) From South | | | | From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|---------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 97 | 0 | 97 | 1 | 0 | 1 | 2 | 1 | 83 | 0 | 84 | 0 | 0 | 0 | 0 | 183 |
| 06:15 | 0 | 127 | 0 | 127 | 1 | 0 | 1 | 2 | 1 | 117 | 0 | 118 | 0 | 0 | 0 | 0 | 247 |
| 06:30 | 0 | 126 | 0 | 126 | 7 | 0 | 1 | 8 | 1 | 146 | 1 | 148 | 0 | 0 | 0 | 0 | 282 |
| 06:45 | 0 | 126 | 2 | 128 | 3 | 0 | 3 | 6 | 1 | 145 | 0 | 146 | 0 | 0 | 0 | 0 | 280 |
| Total | 0 | 476 | 2 | 478 | 12 | 0 | 6 | 18 | 4 | 491 | 1 | 496 | 0 | 0 | 0 | 0 | 992 |
| 07:00 | 0 | 118 | 3 | 121 | 8 | 0 | 4 | 12 | 2 | 133 | 0 | 135 | 0 | 0 | 0 | 0 | 268 |
| 07:15 | 0 | 158 | 1 | 159 | 9 | 0 | 3 | 12 | 0 | 170 | 0 | 170 | 0 | 0 | 0 | 0 | 341 |
| 07:30 | 0 | 160 | 3 | 163 | 15 | 0 | 6 | 21 | 4 | 228 | 0 | 232 | 0 | 0 | 0 | 0 | 416 |
| 07:45 | 0 | 170 | 2 | 172 | 22 | 0 | 6 | 28 | 1 | 258 | 0 | 259 | 0 | 0 | 0 | 0 | 459 |
| Total | 0 | 606 | 9 | 615 | 54 | 0 | 19 | 73 | 7 | 789 | 0 | 796 | 0 | 0 | 0 | 0 | 1484 |
| 08:00 | 0 | 185 | 4 | 189 | 5 | 0 | 8 | 13 | 0 | 193 | 0 | 193 | 0 | 0 | 0 | 0 | 395 |
| 08:15 | 0 | 142 | 4 | 146 | 5 | 0 | 0 | 5 | 0 | 180 | 0 | 180 | 0 | 0 | 0 | 0 | 331 |
| 08:30 | 0 | 131 | 1 | 132 | 6 | 0 | 1 | 7 | 2 | 165 | 0 | 167 | 0 | 0 | 0 | 0 | 306 |
| 08:45 | 0 | 143 | 2 | 145 | 2 | 0 | 2 | 4 | 0 | 132 | 0 | 132 | 0 | 0 | 0 | 0 | 281 |
| Total | 0 | 601 | 11 | 612 | 18 | 0 | 11 | 29 | 2 | 670 | 0 | 672 | 0 | 0 | 0 | 0 | 1313 |
| 09:00 | 0 | 117 | 4 | 121 | 4 | 0 | 0 | 4 | 2 | 122 | 0 | 124 | 0 | 0 | 0 | 0 | 249 |
| 09:15 | 0 | 115 | 1 | 116 | 0 | 0 | 3 | 3 | 2 | 131 | 0 | 133 | 0 | 0 | 0 | 0 | 252 |
| 09:30 | 0 | 155 | 3 | 158 | 3 | 0 | 2 | 5 | 0 | 165 | 0 | 165 | 0 | 0 | 0 | 0 | 328 |
| 09:45 | 0 | 115 | 0 | 115 | 7 | 0 | 1 | 8 | 3 | 150 | 0 | 153 | 0 | 0 | 0 | 0 | 276 |
| Total | 0 | 502 | 8 | 510 | 14 | 0 | 6 | 20 | 7 | 568 | 0 | 575 | 0 | 0 | 0 | 0 | 1105 |
| 10:00 | 0 | 129 | 0 | 129 | 3 | 0 | 1 | 4 | 1 | 113 | 0 | 114 | 0 | 0 | 0 | 0 | 247 |
| 10:15 | 0 | 140 | 0 | 140 | 4 | 0 | 0 | 4 | 0 | 148 | 0 | 148 | 0 | 0 | 0 | 0 | 292 |
| 10:30 | 0 | 134 | 7 | 141 | 4 | 0 | 3 | 7 | 2 | 132 | 0 | 134 | 0 | 0 | 0 | 0 | 282 |
| 10:45 | 0 | 136 | 3 | 139 | 1 | 0 | 0 | 1 | 1 | 133 | 0 | 134 | 0 | 0 | 0 | 0 | 274 |
| Total | 0 | 539 | 10 | 549 | 12 | 0 | 4 | 16 | 4 | 526 | 0 | 530 | 0 | 0 | 0 | 0 | 1095 |
| 11:00 | 0 | 133 | 4 | 137 | 8 | 0 | 1 | 9 | 2 | 131 | 0 | 133 | 0 | 0 | 0 | 0 | 279 |
| 11:15 | 0 | 151 | 4 | 155 | 3 | 0 | 2 | 5 | 2 | 151 | 0 | 153 | 0 | 0 | 0 | 0 | 313 |
| 11:30 | 0 | 141 | 6 | 147 | 4 | 0 | 3 | 7 | 1 | 147 | 0 | 148 | 0 | 0 | 0 | 0 | 302 |
| 11:45 | 0 | 122 | 4 | 126 | 9 | 0 | 1 | 10 | 2 | 139 | 0 | 141 | 0 | 0 | 0 | 0 | 277 |
| Total | 0 | 547 | 18 | 565 | 24 | 0 | 7 | 31 | 7 | 568 | 0 | 575 | 0 | 0 | 0 | 0 | 1171 |
| 12:00 | 0 | 167 | 5 | 172 | 4 | 0 | 5 | 9 | 1 | 128 | 0 | 129 | 0 | 0 | 0 | 0 | 310 |
| 12:15 | 0 | 151 | 4 | 155 | 4 | 0 | 0 | 4 | 0 | 146 | 0 | 146 | 0 | 0 | 0 | 0 | 305 |
| 12:30 | 0 | 142 | 3 | 145 | 4 | 0 | 0 | 4 | 4 | 132 | 0 | 136 | 0 | 0 | 0 | 0 | 285 |
| 12:45 | 0 | 150 | 3 | 153 | 1 | 0 | 1 | 2 | 1 | 153 | 0 | 154 | 0 | 0 | 0 | 0 | 309 |
| Total | 0 | 610 | 15 | 625 | 13 | 0 | 6 | 19 | 6 | 559 | 0 | 565 | 0 | 0 | 0 | 0 | 1209 |
| 13:00 | 0 | 122 | 4 | 126 | 4 | 0 | 0 | 4 | 1 | 159 | 0 | 160 | 0 | 0 | 0 | 0 | 290 |
| 13:15 | 0 | 145 | 7 | 152 | 9 | 0 | 3 | 12 | 5 | 140 | 0 | 145 | 0 | 0 | 0 | 0 | 309 |
| 13:30 | 0 | 168 | 4 | 172 | 3 | 0 | 0 | 3 | 0 | 140 | 0 | 140 | 0 | 0 | 0 | 0 | 315 |
| 13:45 | 0 | 179 | 5 | 184 | 10 | 0 | 3 | 13 | 0 | 138 | 0 | 138 | 0 | 0 | 0 | 0 | 335 |
| Total | 0 | 614 | 20 | 634 | 26 | 0 | 6 | 32 | 6 | 577 | 0 | 583 | 0 | 0 | 0 | 0 | 1249 |
| 14:00 | 0 | 168 | 13 | 181 | 8 | 0 | 0 | 8 | 4 | 153 | 0 | 157 | 0 | 0 | 0 | 0 | 346 |
| 14:15 | 0 | 167 | 2 | 169 | 8 | 0 | 2 | 10 | 1 | 156 | 0 | 157 | 0 | 0 | 0 | 0 | 336 |
| 14:30 | 0 | 174 | 10 | 184 | 6 | 0 | 1 | 7 | 2 | 155 | 0 | 157 | 0 | 0 | 0 | 0 | 348 |
| 14:45 | 0 | 175 | 5 | 180 | 5 | 0 | 2 | 7 | 4 | 184 | 0 | 188 | 0 | 0 | 0 | 0 | 375 |
| Total | 0 | 684 | 30 | 714 | 27 | 0 | 5 | 32 | 11 | 648 | 0 | 659 | 0 | 0 | 0 | 0 | 1405 |
| 15:00 | 0 | 184 | 4 | 188 | 4 | 0 | 1 | 5 | 1 | 175 | 0 | 176 | 0 | 0 | 0 | 0 | 369 |
| 15:15 | 0 | 197 | 4 | 201 | 6 | 0 | 2 | 8 | 2 | 152 | 0 | 154 | 0 | 0 | 0 | 0 | 363 |
| 15:30 | 0 | 199 | 5 | 204 | 1 | 0 | 0 | 1 | 3 | 175 | 1 | 179 | 0 | 0 | 0 | 0 | 384 |
| 15:45 | 0 | 187 | 9 | 196 | 10 | 0 | 1 | 11 | 9 | 205 | 0 | 214 | 0 | 0 | 0 | 0 | 421 |
| Total | 0 | 767 | 22 | 789 | 21 | 0 | 4 | 25 | 15 | 707 | 1 | 723 | 0 | 0 | 0 | 0 | 1537 |
| 16:00 | 0 | 198 | 7 | 205 | 9 | 0 | 5 | 14 | 5 | 155 | 0 | 160 | 0 | 0 | 0 | 0 | 379 |

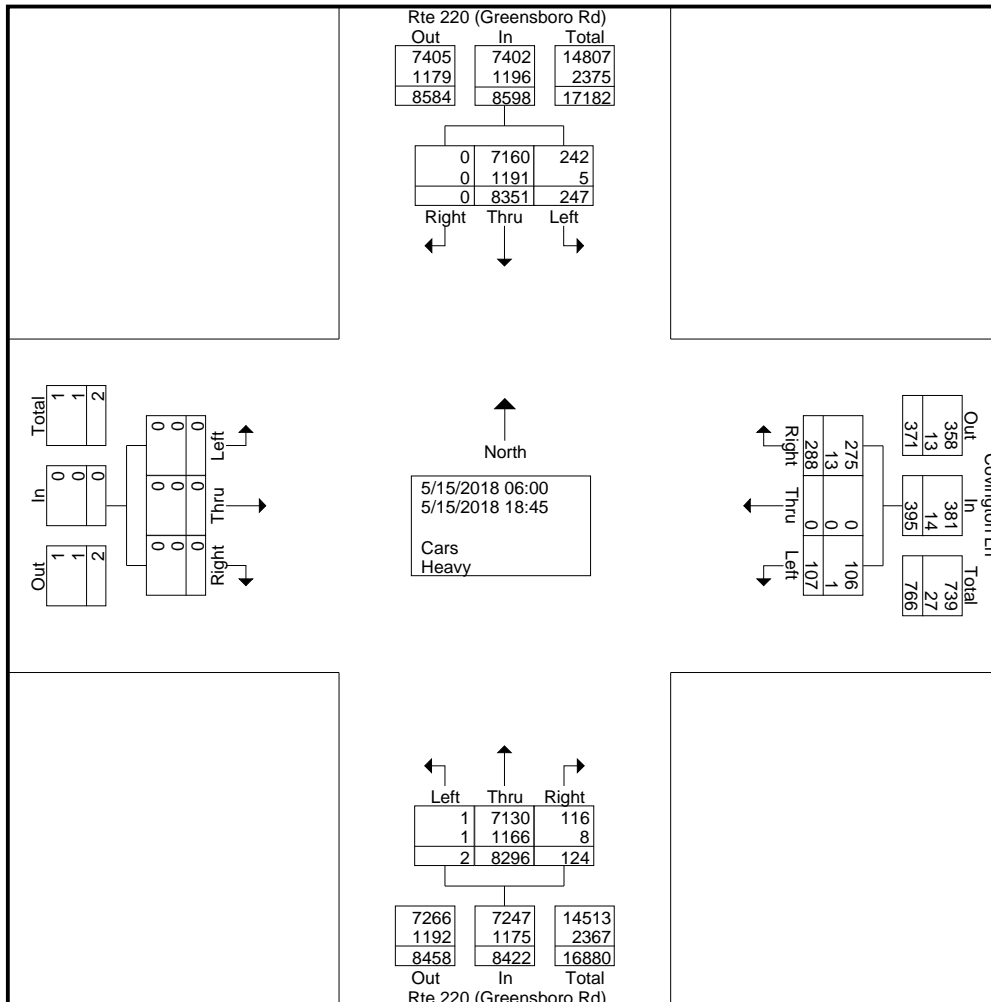
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Covington Ln
Start Date : 5/15/2018
Page No : 2

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Covington Ln From East | | | | Rte 220 (Greensboro Rd) From South | | | | From West | | | | Int. Total |
|--------------------|---------------------------------------|------|------|------------|---------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 0 | 197 | 3 | 200 | 5 | 0 | 3 | 8 | 1 | 196 | 0 | 197 | 0 | 0 | 0 | 0 | 405 |
| 16:30 | 0 | 181 | 10 | 191 | 2 | 0 | 2 | 4 | 8 | 208 | 0 | 216 | 0 | 0 | 0 | 0 | 411 |
| 16:45 | 0 | 238 | 8 | 246 | 8 | 0 | 0 | 8 | 6 | 194 | 0 | 200 | 0 | 0 | 0 | 0 | 454 |
| Total | 0 | 814 | 28 | 842 | 24 | 0 | 10 | 34 | 20 | 753 | 0 | 773 | 0 | 0 | 0 | 0 | 1649 |
| 17:00 | 0 | 248 | 14 | 262 | 3 | 0 | 2 | 5 | 2 | 191 | 0 | 193 | 0 | 0 | 0 | 0 | 460 |
| 17:15 | 0 | 283 | 10 | 293 | 8 | 0 | 4 | 12 | 4 | 188 | 0 | 192 | 0 | 0 | 0 | 0 | 497 |
| 17:30 | 0 | 261 | 7 | 268 | 5 | 0 | 1 | 6 | 1 | 197 | 0 | 198 | 0 | 0 | 0 | 0 | 472 |
| 17:45 | 0 | 200 | 12 | 212 | 10 | 0 | 3 | 13 | 8 | 180 | 0 | 188 | 0 | 0 | 0 | 0 | 413 |
| Total | 0 | 992 | 43 | 1035 | 26 | 0 | 10 | 36 | 15 | 756 | 0 | 771 | 0 | 0 | 0 | 0 | 1842 |
| 18:00 | 0 | 161 | 12 | 173 | 6 | 0 | 2 | 8 | 4 | 202 | 0 | 206 | 0 | 0 | 0 | 0 | 387 |
| 18:15 | 0 | 141 | 8 | 149 | 1 | 0 | 4 | 5 | 3 | 197 | 0 | 200 | 0 | 0 | 0 | 0 | 354 |
| 18:30 | 0 | 144 | 8 | 152 | 3 | 0 | 3 | 6 | 6 | 143 | 0 | 149 | 0 | 0 | 0 | 0 | 307 |
| 18:45 | 0 | 153 | 3 | 156 | 7 | 0 | 4 | 11 | 7 | 142 | 0 | 149 | 0 | 0 | 0 | 0 | 316 |
| Total | 0 | 599 | 31 | 630 | 17 | 0 | 13 | 30 | 20 | 684 | 0 | 704 | 0 | 0 | 0 | 0 | 1364 |
| Grand Total | 0 | 8351 | 247 | 8598 | 288 | 0 | 107 | 395 | 124 | 8296 | 2 | 8422 | 0 | 0 | 0 | 0 | 17415 |
| Apprch % | 0 | 97.1 | 2.9 | | 72.9 | 0 | 27.1 | | 1.5 | 98.5 | 0 | | 0 | 0 | 0 | | |
| Total % | 0 | 48 | 1.4 | 49.4 | 1.7 | 0 | 0.6 | 2.3 | 0.7 | 47.6 | 0 | 48.4 | 0 | 0 | 0 | 0 | |
| Cars | 0 | 7160 | 242 | 7402 | 275 | 0 | 106 | 381 | 116 | 7130 | 1 | 7247 | 0 | 0 | 0 | 0 | 15030 |
| % Cars | 0 | 85.7 | 98 | 86.1 | 95.5 | 0 | 99.1 | 96.5 | 93.5 | 85.9 | 50 | 86 | 0 | 0 | 0 | 0 | 86.3 |
| Heavy | 0 | 1191 | 5 | 1196 | 13 | 0 | 1 | 14 | 8 | 1166 | 1 | 1175 | 0 | 0 | 0 | 0 | 2385 |
| % Heavy | 0 | 14.3 | 2 | 13.9 | 4.5 | 0 | 0.9 | 3.5 | 6.5 | 14.1 | 50 | 14 | 0 | 0 | 0 | 0 | 13.7 |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Covington Ln
Start Date : 5/15/2018
Page No : 3

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Covington Ln From East | | | | Rte 220 (Greensboro Rd) From South | | | | From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|---------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 0 | 158 | 1 | 159 | 9 | 0 | 3 | 12 | 0 | 170 | 0 | 170 | 0 | 0 | 0 | 0 | 341 |
| 07:30 | 0 | 160 | 3 | 163 | 15 | 0 | 6 | 21 | 4 | 228 | 0 | 232 | 0 | 0 | 0 | 0 | 416 |
| 07:45 | 0 | 170 | 2 | 172 | 22 | 0 | 6 | 28 | 1 | 258 | 0 | 259 | 0 | 0 | 0 | 0 | 459 |
| 08:00 | 0 | 185 | 4 | 189 | 5 | 0 | 8 | 13 | 0 | 193 | 0 | 193 | 0 | 0 | 0 | 0 | 395 |
| Total Volume | 0 | 673 | 10 | 683 | 51 | 0 | 23 | 74 | 5 | 849 | 0 | 854 | 0 | 0 | 0 | 0 | 1611 |
| % App. Total | 0 | 98.5 | 1.5 | | 68.9 | 0 | 31.1 | | 0.6 | 99.4 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .909 | .625 | .903 | .580 | .000 | .719 | .661 | .313 | .823 | .000 | .824 | .000 | .000 | .000 | .000 | .877 |

Peak Hour Analysis From 16:45 to 17:30 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 16:45

| | | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 16:45 | 0 | 238 | 8 | 246 | 8 | 0 | 0 | 8 | 6 | 194 | 0 | 200 | 0 | 0 | 0 | 0 | 454 |
| 17:00 | 0 | 248 | 14 | 262 | 3 | 0 | 2 | 5 | 2 | 191 | 0 | 193 | 0 | 0 | 0 | 0 | 460 |
| 17:15 | 0 | 283 | 10 | 293 | 8 | 0 | 4 | 12 | 4 | 188 | 0 | 192 | 0 | 0 | 0 | 0 | 497 |
| 17:30 | 0 | 261 | 7 | 268 | 5 | 0 | 1 | 6 | 1 | 197 | 0 | 198 | 0 | 0 | 0 | 0 | 472 |
| Total Volume | 0 | 1030 | 39 | 1069 | 24 | 0 | 7 | 31 | 13 | 770 | 0 | 783 | 0 | 0 | 0 | 0 | 1883 |
| % App. Total | 0 | 96.4 | 3.6 | | 77.4 | 0 | 22.6 | | 1.7 | 98.3 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .910 | .696 | .912 | .750 | .000 | .438 | .646 | .542 | .977 | .000 | .979 | .000 | .000 | .000 | .000 | .947 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Drewry Mason School Rd
Date: 5/16/2018
Page No: 1

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Drewry Mason School Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Steve Dr From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 65 | 1 | 66 | 0 | 0 | 0 | 0 | 0 | 59 | 0 | 59 | 1 | 0 | 3 | 4 | 129 |
| 06:15 | 1 | 84 | 0 | 85 | 0 | 0 | 0 | 0 | 0 | 94 | 0 | 94 | 0 | 0 | 1 | 1 | 180 |
| 06:30 | 1 | 114 | 2 | 117 | 0 | 0 | 0 | 0 | 2 | 112 | 0 | 114 | 0 | 0 | 4 | 4 | 235 |
| 06:45 | 1 | 114 | 0 | 115 | 0 | 0 | 0 | 0 | 0 | 128 | 0 | 128 | 3 | 0 | 3 | 6 | 249 |
| Total | 3 | 377 | 3 | 383 | 0 | 0 | 0 | 0 | 2 | 393 | 0 | 395 | 4 | 0 | 11 | 15 | 793 |
| 07:00 | 0 | 112 | 7 | 119 | 0 | 0 | 0 | 0 | 0 | 104 | 1 | 105 | 3 | 0 | 2 | 5 | 229 |
| 07:15 | 1 | 107 | 20 | 128 | 0 | 0 | 0 | 0 | 8 | 160 | 1 | 169 | 4 | 1 | 4 | 9 | 306 |
| 07:30 | 1 | 126 | 22 | 149 | 0 | 0 | 0 | 0 | 40 | 170 | 1 | 211 | 2 | 1 | 5 | 8 | 368 |
| 07:45 | 3 | 168 | 25 | 196 | 0 | 0 | 0 | 0 | 42 | 168 | 0 | 210 | 3 | 1 | 3 | 7 | 413 |
| Total | 5 | 513 | 74 | 592 | 0 | 0 | 0 | 0 | 90 | 602 | 3 | 695 | 12 | 3 | 14 | 29 | 1316 |
| 08:00 | 3 | 141 | 18 | 162 | 0 | 0 | 0 | 0 | 21 | 148 | 0 | 169 | 2 | 0 | 1 | 3 | 334 |
| 08:15 | 0 | 117 | 4 | 121 | 0 | 0 | 0 | 0 | 8 | 138 | 0 | 146 | 1 | 0 | 3 | 4 | 271 |
| 08:30 | 1 | 92 | 9 | 102 | 0 | 0 | 0 | 0 | 7 | 137 | 1 | 145 | 1 | 0 | 4 | 5 | 252 |
| 08:45 | 2 | 115 | 10 | 127 | 0 | 0 | 0 | 0 | 13 | 104 | 1 | 118 | 7 | 0 | 4 | 11 | 256 |
| Total | 6 | 465 | 41 | 512 | 0 | 0 | 0 | 0 | 49 | 527 | 2 | 578 | 11 | 0 | 12 | 23 | 1113 |
| 09:00 | 0 | 109 | 1 | 110 | 0 | 0 | 0 | 0 | 9 | 106 | 1 | 116 | 0 | 1 | 0 | 1 | 227 |
| 09:15 | 2 | 116 | 3 | 121 | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 118 | 0 | 0 | 2 | 2 | 241 |
| 09:30 | 2 | 101 | 0 | 103 | 0 | 0 | 0 | 0 | 0 | 123 | 0 | 123 | 1 | 0 | 3 | 4 | 230 |
| 09:45 | 1 | 103 | 1 | 105 | 0 | 0 | 0 | 0 | 2 | 141 | 0 | 143 | 1 | 0 | 3 | 4 | 252 |
| Total | 5 | 429 | 5 | 439 | 0 | 0 | 0 | 0 | 11 | 488 | 1 | 500 | 2 | 1 | 8 | 11 | 950 |
| 10:00 | 1 | 124 | 3 | 128 | 0 | 0 | 0 | 0 | 1 | 107 | 0 | 108 | 1 | 0 | 1 | 2 | 238 |
| 10:15 | 4 | 125 | 3 | 132 | 0 | 0 | 0 | 0 | 2 | 123 | 1 | 126 | 1 | 0 | 1 | 2 | 260 |
| 10:30 | 3 | 116 | 0 | 119 | 0 | 0 | 0 | 0 | 1 | 114 | 0 | 115 | 1 | 0 | 2 | 3 | 237 |
| 10:45 | 3 | 112 | 0 | 115 | 0 | 0 | 0 | 0 | 1 | 124 | 0 | 125 | 0 | 0 | 8 | 8 | 248 |
| Total | 11 | 477 | 6 | 494 | 0 | 0 | 0 | 0 | 5 | 468 | 1 | 474 | 3 | 0 | 12 | 15 | 983 |
| 11:00 | 6 | 117 | 1 | 124 | 0 | 0 | 0 | 0 | 0 | 127 | 1 | 128 | 3 | 0 | 0 | 3 | 255 |
| 11:15 | 2 | 115 | 0 | 117 | 0 | 0 | 0 | 0 | 0 | 122 | 1 | 123 | 3 | 0 | 1 | 4 | 244 |
| 11:30 | 1 | 112 | 1 | 114 | 0 | 0 | 0 | 0 | 1 | 128 | 1 | 130 | 2 | 0 | 1 | 3 | 247 |
| 11:45 | 0 | 132 | 1 | 133 | 0 | 0 | 0 | 0 | 1 | 128 | 3 | 132 | 0 | 0 | 3 | 3 | 268 |
| Total | 9 | 476 | 3 | 488 | 0 | 0 | 0 | 0 | 2 | 505 | 6 | 513 | 8 | 0 | 5 | 13 | 1014 |
| 12:00 | 1 | 132 | 2 | 135 | 0 | 0 | 0 | 0 | 1 | 117 | 3 | 121 | 2 | 0 | 2 | 4 | 260 |
| 12:15 | 3 | 127 | 1 | 131 | 0 | 0 | 0 | 0 | 0 | 123 | 1 | 124 | 3 | 0 | 0 | 3 | 258 |
| 12:30 | 2 | 127 | 1 | 130 | 0 | 0 | 0 | 0 | 2 | 125 | 1 | 128 | 1 | 0 | 1 | 2 | 260 |
| 12:45 | 2 | 120 | 0 | 122 | 0 | 0 | 0 | 0 | 1 | 135 | 3 | 139 | 3 | 0 | 0 | 3 | 264 |
| Total | 8 | 506 | 4 | 518 | 0 | 0 | 0 | 0 | 4 | 500 | 8 | 512 | 9 | 0 | 3 | 12 | 1042 |
| 13:00 | 2 | 108 | 2 | 112 | 0 | 0 | 0 | 0 | 2 | 132 | 2 | 136 | 1 | 0 | 0 | 1 | 249 |
| 13:15 | 2 | 122 | 5 | 129 | 0 | 0 | 0 | 0 | 0 | 100 | 1 | 101 | 0 | 0 | 0 | 0 | 230 |
| 13:30 | 0 | 92 | 2 | 94 | 0 | 0 | 0 | 0 | 1 | 94 | 0 | 95 | 2 | 0 | 3 | 5 | 194 |
| 13:45 | 2 | 127 | 3 | 132 | 0 | 0 | 0 | 0 | 5 | 96 | 1 | 102 | 0 | 0 | 0 | 0 | 234 |
| Total | 6 | 449 | 12 | 467 | 0 | 0 | 0 | 0 | 8 | 422 | 4 | 434 | 3 | 0 | 3 | 6 | 907 |
| 14:00 | 2 | 151 | 4 | 157 | 0 | 0 | 0 | 0 | 3 | 140 | 0 | 143 | 1 | 0 | 3 | 4 | 304 |
| 14:15 | 3 | 127 | 4 | 134 | 0 | 0 | 0 | 0 | 0 | 114 | 2 | 116 | 3 | 0 | 0 | 3 | 253 |
| 14:30 | 4 | 107 | 2 | 113 | 0 | 0 | 0 | 0 | 2 | 98 | 0 | 100 | 1 | 0 | 1 | 2 | 215 |
| 14:45 | 3 | 186 | 7 | 196 | 0 | 0 | 0 | 0 | 30 | 85 | 0 | 115 | 1 | 0 | 2 | 3 | 314 |
| Total | 12 | 571 | 17 | 600 | 0 | 0 | 0 | 0 | 35 | 437 | 2 | 474 | 6 | 0 | 6 | 12 | 1086 |
| 15:00 | 5 | 174 | 2 | 181 | 0 | 0 | 0 | 0 | 1 | 125 | 0 | 126 | 3 | 0 | 1 | 4 | 311 |
| 15:15 | 2 | 129 | 3 | 134 | 0 | 0 | 0 | 0 | 1 | 128 | 1 | 130 | 0 | 0 | 1 | 1 | 265 |
| 15:30 | 3 | 135 | 1 | 139 | 0 | 0 | 0 | 0 | 1 | 135 | 3 | 139 | 1 | 0 | 1 | 2 | 280 |
| 15:45 | 4 | 168 | 2 | 174 | 0 | 0 | 0 | 0 | 1 | 161 | 1 | 163 | 0 | 0 | 1 | 1 | 338 |
| Total | 14 | 606 | 8 | 628 | 0 | 0 | 0 | 0 | 4 | 549 | 5 | 558 | 4 | 0 | 4 | 8 | 1194 |
| 16:00 | 3 | 164 | 2 | 169 | 0 | 0 | 0 | 0 | 1 | 131 | 2 | 134 | 1 | 0 | 4 | 5 | 308 |

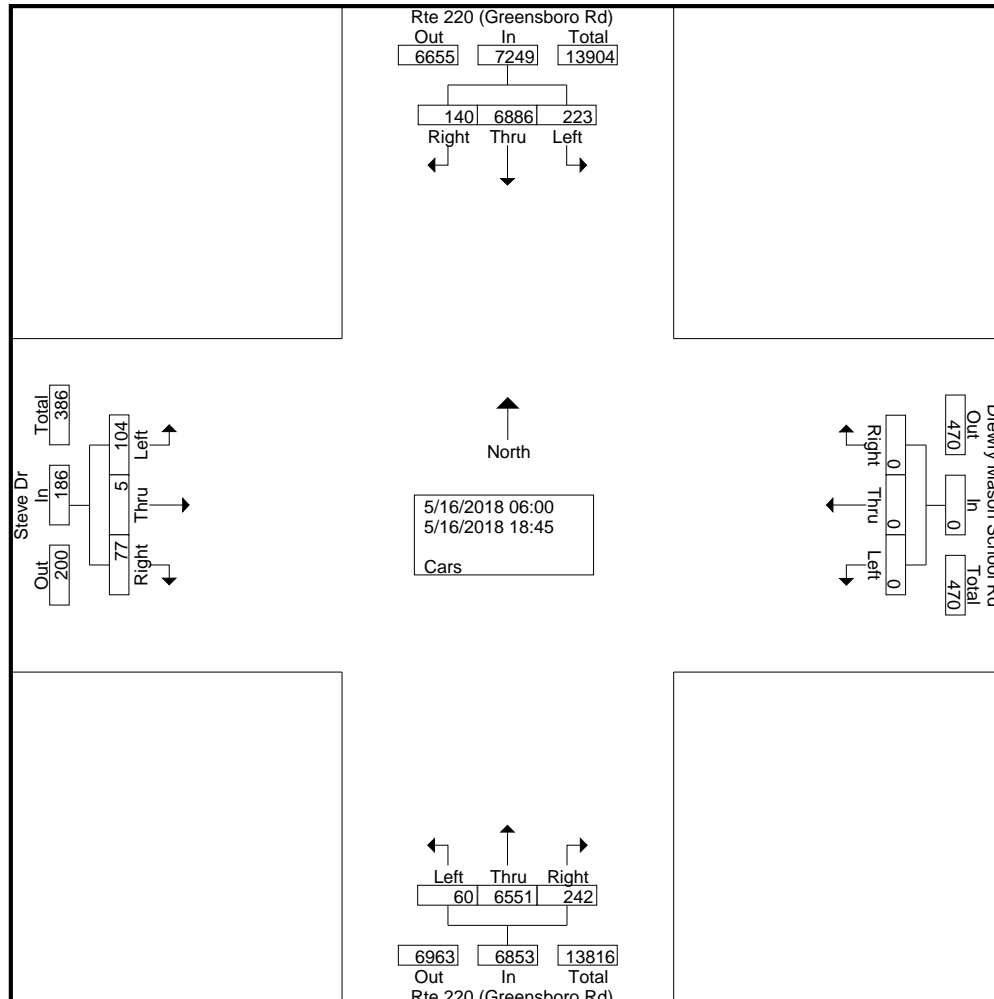
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Drewry Mason School Rd
Date: 5/16/2018
Page No: 2

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Drewry Mason School Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Steve Dr From West | | | | Int. Total |
|--------------------|---------------------------------------|-------------|------------|-------------|-------------------------------------|----------|----------|------------|---------------------------------------|-------------|-----------|-------------|-----------------------|----------|------------|------------|--------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 6 | 190 | 2 | 198 | 0 | 0 | 0 | 0 | 0 | 159 | 1 | 160 | 2 | 0 | 0 | 2 | 360 |
| 16:30 | 4 | 138 | 3 | 145 | 0 | 0 | 0 | 0 | 1 | 139 | 3 | 143 | 1 | 0 | 1 | 2 | 290 |
| 16:45 | 4 | 191 | 4 | 199 | 0 | 0 | 0 | 0 | 3 | 142 | 1 | 146 | 2 | 0 | 4 | 6 | 351 |
| Total | 17 | 683 | 11 | 711 | 0 | 0 | 0 | 0 | 5 | 571 | 7 | 583 | 6 | 0 | 9 | 15 | 1309 |
| | | | | | | | | | | | | | | | | | |
| 17:00 | 8 | 194 | 7 | 209 | 0 | 0 | 0 | 0 | 1 | 138 | 4 | 143 | 1 | 0 | 1 | 2 | 354 |
| 17:15 | 5 | 229 | 5 | 239 | 0 | 0 | 0 | 0 | 2 | 173 | 1 | 176 | 1 | 0 | 4 | 5 | 420 |
| 17:30 | 7 | 158 | 7 | 172 | 0 | 0 | 0 | 0 | 3 | 153 | 5 | 161 | 0 | 0 | 0 | 0 | 333 |
| 17:45 | 7 | 216 | 14 | 237 | 0 | 0 | 0 | 0 | 11 | 129 | 1 | 141 | 1 | 0 | 3 | 4 | 382 |
| Total | 27 | 797 | 33 | 857 | 0 | 0 | 0 | 0 | 17 | 593 | 11 | 621 | 3 | 0 | 8 | 11 | 1489 |
| | | | | | | | | | | | | | | | | | |
| 18:00 | 3 | 170 | 4 | 177 | 0 | 0 | 0 | 0 | 7 | 148 | 2 | 157 | 1 | 0 | 2 | 3 | 337 |
| 18:15 | 6 | 137 | 1 | 144 | 0 | 0 | 0 | 0 | 2 | 143 | 4 | 149 | 3 | 1 | 2 | 6 | 299 |
| 18:30 | 4 | 98 | 0 | 102 | 0 | 0 | 0 | 0 | 0 | 100 | 4 | 104 | 1 | 0 | 2 | 3 | 209 |
| 18:45 | 4 | 132 | 1 | 137 | 0 | 0 | 0 | 0 | 1 | 105 | 0 | 106 | 1 | 0 | 3 | 4 | 247 |
| Total | 17 | 537 | 6 | 560 | 0 | 0 | 0 | 0 | 10 | 496 | 10 | 516 | 6 | 1 | 9 | 16 | 1092 |
| | | | | | | | | | | | | | | | | | |
| Grand Total | 140 | 6886 | 223 | 7249 | 0 | 0 | 0 | 0 | 242 | 6551 | 60 | 6853 | 77 | 5 | 104 | 186 | 14288 |
| Apprch % | 1.9 | 95 | 3.1 | | 0 | 0 | 0 | | 3.5 | 95.6 | 0.9 | | 41.4 | 2.7 | 55.9 | | |
| Total % | 1 | 48.2 | 1.6 | | 0 | 0 | 0 | | 1.7 | 45.8 | 0.4 | | 0.5 | 0 | 0.7 | | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Drewry Mason School Rd
Date: 5/16/2018
Page No: 3

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Drewry Mason School Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Steve Dr From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 1 | 107 | 20 | 128 | 0 | 0 | 0 | 0 | 8 | 160 | 1 | 169 | 4 | 1 | 4 | 9 | 306 |
| 07:30 | 1 | 126 | 22 | 149 | 0 | 0 | 0 | 0 | 40 | 170 | 1 | 211 | 2 | 1 | 5 | 8 | 368 |
| 07:45 | 3 | 168 | 25 | 196 | 0 | 0 | 0 | 0 | 42 | 168 | 0 | 210 | 3 | 1 | 3 | 7 | 413 |
| 08:00 | 3 | 141 | 18 | 162 | 0 | 0 | 0 | 0 | 21 | 148 | 0 | 169 | 2 | 0 | 1 | 3 | 334 |
| Total Volume | 8 | 542 | 85 | 635 | 0 | 0 | 0 | 0 | 111 | 646 | 2 | 759 | 11 | 3 | 13 | 27 | 1421 |
| % App. Total | 1.3 | 85.4 | 13.4 | | 0 | 0 | 0 | | 14.6 | 85.1 | 0.3 | | 40.7 | 11.1 | 48.1 | | |
| PHF | .667 | .807 | .850 | .810 | .000 | .000 | .000 | .000 | .661 | .950 | .500 | .899 | .688 | .750 | .650 | .750 | .860 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 8 | 194 | 7 | 209 | 0 | 0 | 0 | 0 | 1 | 138 | 4 | 143 | 1 | 0 | 1 | 2 | 354 |
| 17:15 | 5 | 229 | 5 | 239 | 0 | 0 | 0 | 0 | 2 | 173 | 1 | 176 | 1 | 0 | 4 | 5 | 420 |
| 17:30 | 7 | 158 | 7 | 172 | 0 | 0 | 0 | 0 | 3 | 153 | 5 | 161 | 0 | 0 | 0 | 0 | 333 |
| 17:45 | 7 | 216 | 14 | 237 | 0 | 0 | 0 | 0 | 11 | 129 | 1 | 141 | 1 | 0 | 3 | 4 | 382 |
| Total Volume | 27 | 797 | 33 | 857 | 0 | 0 | 0 | 0 | 17 | 593 | 11 | 621 | 3 | 0 | 8 | 11 | 1489 |
| % App. Total | 3.2 | 93 | 3.9 | | 0 | 0 | 0 | | 2.7 | 95.5 | 1.8 | | 27.3 | 0 | 72.7 | | |
| PHF | .844 | .870 | .589 | .896 | .000 | .000 | .000 | .000 | .386 | .857 | .550 | .882 | .750 | .000 | .500 | .550 | .886 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Drewry Mason School Rd
Date: 5/16/2018
Page No: 1

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Drewry Mason School Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Steve Dr From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 | 0 | 0 | 0 | 0 | 33 |
| 06:15 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 30 |
| 06:30 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 | 0 | 0 | 0 | 0 | 21 |
| 06:45 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 43 |
| Total | 0 | 68 | 0 | 68 | 0 | 0 | 0 | 0 | 0 | 59 | 0 | 59 | 0 | 0 | 0 | 0 | 127 |
| 07:00 | 1 | 19 | 0 | 20 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 25 | 1 | 0 | 0 | 1 | 46 |
| 07:15 | 1 | 20 | 0 | 21 | 0 | 0 | 0 | 0 | 2 | 27 | 0 | 29 | 0 | 0 | 0 | 0 | 50 |
| 07:30 | 0 | 19 | 3 | 22 | 0 | 0 | 0 | 0 | 3 | 27 | 0 | 30 | 1 | 0 | 0 | 1 | 53 |
| 07:45 | 0 | 21 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 47 |
| Total | 2 | 79 | 4 | 85 | 0 | 0 | 0 | 0 | 6 | 103 | 0 | 109 | 2 | 0 | 0 | 2 | 196 |
| 08:00 | 1 | 25 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 1 | 0 | 0 | 1 | 47 |
| 08:15 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 1 | 34 | 0 | 35 | 0 | 0 | 0 | 0 | 60 |
| 08:30 | 0 | 29 | 1 | 30 | 0 | 0 | 0 | 0 | 1 | 28 | 0 | 29 | 0 | 0 | 0 | 0 | 59 |
| 08:45 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 53 |
| Total | 1 | 103 | 1 | 105 | 0 | 0 | 0 | 0 | 2 | 111 | 0 | 113 | 1 | 0 | 0 | 1 | 219 |
| 09:00 | 0 | 32 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 57 |
| 09:15 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 44 |
| 09:30 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 62 |
| 09:45 | 0 | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 68 |
| Total | 0 | 125 | 0 | 125 | 0 | 0 | 0 | 0 | 0 | 106 | 0 | 106 | 0 | 0 | 0 | 0 | 231 |
| 10:00 | 0 | 32 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 56 |
| 10:15 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 48 |
| 10:30 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 47 |
| 10:45 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 64 |
| Total | 0 | 111 | 0 | 111 | 0 | 0 | 0 | 0 | 0 | 104 | 0 | 104 | 0 | 0 | 0 | 0 | 215 |
| 11:00 | 0 | 32 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 50 |
| 11:15 | 0 | 24 | 1 | 25 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 | 0 | 0 | 0 | 0 | 52 |
| 11:30 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 54 |
| 11:45 | 1 | 29 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 61 |
| Total | 1 | 105 | 1 | 107 | 0 | 0 | 0 | 0 | 0 | 110 | 0 | 110 | 0 | 0 | 0 | 0 | 217 |
| 12:00 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 1 | 0 | 0 | 1 | 46 |
| 12:15 | 0 | 32 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 66 |
| 12:30 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 45 |
| 12:45 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 37 | 0 | 0 | 0 | 0 | 62 |
| Total | 0 | 103 | 0 | 103 | 0 | 0 | 0 | 0 | 0 | 115 | 0 | 115 | 1 | 0 | 0 | 1 | 219 |
| 13:00 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 50 |
| 13:15 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 49 |
| 13:30 | 0 | 12 | 0 | 12 | 0 | 0 | 0 | 0 | 1 | 25 | 0 | 26 | 0 | 0 | 0 | 0 | 38 |
| 13:45 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 54 |
| Total | 0 | 92 | 0 | 92 | 0 | 0 | 0 | 0 | 1 | 98 | 0 | 99 | 0 | 0 | 0 | 0 | 191 |
| 14:00 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 1 | 29 | 0 | 30 | 0 | 0 | 0 | 0 | 54 |
| 14:15 | 0 | 24 | 1 | 25 | 0 | 0 | 0 | 0 | 1 | 34 | 0 | 35 | 0 | 0 | 0 | 0 | 60 |
| 14:30 | 0 | 22 | 1 | 23 | 0 | 0 | 0 | 0 | 3 | 28 | 0 | 31 | 0 | 0 | 0 | 0 | 54 |
| 14:45 | 0 | 30 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 50 |
| Total | 0 | 100 | 2 | 102 | 0 | 0 | 0 | 0 | 5 | 111 | 0 | 116 | 0 | 0 | 0 | 0 | 218 |
| 15:00 | 1 | 27 | 2 | 30 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 26 | 1 | 0 | 0 | 1 | 57 |
| 15:15 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 52 |
| 15:30 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 13 | 1 | 14 | 0 | 0 | 0 | 0 | 35 |
| 15:45 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 1 | 20 | 0 | 21 | 0 | 0 | 1 | 1 | 48 |
| Total | 1 | 105 | 2 | 108 | 0 | 0 | 0 | 0 | 1 | 80 | 1 | 82 | 1 | 0 | 1 | 2 | 192 |
| 16:00 | 0 | 28 | 1 | 29 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 48 |

T3 Design

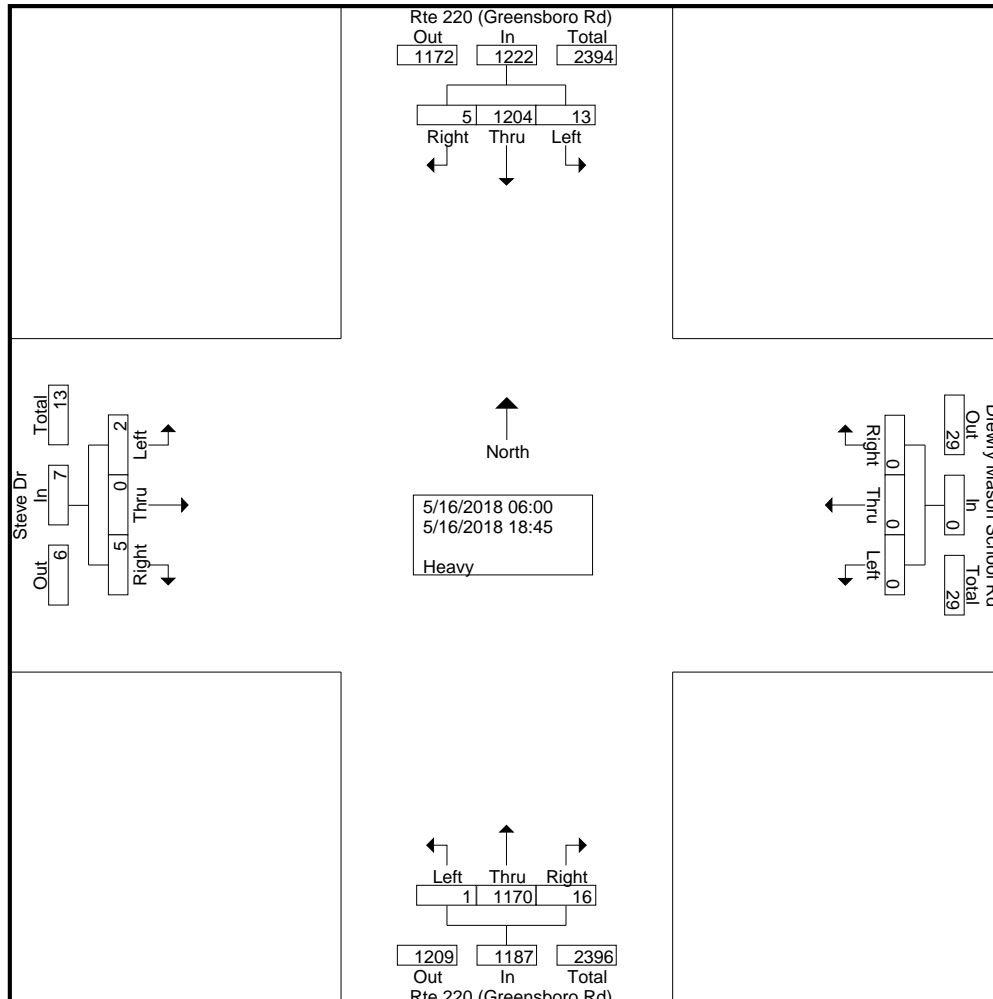
10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Drewry Mason School Rd
Date: 5/16/2018

Groups Printed- Heavy Vehicles

Page No: 2

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Drewry Mason School Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Steve Dr From West | | | | Int. Total |
|-------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 45 |
| 16:30 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 31 |
| 16:45 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 32 |
| Total | 0 | 89 | 1 | 90 | 0 | 0 | 0 | 0 | 0 | 66 | 0 | 66 | 0 | 0 | 0 | 0 | 156 |
| 17:00 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 37 |
| 17:15 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 35 |
| 17:30 | 0 | 8 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 23 |
| 17:45 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 31 |
| Total | 0 | 63 | 1 | 64 | 0 | 0 | 0 | 0 | 0 | 62 | 0 | 62 | 0 | 0 | 0 | 0 | 126 |
| 18:00 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 0 | 0 | 0 | 30 |
| 18:15 | 0 | 16 | 1 | 17 | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 11 | 0 | 0 | 1 | 1 | 29 |
| 18:30 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 17 |
| 18:45 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 33 |
| Total | 0 | 61 | 1 | 62 | 0 | 0 | 0 | 0 | 1 | 45 | 0 | 46 | 0 | 0 | 1 | 1 | 109 |
| Grand Total | 5 | 1204 | 13 | 1222 | 0 | 0 | 0 | 0 | 16 | 1170 | 1 | 1187 | 5 | 0 | 2 | 7 | 2416 |
| Apprch % | 0.4 | 98.5 | 1.1 | | 0 | 0 | 0 | | 1.3 | 98.6 | 0.1 | | 71.4 | 0 | 28.6 | | |
| Total % | 0.2 | 49.8 | 0.5 | 50.6 | 0 | 0 | 0 | 0 | 0.7 | 48.4 | 0 | 49.1 | 0.2 | 0 | 0.1 | 0.3 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Drewry Mason School Rd
Date: 5/16/2018

Groups Printed- Heavy Vehicles Page No: 3

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Drewry Mason School Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Steve Dr From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 1 | 20 | 0 | 21 | 0 | 0 | 0 | 0 | 2 | 27 | 0 | 29 | 0 | 0 | 0 | 0 | 50 |
| 07:30 | 0 | 19 | 3 | 22 | 0 | 0 | 0 | 0 | 3 | 27 | 0 | 30 | 1 | 0 | 0 | 1 | 53 |
| 07:45 | 0 | 21 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 47 |
| 08:00 | 1 | 25 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 1 | 0 | 0 | 1 | 47 |
| Total Volume | 2 | 85 | 4 | 91 | 0 | 0 | 0 | 0 | 5 | 99 | 0 | 104 | 2 | 0 | 0 | 2 | 197 |
| % App. Total | 2.2 | 93.4 | 4.4 | | 0 | 0 | 0 | | 4.8 | 95.2 | 0 | | 100 | 0 | 0 | | |
| PHF | .500 | .850 | .333 | .875 | .000 | .000 | .000 | .000 | .417 | .917 | .000 | .867 | .500 | .000 | .000 | .500 | .929 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 37 |
| 17:15 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 35 |
| 17:30 | 0 | 8 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 23 |
| 17:45 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 31 |
| Total Volume | 0 | 63 | 1 | 64 | 0 | 0 | 0 | 0 | 0 | 62 | 0 | 62 | 0 | 0 | 0 | 0 | 126 |
| % App. Total | 0 | 98.4 | 1.6 | | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .656 | .250 | .667 | .000 | .000 | .000 | .000 | .000 | .775 | .000 | .775 | .000 | .000 | .000 | .000 | .851 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Drewry Mason School Rd
Date: 5/16/2018

Groups Printed- Combined Page No: 1

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Drewry Mason School Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Steve Dr From West | | | | Int. Total | |
|------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------|------|------|------------|------------|------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | | |
| 06:00 | 0 | 86 | 1 | 87 | 0 | 0 | 0 | 0 | 0 | 71 | 0 | 71 | 1 | 0 | 3 | 4 | 162 | |
| 06:15 | 1 | 100 | 0 | 101 | 0 | 0 | 0 | 0 | 0 | 108 | 0 | 108 | 0 | 0 | 1 | 1 | 210 | |
| 06:30 | 1 | 123 | 2 | 126 | 0 | 0 | 0 | 0 | 0 | 124 | 0 | 126 | 0 | 0 | 4 | 4 | 256 | |
| 06:45 | 1 | 136 | 0 | 137 | 0 | 0 | 0 | 0 | 0 | 149 | 0 | 149 | 3 | 0 | 3 | 6 | 292 | |
| Total | 3 | 445 | 3 | 451 | 0 | 0 | 0 | 0 | 0 | 2 | 452 | 0 | 454 | 4 | 0 | 11 | 15 | 920 |
| 07:00 | 1 | 131 | 7 | 139 | 0 | 0 | 0 | 0 | 0 | 1 | 128 | 1 | 130 | 4 | 0 | 2 | 6 | 275 |
| 07:15 | 2 | 127 | 20 | 149 | 0 | 0 | 0 | 0 | 0 | 10 | 187 | 1 | 198 | 4 | 1 | 4 | 9 | 356 |
| 07:30 | 1 | 145 | 25 | 171 | 0 | 0 | 0 | 0 | 0 | 43 | 197 | 1 | 241 | 3 | 1 | 5 | 9 | 421 |
| 07:45 | 3 | 189 | 26 | 218 | 0 | 0 | 0 | 0 | 0 | 42 | 193 | 0 | 235 | 3 | 1 | 3 | 7 | 460 |
| Total | 7 | 592 | 78 | 677 | 0 | 0 | 0 | 0 | 0 | 96 | 705 | 3 | 804 | 14 | 3 | 14 | 31 | 1512 |
| 08:00 | 4 | 166 | 18 | 188 | 0 | 0 | 0 | 0 | 0 | 21 | 168 | 0 | 189 | 3 | 0 | 1 | 4 | 381 |
| 08:15 | 0 | 142 | 4 | 146 | 0 | 0 | 0 | 0 | 0 | 9 | 172 | 0 | 181 | 1 | 0 | 3 | 4 | 331 |
| 08:30 | 1 | 121 | 10 | 132 | 0 | 0 | 0 | 0 | 0 | 8 | 165 | 1 | 174 | 1 | 0 | 4 | 5 | 311 |
| 08:45 | 2 | 139 | 10 | 151 | 0 | 0 | 0 | 0 | 0 | 13 | 133 | 1 | 147 | 7 | 0 | 4 | 11 | 309 |
| Total | 7 | 568 | 42 | 617 | 0 | 0 | 0 | 0 | 0 | 51 | 638 | 2 | 691 | 12 | 0 | 12 | 24 | 1332 |
| 09:00 | 0 | 141 | 1 | 142 | 0 | 0 | 0 | 0 | 0 | 9 | 131 | 1 | 141 | 0 | 1 | 0 | 1 | 284 |
| 09:15 | 2 | 140 | 3 | 145 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 0 | 138 | 0 | 0 | 2 | 2 | 285 |
| 09:30 | 2 | 135 | 0 | 137 | 0 | 0 | 0 | 0 | 0 | 0 | 151 | 0 | 151 | 1 | 0 | 3 | 4 | 292 |
| 09:45 | 1 | 138 | 1 | 140 | 0 | 0 | 0 | 0 | 0 | 2 | 174 | 0 | 176 | 1 | 0 | 3 | 4 | 320 |
| Total | 5 | 554 | 5 | 564 | 0 | 0 | 0 | 0 | 0 | 11 | 594 | 1 | 606 | 2 | 1 | 8 | 11 | 1181 |
| 10:00 | 1 | 156 | 3 | 160 | 0 | 0 | 0 | 0 | 0 | 1 | 131 | 0 | 132 | 1 | 0 | 1 | 2 | 294 |
| 10:15 | 4 | 146 | 3 | 153 | 0 | 0 | 0 | 0 | 0 | 2 | 150 | 1 | 153 | 1 | 0 | 1 | 2 | 308 |
| 10:30 | 3 | 143 | 0 | 146 | 0 | 0 | 0 | 0 | 0 | 1 | 134 | 0 | 135 | 1 | 0 | 2 | 3 | 284 |
| 10:45 | 3 | 143 | 0 | 146 | 0 | 0 | 0 | 0 | 0 | 1 | 157 | 0 | 158 | 0 | 0 | 8 | 8 | 312 |
| Total | 11 | 588 | 6 | 605 | 0 | 0 | 0 | 0 | 0 | 5 | 572 | 1 | 578 | 3 | 0 | 12 | 15 | 1198 |
| 11:00 | 6 | 149 | 1 | 156 | 0 | 0 | 0 | 0 | 0 | 0 | 145 | 1 | 146 | 3 | 0 | 0 | 3 | 305 |
| 11:15 | 2 | 139 | 1 | 142 | 0 | 0 | 0 | 0 | 0 | 0 | 149 | 1 | 150 | 3 | 0 | 1 | 4 | 296 |
| 11:30 | 1 | 132 | 1 | 134 | 0 | 0 | 0 | 0 | 0 | 1 | 162 | 1 | 164 | 2 | 0 | 1 | 3 | 301 |
| 11:45 | 1 | 161 | 1 | 163 | 0 | 0 | 0 | 0 | 0 | 1 | 159 | 3 | 163 | 0 | 0 | 3 | 3 | 329 |
| Total | 10 | 581 | 4 | 595 | 0 | 0 | 0 | 0 | 0 | 2 | 615 | 6 | 623 | 8 | 0 | 5 | 13 | 1231 |
| 12:00 | 1 | 152 | 2 | 155 | 0 | 0 | 0 | 0 | 0 | 1 | 142 | 3 | 146 | 3 | 0 | 2 | 5 | 306 |
| 12:15 | 3 | 159 | 1 | 163 | 0 | 0 | 0 | 0 | 0 | 0 | 157 | 1 | 158 | 3 | 0 | 0 | 3 | 324 |
| 12:30 | 2 | 153 | 1 | 156 | 0 | 0 | 0 | 0 | 0 | 2 | 144 | 1 | 147 | 1 | 0 | 1 | 2 | 305 |
| 12:45 | 2 | 145 | 0 | 147 | 0 | 0 | 0 | 0 | 0 | 1 | 172 | 3 | 176 | 3 | 0 | 0 | 3 | 326 |
| Total | 8 | 609 | 4 | 621 | 0 | 0 | 0 | 0 | 0 | 4 | 615 | 8 | 627 | 10 | 0 | 3 | 13 | 1261 |
| 13:00 | 2 | 130 | 2 | 134 | 0 | 0 | 0 | 0 | 0 | 2 | 160 | 2 | 164 | 1 | 0 | 0 | 1 | 299 |
| 13:15 | 2 | 147 | 5 | 154 | 0 | 0 | 0 | 0 | 0 | 0 | 124 | 1 | 125 | 0 | 0 | 0 | 0 | 279 |
| 13:30 | 0 | 104 | 2 | 106 | 0 | 0 | 0 | 0 | 0 | 2 | 119 | 0 | 121 | 2 | 0 | 3 | 5 | 232 |
| 13:45 | 2 | 160 | 3 | 165 | 0 | 0 | 0 | 0 | 0 | 5 | 117 | 1 | 123 | 0 | 0 | 0 | 0 | 288 |
| Total | 6 | 541 | 12 | 559 | 0 | 0 | 0 | 0 | 0 | 9 | 520 | 4 | 533 | 3 | 0 | 3 | 6 | 1098 |
| 14:00 | 2 | 175 | 4 | 181 | 0 | 0 | 0 | 0 | 0 | 4 | 169 | 0 | 173 | 1 | 0 | 3 | 4 | 358 |
| 14:15 | 3 | 151 | 5 | 159 | 0 | 0 | 0 | 0 | 0 | 1 | 148 | 2 | 151 | 3 | 0 | 0 | 3 | 313 |
| 14:30 | 4 | 129 | 3 | 136 | 0 | 0 | 0 | 0 | 0 | 5 | 126 | 0 | 131 | 1 | 0 | 1 | 2 | 269 |
| 14:45 | 3 | 216 | 7 | 226 | 0 | 0 | 0 | 0 | 0 | 30 | 105 | 0 | 135 | 1 | 0 | 2 | 3 | 364 |
| Total | 12 | 671 | 19 | 702 | 0 | 0 | 0 | 0 | 0 | 40 | 548 | 2 | 590 | 6 | 0 | 6 | 12 | 1304 |
| 15:00 | 6 | 201 | 4 | 211 | 0 | 0 | 0 | 0 | 0 | 1 | 151 | 0 | 152 | 4 | 0 | 1 | 5 | 368 |
| 15:15 | 2 | 160 | 3 | 165 | 0 | 0 | 0 | 0 | 0 | 1 | 149 | 1 | 151 | 0 | 0 | 1 | 1 | 317 |
| 15:30 | 3 | 156 | 1 | 160 | 0 | 0 | 0 | 0 | 0 | 1 | 148 | 4 | 153 | 1 | 0 | 1 | 2 | 315 |
| 15:45 | 4 | 194 | 2 | 200 | 0 | 0 | 0 | 0 | 0 | 2 | 181 | 1 | 184 | 0 | 0 | 2 | 2 | 386 |
| Total | 15 | 711 | 10 | 736 | 0 | 0 | 0 | 0 | 0 | 5 | 629 | 6 | 640 | 5 | 0 | 5 | 10 | 1386 |
| 16:00 | 3 | 192 | 3 | 198 | 0 | 0 | 0 | 0 | 0 | 1 | 150 | 2 | 153 | 1 | 0 | 4 | 5 | 356 |

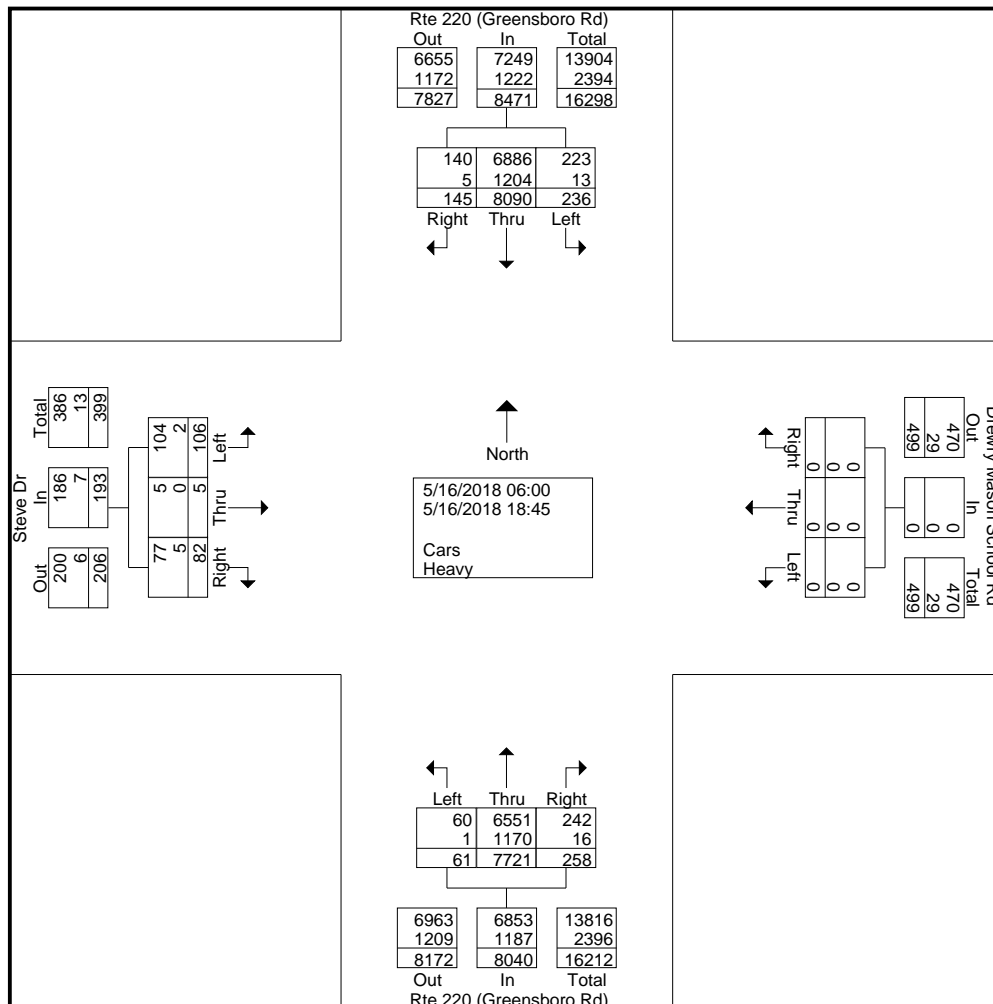
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Drewry Mason School Rd
Date: 5/16/2018
Page No: 2

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Drewry Mason School Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Steve Dr From West | | | | Int. Total |
|-------------|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 6 | 215 | 2 | 223 | 0 | 0 | 0 | 0 | 0 | 179 | 1 | 180 | 2 | 0 | 0 | 2 | 405 |
| 16:30 | 4 | 156 | 3 | 163 | 0 | 0 | 0 | 0 | 1 | 152 | 3 | 156 | 1 | 0 | 1 | 2 | 321 |
| 16:45 | 4 | 209 | 4 | 217 | 0 | 0 | 0 | 0 | 3 | 156 | 1 | 160 | 2 | 0 | 4 | 6 | 383 |
| Total | 17 | 772 | 12 | 801 | 0 | 0 | 0 | 0 | 5 | 637 | 7 | 649 | 6 | 0 | 9 | 15 | 1465 |
| 17:00 | 8 | 218 | 7 | 233 | 0 | 0 | 0 | 0 | 1 | 151 | 4 | 156 | 1 | 0 | 1 | 2 | 391 |
| 17:15 | 5 | 244 | 5 | 254 | 0 | 0 | 0 | 0 | 2 | 193 | 1 | 196 | 1 | 0 | 4 | 5 | 455 |
| 17:30 | 7 | 166 | 8 | 181 | 0 | 0 | 0 | 0 | 3 | 167 | 5 | 175 | 0 | 0 | 0 | 0 | 356 |
| 17:45 | 7 | 232 | 14 | 253 | 0 | 0 | 0 | 0 | 11 | 144 | 1 | 156 | 1 | 0 | 3 | 4 | 413 |
| Total | 27 | 860 | 34 | 921 | 0 | 0 | 0 | 0 | 17 | 655 | 11 | 683 | 3 | 0 | 8 | 11 | 1615 |
| 18:00 | 3 | 190 | 4 | 197 | 0 | 0 | 0 | 0 | 7 | 158 | 2 | 167 | 1 | 0 | 2 | 3 | 367 |
| 18:15 | 6 | 153 | 2 | 161 | 0 | 0 | 0 | 0 | 3 | 153 | 4 | 160 | 3 | 1 | 3 | 7 | 328 |
| 18:30 | 4 | 112 | 0 | 116 | 0 | 0 | 0 | 0 | 0 | 103 | 4 | 107 | 1 | 0 | 2 | 3 | 226 |
| 18:45 | 4 | 143 | 1 | 148 | 0 | 0 | 0 | 0 | 1 | 127 | 0 | 128 | 1 | 0 | 3 | 4 | 280 |
| Total | 17 | 598 | 7 | 622 | 0 | 0 | 0 | 0 | 11 | 541 | 10 | 562 | 6 | 1 | 10 | 17 | 1201 |
| Grand Total | 145 | 8090 | 236 | 8471 | 0 | 0 | 0 | 0 | 258 | 7721 | 61 | 8040 | 82 | 5 | 106 | 193 | 16704 |
| Apprch % | 1.7 | 95.5 | 2.8 | | 0 | 0 | 0 | | 3.2 | 96 | 0.8 | | 42.5 | 2.6 | 54.9 | | |
| Total % | 0.9 | 48.4 | 1.4 | 50.7 | 0 | 0 | 0 | 0 | 1.5 | 46.2 | 0.4 | 48.1 | 0.5 | 0 | 0.6 | 1.2 | |
| Cars | 140 | 6886 | 223 | 7249 | 0 | 0 | 0 | 0 | 242 | 6551 | 60 | 6853 | 77 | 5 | 104 | 186 | 14288 |
| % Cars | 96.6 | 85.1 | 94.5 | 85.6 | 0 | 0 | 0 | 0 | 93.8 | 84.8 | 98.4 | 85.2 | 93.9 | 100 | 98.1 | 96.4 | 85.5 |
| Heavy | 5 | 1204 | 13 | 1222 | 0 | 0 | 0 | 0 | 16 | 1170 | 1 | 1187 | 5 | 0 | 2 | 7 | 2416 |
| % Heavy | 3.4 | 14.9 | 5.5 | 14.4 | 0 | 0 | 0 | 0 | 6.2 | 15.2 | 1.6 | 14.8 | 6.1 | 0 | 1.9 | 3.6 | 14.5 |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Drewry Mason School Rd

Date: 5/16/2018

Groups Printed- Combined

Page No: 3

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Drewry Mason School Rd From East | | | | Rte 220 (Greensboro Rd) From South | | | | Steve Dr From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------------------------|------|------|------------|-----------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 2 | 127 | 20 | 149 | 0 | 0 | 0 | 0 | 10 | 187 | 1 | 198 | 4 | 1 | 4 | 9 | 356 |
| 07:30 | 1 | 145 | 25 | 171 | 0 | 0 | 0 | 0 | 43 | 197 | 1 | 241 | 3 | 1 | 5 | 9 | 421 |
| 07:45 | 3 | 189 | 26 | 218 | 0 | 0 | 0 | 0 | 42 | 193 | 0 | 235 | 3 | 1 | 3 | 7 | 460 |
| 08:00 | 4 | 166 | 18 | 188 | 0 | 0 | 0 | 0 | 21 | 168 | 0 | 189 | 3 | 0 | 1 | 4 | 381 |
| Total Volume | 10 | 627 | 89 | 726 | 0 | 0 | 0 | 0 | 116 | 745 | 2 | 863 | 13 | 3 | 13 | 29 | 1618 |
| % App. Total | 1.4 | 86.4 | 12.3 | | 0 | 0 | 0 | | 13.4 | 86.3 | 0.2 | | 44.8 | 10.3 | 44.8 | | |
| PHF | .625 | .829 | .856 | .833 | .000 | .000 | .000 | .000 | .674 | .945 | .500 | .895 | .813 | .750 | .650 | .806 | .879 |

Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 17:00

| | | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 17:00 | 8 | 218 | 7 | 233 | 0 | 0 | 0 | 0 | 1 | 151 | 4 | 156 | 1 | 0 | 1 | 2 | 391 |
| 17:15 | 5 | 244 | 5 | 254 | 0 | 0 | 0 | 0 | 2 | 193 | 1 | 196 | 1 | 0 | 4 | 5 | 455 |
| 17:30 | 7 | 166 | 8 | 181 | 0 | 0 | 0 | 0 | 3 | 167 | 5 | 175 | 0 | 0 | 0 | 0 | 356 |
| 17:45 | 7 | 232 | 14 | 253 | 0 | 0 | 0 | 0 | 11 | 144 | 1 | 156 | 1 | 0 | 3 | 4 | 413 |
| Total Volume | 27 | 860 | 34 | 921 | 0 | 0 | 0 | 0 | 17 | 655 | 11 | 683 | 3 | 0 | 8 | 11 | 1615 |
| % App. Total | 2.9 | 93.4 | 3.7 | | 0 | 0 | 0 | | 2.5 | 95.9 | 1.6 | | 27.3 | 0 | 72.7 | | |
| PHF | .844 | .881 | .607 | .906 | .000 | .000 | .000 | .000 | .386 | .848 | .550 | .871 | .750 | .000 | .500 | .550 | .887 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Water Plant Rd
Start Date : 5/15/2018
Page No : 1

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | | Water Plant Rd From East | | | | | Rte 220 (Greensboro Rd) From South | | | | | Water Plant Rd From West | | | | | Int. Total |
|------------|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 06:00 | 10 | 53 | 3 | 0 | 66 | 0 | 1 | 0 | 0 | 1 | 0 | 56 | 6 | 0 | 62 | 6 | 0 | 9 | 0 | 15 | 144 |
| 06:15 | 15 | 79 | 1 | 0 | 95 | 0 | 1 | 1 | 0 | 2 | 0 | 82 | 7 | 0 | 89 | 6 | 2 | 8 | 0 | 16 | 202 |
| 06:30 | 25 | 76 | 8 | 0 | 109 | 0 | 0 | 1 | 0 | 1 | 0 | 119 | 9 | 0 | 128 | 3 | 0 | 10 | 0 | 13 | 251 |
| 06:45 | 23 | 79 | 5 | 0 | 107 | 0 | 1 | 1 | 0 | 2 | 0 | 107 | 9 | 0 | 116 | 7 | 0 | 18 | 0 | 25 | 250 |
| Total | 73 | 287 | 17 | 0 | 377 | 0 | 3 | 3 | 0 | 6 | 0 | 364 | 31 | 0 | 395 | 22 | 2 | 45 | 0 | 69 | 847 |
| 07:00 | 12 | 62 | 5 | 0 | 79 | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 14 | 0 | 117 | 1 | 1 | 7 | 0 | 9 | 205 |
| 07:15 | 14 | 92 | 2 | 0 | 108 | 0 | 1 | 0 | 0 | 1 | 0 | 133 | 10 | 0 | 143 | 3 | 2 | 18 | 0 | 23 | 275 |
| 07:30 | 16 | 109 | 5 | 0 | 130 | 0 | 2 | 1 | 0 | 3 | 0 | 194 | 11 | 0 | 205 | 1 | 0 | 13 | 0 | 14 | 352 |
| 07:45 | 14 | 106 | 8 | 0 | 128 | 0 | 1 | 0 | 0 | 1 | 0 | 187 | 11 | 0 | 198 | 1 | 0 | 17 | 0 | 18 | 345 |
| Total | 56 | 369 | 20 | 0 | 445 | 0 | 4 | 1 | 0 | 5 | 0 | 617 | 46 | 0 | 663 | 6 | 3 | 55 | 0 | 64 | 1177 |
| 08:00 | 21 | 108 | 7 | 0 | 136 | 0 | 1 | 1 | 0 | 2 | 0 | 140 | 7 | 0 | 147 | 9 | 0 | 17 | 0 | 26 | 311 |
| 08:15 | 17 | 89 | 5 | 0 | 111 | 0 | 1 | 0 | 0 | 1 | 1 | 128 | 6 | 0 | 135 | 5 | 1 | 12 | 0 | 18 | 265 |
| 08:30 | 5 | 83 | 5 | 0 | 93 | 0 | 0 | 0 | 0 | 0 | 0 | 117 | 17 | 0 | 134 | 2 | 2 | 13 | 0 | 17 | 244 |
| 08:45 | 14 | 92 | 5 | 0 | 111 | 0 | 0 | 1 | 0 | 1 | 1 | 98 | 5 | 0 | 104 | 6 | 0 | 2 | 0 | 8 | 224 |
| Total | 57 | 372 | 22 | 0 | 451 | 0 | 2 | 2 | 0 | 4 | 2 | 483 | 35 | 0 | 520 | 22 | 3 | 44 | 0 | 69 | 1044 |
| 09:00 | 12 | 66 | 0 | 0 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 84 | 4 | 0 | 88 | 3 | 1 | 5 | 0 | 9 | 175 |
| 09:15 | 7 | 60 | 1 | 0 | 68 | 0 | 1 | 0 | 0 | 1 | 0 | 97 | 10 | 0 | 107 | 4 | 1 | 9 | 0 | 14 | 190 |
| 09:30 | 15 | 85 | 4 | 0 | 104 | 0 | 1 | 0 | 0 | 1 | 0 | 116 | 3 | 0 | 119 | 6 | 0 | 16 | 0 | 22 | 246 |
| 09:45 | 13 | 60 | 8 | 0 | 81 | 0 | 0 | 1 | 0 | 1 | 0 | 102 | 8 | 0 | 110 | 0 | 0 | 11 | 0 | 11 | 203 |
| Total | 47 | 271 | 13 | 0 | 331 | 0 | 2 | 1 | 0 | 3 | 0 | 399 | 25 | 0 | 424 | 13 | 2 | 41 | 0 | 56 | 814 |
| 10:00 | 15 | 68 | 2 | 0 | 85 | 0 | 0 | 0 | 0 | 0 | 1 | 77 | 8 | 0 | 86 | 3 | 0 | 5 | 0 | 8 | 179 |
| 10:15 | 14 | 79 | 4 | 0 | 97 | 0 | 1 | 1 | 0 | 2 | 0 | 96 | 3 | 0 | 99 | 4 | 0 | 10 | 0 | 14 | 212 |
| 10:30 | 9 | 96 | 3 | 0 | 108 | 0 | 0 | 1 | 0 | 1 | 0 | 89 | 8 | 0 | 97 | 6 | 3 | 11 | 0 | 20 | 226 |
| 10:45 | 5 | 74 | 4 | 0 | 83 | 0 | 1 | 1 | 0 | 2 | 2 | 95 | 4 | 0 | 101 | 0 | 1 | 5 | 0 | 6 | 192 |
| Total | 43 | 317 | 13 | 0 | 373 | 0 | 2 | 3 | 0 | 5 | 3 | 357 | 23 | 0 | 383 | 13 | 4 | 31 | 0 | 48 | 809 |
| 11:00 | 8 | 73 | 5 | 0 | 86 | 0 | 0 | 0 | 0 | 0 | 2 | 84 | 9 | 0 | 95 | 5 | 0 | 10 | 0 | 15 | 196 |
| 11:15 | 11 | 76 | 3 | 0 | 90 | 0 | 0 | 2 | 0 | 2 | 1 | 93 | 4 | 0 | 98 | 4 | 0 | 10 | 0 | 14 | 204 |
| 11:30 | 5 | 92 | 1 | 0 | 98 | 0 | 3 | 2 | 0 | 5 | 0 | 92 | 11 | 0 | 103 | 1 | 1 | 6 | 0 | 8 | 214 |
| 11:45 | 9 | 74 | 5 | 0 | 88 | 0 | 6 | 0 | 0 | 6 | 1 | 103 | 5 | 0 | 109 | 5 | 1 | 10 | 0 | 16 | 219 |
| Total | 33 | 315 | 14 | 0 | 362 | 0 | 9 | 4 | 0 | 13 | 4 | 372 | 29 | 0 | 405 | 15 | 2 | 36 | 0 | 53 | 833 |
| 12:00 | 17 | 86 | 2 | 0 | 105 | 0 | 2 | 2 | 0 | 4 | 2 | 84 | 3 | 0 | 89 | 5 | 4 | 8 | 0 | 17 | 215 |
| 12:15 | 9 | 99 | 7 | 0 | 115 | 0 | 1 | 3 | 0 | 4 | 1 | 98 | 8 | 0 | 107 | 3 | 4 | 11 | 0 | 18 | 244 |
| 12:30 | 18 | 69 | 4 | 0 | 91 | 0 | 1 | 1 | 0 | 2 | 1 | 86 | 14 | 0 | 101 | 7 | 0 | 7 | 0 | 14 | 208 |
| 12:45 | 13 | 101 | 6 | 0 | 120 | 0 | 1 | 0 | 0 | 1 | 1 | 105 | 6 | 0 | 112 | 4 | 2 | 12 | 0 | 18 | 251 |
| Total | 57 | 355 | 19 | 0 | 431 | 0 | 5 | 6 | 0 | 11 | 5 | 373 | 31 | 0 | 409 | 19 | 10 | 38 | 0 | 67 | 918 |
| 13:00 | 13 | 68 | 6 | 0 | 87 | 0 | 0 | 0 | 0 | 0 | 0 | 110 | 8 | 0 | 118 | 1 | 0 | 12 | 0 | 13 | 218 |
| 13:15 | 17 | 87 | 4 | 0 | 108 | 0 | 2 | 2 | 0 | 4 | 0 | 97 | 9 | 0 | 106 | 5 | 1 | 5 | 0 | 11 | 229 |
| 13:30 | 9 | 78 | 6 | 0 | 93 | 0 | 0 | 1 | 0 | 1 | 2 | 91 | 10 | 0 | 103 | 2 | 2 | 13 | 0 | 17 | 214 |
| 13:45 | 12 | 73 | 12 | 0 | 97 | 0 | 0 | 1 | 0 | 1 | 1 | 86 | 6 | 0 | 93 | 2 | 2 | 9 | 0 | 13 | 204 |
| Total | 51 | 306 | 28 | 0 | 385 | 0 | 2 | 4 | 0 | 6 | 3 | 384 | 33 | 0 | 420 | 10 | 5 | 39 | 0 | 54 | 865 |
| 14:00 | 9 | 85 | 7 | 0 | 101 | 0 | 2 | 0 | 0 | 2 | 3 | 107 | 11 | 0 | 121 | 3 | 1 | 11 | 0 | 15 | 239 |
| 14:15 | 19 | 101 | 1 | 0 | 121 | 0 | 5 | 5 | 0 | 10 | 0 | 95 | 7 | 0 | 102 | 3 | 5 | 13 | 0 | 21 | 254 |
| 14:30 | 18 | 88 | 3 | 0 | 109 | 0 | 1 | 0 | 0 | 1 | 2 | 129 | 13 | 0 | 144 | 4 | 2 | 17 | 0 | 23 | 277 |
| 14:45 | 17 | 100 | 16 | 0 | 133 | 0 | 2 | 1 | 0 | 3 | 1 | 102 | 13 | 0 | 116 | 5 | 0 | 12 | 0 | 17 | 269 |
| Total | 63 | 374 | 27 | 0 | 464 | 0 | 10 | 6 | 0 | 16 | 6 | 433 | 44 | 0 | 483 | 15 | 8 | 53 | 0 | 76 | 1039 |
| 15:00 | 20 | 121 | 2 | 0 | 143 | 0 | 2 | 1 | 0 | 3 | 0 | 116 | 10 | 0 | 126 | 8 | 1 | 19 | 0 | 28 | 300 |
| 15:15 | 22 | 119 | 10 | 0 | 151 | 0 | 1 | 2 | 0 | 3 | 1 | 104 | 9 | 0 | 114 | 6 | 1 | 14 | 0 | 21 | 289 |
| 15:30 | 40 | 124 | 7 | 0 | 171 | 0 | 2 | 1 | 0 | 3 | 4 | 121 | 17 | 0 | 142 | 5 | 2 | 12 | 0 | 19 | 335 |
| 15:45 | 17 | 109 | 7 | 0 | 133 | 0 | 1 | 1 | 0 | 2 | 0 | 148 | 21 | 0 | 169 | 3 | 1 | 19 | 0 | 23 | 327 |
| Total | 99 | 473 | 26 | 0 | 598 | 0 | 6 | 5 | 0 | 11 | 5 | 489 | 57 | 0 | 551 | 22 | 5 | 64 | 0 | 91 | 1251 |
| 16:00 | 27 | 122 | 9 | 0 | 158 | 0 | 0 | 1 | 0 | 1 | 2 | 118 | 14 | 0 | 134 | 3 | 1 | 13 | 0 | 17 | 310 |

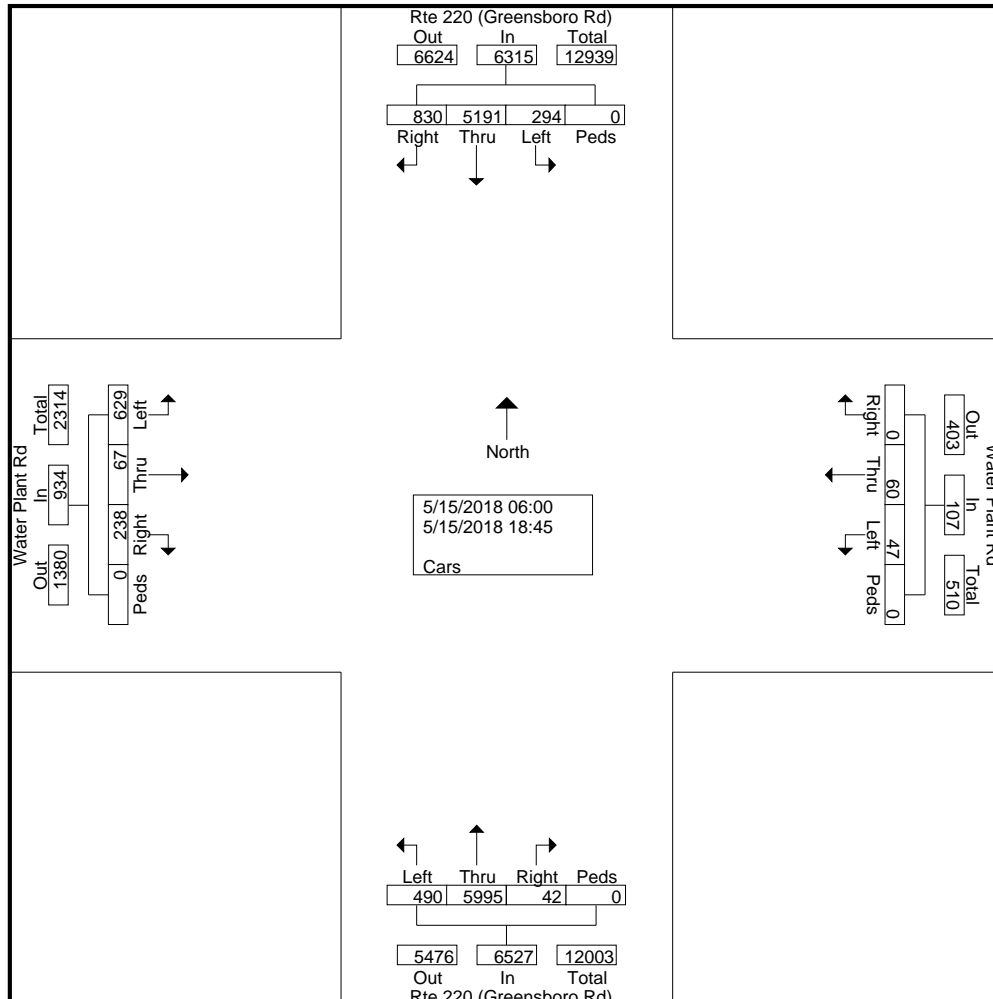
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Water Plant Rd
Start Date : 5/15/2018
Page No : 2

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | | Water Plant Rd From East | | | | | Rte 220 (Greensboro Rd) From South | | | | | Water Plant Rd From West | | | | | Int. Total |
|--------------------|---------------------------------------|-------------|------------|----------|-------------|-----------------------------|-------------|-------------|----------|------------|---------------------------------------|-------------|------------|----------|-------------|-----------------------------|------------|-------------|----------|------------|--------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 16:15 | 16 | 140 | 5 | 0 | 161 | 0 | 1 | 1 | 0 | 2 | 2 | 168 | 8 | 0 | 178 | 4 | 2 | 11 | 0 | 17 | 358 |
| 16:30 | 15 | 113 | 6 | 0 | 134 | 0 | 1 | 1 | 0 | 2 | 1 | 159 | 14 | 0 | 174 | 10 | 1 | 13 | 0 | 24 | 334 |
| 16:45 | 26 | 178 | 7 | 0 | 211 | 0 | 2 | 1 | 0 | 3 | 1 | 170 | 7 | 0 | 178 | 8 | 2 | 10 | 0 | 20 | 412 |
| Total | 84 | 553 | 27 | 0 | 664 | 0 | 4 | 4 | 0 | 8 | 6 | 615 | 43 | 0 | 664 | 25 | 6 | 47 | 0 | 78 | 1414 |
| | | | | | | | | | | | | | | | | | | | | | |
| 17:00 | 26 | 157 | 5 | 0 | 188 | 0 | 1 | 3 | 0 | 4 | 1 | 125 | 11 | 0 | 137 | 12 | 1 | 21 | 0 | 34 | 363 |
| 17:15 | 33 | 201 | 16 | 0 | 250 | 0 | 1 | 0 | 0 | 1 | 2 | 146 | 9 | 0 | 157 | 8 | 0 | 17 | 0 | 25 | 433 |
| 17:30 | 33 | 255 | 17 | 0 | 305 | 0 | 3 | 1 | 0 | 4 | 1 | 164 | 13 | 0 | 178 | 5 | 2 | 18 | 0 | 25 | 512 |
| 17:45 | 13 | 156 | 7 | 0 | 176 | 0 | 3 | 2 | 0 | 5 | 0 | 149 | 10 | 0 | 159 | 11 | 3 | 17 | 0 | 31 | 371 |
| Total | 105 | 769 | 45 | 0 | 919 | 0 | 8 | 6 | 0 | 14 | 4 | 584 | 43 | 0 | 631 | 36 | 6 | 73 | 0 | 115 | 1679 |
| | | | | | | | | | | | | | | | | | | | | | |
| 18:00 | 20 | 121 | 6 | 0 | 147 | 0 | 1 | 1 | 0 | 2 | 1 | 146 | 14 | 0 | 161 | 5 | 6 | 17 | 0 | 28 | 338 |
| 18:15 | 12 | 101 | 6 | 0 | 119 | 0 | 2 | 0 | 0 | 2 | 1 | 153 | 9 | 0 | 163 | 5 | 4 | 16 | 0 | 25 | 309 |
| 18:30 | 13 | 95 | 5 | 0 | 113 | 0 | 0 | 1 | 0 | 1 | 0 | 116 | 19 | 0 | 135 | 3 | 0 | 17 | 0 | 20 | 269 |
| 18:45 | 17 | 113 | 6 | 0 | 136 | 0 | 0 | 0 | 0 | 0 | 2 | 110 | 8 | 0 | 120 | 7 | 1 | 13 | 0 | 21 | 277 |
| Total | 62 | 430 | 23 | 0 | 515 | 0 | 3 | 2 | 0 | 5 | 4 | 525 | 50 | 0 | 579 | 20 | 11 | 63 | 0 | 94 | 1193 |
| | | | | | | | | | | | | | | | | | | | | | |
| Grand Total | 830 | 5191 | 294 | 0 | 6315 | 0 | 60 | 47 | 0 | 107 | 42 | 5995 | 490 | 0 | 6527 | 238 | 67 | 629 | 0 | 934 | 13883 |
| Apprch % | 13.1 | 82.2 | 4.7 | 0 | | 0 | 56.1 | 43.9 | 0 | | 0.6 | 91.8 | 7.5 | 0 | | 25.5 | 7.2 | 67.3 | 0 | | |
| Total % | 6 | 37.4 | 2.1 | 0 | 45.5 | 0 | 0.4 | 0.3 | 0 | 0.8 | 0.3 | 43.2 | 3.5 | 0 | 47 | 1.7 | 0.5 | 4.5 | 0 | 6.7 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Water Plant Rd
Start Date : 5/15/2018
Page No : 3

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | | Water Plant Rd From East | | | | | Rte 220 (Greensboro Rd) From South | | | | | Water Plant Rd From West | | | | | Int. Total |
|--|---------------------------------------|------------|----------|------|------------|-----------------------------|----------|----------|------|------------|---------------------------------------|------------|-----------|------|------------|-----------------------------|----------|-----------|------|------------|------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | | | | | |
| 07:30 | 16 | 109 | 5 | 0 | 130 | 0 | 2 | 1 | 0 | 3 | 0 | 194 | 11 | 0 | 205 | 1 | 0 | 13 | 0 | 14 | 352 |
| 07:45 | 14 | 106 | 8 | 0 | 128 | 0 | 1 | 0 | 0 | 1 | 0 | 187 | 11 | 0 | 198 | 1 | 0 | 17 | 0 | 18 | 345 |
| 08:00 | 21 | 108 | 7 | 0 | 136 | 0 | 1 | 1 | 0 | 2 | 0 | 140 | 7 | 0 | 147 | 9 | 0 | 17 | 0 | 26 | 311 |
| 08:15 | 17 | 89 | 5 | 0 | 111 | 0 | 1 | 0 | 0 | 1 | 1 | 128 | 6 | 0 | 135 | 5 | 1 | 12 | 0 | 18 | 265 |
| Total Volume | 68 | 412 | 25 | 0 | 505 | 0 | 5 | 2 | 0 | 7 | 1 | 649 | 35 | 0 | 685 | 16 | 1 | 59 | 0 | 76 | 1273 |
| % App. Total | 13.5 | 81.6 | 5 | 0 | | 0 | 71.4 | 28.6 | 0 | | 0.1 | 94.7 | 5.1 | 0 | | 21.1 | 1.3 | 77.6 | 0 | | |
| PHF | .810 | .945 | .781 | .000 | .928 | .000 | .625 | .500 | .000 | .583 | .250 | .836 | .795 | .000 | .835 | .444 | .250 | .868 | .000 | .731 | .904 |

Peak Hour Analysis From 16:45 to 17:30 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 16:45

| | | | | | | | | | | | | | | | | | | | | | |
|--------------|-----------|------------|-----------|------|------------|------|----------|----------|------|----------|----------|------------|-----------|------|------------|-----------|----------|-----------|------|-----------|------------|
| 16:45 | 26 | 178 | 7 | 0 | 211 | 0 | 2 | 1 | 0 | 3 | 1 | 170 | | | 178 | | 2 | | | | |
| 17:00 | 26 | 157 | 5 | 0 | 188 | 0 | 1 | 3 | 0 | 4 | 1 | 125 | 11 | 0 | 137 | 12 | 1 | 21 | 0 | 34 | 363 |
| 17:15 | 33 | 201 | 16 | 0 | 250 | 0 | 1 | 0 | 0 | 1 | 2 | 146 | 9 | 0 | 157 | 8 | 0 | 17 | 0 | 25 | 433 |
| 17:30 | 33 | 255 | 17 | 0 | 305 | 0 | 3 | 1 | 0 | 4 | 1 | 164 | 13 | 0 | 178 | 5 | 2 | 18 | 0 | 25 | 512 |
| Total Volume | 118 | 791 | 45 | 0 | 954 | 0 | 7 | 5 | 0 | 12 | 5 | 605 | 40 | 0 | 650 | 33 | 5 | 66 | 0 | 104 | 1720 |
| % App. Total | 12.4 | 82.9 | 4.7 | 0 | | 0 | 58.3 | 41.7 | 0 | | 0.8 | 93.1 | 6.2 | 0 | | 31.7 | 4.8 | 63.5 | 0 | | |
| PHF | .894 | .775 | .662 | .000 | .782 | .000 | .583 | .417 | .000 | .750 | .625 | .890 | .769 | .000 | .913 | .688 | .625 | .786 | .000 | .765 | .840 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Water Plant Rd
Start Date : 5/15/2018
Page No : 1

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | | Water Plant Rd From East | | | | | Rte 220 (Greensboro Rd) From South | | | | | Water Plant Rd From West | | | | | Int. Total |
|------------|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 06:00 | 1 | 18 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 15 | 3 | 0 | 1 | 0 | 4 | 38 |
| 06:15 | 0 | 23 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 1 | 0 | 5 | 0 | 6 | 47 |
| 06:30 | 0 | 21 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 1 | 0 | 24 | 2 | 0 | 2 | 0 | 4 | 49 |
| 06:45 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 3 | 0 | 3 | 0 | 6 | 38 |
| Total | 1 | 75 | 0 | 0 | 76 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 1 | 0 | 76 | 9 | 0 | 11 | 0 | 20 | 172 |
| 07:00 | 2 | 19 | 1 | 0 | 22 | 0 | 1 | 0 | 0 | 1 | 0 | 16 | 0 | 0 | 16 | 4 | 0 | 0 | 0 | 4 | 43 |
| 07:15 | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 26 | 4 | 0 | 1 | 0 | 5 | 43 |
| 07:30 | 3 | 26 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 1 | 2 | 0 | 0 | 3 | 51 |
| 07:45 | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 2 | 0 | 22 | 3 | 0 | 2 | 0 | 5 | 47 |
| Total | 5 | 77 | 1 | 0 | 83 | 0 | 1 | 0 | 0 | 1 | 0 | 81 | 2 | 0 | 83 | 12 | 2 | 3 | 0 | 17 | 184 |
| 08:00 | 2 | 28 | 1 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 21 | 2 | 0 | 0 | 0 | 2 | 54 |
| 08:15 | 2 | 22 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 1 | 0 | 26 | 3 | 0 | 3 | 0 | 6 | 56 |
| 08:30 | 1 | 23 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 1 | 0 | 28 | 3 | 0 | 4 | 0 | 7 | 59 |
| 08:45 | 0 | 26 | 0 | 0 | 26 | 0 | 0 | 1 | 0 | 1 | 0 | 30 | 1 | 0 | 31 | 1 | 0 | 1 | 0 | 2 | 60 |
| Total | 5 | 99 | 1 | 0 | 105 | 0 | 0 | 1 | 0 | 1 | 0 | 103 | 3 | 0 | 106 | 9 | 0 | 8 | 0 | 17 | 229 |
| 09:00 | 2 | 25 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 1 | 0 | 25 | 3 | 0 | 0 | 0 | 3 | 55 |
| 09:15 | 1 | 20 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 2 | 0 | 29 | 3 | 0 | 1 | 0 | 4 | 54 |
| 09:30 | 2 | 27 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 2 | 0 | 28 | 6 | 0 | 2 | 0 | 8 | 65 |
| 09:45 | 2 | 17 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 1 | 0 | 27 | 3 | 0 | 2 | 0 | 5 | 51 |
| Total | 7 | 89 | 0 | 0 | 96 | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 6 | 0 | 109 | 15 | 0 | 5 | 0 | 20 | 225 |
| 10:00 | 0 | 29 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 1 | 0 | 29 | 5 | 0 | 1 | 0 | 6 | 64 |
| 10:15 | 2 | 22 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 1 | 0 | 27 | 3 | 0 | 2 | 0 | 5 | 56 |
| 10:30 | 1 | 29 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 4 | 0 | 2 | 0 | 6 | 61 |
| 10:45 | 1 | 25 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 1 | 0 | 28 | 3 | 0 | 1 | 0 | 4 | 58 |
| Total | 4 | 105 | 0 | 0 | 109 | 0 | 0 | 0 | 0 | 0 | 0 | 106 | 3 | 0 | 109 | 15 | 0 | 6 | 0 | 21 | 239 |
| 11:00 | 2 | 25 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 1 | 0 | 30 | 5 | 0 | 2 | 0 | 7 | 64 |
| 11:15 | 0 | 28 | 1 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 1 | 0 | 34 | 1 | 0 | 1 | 0 | 2 | 65 |
| 11:30 | 0 | 31 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 1 | 0 | 25 | 1 | 0 | 2 | 0 | 3 | 59 |
| 11:45 | 1 | 26 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 32 | 2 | 0 | 2 | 0 | 4 | 63 |
| Total | 3 | 110 | 1 | 0 | 114 | 0 | 0 | 0 | 0 | 0 | 0 | 118 | 3 | 0 | 121 | 9 | 0 | 7 | 0 | 16 | 251 |
| 12:00 | 2 | 27 | 1 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 2 | 0 | 23 | 1 | 0 | 3 | 0 | 4 | 57 |
| 12:15 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 7 | 0 | 2 | 0 | 9 | 64 |
| 12:30 | 3 | 14 | 2 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 1 | 0 | 32 | 4 | 0 | 1 | 0 | 5 | 56 |
| 12:45 | 0 | 33 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 2 | 0 | 26 | 3 | 0 | 1 | 0 | 4 | 63 |
| Total | 5 | 99 | 3 | 0 | 107 | 0 | 0 | 0 | 0 | 0 | 0 | 106 | 5 | 0 | 111 | 15 | 0 | 7 | 0 | 22 | 240 |
| 13:00 | 0 | 21 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 1 | 0 | 30 | 1 | 0 | 3 | 0 | 4 | 55 |
| 13:15 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 4 | 0 | 33 | 3 | 0 | 0 | 0 | 3 | 66 |
| 13:30 | 1 | 28 | 1 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 1 | 0 | 26 | 1 | 0 | 3 | 0 | 4 | 60 |
| 13:45 | 1 | 28 | 3 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 2 | 0 | 27 | 5 | 0 | 2 | 0 | 7 | 66 |
| Total | 2 | 107 | 4 | 0 | 113 | 0 | 0 | 0 | 0 | 0 | 0 | 108 | 8 | 0 | 116 | 10 | 0 | 8 | 0 | 18 | 247 |
| 14:00 | 2 | 45 | 0 | 0 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 1 | 0 | 32 | 5 | 0 | 3 | 0 | 8 | 87 |
| 14:15 | 3 | 26 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 35 | 1 | 0 | 1 | 0 | 2 | 66 |
| 14:30 | 4 | 26 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 1 | 0 | 26 | 3 | 0 | 1 | 0 | 4 | 60 |
| 14:45 | 0 | 27 | 2 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 2 | 0 | 25 | 2 | 0 | 1 | 0 | 3 | 57 |
| Total | 9 | 124 | 2 | 0 | 135 | 0 | 0 | 0 | 0 | 0 | 0 | 114 | 4 | 0 | 118 | 11 | 0 | 6 | 0 | 17 | 270 |
| 15:00 | 1 | 34 | 1 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 1 | 28 | 1 | 0 | 30 | 2 | 1 | 3 | 0 | 6 | 72 |
| 15:15 | 0 | 34 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 2 | 0 | 25 | 4 | 0 | 2 | 0 | 6 | 65 |
| 15:30 | 1 | 24 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 1 | 0 | 22 | 5 | 0 | 1 | 0 | 6 | 53 |
| 15:45 | 2 | 20 | 0 | 0 | 22 | 0 | 1 | 0 | 0 | 1 | 0 | 29 | 4 | 0 | 33 | 3 | 1 | 0 | 0 | 4 | 60 |
| Total | 4 | 112 | 1 | 0 | 117 | 0 | 1 | 0 | 0 | 1 | 1 | 101 | 8 | 0 | 110 | 14 | 2 | 6 | 0 | 22 | 250 |
| 16:00 | 1 | 30 | 0 | 0 | 31 | 0 | 0 | 1 | 0 | 1 | 0 | 10 | 2 | 0 | 12 | 3 | 0 | 2 | 0 | 5 | 49 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

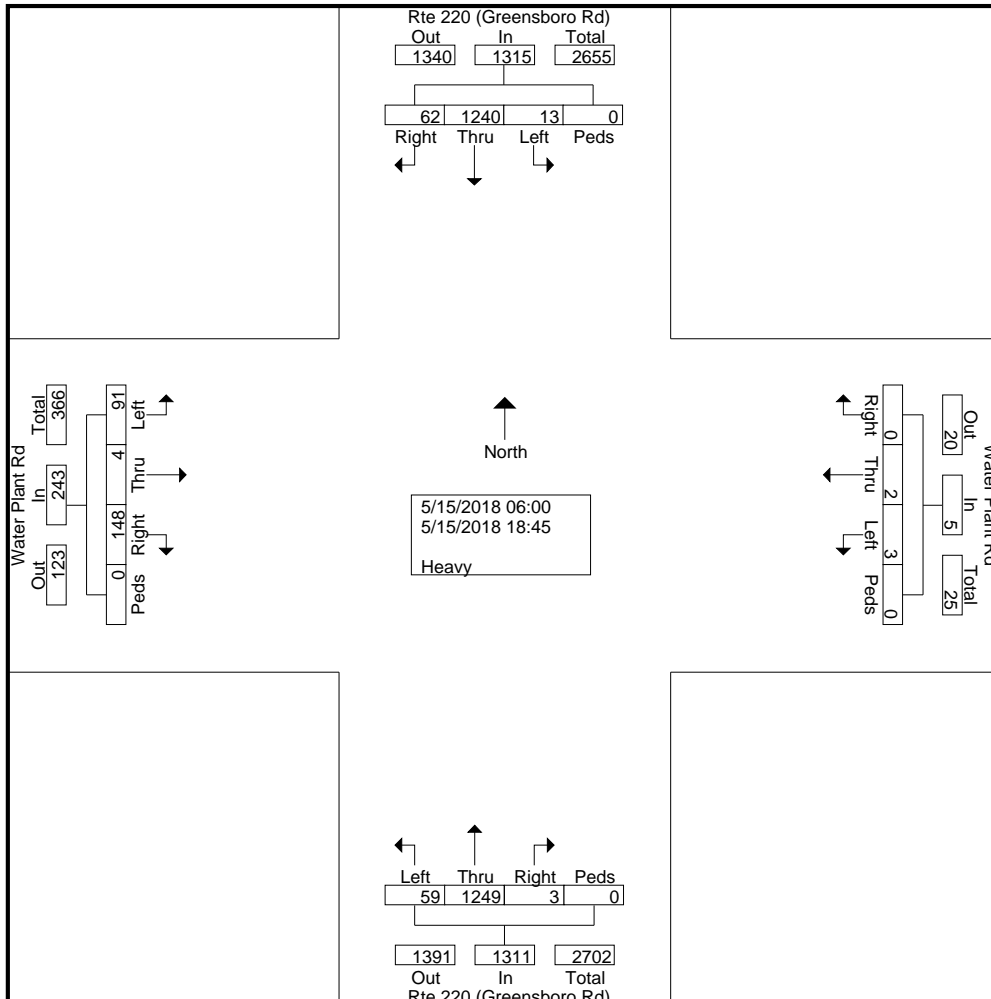
File Name : Rte 220 at Water Plant Rd

Start Date : 5/15/2018

Page No : 2

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | | Water Plant Rd From East | | | | | Rte 220 (Greensboro Rd) From South | | | | | Water Plant Rd From West | | | | | Int. Total |
|-------------|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 16:15 | 5 | 29 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 1 | 0 | 27 | 2 | 0 | 2 | 0 | 4 | 65 |
| 16:30 | 3 | 18 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 1 | 0 | 31 | 3 | 0 | 1 | 0 | 4 | 56 |
| 16:45 | 3 | 20 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 1 | 0 | 19 | 2 | 0 | 4 | 0 | 6 | 48 |
| Total | 12 | 97 | 0 | 0 | 109 | 0 | 0 | 1 | 0 | 1 | 0 | 84 | 5 | 0 | 89 | 10 | 0 | 9 | 0 | 19 | 218 |
| 17:00 | 0 | 26 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 2 | 26 | 3 | 0 | 31 | 4 | 0 | 5 | 0 | 9 | 66 |
| 17:15 | 1 | 19 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 1 | 0 | 22 | 2 | 0 | 2 | 0 | 4 | 46 |
| 17:30 | 0 | 29 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 1 | 0 | 21 | 3 | 0 | 1 | 0 | 4 | 54 |
| 17:45 | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 1 | 0 | 1 | 0 | 16 | 0 | 0 | 16 | 2 | 0 | 0 | 0 | 2 | 31 |
| Total | 1 | 86 | 0 | 0 | 87 | 0 | 0 | 1 | 0 | 1 | 2 | 83 | 5 | 0 | 90 | 11 | 0 | 8 | 0 | 19 | 197 |
| 18:00 | 0 | 13 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 3 | 0 | 19 | 2 | 0 | 3 | 0 | 5 | 37 |
| 18:15 | 1 | 10 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 32 | 1 | 0 | 1 | 0 | 2 | 45 |
| 18:30 | 2 | 20 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 6 | 1 | 0 | 0 | 0 | 1 | 29 |
| 18:45 | 1 | 17 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 2 | 0 | 16 | 4 | 0 | 3 | 0 | 7 | 41 |
| Total | 4 | 60 | 0 | 0 | 64 | 0 | 0 | 0 | 0 | 0 | 0 | 67 | 6 | 0 | 73 | 8 | 0 | 7 | 0 | 15 | 152 |
| Grand Total | 62 | 1240 | 13 | 0 | 1315 | 0 | 2 | 3 | 0 | 5 | 3 | 1249 | 59 | 0 | 1311 | 148 | 4 | 91 | 0 | 243 | 2874 |
| Apprch % | 4.7 | 94.3 | 1 | 0 | | 0 | 40 | 60 | 0 | | 0.2 | 95.3 | 4.5 | 0 | | 60.9 | 1.6 | 37.4 | 0 | | |
| Total % | 2.2 | 43.1 | 0.5 | 0 | 45.8 | 0 | 0.1 | 0.1 | 0 | 0.2 | 0.1 | 43.5 | 2.1 | 0 | 45.6 | 5.1 | 0.1 | 3.2 | 0 | 8.5 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Water Plant Rd
Start Date : 5/15/2018
Page No : 3

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | | Water Plant Rd From East | | | | | Rte 220 (Greensboro Rd) From South | | | | | Water Plant Rd From West | | | | | Int. Total |
|--|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | | | | | |
| 07:30 | 3 | 26 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 1 | 2 | 0 | 0 | 3 | 51 |
| 07:45 | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 2 | 0 | 22 | 3 | 0 | 2 | 0 | 5 | 47 |
| 08:00 | 2 | 28 | 1 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 21 | 2 | 0 | 0 | 0 | 2 | 54 |
| 08:15 | 2 | 22 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 1 | 0 | 26 | 3 | 0 | 3 | 0 | 6 | 56 |
| Total Volume | 7 | 96 | 1 | 0 | 104 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | 3 | 0 | 88 | 9 | 2 | 5 | 0 | 16 | 208 |
| % App. Total | 6.7 | 92.3 | 1 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 96.6 | 3.4 | 0 | | 56.2 | 12.5 | 31.2 | 0 | | |
| PHF | .583 | .857 | .250 | .000 | .839 | .000 | .000 | .000 | .000 | .000 | .000 | .850 | .375 | .000 | .846 | .750 | .250 | .417 | .000 | .667 | .929 |

Peak Hour Analysis From 16:45 to 17:30 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 16:45

| | | | | | | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 16:45 | 3 | | | | | | | | | | | | | | | | | | | | |
| 17:00 | 0 | 26 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 2 | 26 | 3 | 0 | 31 | 4 | 0 | 5 | 0 | 9 | 66 |
| 17:15 | 1 | 19 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 1 | 0 | 22 | 2 | 0 | 2 | 0 | 4 | 46 |
| 17:30 | 0 | 29 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 1 | 0 | 21 | 3 | 0 | 1 | 0 | 4 | 54 |
| Total Volume | 4 | 94 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 0 | 2 | 85 | 6 | 0 | 93 | 11 | 0 | 12 | 0 | 23 | 214 |
| % App. Total | 4.1 | 95.9 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 2.2 | 91.4 | 6.5 | 0 | | 47.8 | 0 | 52.2 | 0 | | |
| PHF | .333 | .810 | .000 | .000 | .845 | .000 | .000 | .000 | .000 | .000 | .250 | .817 | .500 | .000 | .750 | .688 | .000 | .600 | .000 | .639 | .811 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Water Plant Rd
Start Date : 5/15/2018
Page No : 1

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | | Water Plant Rd From East | | | | | Rte 220 (Greensboro Rd) From South | | | | | Water Plant Rd From West | | | | | Int. Total |
|------------|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 06:00 | 11 | 71 | 3 | 0 | 85 | 0 | 1 | 0 | 0 | 1 | 0 | 71 | 6 | 0 | 77 | 9 | 0 | 10 | 0 | 19 | 182 |
| 06:15 | 15 | 102 | 1 | 0 | 118 | 0 | 1 | 1 | 0 | 2 | 0 | 100 | 7 | 0 | 107 | 7 | 2 | 13 | 0 | 22 | 249 |
| 06:30 | 25 | 97 | 8 | 0 | 130 | 0 | 0 | 1 | 0 | 1 | 0 | 142 | 10 | 0 | 152 | 5 | 0 | 12 | 0 | 17 | 300 |
| 06:45 | 23 | 92 | 5 | 0 | 120 | 0 | 1 | 1 | 0 | 2 | 0 | 126 | 9 | 0 | 135 | 10 | 0 | 21 | 0 | 31 | 288 |
| Total | 74 | 362 | 17 | 0 | 453 | 0 | 3 | 3 | 0 | 6 | 0 | 439 | 32 | 0 | 471 | 31 | 2 | 56 | 0 | 89 | 1019 |
| 07:00 | 14 | 81 | 6 | 0 | 101 | 0 | 1 | 0 | 0 | 1 | 0 | 119 | 14 | 0 | 133 | 5 | 1 | 7 | 0 | 13 | 248 |
| 07:15 | 14 | 104 | 2 | 0 | 120 | 0 | 1 | 0 | 0 | 1 | 0 | 159 | 10 | 0 | 169 | 7 | 2 | 19 | 0 | 28 | 318 |
| 07:30 | 19 | 135 | 5 | 0 | 159 | 0 | 2 | 1 | 0 | 3 | 0 | 213 | 11 | 0 | 224 | 2 | 2 | 13 | 0 | 17 | 403 |
| 07:45 | 14 | 126 | 8 | 0 | 148 | 0 | 1 | 0 | 0 | 1 | 0 | 207 | 13 | 0 | 220 | 4 | 0 | 19 | 0 | 23 | 392 |
| Total | 61 | 446 | 21 | 0 | 528 | 0 | 5 | 1 | 0 | 6 | 0 | 698 | 48 | 0 | 746 | 18 | 5 | 58 | 0 | 81 | 1361 |
| 08:00 | 23 | 136 | 8 | 0 | 167 | 0 | 1 | 1 | 0 | 2 | 0 | 161 | 7 | 0 | 168 | 11 | 0 | 17 | 0 | 28 | 365 |
| 08:15 | 19 | 111 | 5 | 0 | 135 | 0 | 1 | 0 | 0 | 1 | 1 | 153 | 7 | 0 | 161 | 8 | 1 | 15 | 0 | 24 | 321 |
| 08:30 | 6 | 106 | 5 | 0 | 117 | 0 | 0 | 0 | 0 | 0 | 0 | 144 | 18 | 0 | 162 | 5 | 2 | 17 | 0 | 24 | 303 |
| 08:45 | 14 | 118 | 5 | 0 | 137 | 0 | 0 | 2 | 0 | 2 | 1 | 128 | 6 | 0 | 135 | 7 | 0 | 3 | 0 | 10 | 284 |
| Total | 62 | 471 | 23 | 0 | 556 | 0 | 2 | 3 | 0 | 5 | 2 | 586 | 38 | 0 | 626 | 31 | 3 | 52 | 0 | 86 | 1273 |
| 09:00 | 14 | 91 | 0 | 0 | 105 | 0 | 0 | 0 | 0 | 0 | 0 | 108 | 5 | 0 | 113 | 6 | 1 | 5 | 0 | 12 | 230 |
| 09:15 | 8 | 80 | 1 | 0 | 89 | 0 | 1 | 0 | 0 | 1 | 0 | 124 | 12 | 0 | 136 | 7 | 1 | 10 | 0 | 18 | 244 |
| 09:30 | 17 | 112 | 4 | 0 | 133 | 0 | 1 | 0 | 0 | 1 | 0 | 142 | 5 | 0 | 147 | 12 | 0 | 18 | 0 | 30 | 311 |
| 09:45 | 15 | 77 | 8 | 0 | 100 | 0 | 0 | 1 | 0 | 1 | 0 | 128 | 9 | 0 | 137 | 3 | 0 | 13 | 0 | 16 | 254 |
| Total | 54 | 360 | 13 | 0 | 427 | 0 | 2 | 1 | 0 | 3 | 0 | 502 | 31 | 0 | 533 | 28 | 2 | 46 | 0 | 76 | 1039 |
| 10:00 | 15 | 97 | 2 | 0 | 114 | 0 | 0 | 0 | 0 | 0 | 1 | 105 | 9 | 0 | 115 | 8 | 0 | 6 | 0 | 14 | 243 |
| 10:15 | 16 | 101 | 4 | 0 | 121 | 0 | 1 | 1 | 0 | 2 | 0 | 122 | 4 | 0 | 126 | 7 | 0 | 12 | 0 | 19 | 268 |
| 10:30 | 10 | 125 | 3 | 0 | 138 | 0 | 0 | 1 | 0 | 1 | 0 | 114 | 8 | 0 | 122 | 10 | 3 | 13 | 0 | 26 | 287 |
| 10:45 | 6 | 99 | 4 | 0 | 109 | 0 | 1 | 1 | 0 | 2 | 2 | 122 | 5 | 0 | 129 | 3 | 1 | 6 | 0 | 10 | 250 |
| Total | 47 | 422 | 13 | 0 | 482 | 0 | 2 | 3 | 0 | 5 | 3 | 463 | 26 | 0 | 492 | 28 | 4 | 37 | 0 | 69 | 1048 |
| 11:00 | 10 | 98 | 5 | 0 | 113 | 0 | 0 | 0 | 0 | 0 | 2 | 113 | 10 | 0 | 125 | 10 | 0 | 12 | 0 | 22 | 260 |
| 11:15 | 11 | 104 | 4 | 0 | 119 | 0 | 0 | 2 | 0 | 2 | 1 | 126 | 5 | 0 | 132 | 5 | 0 | 11 | 0 | 16 | 269 |
| 11:30 | 5 | 123 | 1 | 0 | 129 | 0 | 3 | 2 | 0 | 5 | 0 | 116 | 12 | 0 | 128 | 2 | 1 | 8 | 0 | 11 | 273 |
| 11:45 | 10 | 100 | 5 | 0 | 115 | 0 | 6 | 0 | 0 | 6 | 1 | 135 | 5 | 0 | 141 | 7 | 1 | 12 | 0 | 20 | 282 |
| Total | 36 | 425 | 15 | 0 | 476 | 0 | 9 | 4 | 0 | 13 | 4 | 490 | 32 | 0 | 526 | 24 | 2 | 43 | 0 | 69 | 1084 |
| 12:00 | 19 | 113 | 3 | 0 | 135 | 0 | 2 | 2 | 0 | 4 | 2 | 105 | 5 | 0 | 112 | 6 | 4 | 11 | 0 | 21 | 272 |
| 12:15 | 9 | 124 | 7 | 0 | 140 | 0 | 1 | 3 | 0 | 4 | 1 | 128 | 8 | 0 | 137 | 10 | 4 | 13 | 0 | 27 | 308 |
| 12:30 | 21 | 83 | 6 | 0 | 110 | 0 | 1 | 1 | 0 | 2 | 1 | 117 | 15 | 0 | 133 | 11 | 0 | 8 | 0 | 19 | 264 |
| 12:45 | 13 | 134 | 6 | 0 | 153 | 0 | 1 | 0 | 0 | 1 | 1 | 129 | 8 | 0 | 138 | 7 | 2 | 13 | 0 | 22 | 314 |
| Total | 62 | 454 | 22 | 0 | 538 | 0 | 5 | 6 | 0 | 11 | 5 | 479 | 36 | 0 | 520 | 34 | 10 | 45 | 0 | 89 | 1158 |
| 13:00 | 13 | 89 | 6 | 0 | 108 | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 9 | 0 | 148 | 2 | 0 | 15 | 0 | 17 | 273 |
| 13:15 | 17 | 117 | 4 | 0 | 138 | 0 | 2 | 2 | 0 | 4 | 0 | 126 | 13 | 0 | 139 | 8 | 1 | 5 | 0 | 14 | 295 |
| 13:30 | 10 | 106 | 7 | 0 | 123 | 0 | 0 | 1 | 0 | 1 | 2 | 116 | 11 | 0 | 129 | 3 | 2 | 16 | 0 | 21 | 274 |
| 13:45 | 13 | 101 | 15 | 0 | 129 | 0 | 0 | 1 | 0 | 1 | 1 | 111 | 8 | 0 | 120 | 7 | 2 | 11 | 0 | 20 | 270 |
| Total | 53 | 413 | 32 | 0 | 498 | 0 | 2 | 4 | 0 | 6 | 3 | 492 | 41 | 0 | 536 | 20 | 5 | 47 | 0 | 72 | 1112 |
| 14:00 | 11 | 130 | 7 | 0 | 148 | 0 | 2 | 0 | 0 | 2 | 3 | 138 | 12 | 0 | 153 | 8 | 1 | 14 | 0 | 23 | 326 |
| 14:15 | 22 | 127 | 1 | 0 | 150 | 0 | 5 | 5 | 0 | 10 | 0 | 130 | 7 | 0 | 137 | 4 | 5 | 14 | 0 | 23 | 320 |
| 14:30 | 22 | 114 | 3 | 0 | 139 | 0 | 1 | 0 | 0 | 1 | 2 | 154 | 14 | 0 | 170 | 7 | 2 | 18 | 0 | 27 | 337 |
| 14:45 | 17 | 127 | 18 | 0 | 162 | 0 | 2 | 1 | 0 | 3 | 1 | 125 | 15 | 0 | 141 | 7 | 0 | 13 | 0 | 20 | 326 |
| Total | 72 | 498 | 29 | 0 | 599 | 0 | 10 | 6 | 0 | 16 | 6 | 547 | 48 | 0 | 601 | 26 | 8 | 59 | 0 | 93 | 1309 |
| 15:00 | 21 | 155 | 3 | 0 | 179 | 0 | 2 | 1 | 0 | 3 | 1 | 144 | 11 | 0 | 156 | 10 | 2 | 22 | 0 | 34 | 372 |
| 15:15 | 22 | 153 | 10 | 0 | 185 | 0 | 1 | 2 | 0 | 3 | 1 | 127 | 11 | 0 | 139 | 10 | 1 | 16 | 0 | 27 | 354 |
| 15:30 | 41 | 148 | 7 | 0 | 196 | 0 | 2 | 1 | 0 | 3 | 4 | 142 | 18 | 0 | 164 | 10 | 2 | 13 | 0 | 25 | 388 |
| 15:45 | 19 | 129 | 7 | 0 | 155 | 0 | 2 | 1 | 0 | 3 | 0 | 177 | 25 | 0 | 202 | 6 | 2 | 19 | 0 | 27 | 387 |
| Total | 103 | 585 | 27 | 0 | 715 | 0 | 7 | 5 | 0 | 12 | 6 | 590 | 65 | 0 | 661 | 36 | 7 | 70 | 0 | 113 | 1501 |
| 16:00 | 28 | 152 | 9 | 0 | 189 | 0 | 0 | 2 | 0 | 2 | 2 | 128 | 16 | 0 | 146 | 6 | 1 | 15 | 0 | 22 | 359 |

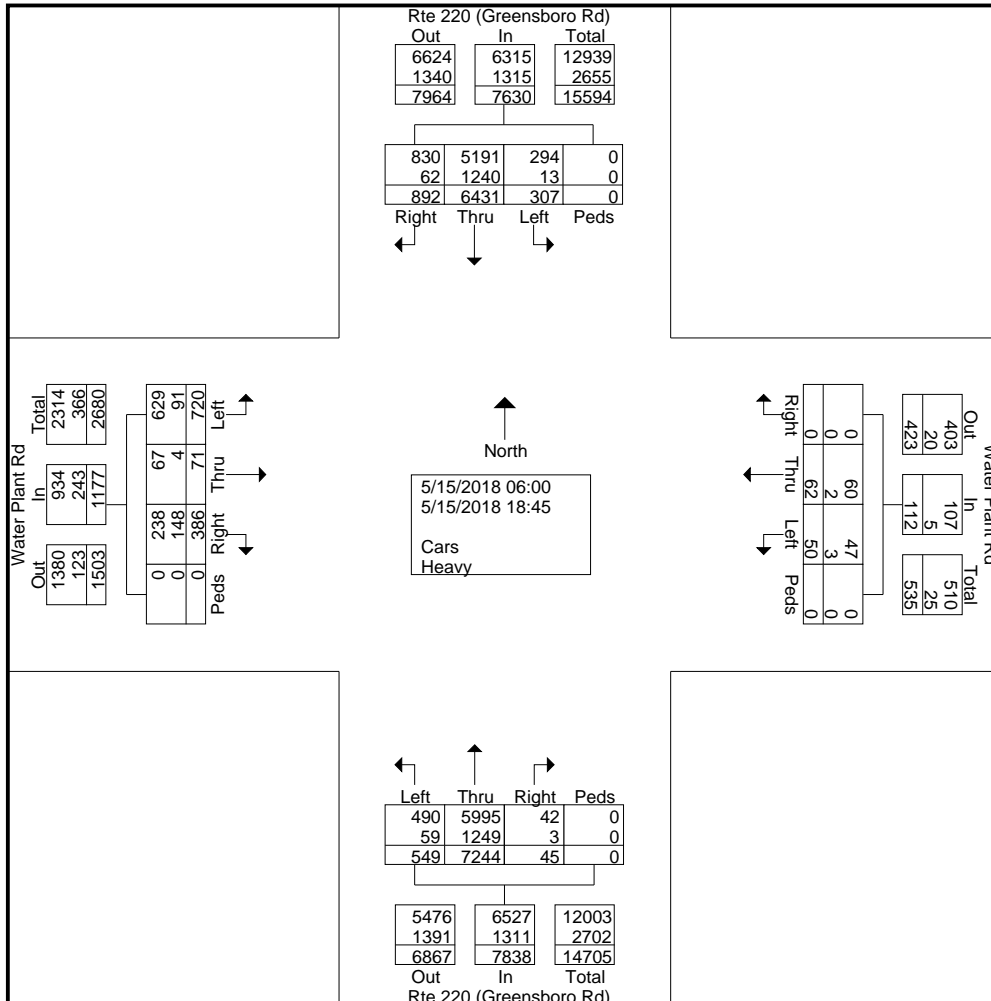
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Water Plant Rd
Start Date : 5/15/2018
Page No : 2

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | | Water Plant Rd From East | | | | | Rte 220 (Greensboro Rd) From South | | | | | Water Plant Rd From West | | | | | Int. Total |
|--------------------|---------------------------------------|-------------|------------|----------|-------------|-----------------------------|-----------|-----------|----------|------------|---------------------------------------|-------------|------------|----------|-------------|-----------------------------|-----------|------------|----------|-------------|--------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| 16:15 | 21 | 169 | 5 | 0 | 195 | 0 | 1 | 1 | 0 | 2 | 2 | 194 | 9 | 0 | 205 | 6 | 2 | 13 | 0 | 21 | 423 |
| 16:30 | 18 | 131 | 6 | 0 | 155 | 0 | 1 | 1 | 0 | 2 | 1 | 189 | 15 | 0 | 205 | 13 | 1 | 14 | 0 | 28 | 390 |
| 16:45 | 29 | 198 | 7 | 0 | 234 | 0 | 2 | 1 | 0 | 3 | 1 | 188 | 8 | 0 | 197 | 10 | 2 | 14 | 0 | 26 | 460 |
| Total | 96 | 650 | 27 | 0 | 773 | 0 | 4 | 5 | 0 | 9 | 6 | 699 | 48 | 0 | 753 | 35 | 6 | 56 | 0 | 97 | 1632 |
| 17:00 | 26 | 183 | 5 | 0 | 214 | 0 | 1 | 3 | 0 | 4 | 3 | 151 | 14 | 0 | 168 | 16 | 1 | 26 | 0 | 43 | 429 |
| 17:15 | 34 | 220 | 16 | 0 | 270 | 0 | 1 | 0 | 0 | 1 | 2 | 167 | 10 | 0 | 179 | 10 | 0 | 19 | 0 | 29 | 479 |
| 17:30 | 33 | 284 | 17 | 0 | 334 | 0 | 3 | 1 | 0 | 4 | 1 | 184 | 14 | 0 | 199 | 8 | 2 | 19 | 0 | 29 | 566 |
| 17:45 | 13 | 168 | 7 | 0 | 188 | 0 | 3 | 3 | 0 | 6 | 0 | 165 | 10 | 0 | 175 | 13 | 3 | 17 | 0 | 33 | 402 |
| Total | 106 | 855 | 45 | 0 | 1006 | 0 | 8 | 7 | 0 | 15 | 6 | 667 | 48 | 0 | 721 | 47 | 6 | 81 | 0 | 134 | 1876 |
| 18:00 | 20 | 134 | 6 | 0 | 160 | 0 | 1 | 1 | 0 | 2 | 1 | 162 | 17 | 0 | 180 | 7 | 6 | 20 | 0 | 33 | 375 |
| 18:15 | 13 | 111 | 6 | 0 | 130 | 0 | 2 | 0 | 0 | 2 | 1 | 185 | 9 | 0 | 195 | 6 | 4 | 17 | 0 | 27 | 354 |
| 18:30 | 15 | 115 | 5 | 0 | 135 | 0 | 0 | 1 | 0 | 1 | 0 | 121 | 20 | 0 | 141 | 4 | 0 | 17 | 0 | 21 | 298 |
| 18:45 | 18 | 130 | 6 | 0 | 154 | 0 | 0 | 0 | 0 | 0 | 2 | 124 | 10 | 0 | 136 | 11 | 1 | 16 | 0 | 28 | 318 |
| Total | 66 | 490 | 23 | 0 | 579 | 0 | 3 | 2 | 0 | 5 | 4 | 592 | 56 | 0 | 652 | 28 | 11 | 70 | 0 | 109 | 1345 |
| Grand Total | 892 | 6431 | 307 | 0 | 7630 | 0 | 62 | 50 | 0 | 112 | 45 | 7244 | 549 | 0 | 7838 | 386 | 71 | 720 | 0 | 1177 | 16757 |
| Apprch % | 11.7 | 84.3 | 4 | 0 | | 0 | 55.4 | 44.6 | 0 | | 0.6 | 92.4 | 7 | 0 | | 32.8 | 6 | 61.2 | 0 | | |
| Total % | 5.3 | 38.4 | 1.8 | 0 | 45.5 | 0 | 0.4 | 0.3 | 0 | 0.7 | 0.3 | 43.2 | 3.3 | 0 | 46.8 | 2.3 | 0.4 | 4.3 | 0 | 7 | |
| Cars | 830 | 5191 | 294 | 0 | 6315 | 0 | 60 | 47 | 0 | 107 | 42 | 5995 | 490 | 0 | 6527 | 238 | 67 | 629 | 0 | 934 | 13883 |
| % Cars | 93 | 80.7 | 95.8 | 0 | 82.8 | 0 | 96.8 | 94 | 0 | 95.5 | 93.3 | 82.8 | 89.3 | 0 | 83.3 | 61.7 | 94.4 | 87.4 | 0 | 79.4 | 82.8 |
| Heavy | 62 | 1240 | 13 | 0 | 1315 | 0 | 2 | 3 | 0 | 5 | 3 | 1249 | 59 | 0 | 1311 | 148 | 4 | 91 | 0 | 243 | 2874 |
| % Heavy | 7 | 19.3 | 4.2 | 0 | 17.2 | 0 | 3.2 | 6 | 0 | 4.5 | 6.7 | 17.2 | 10.7 | 0 | 16.7 | 38.3 | 5.6 | 12.6 | 0 | 20.6 | 17.2 |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Water Plant Rd
Start Date : 5/15/2018
Page No : 3

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | | Water Plant Rd From East | | | | | Rte 220 (Greensboro Rd) From South | | | | | Water Plant Rd From West | | | | | Int. Total |
|--|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|---------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|------------|
| | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | |
| Peak Hour Analysis From 07:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | | | | | |
| 07:30 | 19 | 135 | 5 | 0 | 159 | 0 | 2 | 1 | 0 | 3 | 0 | 213 | 11 | 0 | 224 | 2 | 2 | 13 | 0 | 17 | 403 |
| 07:45 | 14 | 126 | 8 | 0 | 148 | 0 | 1 | 0 | 0 | 1 | 0 | 207 | 13 | 0 | 220 | 4 | 0 | 19 | 0 | 23 | 392 |
| 08:00 | 23 | 136 | 8 | 0 | 167 | 0 | 1 | 1 | 0 | 2 | 0 | 161 | 7 | 0 | 168 | 11 | 0 | 17 | 0 | 28 | 365 |
| 08:15 | 19 | 111 | 5 | 0 | 135 | 0 | 1 | 0 | 0 | 1 | 1 | 153 | 7 | 0 | 161 | 8 | 1 | 15 | 0 | 24 | 321 |
| Total Volume | 75 | 508 | 26 | 0 | 609 | 0 | 5 | 2 | 0 | 7 | 1 | 734 | 38 | 0 | 773 | 25 | 3 | 64 | 0 | 92 | 1481 |
| % App. Total | 12.3 | 83.4 | 4.3 | 0 | | 0 | 71.4 | 28.6 | 0 | | 0.1 | 95 | 4.9 | 0 | | 27.2 | 3.3 | 69.6 | 0 | | |
| PHF | .815 | .934 | .813 | .000 | .912 | .000 | .625 | .500 | .000 | .583 | .250 | .862 | .731 | .000 | .863 | .568 | .375 | .842 | .000 | .821 | .919 |

| | | | | | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 16:45 to 17:30 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:45 | | | | | | | | | | | | | | | | | | | | | |
| 16:45 | 29 | 198 | 7 | 0 | 234 | 0 | 2 | 1 | 0 | 3 | 1 | 188 | | | | | 2 | | | | |
| 17:00 | 26 | 183 | 5 | 0 | 214 | 0 | 1 | 3 | 0 | 4 | 3 | 151 | 14 | 0 | 168 | 16 | 1 | 26 | 0 | 43 | 429 |
| 17:15 | 34 | 220 | 16 | 0 | 270 | 0 | 1 | 0 | 0 | 1 | 2 | 167 | 10 | 0 | 179 | 10 | 0 | 19 | 0 | 29 | 479 |
| 17:30 | 33 | 284 | 17 | 0 | 334 | 0 | 3 | 1 | 0 | 4 | 1 | 184 | 14 | 0 | 199 | 8 | 2 | 19 | 0 | 29 | 566 |
| Total Volume | 122 | 885 | 45 | 0 | 1052 | 0 | 7 | 5 | 0 | 12 | 7 | 690 | 46 | 0 | 743 | 44 | 5 | 78 | 0 | 127 | 1934 |
| % App. Total | 11.6 | 84.1 | 4.3 | 0 | | 0 | 58.3 | 41.7 | 0 | | 0.9 | 92.9 | 6.2 | 0 | | 34.6 | 3.9 | 61.4 | 0 | | |
| PHF | .897 | .779 | .662 | .000 | .787 | .000 | .583 | .417 | .000 | .750 | .583 | .918 | .821 | .000 | .933 | .688 | .625 | .750 | .000 | .738 | .854 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Soapstone Rd
Start Date : 5/15/2018
Page No : 1

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Main St From East | | | | Rte 220 (Greensboro Rd) From South | | | | Soapstone Rd From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|----------------------|------|------|------------|---------------------------------------|------|------|------------|---------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 66 | 0 | 66 | 2 | 3 | 1 | 6 | 0 | 43 | 0 | 43 | 1 | 0 | 0 | 1 | 116 |
| 06:15 | 1 | 108 | 0 | 109 | 19 | 1 | 1 | 21 | 1 | 89 | 5 | 95 | 6 | 2 | 1 | 9 | 234 |
| 06:30 | 1 | 103 | 5 | 109 | 36 | 20 | 1 | 57 | 0 | 98 | 8 | 106 | 13 | 2 | 1 | 16 | 288 |
| 06:45 | 1 | 99 | 3 | 103 | 11 | 7 | 0 | 18 | 0 | 101 | 9 | 110 | 8 | 4 | 2 | 14 | 245 |
| Total | 3 | 376 | 8 | 387 | 68 | 31 | 3 | 102 | 1 | 331 | 22 | 354 | 28 | 8 | 4 | 40 | 883 |
| 07:00 | 8 | 74 | 4 | 86 | 21 | 1 | 2 | 24 | 0 | 106 | 1 | 107 | 7 | 1 | 3 | 11 | 228 |
| 07:15 | 3 | 95 | 12 | 110 | 24 | 14 | 0 | 38 | 0 | 104 | 5 | 109 | 5 | 1 | 1 | 7 | 264 |
| 07:30 | 3 | 100 | 10 | 113 | 49 | 4 | 1 | 54 | 0 | 166 | 6 | 172 | 12 | 4 | 4 | 20 | 359 |
| 07:45 | 15 | 84 | 19 | 118 | 37 | 12 | 0 | 49 | 0 | 132 | 9 | 141 | 6 | 1 | 5 | 12 | 320 |
| Total | 29 | 353 | 45 | 427 | 131 | 31 | 3 | 165 | 0 | 508 | 21 | 529 | 30 | 7 | 13 | 50 | 1171 |
| 08:00 | 23 | 89 | 10 | 122 | 21 | 19 | 0 | 40 | 0 | 82 | 5 | 87 | 5 | 4 | 9 | 18 | 267 |
| 08:15 | 6 | 81 | 4 | 91 | 23 | 3 | 0 | 26 | 0 | 96 | 0 | 96 | 11 | 6 | 13 | 30 | 243 |
| 08:30 | 1 | 83 | 10 | 94 | 26 | 4 | 1 | 31 | 0 | 109 | 4 | 113 | 2 | 3 | 3 | 8 | 246 |
| 08:45 | 1 | 70 | 16 | 87 | 18 | 0 | 2 | 20 | 0 | 65 | 2 | 67 | 2 | 2 | 3 | 7 | 181 |
| Total | 31 | 323 | 40 | 394 | 88 | 26 | 3 | 117 | 0 | 352 | 11 | 363 | 20 | 15 | 28 | 63 | 937 |
| 09:00 | 2 | 57 | 9 | 68 | 13 | 1 | 0 | 14 | 0 | 57 | 0 | 57 | 2 | 3 | 3 | 8 | 147 |
| 09:15 | 1 | 67 | 11 | 79 | 14 | 2 | 1 | 17 | 0 | 81 | 2 | 83 | 5 | 1 | 3 | 9 | 188 |
| 09:30 | 3 | 68 | 18 | 89 | 27 | 2 | 3 | 32 | 0 | 72 | 2 | 74 | 3 | 0 | 3 | 6 | 201 |
| 09:45 | 1 | 58 | 13 | 72 | 20 | 2 | 0 | 22 | 0 | 74 | 1 | 75 | 4 | 2 | 1 | 7 | 176 |
| Total | 7 | 250 | 51 | 308 | 74 | 7 | 4 | 85 | 0 | 284 | 5 | 289 | 14 | 6 | 10 | 30 | 712 |
| 10:00 | 4 | 68 | 14 | 86 | 9 | 1 | 0 | 10 | 0 | 64 | 1 | 65 | 4 | 1 | 3 | 8 | 169 |
| 10:15 | 1 | 78 | 14 | 93 | 25 | 1 | 2 | 28 | 0 | 61 | 1 | 62 | 2 | 2 | 2 | 6 | 189 |
| 10:30 | 1 | 90 | 17 | 108 | 19 | 0 | 0 | 19 | 0 | 66 | 2 | 68 | 5 | 1 | 1 | 7 | 202 |
| 10:45 | 3 | 70 | 11 | 84 | 22 | 3 | 1 | 26 | 0 | 71 | 0 | 71 | 6 | 1 | 3 | 10 | 191 |
| Total | 9 | 306 | 56 | 371 | 75 | 5 | 3 | 83 | 0 | 262 | 4 | 266 | 17 | 5 | 9 | 31 | 751 |
| 11:00 | 2 | 56 | 19 | 77 | 24 | 8 | 0 | 32 | 0 | 64 | 1 | 65 | 3 | 6 | 6 | 15 | 189 |
| 11:15 | 4 | 74 | 14 | 92 | 25 | 3 | 0 | 28 | 0 | 57 | 1 | 58 | 4 | 3 | 6 | 13 | 191 |
| 11:30 | 2 | 80 | 16 | 98 | 32 | 2 | 1 | 35 | 0 | 77 | 2 | 79 | 1 | 2 | 2 | 5 | 217 |
| 11:45 | 4 | 61 | 18 | 83 | 16 | 3 | 2 | 21 | 0 | 57 | 0 | 57 | 8 | 3 | 6 | 17 | 178 |
| Total | 12 | 271 | 67 | 350 | 97 | 16 | 3 | 116 | 0 | 255 | 4 | 259 | 16 | 14 | 20 | 50 | 775 |
| 12:00 | 3 | 58 | 20 | 81 | 21 | 4 | 0 | 25 | 0 | 76 | 1 | 77 | 1 | 5 | 2 | 8 | 191 |
| 12:15 | 2 | 77 | 22 | 101 | 36 | 2 | 0 | 38 | 1 | 90 | 5 | 96 | 5 | 3 | 3 | 11 | 246 |
| 12:30 | 4 | 81 | 27 | 112 | 28 | 5 | 1 | 34 | 0 | 84 | 2 | 86 | 1 | 5 | 3 | 9 | 241 |
| 12:45 | 1 | 88 | 24 | 113 | 35 | 5 | 0 | 40 | 0 | 86 | 5 | 91 | 3 | 4 | 3 | 10 | 254 |
| Total | 10 | 304 | 93 | 407 | 120 | 16 | 1 | 137 | 1 | 336 | 13 | 350 | 10 | 17 | 11 | 38 | 932 |
| 13:00 | 7 | 97 | 17 | 121 | 18 | 4 | 0 | 22 | 0 | 75 | 1 | 76 | 1 | 2 | 2 | 5 | 224 |
| 13:15 | 1 | 77 | 31 | 109 | 25 | 6 | 2 | 33 | 2 | 80 | 2 | 84 | 2 | 3 | 0 | 5 | 231 |
| 13:30 | 5 | 100 | 17 | 122 | 37 | 6 | 4 | 47 | 0 | 75 | 1 | 76 | 1 | 2 | 4 | 7 | 252 |
| 13:45 | 6 | 89 | 20 | 115 | 24 | 4 | 3 | 31 | 0 | 57 | 3 | 60 | 0 | 1 | 1 | 2 | 208 |
| Total | 19 | 363 | 85 | 467 | 104 | 20 | 9 | 133 | 2 | 287 | 7 | 296 | 4 | 8 | 7 | 19 | 915 |
| 14:00 | 2 | 101 | 26 | 129 | 32 | 4 | 2 | 38 | 1 | 81 | 1 | 83 | 2 | 3 | 3 | 8 | 258 |
| 14:15 | 3 | 100 | 19 | 122 | 32 | 5 | 2 | 39 | 0 | 75 | 2 | 77 | 4 | 8 | 7 | 19 | 257 |
| 14:30 | 7 | 95 | 17 | 119 | 41 | 4 | 2 | 47 | 0 | 88 | 1 | 89 | 2 | 6 | 6 | 14 | 269 |
| 14:45 | 5 | 96 | 24 | 125 | 31 | 4 | 3 | 38 | 0 | 91 | 2 | 93 | 3 | 4 | 3 | 10 | 266 |
| Total | 17 | 392 | 86 | 495 | 136 | 17 | 9 | 162 | 1 | 335 | 6 | 342 | 11 | 21 | 19 | 51 | 1050 |
| 15:00 | 6 | 116 | 25 | 147 | 32 | 5 | 1 | 38 | 0 | 59 | 4 | 63 | 6 | 5 | 7 | 18 | 266 |
| 15:15 | 6 | 107 | 40 | 153 | 37 | 6 | 2 | 45 | 0 | 72 | 8 | 80 | 4 | 7 | 5 | 16 | 294 |
| 15:30 | 6 | 112 | 28 | 146 | 37 | 8 | 2 | 47 | 0 | 108 | 3 | 111 | 16 | 26 | 22 | 64 | 368 |
| 15:45 | 5 | 94 | 31 | 130 | 41 | 6 | 0 | 47 | 2 | 95 | 5 | 102 | 10 | 17 | 15 | 42 | 321 |
| Total | 23 | 429 | 124 | 576 | 147 | 25 | 5 | 177 | 2 | 334 | 20 | 356 | 36 | 55 | 49 | 140 | 1249 |
| 16:00 | 10 | 119 | 33 | 162 | 38 | 8 | 3 | 49 | 0 | 115 | 2 | 117 | 6 | 7 | 6 | 19 | 347 |

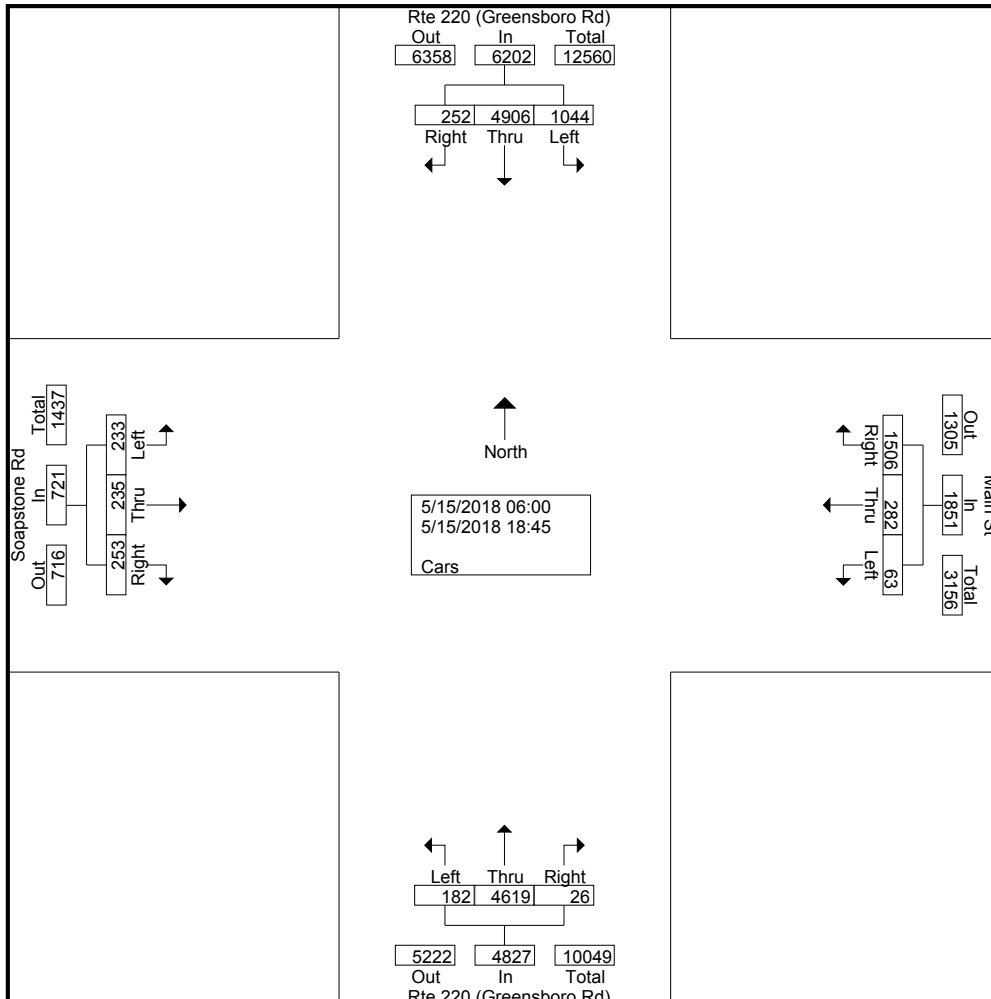
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Soapstone Rd
Start Date : 5/15/2018
Page No : 2

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Main St From East | | | | Rte 220 (Greensboro Rd) From South | | | | Soapstone Rd From West | | | | Int. Total |
|-------------|---------------------------------------|------|------|------------|----------------------|------|------|------------|---------------------------------------|------|------|------------|---------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 11 | 128 | 33 | 172 | 42 | 8 | 2 | 52 | 1 | 121 | 6 | 128 | 5 | 8 | 4 | 17 | 369 |
| 16:30 | 4 | 116 | 26 | 146 | 48 | 7 | 1 | 56 | 2 | 113 | 2 | 117 | 6 | 2 | 6 | 14 | 333 |
| 16:45 | 15 | 130 | 44 | 189 | 36 | 11 | 2 | 49 | 3 | 116 | 9 | 128 | 7 | 4 | 4 | 15 | 381 |
| Total | 40 | 493 | 136 | 669 | 164 | 34 | 8 | 206 | 6 | 465 | 19 | 490 | 24 | 21 | 20 | 65 | 1430 |
| 17:00 | 12 | 163 | 28 | 203 | 32 | 17 | 2 | 51 | 2 | 114 | 9 | 125 | 4 | 10 | 4 | 18 | 397 |
| 17:15 | 13 | 168 | 54 | 235 | 41 | 6 | 2 | 49 | 2 | 128 | 6 | 136 | 14 | 7 | 3 | 24 | 444 |
| 17:30 | 4 | 153 | 45 | 202 | 44 | 7 | 0 | 51 | 1 | 124 | 9 | 134 | 6 | 10 | 6 | 22 | 409 |
| 17:45 | 4 | 153 | 31 | 188 | 45 | 8 | 1 | 54 | 3 | 104 | 5 | 112 | 7 | 12 | 10 | 29 | 383 |
| Total | 33 | 637 | 158 | 828 | 162 | 38 | 5 | 205 | 8 | 470 | 29 | 507 | 31 | 39 | 23 | 93 | 1633 |
| 18:00 | 5 | 107 | 30 | 142 | 37 | 2 | 1 | 40 | 1 | 117 | 10 | 128 | 5 | 10 | 7 | 22 | 332 |
| 18:15 | 5 | 95 | 23 | 123 | 40 | 4 | 1 | 45 | 3 | 114 | 4 | 121 | 5 | 4 | 4 | 13 | 302 |
| 18:30 | 5 | 100 | 18 | 123 | 37 | 5 | 5 | 47 | 1 | 93 | 4 | 98 | 1 | 1 | 7 | 9 | 277 |
| 18:45 | 4 | 107 | 24 | 135 | 26 | 5 | 0 | 31 | 0 | 76 | 3 | 79 | 1 | 4 | 2 | 7 | 252 |
| Total | 19 | 409 | 95 | 523 | 140 | 16 | 7 | 163 | 5 | 400 | 21 | 426 | 12 | 19 | 20 | 51 | 1163 |
| Grand Total | 252 | 4906 | 1044 | 6202 | 1506 | 282 | 63 | 1851 | 26 | 4619 | 182 | 4827 | 253 | 235 | 233 | 721 | 13601 |
| Apprch % | 4.1 | 79.1 | 16.8 | | 81.4 | 15.2 | 3.4 | | 0.5 | 95.7 | 3.8 | | 35.1 | 32.6 | 32.3 | | |
| Total % | 1.9 | 36.1 | 7.7 | 45.6 | 11.1 | 2.1 | 0.5 | 13.6 | 0.2 | 34 | 1.3 | 35.5 | 1.9 | 1.7 | 1.7 | 5.3 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Soapstone Rd
Start Date : 5/15/2018
Page No : 3

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Main St From East | | | | Rte 220 (Greensboro Rd) From South | | | | Soapstone Rd From West | | | | Int. Total |
|--|---------------------------------------|------------|-----------|------------|----------------------|-----------|----------|------------|---------------------------------------|------------|----------|------------|---------------------------|----------|----------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 3 | 95 | 12 | 110 | 24 | 14 | 0 | 38 | 0 | 104 | 5 | 109 | 5 | 1 | 1 | 7 | 264 |
| 07:30 | 3 | 100 | 10 | 113 | 49 | 4 | 1 | 54 | 0 | 166 | 6 | 172 | 12 | 4 | 4 | 20 | 359 |
| 07:45 | 15 | 84 | 19 | 118 | 37 | 12 | 0 | 49 | 0 | 132 | 9 | 141 | 6 | 1 | 5 | 12 | 320 |
| 08:00 | 23 | 89 | 10 | 122 | 21 | 19 | 0 | 40 | 0 | 82 | 5 | 87 | 5 | 4 | 9 | 18 | 267 |
| Total Volume | 44 | 368 | 51 | 463 | 131 | 49 | 1 | 181 | 0 | 484 | 25 | 509 | 28 | 10 | 19 | 57 | 1210 |
| % App. Total | 9.5 | 79.5 | 11 | | 72.4 | 27.1 | 0.6 | | 0 | 95.1 | 4.9 | | 49.1 | 17.5 | 33.3 | | |
| PHF | .478 | .920 | .671 | .949 | .668 | .645 | .250 | .838 | .000 | .729 | .694 | .740 | .583 | .625 | .528 | .713 | .843 |

| | | | | | | | | | | | | | | | | | |
|--|-----------|------------|-----------|------------|-----------|-----------|----------|-----------|----------|------------|----------|------------|-----------|-----------|-----------|-----------|------------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 12 | 163 | 28 | 203 | 32 | 17 | 2 | 51 | 2 | 114 | 9 | 125 | 4 | 10 | 4 | 18 | 397 |
| 17:15 | 13 | 168 | 54 | 235 | 41 | 6 | 2 | 49 | 2 | 128 | 6 | 136 | 14 | 7 | 3 | 24 | 444 |
| 17:30 | 4 | 153 | 45 | 202 | 44 | 7 | 0 | 51 | 1 | 124 | 9 | 134 | 6 | 10 | 6 | 22 | 409 |
| 17:45 | 4 | 153 | 31 | 188 | 45 | 8 | 1 | 54 | 3 | 104 | 5 | 112 | 7 | 12 | 10 | 29 | 383 |
| Total Volume | 33 | 637 | 158 | 828 | 162 | 38 | 5 | 205 | 8 | 470 | 29 | 507 | 31 | 39 | 23 | 93 | 1633 |
| % App. Total | 4 | 76.9 | 19.1 | | 79 | 18.5 | 2.4 | | 1.6 | 92.7 | 5.7 | | 33.3 | 41.9 | 24.7 | | |
| PHF | .635 | .948 | .731 | .881 | .900 | .559 | .625 | .949 | .667 | .918 | .806 | .932 | .554 | .813 | .575 | .802 | .919 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Soapstone Rd

Start Date : 5/15/2018

Groups Printed- Heavy Vehicles

Page No : 1

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Main St From East | | | | Rte 220 (Greensboro Rd) From South | | | | Soapstone Rd From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|----------------------|------|------|------------|---------------------------------------|------|------|------------|---------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 21 | 3 | 24 | 21 | 0 | 0 | 21 | 0 | 16 | 0 | 16 | 1 | 0 | 0 | 1 | 62 |
| 06:15 | 0 | 23 | 0 | 23 | 2 | 0 | 1 | 3 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 45 |
| 06:30 | 0 | 22 | 2 | 24 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 42 |
| 06:45 | 0 | 16 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 38 |
| Total | 0 | 82 | 6 | 88 | 23 | 0 | 1 | 24 | 0 | 74 | 0 | 74 | 1 | 0 | 0 | 1 | 187 |
| 07:00 | 1 | 20 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 18 | 1 | 19 | 0 | 0 | 0 | 0 | 40 |
| 07:15 | 0 | 15 | 1 | 16 | 2 | 2 | 0 | 4 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 41 |
| 07:30 | 0 | 27 | 2 | 29 | 1 | 0 | 0 | 1 | 0 | 22 | 0 | 22 | 1 | 0 | 0 | 1 | 53 |
| 07:45 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 21 | 1 | 22 | 0 | 0 | 0 | 0 | 44 |
| Total | 1 | 84 | 3 | 88 | 3 | 2 | 0 | 5 | 0 | 82 | 2 | 84 | 1 | 0 | 0 | 1 | 178 |
| 08:00 | 2 | 28 | 0 | 30 | 4 | 2 | 0 | 6 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 56 |
| 08:15 | 0 | 23 | 1 | 24 | 1 | 0 | 0 | 1 | 0 | 18 | 0 | 18 | 3 | 1 | 1 | 5 | 48 |
| 08:30 | 0 | 28 | 3 | 31 | 2 | 0 | 0 | 2 | 1 | 26 | 0 | 27 | 0 | 1 | 0 | 1 | 61 |
| 08:45 | 1 | 27 | 1 | 29 | 1 | 0 | 0 | 1 | 0 | 24 | 0 | 24 | 1 | 0 | 0 | 1 | 55 |
| Total | 3 | 106 | 5 | 114 | 8 | 2 | 0 | 10 | 1 | 88 | 0 | 89 | 4 | 2 | 1 | 7 | 220 |
| 09:00 | 0 | 27 | 2 | 29 | 1 | 0 | 0 | 1 | 0 | 27 | 0 | 27 | 0 | 1 | 0 | 1 | 58 |
| 09:15 | 0 | 25 | 0 | 25 | 1 | 0 | 0 | 1 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 51 |
| 09:30 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 53 |
| 09:45 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 23 | 1 | 0 | 0 | 1 | 47 |
| Total | 0 | 100 | 2 | 102 | 2 | 0 | 0 | 2 | 0 | 103 | 0 | 103 | 1 | 1 | 0 | 2 | 209 |
| 10:00 | 0 | 32 | 0 | 32 | 3 | 1 | 0 | 4 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 62 |
| 10:15 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 51 |
| 10:30 | 0 | 32 | 1 | 33 | 1 | 0 | 0 | 1 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 59 |
| 10:45 | 0 | 27 | 1 | 28 | 1 | 0 | 0 | 1 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 51 |
| Total | 0 | 117 | 2 | 119 | 5 | 1 | 0 | 6 | 0 | 98 | 0 | 98 | 0 | 0 | 0 | 0 | 223 |
| 11:00 | 0 | 27 | 2 | 29 | 0 | 0 | 2 | 2 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 65 |
| 11:15 | 1 | 27 | 0 | 28 | 1 | 0 | 0 | 1 | 0 | 32 | 0 | 32 | 0 | 0 | 2 | 2 | 63 |
| 11:30 | 0 | 31 | 0 | 31 | 2 | 0 | 0 | 2 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 58 |
| 11:45 | 0 | 27 | 1 | 28 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 61 |
| Total | 1 | 112 | 3 | 116 | 3 | 0 | 2 | 5 | 0 | 124 | 0 | 124 | 0 | 0 | 2 | 2 | 247 |
| 12:00 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 42 |
| 12:15 | 0 | 34 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 62 |
| 12:30 | 0 | 23 | 2 | 25 | 0 | 1 | 0 | 1 | 0 | 27 | 0 | 27 | 0 | 1 | 0 | 1 | 54 |
| 12:45 | 0 | 24 | 0 | 24 | 0 | 1 | 1 | 2 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 57 |
| Total | 0 | 107 | 2 | 109 | 0 | 2 | 1 | 3 | 0 | 102 | 0 | 102 | 0 | 1 | 0 | 1 | 215 |
| 13:00 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 50 |
| 13:15 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 45 |
| 13:30 | 0 | 39 | 3 | 42 | 2 | 0 | 0 | 2 | 0 | 28 | 0 | 28 | 0 | 0 | 1 | 1 | 73 |
| 13:45 | 0 | 25 | 1 | 26 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 | 51 |
| Total | 0 | 111 | 4 | 115 | 2 | 0 | 0 | 2 | 0 | 101 | 0 | 101 | 0 | 0 | 1 | 1 | 219 |
| 14:00 | 0 | 42 | 1 | 43 | 1 | 0 | 0 | 1 | 0 | 26 | 1 | 27 | 0 | 0 | 0 | 0 | 71 |
| 14:15 | 1 | 22 | 0 | 23 | 1 | 0 | 0 | 1 | 0 | 30 | 0 | 30 | 1 | 0 | 1 | 2 | 56 |
| 14:30 | 1 | 25 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 28 | 0 | 0 | 1 | 1 | 55 |
| 14:45 | 0 | 20 | 1 | 21 | 0 | 1 | 0 | 1 | 0 | 24 | 1 | 25 | 0 | 1 | 0 | 1 | 48 |
| Total | 2 | 109 | 2 | 113 | 2 | 1 | 0 | 3 | 0 | 108 | 2 | 110 | 1 | 1 | 2 | 4 | 230 |
| 15:00 | 1 | 28 | 0 | 29 | 2 | 1 | 0 | 3 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 53 |
| 15:15 | 0 | 29 | 1 | 30 | 0 | 2 | 0 | 2 | 0 | 25 | 0 | 25 | 1 | 0 | 0 | 1 | 58 |
| 15:30 | 0 | 29 | 1 | 30 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 19 | 3 | 3 | 2 | 8 | 57 |
| 15:45 | 1 | 19 | 3 | 23 | 2 | 2 | 0 | 4 | 0 | 19 | 0 | 19 | 0 | 0 | 1 | 1 | 47 |
| Total | 2 | 105 | 5 | 112 | 4 | 5 | 0 | 9 | 0 | 84 | 0 | 84 | 4 | 3 | 3 | 10 | 215 |
| 16:00 | 0 | 23 | 2 | 25 | 1 | 0 | 0 | 1 | 0 | 12 | 0 | 12 | 0 | 0 | 1 | 1 | 39 |

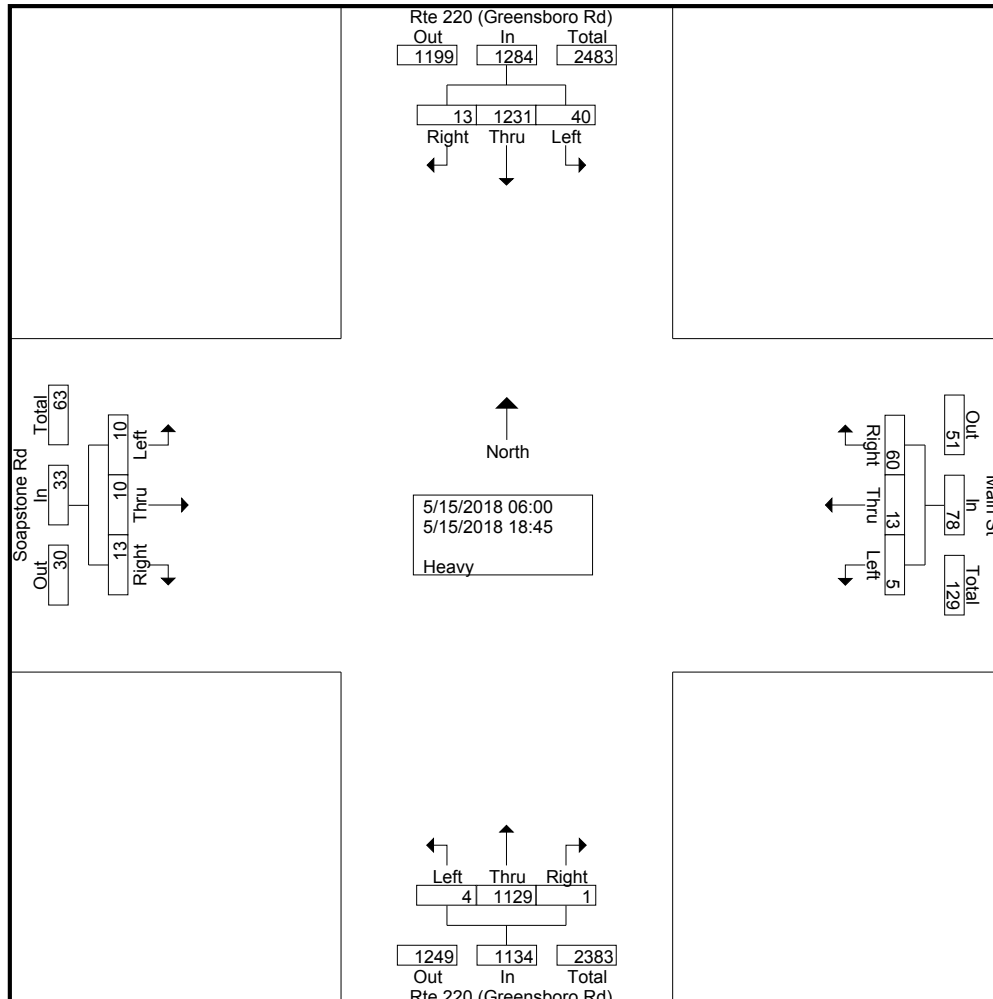
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Soapstone Rd
Start Date : 5/15/2018
Page No : 2

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Main St From East | | | | Rte 220 (Greensboro Rd) From South | | | | Soapstone Rd From West | | | | Int. Total |
|--------------------|---------------------------------------|-------------|-----------|-------------|----------------------|-----------|----------|------------|---------------------------------------|-------------|----------|-------------|---------------------------|-----------|-----------|------------|-------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 1 | 25 | 1 | 27 | 1 | 0 | 0 | 1 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 39 |
| 16:30 | 2 | 16 | 0 | 18 | 1 | 0 | 0 | 1 | 0 | 17 | 0 | 17 | 1 | 0 | 0 | 1 | 37 |
| 16:45 | 0 | 12 | 0 | 12 | 1 | 0 | 1 | 2 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 25 |
| Total | 3 | 76 | 3 | 82 | 4 | 0 | 1 | 5 | 0 | 51 | 0 | 51 | 1 | 0 | 1 | 2 | 140 |
| 17:00 | 0 | 21 | 0 | 21 | 1 | 0 | 0 | 1 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 48 |
| 17:15 | 0 | 14 | 0 | 14 | 1 | 0 | 0 | 1 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 26 |
| 17:30 | 0 | 19 | 1 | 20 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 11 | 0 | 1 | 0 | 1 | 32 |
| 17:45 | 0 | 11 | 1 | 12 | 2 | 0 | 0 | 2 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 32 |
| Total | 0 | 65 | 2 | 67 | 4 | 0 | 0 | 4 | 0 | 66 | 0 | 66 | 0 | 1 | 0 | 1 | 138 |
| 18:00 | 1 | 10 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 1 | 0 | 1 | 25 |
| 18:15 | 0 | 12 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 28 |
| 18:30 | 0 | 20 | 1 | 21 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 30 |
| 18:45 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 0 | 0 | 0 | 25 |
| Total | 1 | 57 | 1 | 59 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 48 | 0 | 1 | 0 | 1 | 108 |
| Grand Total | 13 | 1231 | 40 | 1284 | 60 | 13 | 5 | 78 | 1 | 1129 | 4 | 1134 | 13 | 10 | 10 | 33 | 2529 |
| Apprch % | 1 | 95.9 | 3.1 | | 76.9 | 16.7 | 6.4 | | 0.1 | 99.6 | 0.4 | | 39.4 | 30.3 | 30.3 | | |
| Total % | 0.5 | 48.7 | 1.6 | | 2.4 | 0.5 | 0.2 | | 0 | 44.6 | 0.2 | | 0.5 | 0.4 | 0.4 | | 1.3 |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Soapstone Rd
Start Date : 5/15/2018
Page No : 3

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Main St From East | | | | Rte 220 (Greensboro Rd) From South | | | | Soapstone Rd From West | | | | Int. Total |
|--|---------------------------------------|------|------|------------|----------------------|------|------|------------|---------------------------------------|------|------|------------|---------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 0 | 15 | 1 | 16 | 2 | 2 | 0 | 4 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 41 |
| 07:30 | 0 | 27 | 2 | 29 | 1 | 0 | 0 | 1 | 0 | 22 | 0 | 22 | 1 | 0 | 0 | 1 | 53 |
| 07:45 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 21 | 1 | 22 | 0 | 0 | 0 | 0 | 44 |
| 08:00 | 2 | 28 | 0 | 30 | 4 | 2 | 0 | 6 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 56 |
| Total Volume | 2 | 92 | 3 | 97 | 7 | 4 | 0 | 11 | 0 | 84 | 1 | 85 | 1 | 0 | 0 | 1 | 194 |
| % App. Total | 2.1 | 94.8 | 3.1 | | 63.6 | 36.4 | 0 | | 0 | 98.8 | 1.2 | | 100 | 0 | 0 | | |
| PHF | .250 | .821 | .375 | .808 | .438 | .500 | .000 | .458 | .000 | .955 | .250 | .966 | .250 | .000 | .000 | .250 | .866 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 0 | 21 | 0 | 21 | 1 | 0 | 0 | 1 | 0 | 26 | 0 | 26 | 0 | 0 | 0 | 0 | 48 |
| 17:15 | 0 | 14 | 0 | 14 | 1 | 0 | 0 | 1 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 26 |
| 17:30 | 0 | 19 | 1 | 20 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 11 | 0 | 1 | 0 | 1 | 32 |
| 17:45 | 0 | 11 | 1 | 12 | 2 | 0 | 0 | 2 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 32 |
| Total Volume | 0 | 65 | 2 | 67 | 4 | 0 | 0 | 4 | 0 | 66 | 0 | 66 | 0 | 1 | 0 | 1 | 138 |
| % App. Total | 0 | 97 | 3 | | 100 | 0 | 0 | | 0 | 100 | 0 | | 0 | 100 | 0 | | |
| PHF | .000 | .774 | .500 | .798 | .500 | .000 | .000 | .500 | .000 | .635 | .000 | .635 | .000 | .250 | .000 | .250 | .719 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Soapstone Rd
Start Date : 5/15/2018
Page No : 1

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Main St From East | | | | Rte 220 (Greensboro Rd) From South | | | | Soapstone Rd From West | | | | Int. Total |
|------------|---------------------------------------|------|------|------------|----------------------|------|------|------------|---------------------------------------|------|------|------------|---------------------------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 87 | 3 | 90 | 23 | 3 | 1 | 27 | 0 | 59 | 0 | 59 | 2 | 0 | 0 | 2 | 178 |
| 06:15 | 1 | 131 | 0 | 132 | 21 | 1 | 2 | 24 | 1 | 108 | 5 | 114 | 6 | 2 | 1 | 9 | 279 |
| 06:30 | 1 | 125 | 7 | 133 | 36 | 20 | 1 | 57 | 0 | 116 | 8 | 124 | 13 | 2 | 1 | 16 | 330 |
| 06:45 | 1 | 115 | 4 | 120 | 11 | 7 | 0 | 18 | 0 | 122 | 9 | 131 | 8 | 4 | 2 | 14 | 283 |
| Total | 3 | 458 | 14 | 475 | 91 | 31 | 4 | 126 | 1 | 405 | 22 | 428 | 29 | 8 | 4 | 41 | 1070 |
| 07:00 | 9 | 94 | 4 | 107 | 21 | 1 | 2 | 24 | 0 | 124 | 2 | 126 | 7 | 1 | 3 | 11 | 268 |
| 07:15 | 3 | 110 | 13 | 126 | 26 | 16 | 0 | 42 | 0 | 125 | 5 | 130 | 5 | 1 | 1 | 7 | 305 |
| 07:30 | 3 | 127 | 12 | 142 | 50 | 4 | 1 | 55 | 0 | 188 | 6 | 194 | 13 | 4 | 4 | 21 | 412 |
| 07:45 | 15 | 106 | 19 | 140 | 37 | 12 | 0 | 49 | 0 | 153 | 10 | 163 | 6 | 1 | 5 | 12 | 364 |
| Total | 30 | 437 | 48 | 515 | 134 | 33 | 3 | 170 | 0 | 590 | 23 | 613 | 31 | 7 | 13 | 51 | 1349 |
| 08:00 | 25 | 117 | 10 | 152 | 25 | 21 | 0 | 46 | 0 | 102 | 5 | 107 | 5 | 4 | 9 | 18 | 323 |
| 08:15 | 6 | 104 | 5 | 115 | 24 | 3 | 0 | 27 | 0 | 114 | 0 | 114 | 14 | 7 | 14 | 35 | 291 |
| 08:30 | 1 | 111 | 13 | 125 | 28 | 4 | 1 | 33 | 1 | 135 | 4 | 140 | 2 | 4 | 3 | 9 | 307 |
| 08:45 | 2 | 97 | 17 | 116 | 19 | 0 | 2 | 21 | 0 | 89 | 2 | 91 | 3 | 2 | 3 | 8 | 236 |
| Total | 34 | 429 | 45 | 508 | 96 | 28 | 3 | 127 | 1 | 440 | 11 | 452 | 24 | 17 | 29 | 70 | 1157 |
| 09:00 | 2 | 84 | 11 | 97 | 14 | 1 | 0 | 15 | 0 | 84 | 0 | 84 | 2 | 4 | 3 | 9 | 205 |
| 09:15 | 1 | 92 | 11 | 104 | 15 | 2 | 1 | 18 | 0 | 106 | 2 | 108 | 5 | 1 | 3 | 9 | 239 |
| 09:30 | 3 | 93 | 18 | 114 | 27 | 2 | 3 | 32 | 0 | 100 | 2 | 102 | 3 | 0 | 3 | 6 | 254 |
| 09:45 | 1 | 81 | 13 | 95 | 20 | 2 | 0 | 22 | 0 | 97 | 1 | 98 | 5 | 2 | 1 | 8 | 223 |
| Total | 7 | 350 | 53 | 410 | 76 | 7 | 4 | 87 | 0 | 387 | 5 | 392 | 15 | 7 | 10 | 32 | 921 |
| 10:00 | 4 | 100 | 14 | 118 | 12 | 2 | 0 | 14 | 0 | 90 | 1 | 91 | 4 | 1 | 3 | 8 | 231 |
| 10:15 | 1 | 104 | 14 | 119 | 25 | 1 | 2 | 28 | 0 | 86 | 1 | 87 | 2 | 2 | 2 | 6 | 240 |
| 10:30 | 1 | 122 | 18 | 141 | 20 | 0 | 0 | 20 | 0 | 91 | 2 | 93 | 5 | 1 | 1 | 7 | 261 |
| 10:45 | 3 | 97 | 12 | 112 | 23 | 3 | 1 | 27 | 0 | 93 | 0 | 93 | 6 | 1 | 3 | 10 | 242 |
| Total | 9 | 423 | 58 | 490 | 80 | 6 | 3 | 89 | 0 | 360 | 4 | 364 | 17 | 5 | 9 | 31 | 974 |
| 11:00 | 2 | 83 | 21 | 106 | 24 | 8 | 2 | 34 | 0 | 98 | 1 | 99 | 3 | 6 | 6 | 15 | 254 |
| 11:15 | 5 | 101 | 14 | 120 | 26 | 3 | 0 | 29 | 0 | 89 | 1 | 90 | 4 | 3 | 8 | 15 | 254 |
| 11:30 | 2 | 111 | 16 | 129 | 34 | 2 | 1 | 37 | 0 | 102 | 2 | 104 | 1 | 2 | 2 | 5 | 275 |
| 11:45 | 4 | 88 | 19 | 111 | 16 | 3 | 2 | 21 | 0 | 90 | 0 | 90 | 8 | 3 | 6 | 17 | 239 |
| Total | 13 | 383 | 70 | 466 | 100 | 16 | 5 | 121 | 0 | 379 | 4 | 383 | 16 | 14 | 22 | 52 | 1022 |
| 12:00 | 3 | 84 | 20 | 107 | 21 | 4 | 0 | 25 | 0 | 92 | 1 | 93 | 1 | 5 | 2 | 8 | 233 |
| 12:15 | 2 | 111 | 22 | 135 | 36 | 2 | 0 | 38 | 1 | 118 | 5 | 124 | 5 | 3 | 3 | 11 | 308 |
| 12:30 | 4 | 104 | 29 | 137 | 28 | 6 | 1 | 35 | 0 | 111 | 2 | 113 | 1 | 6 | 3 | 10 | 295 |
| 12:45 | 1 | 112 | 24 | 137 | 35 | 6 | 1 | 42 | 0 | 117 | 5 | 122 | 3 | 4 | 3 | 10 | 311 |
| Total | 10 | 411 | 95 | 516 | 120 | 18 | 2 | 140 | 1 | 438 | 13 | 452 | 10 | 18 | 11 | 39 | 1147 |
| 13:00 | 7 | 121 | 17 | 145 | 18 | 4 | 0 | 22 | 0 | 101 | 1 | 102 | 1 | 2 | 2 | 5 | 274 |
| 13:15 | 1 | 100 | 31 | 132 | 25 | 6 | 2 | 33 | 2 | 102 | 2 | 106 | 2 | 3 | 0 | 5 | 276 |
| 13:30 | 5 | 139 | 20 | 164 | 39 | 6 | 4 | 49 | 0 | 103 | 1 | 104 | 1 | 2 | 5 | 8 | 325 |
| 13:45 | 6 | 114 | 21 | 141 | 24 | 4 | 3 | 31 | 0 | 82 | 3 | 85 | 0 | 1 | 1 | 2 | 259 |
| Total | 19 | 474 | 89 | 582 | 106 | 20 | 9 | 135 | 2 | 388 | 7 | 397 | 4 | 8 | 8 | 20 | 1134 |
| 14:00 | 2 | 143 | 27 | 172 | 33 | 4 | 2 | 39 | 1 | 107 | 2 | 110 | 2 | 3 | 3 | 8 | 329 |
| 14:15 | 4 | 122 | 19 | 145 | 33 | 5 | 2 | 40 | 0 | 105 | 2 | 107 | 5 | 8 | 8 | 21 | 313 |
| 14:30 | 8 | 120 | 17 | 145 | 41 | 4 | 2 | 47 | 0 | 116 | 1 | 117 | 2 | 6 | 7 | 15 | 324 |
| 14:45 | 5 | 116 | 25 | 146 | 31 | 5 | 3 | 39 | 0 | 115 | 3 | 118 | 3 | 5 | 3 | 11 | 314 |
| Total | 19 | 501 | 88 | 608 | 138 | 18 | 9 | 165 | 1 | 443 | 8 | 452 | 12 | 22 | 21 | 55 | 1280 |
| 15:00 | 7 | 144 | 25 | 176 | 34 | 6 | 1 | 41 | 0 | 80 | 4 | 84 | 6 | 5 | 7 | 18 | 319 |
| 15:15 | 6 | 136 | 41 | 183 | 37 | 8 | 2 | 47 | 0 | 97 | 8 | 105 | 5 | 7 | 5 | 17 | 352 |
| 15:30 | 6 | 141 | 29 | 176 | 37 | 8 | 2 | 47 | 0 | 127 | 3 | 130 | 19 | 29 | 24 | 72 | 425 |
| 15:45 | 6 | 113 | 34 | 153 | 43 | 8 | 0 | 51 | 2 | 114 | 5 | 121 | 10 | 17 | 16 | 43 | 368 |
| Total | 25 | 534 | 129 | 688 | 151 | 30 | 5 | 186 | 2 | 418 | 20 | 440 | 40 | 58 | 52 | 150 | 1464 |
| 16:00 | 10 | 142 | 35 | 187 | 39 | 8 | 3 | 50 | 0 | 127 | 2 | 129 | 6 | 7 | 7 | 20 | 386 |

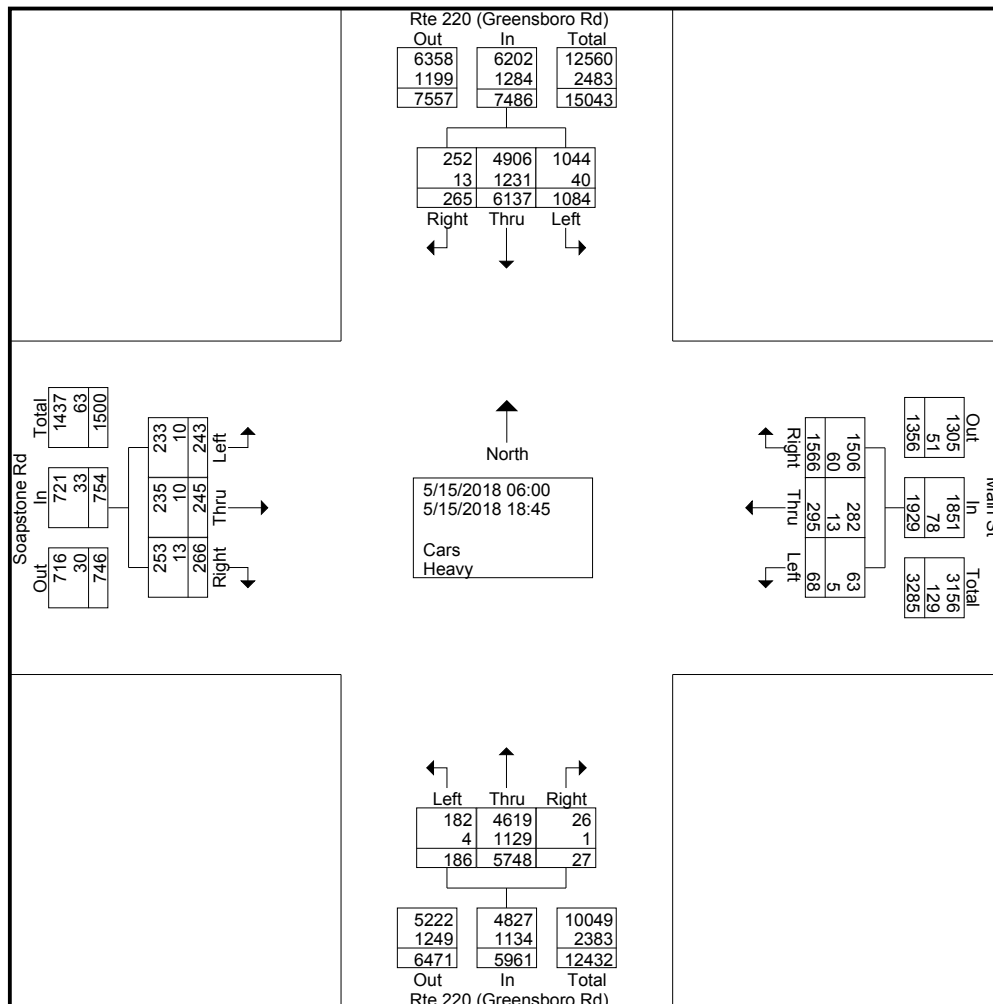
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Soapstone Rd
Start Date : 5/15/2018
Page No : 2

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Main St From East | | | | Rte 220 (Greensboro Rd) From South | | | | Soapstone Rd From West | | | | Int. Total |
|--------------------|---------------------------------------|-------------|-------------|-------------|----------------------|------------|-----------|-------------|---------------------------------------|-------------|------------|-------------|---------------------------|------------|------------|------------|--------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 12 | 153 | 34 | 199 | 43 | 8 | 2 | 53 | 1 | 132 | 6 | 139 | 5 | 8 | 4 | 17 | 408 |
| 16:30 | 6 | 132 | 26 | 164 | 49 | 7 | 1 | 57 | 2 | 130 | 2 | 134 | 7 | 2 | 6 | 15 | 370 |
| 16:45 | 15 | 142 | 44 | 201 | 37 | 11 | 3 | 51 | 3 | 127 | 9 | 139 | 7 | 4 | 4 | 15 | 406 |
| Total | 43 | 569 | 139 | 751 | 168 | 34 | 9 | 211 | 6 | 516 | 19 | 541 | 25 | 21 | 21 | 67 | 1570 |
| 17:00 | 12 | 184 | 28 | 224 | 33 | 17 | 2 | 52 | 2 | 140 | 9 | 151 | 4 | 10 | 4 | 18 | 445 |
| 17:15 | 13 | 182 | 54 | 249 | 42 | 6 | 2 | 50 | 2 | 139 | 6 | 147 | 14 | 7 | 3 | 24 | 470 |
| 17:30 | 4 | 172 | 46 | 222 | 44 | 7 | 0 | 51 | 1 | 135 | 9 | 145 | 6 | 11 | 6 | 23 | 441 |
| 17:45 | 4 | 164 | 32 | 200 | 47 | 8 | 1 | 56 | 3 | 122 | 5 | 130 | 7 | 12 | 10 | 29 | 415 |
| Total | 33 | 702 | 160 | 895 | 166 | 38 | 5 | 209 | 8 | 536 | 29 | 573 | 31 | 40 | 23 | 94 | 1771 |
| 18:00 | 6 | 117 | 30 | 153 | 37 | 2 | 1 | 40 | 1 | 130 | 10 | 141 | 5 | 11 | 7 | 23 | 357 |
| 18:15 | 5 | 107 | 23 | 135 | 40 | 4 | 1 | 45 | 3 | 130 | 4 | 137 | 5 | 4 | 4 | 13 | 330 |
| 18:30 | 5 | 120 | 19 | 144 | 37 | 5 | 5 | 47 | 1 | 102 | 4 | 107 | 1 | 1 | 7 | 9 | 307 |
| 18:45 | 4 | 122 | 24 | 150 | 26 | 5 | 0 | 31 | 0 | 86 | 3 | 89 | 1 | 4 | 2 | 7 | 277 |
| Total | 20 | 466 | 96 | 582 | 140 | 16 | 7 | 163 | 5 | 448 | 21 | 474 | 12 | 20 | 20 | 52 | 1271 |
| Grand Total | 265 | 6137 | 1084 | 7486 | 1566 | 295 | 68 | 1929 | 27 | 5748 | 186 | 5961 | 266 | 245 | 243 | 754 | 16130 |
| Apprch % | 3.5 | 82 | 14.5 | | 81.2 | 15.3 | 3.5 | | 0.5 | 96.4 | 3.1 | | 35.3 | 32.5 | 32.2 | | |
| Total % | 1.6 | 38 | 6.7 | 46.4 | 9.7 | 1.8 | 0.4 | 12 | 0.2 | 35.6 | 1.2 | 37 | 1.6 | 1.5 | 1.5 | 4.7 | |
| Cars | 252 | 4906 | 1044 | 6202 | 1506 | 282 | 63 | 1851 | 26 | 4619 | 182 | 4827 | 253 | 235 | 233 | 721 | 13601 |
| % Cars | 95.1 | 79.9 | 96.3 | 82.8 | 96.2 | 95.6 | 92.6 | 96 | 96.3 | 80.4 | 97.8 | 81 | 95.1 | 95.9 | 95.9 | 95.6 | 84.3 |
| Heavy | 13 | 1231 | 40 | 1284 | 60 | 13 | 5 | 78 | 1 | 1129 | 4 | 1134 | 13 | 10 | 10 | 33 | 2529 |
| % Heavy | 4.9 | 20.1 | 3.7 | 17.2 | 3.8 | 4.4 | 7.4 | 4 | 3.7 | 19.6 | 2.2 | 19 | 4.9 | 4.1 | 4.1 | 4.4 | 15.7 |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Soapstone Rd
Start Date : 5/15/2018
Page No : 3

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro Rd) From North | | | | Main St From East | | | | Rte 220 (Greensboro Rd) From South | | | | Soapstone Rd From West | | | | Int. Total |
|--|---------------------------------------|------------|-----------|------------|----------------------|-----------|----------|------------|---------------------------------------|------------|-----------|------------|---------------------------|----------|----------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 3 | 110 | 13 | 126 | 26 | 16 | 0 | 42 | 0 | 125 | 5 | 130 | 5 | 1 | 1 | 7 | 305 |
| 07:30 | 3 | 127 | 12 | 142 | 50 | 4 | 1 | 55 | 0 | 188 | 6 | 194 | 13 | 4 | 4 | 21 | 412 |
| 07:45 | 15 | 106 | 19 | 140 | 37 | 12 | 0 | 49 | 0 | 153 | 10 | 163 | 6 | 1 | 5 | 12 | 364 |
| 08:00 | 25 | 117 | 10 | 152 | 25 | 21 | 0 | 46 | 0 | 102 | 5 | 107 | 5 | 4 | 9 | 18 | 323 |
| Total Volume | 46 | 460 | 54 | 560 | 138 | 53 | 1 | 192 | 0 | 568 | 26 | 594 | 29 | 10 | 19 | 58 | 1404 |
| % App. Total | 8.2 | 82.1 | 9.6 | | 71.9 | 27.6 | 0.5 | | 0 | 95.6 | 4.4 | | 50 | 17.2 | 32.8 | | |
| PHF | .460 | .906 | .711 | .921 | .690 | .631 | .250 | .873 | .000 | .755 | .650 | .765 | .558 | .625 | .528 | .690 | .852 |

| | | | | | | | | | | | | | | | | | |
|--|-----------|------------|-----------|------------|-----------|-----------|----------|-----------|----------|------------|----------|------------|-----------|-----------|-----------|-----------|------------|
| Peak Hour Analysis From 17:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 12 | 184 | 28 | 224 | 33 | 17 | 2 | 52 | 2 | 140 | 9 | 151 | 4 | 10 | 4 | 18 | 445 |
| 17:15 | 13 | 182 | 54 | 249 | 42 | 6 | 2 | 50 | 2 | 139 | 6 | 147 | 14 | 7 | 3 | 24 | 470 |
| 17:30 | 4 | 172 | 46 | 222 | 44 | 7 | 0 | 51 | 1 | 135 | 9 | 145 | 6 | 11 | 6 | 23 | 441 |
| 17:45 | 4 | 164 | 32 | 200 | 47 | 8 | 1 | 56 | 3 | 122 | 5 | 130 | 7 | 12 | 10 | 29 | 415 |
| Total Volume | 33 | 702 | 160 | 895 | 166 | 38 | 5 | 209 | 8 | 536 | 29 | 573 | 31 | 40 | 23 | 94 | 1771 |
| % App. Total | 3.7 | 78.4 | 17.9 | | 79.4 | 18.2 | 2.4 | | 1.4 | 93.5 | 5.1 | | 33 | 42.6 | 24.5 | | |
| PHF | .635 | .954 | .741 | .899 | .883 | .559 | .625 | .933 | .667 | .957 | .806 | .949 | .554 | .833 | .575 | .810 | .942 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Morehead Ave
Start Date : 5/16/2018
Page No : 1

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro) From North | | | | Morehead Ave From East | | | | Rte 220 (Greensboro) From South | | | | From West | | | | Int. Total |
|------------|------------------------------------|------|------|------------|---------------------------|------|------|------------|------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 47 | 19 | 66 | 26 | 0 | 6 | 32 | 2 | 29 | 0 | 31 | 0 | 0 | 0 | 0 | 129 |
| 06:15 | 0 | 52 | 35 | 87 | 39 | 0 | 10 | 49 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 165 |
| 06:30 | 0 | 51 | 51 | 102 | 56 | 0 | 12 | 68 | 1 | 51 | 0 | 52 | 0 | 0 | 0 | 0 | 222 |
| 06:45 | 0 | 57 | 40 | 97 | 42 | 0 | 7 | 49 | 0 | 44 | 0 | 44 | 0 | 0 | 0 | 0 | 190 |
| Total | 0 | 207 | 145 | 352 | 163 | 0 | 35 | 198 | 3 | 153 | 0 | 156 | 0 | 0 | 0 | 0 | 706 |
| 07:00 | 0 | 56 | 38 | 94 | 42 | 0 | 8 | 50 | 1 | 48 | 0 | 49 | 0 | 0 | 0 | 0 | 193 |
| 07:15 | 0 | 56 | 31 | 87 | 67 | 0 | 11 | 78 | 1 | 83 | 0 | 84 | 0 | 0 | 0 | 0 | 249 |
| 07:30 | 0 | 64 | 44 | 108 | 57 | 0 | 9 | 66 | 0 | 84 | 0 | 84 | 0 | 0 | 0 | 0 | 258 |
| 07:45 | 0 | 66 | 45 | 111 | 56 | 0 | 3 | 59 | 2 | 88 | 0 | 90 | 0 | 0 | 0 | 0 | 260 |
| Total | 0 | 242 | 158 | 400 | 222 | 0 | 31 | 253 | 4 | 303 | 0 | 307 | 0 | 0 | 0 | 0 | 960 |
| 08:00 | 0 | 65 | 31 | 96 | 31 | 0 | 9 | 40 | 1 | 75 | 0 | 76 | 0 | 0 | 0 | 0 | 212 |
| 08:15 | 0 | 44 | 31 | 75 | 37 | 0 | 3 | 40 | 0 | 60 | 0 | 60 | 0 | 0 | 0 | 0 | 175 |
| 08:30 | 0 | 41 | 26 | 67 | 33 | 0 | 6 | 39 | 1 | 53 | 0 | 54 | 0 | 0 | 0 | 0 | 160 |
| 08:45 | 0 | 53 | 29 | 82 | 32 | 0 | 4 | 36 | 5 | 40 | 0 | 45 | 0 | 0 | 0 | 0 | 163 |
| Total | 0 | 203 | 117 | 320 | 133 | 0 | 22 | 155 | 7 | 228 | 0 | 235 | 0 | 0 | 0 | 0 | 710 |
| 09:00 | 0 | 52 | 28 | 80 | 26 | 0 | 11 | 37 | 0 | 49 | 0 | 49 | 0 | 0 | 0 | 0 | 166 |
| 09:15 | 0 | 61 | 33 | 94 | 28 | 0 | 6 | 34 | 1 | 52 | 0 | 53 | 0 | 0 | 0 | 0 | 181 |
| 09:30 | 0 | 49 | 35 | 84 | 22 | 0 | 5 | 27 | 1 | 72 | 0 | 73 | 0 | 0 | 0 | 0 | 184 |
| 09:45 | 0 | 51 | 33 | 84 | 31 | 0 | 4 | 35 | 1 | 63 | 0 | 64 | 0 | 0 | 0 | 0 | 183 |
| Total | 0 | 213 | 129 | 342 | 107 | 0 | 26 | 133 | 3 | 236 | 0 | 239 | 0 | 0 | 0 | 0 | 714 |
| 10:00 | 0 | 57 | 32 | 89 | 22 | 0 | 5 | 27 | 1 | 47 | 0 | 48 | 0 | 0 | 0 | 0 | 164 |
| 10:15 | 0 | 50 | 24 | 74 | 24 | 0 | 4 | 28 | 1 | 57 | 0 | 58 | 0 | 0 | 0 | 0 | 160 |
| 10:30 | 0 | 42 | 35 | 77 | 15 | 0 | 8 | 23 | 2 | 46 | 0 | 48 | 0 | 0 | 0 | 0 | 148 |
| 10:45 | 0 | 51 | 36 | 87 | 22 | 0 | 7 | 29 | 0 | 50 | 0 | 50 | 0 | 0 | 0 | 0 | 166 |
| Total | 0 | 200 | 127 | 327 | 83 | 0 | 24 | 107 | 4 | 200 | 0 | 204 | 0 | 0 | 0 | 0 | 638 |
| 11:00 | 0 | 52 | 28 | 80 | 32 | 0 | 9 | 41 | 3 | 60 | 0 | 63 | 0 | 0 | 0 | 0 | 184 |
| 11:15 | 0 | 52 | 28 | 80 | 31 | 0 | 12 | 43 | 3 | 59 | 0 | 62 | 0 | 0 | 0 | 0 | 185 |
| 11:30 | 0 | 47 | 22 | 69 | 22 | 0 | 3 | 25 | 1 | 58 | 0 | 59 | 0 | 0 | 0 | 0 | 153 |
| 11:45 | 0 | 56 | 40 | 96 | 32 | 0 | 8 | 40 | 1 | 43 | 0 | 44 | 0 | 0 | 0 | 0 | 180 |
| Total | 0 | 207 | 118 | 325 | 117 | 0 | 32 | 149 | 8 | 220 | 0 | 228 | 0 | 0 | 0 | 0 | 702 |
| 12:00 | 0 | 63 | 33 | 96 | 15 | 0 | 3 | 18 | 1 | 51 | 0 | 52 | 0 | 0 | 0 | 0 | 166 |
| 12:15 | 0 | 52 | 40 | 92 | 21 | 0 | 10 | 31 | 1 | 56 | 0 | 57 | 0 | 0 | 0 | 0 | 180 |
| 12:30 | 0 | 69 | 41 | 110 | 24 | 0 | 5 | 29 | 1 | 57 | 0 | 58 | 0 | 0 | 0 | 0 | 197 |
| 12:45 | 0 | 63 | 36 | 99 | 30 | 0 | 2 | 32 | 0 | 49 | 0 | 49 | 0 | 0 | 0 | 0 | 180 |
| Total | 0 | 247 | 150 | 397 | 90 | 0 | 20 | 110 | 3 | 213 | 0 | 216 | 0 | 0 | 0 | 0 | 723 |
| 13:00 | 0 | 54 | 28 | 82 | 32 | 0 | 4 | 36 | 0 | 70 | 0 | 70 | 0 | 0 | 0 | 0 | 188 |
| 13:15 | 0 | 61 | 24 | 85 | 24 | 0 | 1 | 25 | 3 | 51 | 0 | 54 | 0 | 0 | 0 | 0 | 164 |
| 13:30 | 0 | 47 | 35 | 82 | 25 | 0 | 4 | 29 | 6 | 58 | 0 | 64 | 0 | 0 | 0 | 0 | 175 |
| 13:45 | 0 | 65 | 35 | 100 | 24 | 0 | 4 | 28 | 0 | 45 | 0 | 45 | 0 | 0 | 0 | 0 | 173 |
| Total | 0 | 227 | 122 | 349 | 105 | 0 | 13 | 118 | 9 | 224 | 0 | 233 | 0 | 0 | 0 | 0 | 700 |
| 14:00 | 0 | 59 | 44 | 103 | 19 | 0 | 4 | 23 | 1 | 47 | 0 | 48 | 0 | 0 | 0 | 0 | 174 |
| 14:15 | 0 | 81 | 26 | 107 | 39 | 0 | 11 | 50 | 1 | 57 | 0 | 58 | 0 | 0 | 0 | 0 | 215 |
| 14:30 | 0 | 65 | 43 | 108 | 21 | 0 | 8 | 29 | 1 | 46 | 0 | 47 | 0 | 0 | 0 | 0 | 184 |
| 14:45 | 0 | 66 | 46 | 112 | 25 | 0 | 6 | 31 | 0 | 54 | 0 | 54 | 0 | 0 | 0 | 0 | 197 |
| Total | 0 | 271 | 159 | 430 | 104 | 0 | 29 | 133 | 3 | 204 | 0 | 207 | 0 | 0 | 0 | 0 | 770 |
| 15:00 | 0 | 76 | 47 | 123 | 35 | 0 | 7 | 42 | 2 | 57 | 0 | 59 | 0 | 0 | 0 | 0 | 224 |
| 15:15 | 0 | 60 | 47 | 107 | 43 | 0 | 7 | 50 | 4 | 64 | 0 | 68 | 0 | 0 | 0 | 0 | 225 |
| 15:30 | 0 | 71 | 80 | 151 | 42 | 0 | 6 | 48 | 0 | 62 | 0 | 62 | 0 | 0 | 0 | 0 | 261 |
| 15:45 | 0 | 68 | 54 | 122 | 37 | 0 | 7 | 44 | 3 | 80 | 0 | 83 | 0 | 0 | 0 | 0 | 249 |
| Total | 0 | 275 | 228 | 503 | 157 | 0 | 27 | 184 | 9 | 263 | 0 | 272 | 0 | 0 | 0 | 0 | 959 |
| 16:00 | 0 | 73 | 54 | 127 | 33 | 0 | 6 | 39 | 1 | 64 | 0 | 65 | 0 | 0 | 0 | 0 | 231 |

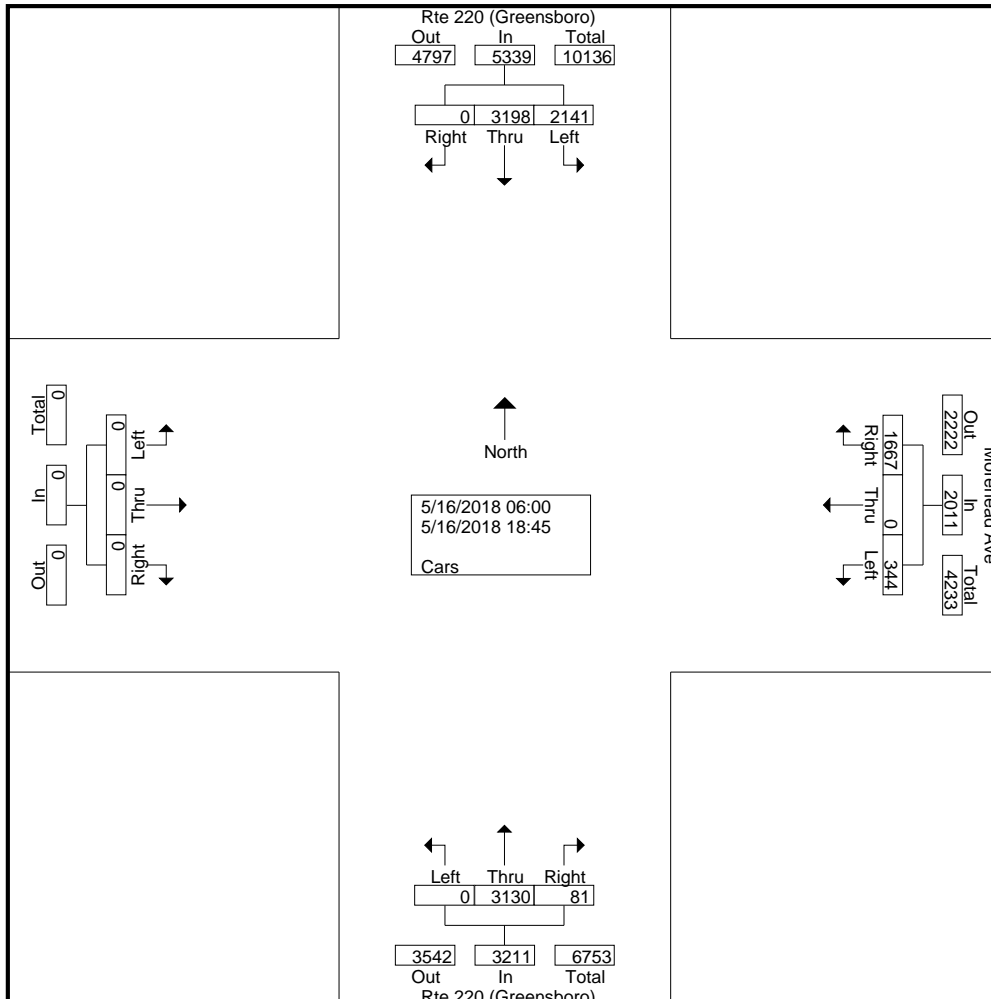
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Morehead Ave
Start Date : 5/16/2018
Page No : 2

Groups Printed- Cars

| Start Time | Rte 220 (Greensboro) From North | | | | Morehead Ave From East | | | | Rte 220 (Greensboro) From South | | | | From West | | | | Int. Total |
|--------------------|------------------------------------|------|------|------------|---------------------------|------|------|------------|------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 0 | 76 | 65 | 141 | 30 | 0 | 8 | 38 | 0 | 80 | 0 | 80 | 0 | 0 | 0 | 0 | 259 |
| 16:30 | 0 | 87 | 59 | 146 | 34 | 0 | 3 | 37 | 3 | 80 | 0 | 83 | 0 | 0 | 0 | 0 | 266 |
| 16:45 | 0 | 83 | 61 | 144 | 32 | 0 | 7 | 39 | 4 | 82 | 0 | 86 | 0 | 0 | 0 | 0 | 269 |
| Total | 0 | 319 | 239 | 558 | 129 | 0 | 24 | 153 | 8 | 306 | 0 | 314 | 0 | 0 | 0 | 0 | 1025 |
| | | | | | | | | | | | | | | | | | |
| 17:00 | 0 | 82 | 56 | 138 | 26 | 0 | 8 | 34 | 2 | 60 | 0 | 62 | 0 | 0 | 0 | 0 | 234 |
| 17:15 | 0 | 93 | 64 | 157 | 45 | 0 | 9 | 54 | 4 | 78 | 0 | 82 | 0 | 0 | 0 | 0 | 293 |
| 17:30 | 0 | 87 | 81 | 168 | 38 | 0 | 5 | 43 | 2 | 120 | 0 | 122 | 0 | 0 | 0 | 0 | 333 |
| 17:45 | 0 | 104 | 69 | 173 | 42 | 0 | 13 | 55 | 3 | 63 | 0 | 66 | 0 | 0 | 0 | 0 | 294 |
| Total | 0 | 366 | 270 | 636 | 151 | 0 | 35 | 186 | 11 | 321 | 0 | 332 | 0 | 0 | 0 | 0 | 1154 |
| | | | | | | | | | | | | | | | | | |
| 18:00 | 0 | 63 | 52 | 115 | 32 | 0 | 7 | 39 | 2 | 89 | 0 | 91 | 0 | 0 | 0 | 0 | 245 |
| 18:15 | 0 | 50 | 45 | 95 | 26 | 0 | 5 | 31 | 2 | 62 | 0 | 64 | 0 | 0 | 0 | 0 | 190 |
| 18:30 | 0 | 52 | 39 | 91 | 27 | 0 | 10 | 37 | 2 | 60 | 0 | 62 | 0 | 0 | 0 | 0 | 190 |
| 18:45 | 0 | 56 | 43 | 99 | 21 | 0 | 4 | 25 | 3 | 48 | 0 | 51 | 0 | 0 | 0 | 0 | 175 |
| Total | 0 | 221 | 179 | 400 | 106 | 0 | 26 | 132 | 9 | 259 | 0 | 268 | 0 | 0 | 0 | 0 | 800 |
| | | | | | | | | | | | | | | | | | |
| Grand Total | 0 | 3198 | 2141 | 5339 | 1667 | 0 | 344 | 2011 | 81 | 3130 | 0 | 3211 | 0 | 0 | 0 | 0 | 10561 |
| Apprch % | 0 | 59.9 | 40.1 | | 82.9 | 0 | 17.1 | | 2.5 | 97.5 | 0 | | 0 | 0 | 0 | | |
| Total % | 0 | 30.3 | 20.3 | 50.6 | 15.8 | 0 | 3.3 | 19 | 0.8 | 29.6 | 0 | 30.4 | 0 | 0 | 0 | 0 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Morehead Ave
Start Date : 5/16/2018
Page No : 3

| Start Time | Rte 220 (Greensboro) From North | | | | Morehead Ave From East | | | | Rte 220 (Greensboro) From South | | | | From West | | | | Int. Total |
|--|------------------------------------|-----------|-----------|------------|---------------------------|------|-----------|------------|------------------------------------|-----------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 0 | 56 | 31 | 87 | 67 | 0 | 11 | 78 | 1 | 83 | 0 | 84 | 0 | 0 | 0 | 0 | 249 |
| 07:30 | 0 | 64 | 44 | 108 | 57 | 0 | 9 | 66 | 0 | 84 | 0 | 84 | 0 | 0 | 0 | 0 | 258 |
| 07:45 | 0 | 66 | 45 | 111 | 56 | 0 | 3 | 59 | 2 | 88 | 0 | 90 | 0 | 0 | 0 | 0 | 260 |
| 08:00 | 0 | 65 | 31 | 96 | 31 | 0 | 9 | 40 | 1 | 75 | 0 | 76 | 0 | 0 | 0 | 0 | 212 |
| Total Volume | 0 | 251 | 151 | 402 | 211 | 0 | 32 | 243 | 4 | 330 | 0 | 334 | 0 | 0 | 0 | 0 | 979 |
| % App. Total | 0 | 62.4 | 37.6 | | 86.8 | 0 | 13.2 | | 1.2 | 98.8 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .951 | .839 | .905 | .787 | .000 | .727 | .779 | .500 | .938 | .000 | .928 | .000 | .000 | .000 | .000 | .941 |

| | | | | | | | | | | | | | | | | | |
|--|------|------------|-----------|------------|-----------|------|-----------|-----------|----------|------------|------|------------|------|------|------|------|------------|
| Peak Hour Analysis From 17:00 to 18:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:15 | | | | | | | | | | | | | | | | | |
| 17:15 | 0 | 93 | 64 | 157 | 45 | 0 | 9 | 54 | 4 | 78 | 0 | 82 | 0 | 0 | 0 | 0 | 293 |
| 17:30 | 0 | 87 | 81 | 168 | 38 | 0 | 5 | 43 | 2 | 120 | 0 | 122 | 0 | 0 | 0 | 0 | 333 |
| 17:45 | 0 | 104 | 69 | 173 | 42 | 0 | 13 | 55 | 3 | 63 | 0 | 66 | 0 | 0 | 0 | 0 | 294 |
| 18:00 | 0 | 63 | 52 | 115 | 32 | 0 | 7 | 39 | 2 | 89 | 0 | 91 | 0 | 0 | 0 | 0 | 245 |
| Total Volume | 0 | 347 | 266 | 613 | 157 | 0 | 34 | 191 | 11 | 350 | 0 | 361 | 0 | 0 | 0 | 0 | 1165 |
| % App. Total | 0 | 56.6 | 43.4 | | 82.2 | 0 | 17.8 | | 3 | 97 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .834 | .821 | .886 | .872 | .000 | .654 | .868 | .688 | .729 | .000 | .740 | .000 | .000 | .000 | .000 | .875 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Morehead Ave
Start Date : 5/16/2018
Page No : 1

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro) From North | | | | Morehead Ave From East | | | | Rte 220 (Greensboro) From South | | | | From West | | | | Int. Total |
|------------|------------------------------------|------|------|------------|---------------------------|------|------|------------|------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 19 | 0 | 19 | 1 | 0 | 0 | 1 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 31 |
| 06:15 | 0 | 13 | 3 | 16 | 9 | 0 | 0 | 9 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 36 |
| 06:30 | 0 | 7 | 4 | 11 | 2 | 0 | 0 | 2 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 24 |
| 06:45 | 0 | 11 | 8 | 19 | 10 | 0 | 1 | 11 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 50 |
| Total | 0 | 50 | 15 | 65 | 22 | 0 | 1 | 23 | 0 | 53 | 0 | 53 | 0 | 0 | 0 | 0 | 141 |
| 07:00 | 0 | 9 | 4 | 13 | 3 | 0 | 1 | 4 | 0 | 16 | 0 | 16 | 0 | 0 | 0 | 0 | 33 |
| 07:15 | 0 | 13 | 6 | 19 | 7 | 0 | 2 | 9 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 45 |
| 07:30 | 0 | 10 | 8 | 18 | 7 | 0 | 0 | 7 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 46 |
| 07:45 | 0 | 23 | 3 | 26 | 5 | 0 | 0 | 5 | 1 | 19 | 0 | 20 | 0 | 0 | 0 | 0 | 51 |
| Total | 0 | 55 | 21 | 76 | 22 | 0 | 3 | 25 | 1 | 73 | 0 | 74 | 0 | 0 | 0 | 0 | 175 |
| 08:00 | 0 | 19 | 6 | 25 | 6 | 0 | 1 | 7 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 49 |
| 08:15 | 0 | 20 | 3 | 23 | 4 | 0 | 1 | 5 | 1 | 23 | 0 | 24 | 0 | 0 | 0 | 0 | 52 |
| 08:30 | 0 | 18 | 7 | 25 | 12 | 0 | 1 | 13 | 1 | 26 | 0 | 27 | 0 | 0 | 0 | 0 | 65 |
| 08:45 | 0 | 20 | 3 | 23 | 7 | 0 | 0 | 7 | 1 | 17 | 0 | 18 | 0 | 0 | 0 | 0 | 48 |
| Total | 0 | 77 | 19 | 96 | 29 | 0 | 3 | 32 | 3 | 83 | 0 | 86 | 0 | 0 | 0 | 0 | 214 |
| 09:00 | 0 | 28 | 4 | 32 | 10 | 0 | 0 | 10 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 60 |
| 09:15 | 0 | 16 | 4 | 20 | 3 | 0 | 0 | 3 | 1 | 22 | 0 | 23 | 0 | 0 | 0 | 0 | 46 |
| 09:30 | 0 | 28 | 2 | 30 | 6 | 0 | 1 | 7 | 2 | 20 | 0 | 22 | 0 | 0 | 0 | 0 | 59 |
| 09:45 | 0 | 29 | 9 | 38 | 4 | 0 | 2 | 6 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 63 |
| Total | 0 | 101 | 19 | 120 | 23 | 0 | 3 | 26 | 3 | 79 | 0 | 82 | 0 | 0 | 0 | 0 | 228 |
| 10:00 | 0 | 18 | 7 | 25 | 3 | 0 | 2 | 5 | 3 | 21 | 0 | 24 | 0 | 0 | 0 | 0 | 54 |
| 10:15 | 0 | 10 | 11 | 21 | 4 | 0 | 2 | 6 | 0 | 15 | 0 | 15 | 0 | 0 | 0 | 0 | 42 |
| 10:30 | 0 | 21 | 5 | 26 | 7 | 0 | 1 | 8 | 1 | 22 | 0 | 23 | 0 | 0 | 0 | 0 | 57 |
| 10:45 | 0 | 28 | 3 | 31 | 5 | 0 | 1 | 6 | 1 | 23 | 0 | 24 | 0 | 0 | 0 | 0 | 61 |
| Total | 0 | 77 | 26 | 103 | 19 | 0 | 6 | 25 | 5 | 81 | 0 | 86 | 0 | 0 | 0 | 0 | 214 |
| 11:00 | 0 | 22 | 8 | 30 | 6 | 0 | 2 | 8 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 62 |
| 11:15 | 0 | 18 | 3 | 21 | 6 | 0 | 0 | 6 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 48 |
| 11:30 | 0 | 9 | 4 | 13 | 11 | 0 | 1 | 12 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 47 |
| 11:45 | 0 | 24 | 8 | 32 | 6 | 0 | 0 | 6 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 61 |
| Total | 0 | 73 | 23 | 96 | 29 | 0 | 3 | 32 | 0 | 90 | 0 | 90 | 0 | 0 | 0 | 0 | 218 |
| 12:00 | 0 | 16 | 3 | 19 | 2 | 0 | 1 | 3 | 0 | 23 | 0 | 23 | 0 | 0 | 0 | 0 | 45 |
| 12:15 | 0 | 19 | 9 | 28 | 7 | 0 | 2 | 9 | 2 | 26 | 0 | 28 | 0 | 0 | 0 | 0 | 65 |
| 12:30 | 0 | 17 | 8 | 25 | 8 | 0 | 0 | 8 | 1 | 21 | 0 | 22 | 0 | 0 | 0 | 0 | 55 |
| 12:45 | 0 | 15 | 7 | 22 | 6 | 0 | 0 | 6 | 0 | 20 | 0 | 20 | 0 | 0 | 0 | 0 | 48 |
| Total | 0 | 67 | 27 | 94 | 23 | 0 | 3 | 26 | 3 | 90 | 0 | 93 | 0 | 0 | 0 | 0 | 213 |
| 13:00 | 0 | 19 | 4 | 23 | 5 | 0 | 1 | 6 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 50 |
| 13:15 | 0 | 20 | 7 | 27 | 4 | 0 | 3 | 7 | 1 | 20 | 0 | 21 | 0 | 0 | 0 | 0 | 55 |
| 13:30 | 0 | 18 | 3 | 21 | 4 | 0 | 1 | 5 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 44 |
| 13:45 | 0 | 21 | 2 | 23 | 4 | 0 | 1 | 5 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 46 |
| Total | 0 | 78 | 16 | 94 | 17 | 0 | 6 | 23 | 1 | 77 | 0 | 78 | 0 | 0 | 0 | 0 | 195 |
| 14:00 | 0 | 21 | 4 | 25 | 3 | 0 | 0 | 3 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 56 |
| 14:15 | 0 | 13 | 4 | 17 | 4 | 0 | 0 | 4 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 39 |
| 14:30 | 0 | 14 | 9 | 23 | 11 | 0 | 1 | 12 | 3 | 25 | 0 | 28 | 0 | 0 | 0 | 0 | 63 |
| 14:45 | 0 | 15 | 12 | 27 | 4 | 0 | 0 | 4 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 45 |
| Total | 0 | 63 | 29 | 92 | 22 | 0 | 1 | 23 | 3 | 85 | 0 | 88 | 0 | 0 | 0 | 0 | 203 |
| 15:00 | 0 | 14 | 6 | 20 | 3 | 0 | 0 | 3 | 0 | 22 | 0 | 22 | 0 | 0 | 0 | 0 | 45 |
| 15:15 | 0 | 24 | 6 | 30 | 4 | 0 | 0 | 4 | 1 | 15 | 0 | 16 | 0 | 0 | 0 | 0 | 50 |
| 15:30 | 0 | 20 | 5 | 25 | 2 | 0 | 1 | 3 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 36 |
| 15:45 | 0 | 17 | 4 | 21 | 3 | 0 | 1 | 4 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 38 |
| Total | 0 | 75 | 21 | 96 | 12 | 0 | 2 | 14 | 1 | 58 | 0 | 59 | 0 | 0 | 0 | 0 | 169 |
| 16:00 | 0 | 18 | 4 | 22 | 4 | 0 | 1 | 5 | 1 | 10 | 0 | 11 | 0 | 0 | 0 | 0 | 38 |

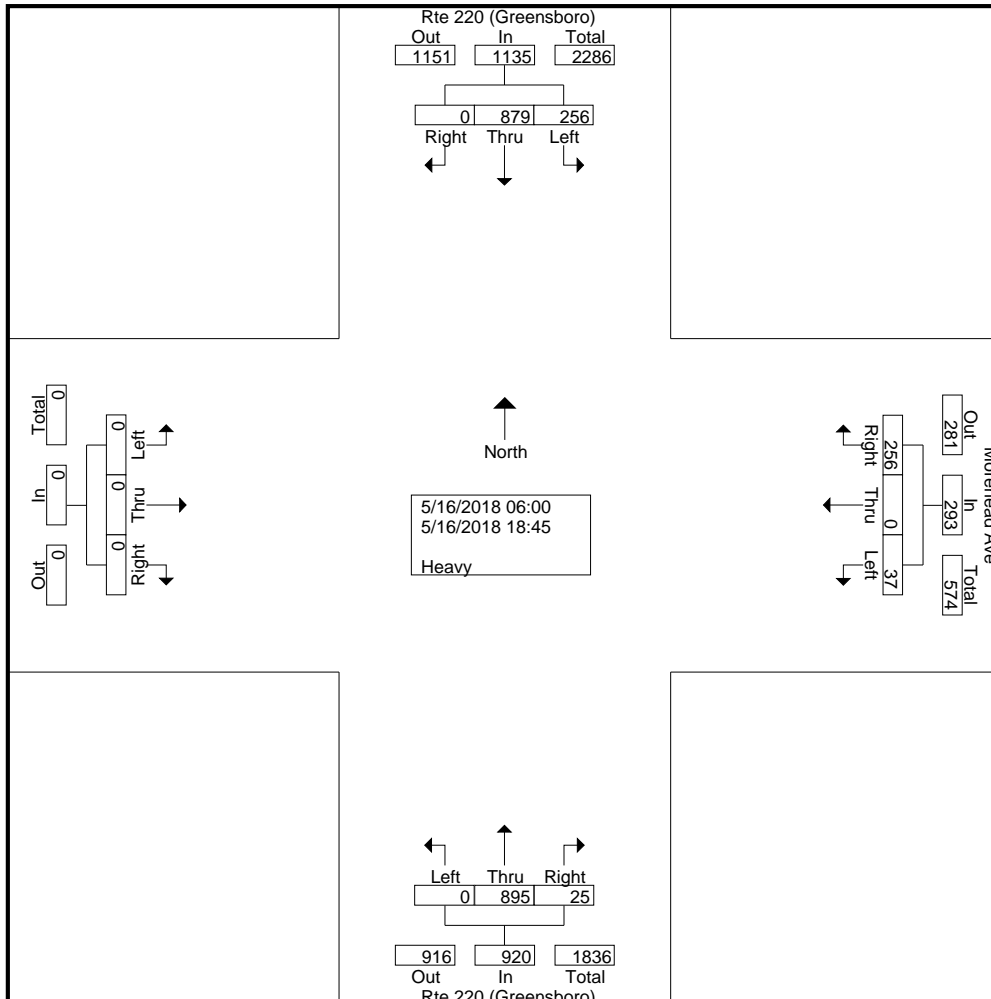
T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Morehead Ave
Start Date : 5/16/2018
Page No: 2

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro) From North | | | | Morehead Ave From East | | | | Rte 220 (Greensboro) From South | | | | From West | | | | Int. Total |
|-------------|------------------------------------|------|------|------------|---------------------------|------|------|------------|------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 16:15 | 0 | 19 | 7 | 26 | 4 | 0 | 1 | 5 | 1 | 13 | 0 | 14 | 0 | 0 | 0 | 0 | 45 |
| 16:30 | 0 | 9 | 6 | 15 | 4 | 0 | 0 | 4 | 1 | 13 | 0 | 14 | 0 | 0 | 0 | 0 | 33 |
| 16:45 | 0 | 14 | 2 | 16 | 4 | 0 | 0 | 4 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 29 |
| Total | 0 | 60 | 19 | 79 | 16 | 0 | 2 | 18 | 3 | 45 | 0 | 48 | 0 | 0 | 0 | 0 | 145 |
| 17:00 | 0 | 18 | 2 | 20 | 3 | 0 | 1 | 4 | 1 | 11 | 0 | 12 | 0 | 0 | 0 | 0 | 36 |
| 17:15 | 0 | 10 | 5 | 15 | 3 | 0 | 0 | 3 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 31 |
| 17:30 | 0 | 13 | 3 | 16 | 4 | 0 | 0 | 4 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 31 |
| 17:45 | 0 | 13 | 0 | 13 | 3 | 0 | 0 | 3 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 24 |
| Total | 0 | 54 | 10 | 64 | 13 | 0 | 1 | 14 | 1 | 43 | 0 | 44 | 0 | 0 | 0 | 0 | 122 |
| 18:00 | 0 | 13 | 1 | 14 | 2 | 0 | 0 | 2 | 1 | 7 | 0 | 8 | 0 | 0 | 0 | 0 | 24 |
| 18:15 | 0 | 14 | 4 | 18 | 4 | 0 | 0 | 4 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 33 |
| 18:30 | 0 | 10 | 3 | 13 | 1 | 0 | 1 | 2 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 21 |
| 18:45 | 0 | 12 | 3 | 15 | 2 | 0 | 2 | 4 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 33 |
| Total | 0 | 49 | 11 | 60 | 9 | 0 | 3 | 12 | 1 | 38 | 0 | 39 | 0 | 0 | 0 | 0 | 111 |
| Grand Total | 0 | 879 | 256 | 1135 | 256 | 0 | 37 | 293 | 25 | 895 | 0 | 920 | 0 | 0 | 0 | 0 | 2348 |
| Apprch % | 0 | 77.4 | 22.6 | | 87.4 | 0 | 12.6 | | 2.7 | 97.3 | 0 | | 0 | 0 | 0 | | |
| Total % | 0 | 37.4 | 10.9 | 48.3 | 10.9 | 0 | 1.6 | 12.5 | 1.1 | 38.1 | 0 | 39.2 | 0 | 0 | 0 | 0 | |



T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Morehead Ave
Start Date : 5/16/2018
Page No : 3

Groups Printed- Heavy Vehicles

| Start Time | Rte 220 (Greensboro) From North | | | | Morehead Ave From East | | | | Rte 220 (Greensboro) From South | | | | From West | | | | Int. Total |
|--|------------------------------------|------|------|------------|---------------------------|------|------|------------|------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 0 | 13 | 6 | 19 | 7 | 0 | 2 | 9 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 45 |
| 07:30 | 0 | 10 | 8 | 18 | 7 | 0 | 0 | 7 | 0 | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 46 |
| 07:45 | 0 | 23 | 3 | 26 | 5 | 0 | 0 | 5 | 1 | 19 | 0 | 20 | 0 | 0 | 0 | 0 | 51 |
| 08:00 | 0 | 19 | 6 | 25 | 6 | 0 | 1 | 7 | 0 | 17 | 0 | 17 | 0 | 0 | 0 | 0 | 49 |
| Total Volume | 0 | 65 | 23 | 88 | 25 | 0 | 3 | 28 | 1 | 74 | 0 | 75 | 0 | 0 | 0 | 0 | 191 |
| % App. Total | 0 | 73.9 | 26.1 | | 89.3 | 0 | 10.7 | | 1.3 | 98.7 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .707 | .719 | .846 | .893 | .000 | .375 | .778 | .250 | .881 | .000 | .893 | .000 | .000 | .000 | .000 | .936 |

Peak Hour Analysis From 17:00 to 18:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 17:00

| | | | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 17:00 | 0 | 18 | 2 | 20 | 3 | 0 | 1 | 4 | 1 | 11 | 0 | 12 | 0 | 0 | 0 | 0 | 36 |
| 17:15 | 0 | 10 | 5 | 15 | 3 | 0 | 0 | 3 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 31 |
| 17:30 | 0 | 13 | 3 | 16 | 4 | 0 | 0 | 4 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 31 |
| 17:45 | 0 | 13 | 0 | 13 | 3 | 0 | 0 | 3 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 24 |
| Total Volume | 0 | 54 | 10 | 64 | 13 | 0 | 1 | 14 | 1 | 43 | 0 | 44 | 0 | 0 | 0 | 0 | 122 |
| % App. Total | 0 | 84.4 | 15.6 | | 92.9 | 0 | 7.1 | | 2.3 | 97.7 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .750 | .500 | .800 | .813 | .000 | .250 | .875 | .250 | .827 | .000 | .846 | .000 | .000 | .000 | .000 | .847 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Morehead Ave
Start Date : 5/16/2018
Page No : 1

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro) From North | | | | Morehead Ave From East | | | | Rte 220 (Greensboro) From South | | | | From West | | | | Int. Total |
|------------|------------------------------------|------|------|------------|---------------------------|------|------|------------|------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| 06:00 | 0 | 66 | 19 | 85 | 27 | 0 | 6 | 33 | 2 | 40 | 0 | 42 | 0 | 0 | 0 | 0 | 160 |
| 06:15 | 0 | 65 | 38 | 103 | 48 | 0 | 10 | 58 | 0 | 40 | 0 | 40 | 0 | 0 | 0 | 0 | 201 |
| 06:30 | 0 | 58 | 55 | 113 | 58 | 0 | 12 | 70 | 1 | 62 | 0 | 63 | 0 | 0 | 0 | 0 | 246 |
| 06:45 | 0 | 68 | 48 | 116 | 52 | 0 | 8 | 60 | 0 | 64 | 0 | 64 | 0 | 0 | 0 | 0 | 240 |
| Total | 0 | 257 | 160 | 417 | 185 | 0 | 36 | 221 | 3 | 206 | 0 | 209 | 0 | 0 | 0 | 0 | 847 |
| 07:00 | 0 | 65 | 42 | 107 | 45 | 0 | 9 | 54 | 1 | 64 | 0 | 65 | 0 | 0 | 0 | 0 | 226 |
| 07:15 | 0 | 69 | 37 | 106 | 74 | 0 | 13 | 87 | 1 | 100 | 0 | 101 | 0 | 0 | 0 | 0 | 294 |
| 07:30 | 0 | 74 | 52 | 126 | 64 | 0 | 9 | 73 | 0 | 105 | 0 | 105 | 0 | 0 | 0 | 0 | 304 |
| 07:45 | 0 | 89 | 48 | 137 | 61 | 0 | 3 | 64 | 3 | 107 | 0 | 110 | 0 | 0 | 0 | 0 | 311 |
| Total | 0 | 297 | 179 | 476 | 244 | 0 | 34 | 278 | 5 | 376 | 0 | 381 | 0 | 0 | 0 | 0 | 1135 |
| 08:00 | 0 | 84 | 37 | 121 | 37 | 0 | 10 | 47 | 1 | 92 | 0 | 93 | 0 | 0 | 0 | 0 | 261 |
| 08:15 | 0 | 64 | 34 | 98 | 41 | 0 | 4 | 45 | 1 | 83 | 0 | 84 | 0 | 0 | 0 | 0 | 227 |
| 08:30 | 0 | 59 | 33 | 92 | 45 | 0 | 7 | 52 | 2 | 79 | 0 | 81 | 0 | 0 | 0 | 0 | 225 |
| 08:45 | 0 | 73 | 32 | 105 | 39 | 0 | 4 | 43 | 6 | 57 | 0 | 63 | 0 | 0 | 0 | 0 | 211 |
| Total | 0 | 280 | 136 | 416 | 162 | 0 | 25 | 187 | 10 | 311 | 0 | 321 | 0 | 0 | 0 | 0 | 924 |
| 09:00 | 0 | 80 | 32 | 112 | 36 | 0 | 11 | 47 | 0 | 67 | 0 | 67 | 0 | 0 | 0 | 0 | 226 |
| 09:15 | 0 | 77 | 37 | 114 | 31 | 0 | 6 | 37 | 2 | 74 | 0 | 76 | 0 | 0 | 0 | 0 | 227 |
| 09:30 | 0 | 77 | 37 | 114 | 28 | 0 | 6 | 34 | 3 | 92 | 0 | 95 | 0 | 0 | 0 | 0 | 243 |
| 09:45 | 0 | 80 | 42 | 122 | 35 | 0 | 6 | 41 | 1 | 82 | 0 | 83 | 0 | 0 | 0 | 0 | 246 |
| Total | 0 | 314 | 148 | 462 | 130 | 0 | 29 | 159 | 6 | 315 | 0 | 321 | 0 | 0 | 0 | 0 | 942 |
| 10:00 | 0 | 75 | 39 | 114 | 25 | 0 | 7 | 32 | 4 | 68 | 0 | 72 | 0 | 0 | 0 | 0 | 218 |
| 10:15 | 0 | 60 | 35 | 95 | 28 | 0 | 6 | 34 | 1 | 72 | 0 | 73 | 0 | 0 | 0 | 0 | 202 |
| 10:30 | 0 | 63 | 40 | 103 | 22 | 0 | 9 | 31 | 3 | 68 | 0 | 71 | 0 | 0 | 0 | 0 | 205 |
| 10:45 | 0 | 79 | 39 | 118 | 27 | 0 | 8 | 35 | 1 | 73 | 0 | 74 | 0 | 0 | 0 | 0 | 227 |
| Total | 0 | 277 | 153 | 430 | 102 | 0 | 30 | 132 | 9 | 281 | 0 | 290 | 0 | 0 | 0 | 0 | 852 |
| 11:00 | 0 | 74 | 36 | 110 | 38 | 0 | 11 | 49 | 3 | 84 | 0 | 87 | 0 | 0 | 0 | 0 | 246 |
| 11:15 | 0 | 70 | 31 | 101 | 37 | 0 | 12 | 49 | 3 | 80 | 0 | 83 | 0 | 0 | 0 | 0 | 233 |
| 11:30 | 0 | 56 | 26 | 82 | 33 | 0 | 4 | 37 | 1 | 80 | 0 | 81 | 0 | 0 | 0 | 0 | 200 |
| 11:45 | 0 | 80 | 48 | 128 | 38 | 0 | 8 | 46 | 1 | 66 | 0 | 67 | 0 | 0 | 0 | 0 | 241 |
| Total | 0 | 280 | 141 | 421 | 146 | 0 | 35 | 181 | 8 | 310 | 0 | 318 | 0 | 0 | 0 | 0 | 920 |
| 12:00 | 0 | 79 | 36 | 115 | 17 | 0 | 4 | 21 | 1 | 74 | 0 | 75 | 0 | 0 | 0 | 0 | 211 |
| 12:15 | 0 | 71 | 49 | 120 | 28 | 0 | 12 | 40 | 3 | 82 | 0 | 85 | 0 | 0 | 0 | 0 | 245 |
| 12:30 | 0 | 86 | 49 | 135 | 32 | 0 | 5 | 37 | 2 | 78 | 0 | 80 | 0 | 0 | 0 | 0 | 252 |
| 12:45 | 0 | 78 | 43 | 121 | 36 | 0 | 2 | 38 | 0 | 69 | 0 | 69 | 0 | 0 | 0 | 0 | 228 |
| Total | 0 | 314 | 177 | 491 | 113 | 0 | 23 | 136 | 6 | 303 | 0 | 309 | 0 | 0 | 0 | 0 | 936 |
| 13:00 | 0 | 73 | 32 | 105 | 37 | 0 | 5 | 42 | 0 | 91 | 0 | 91 | 0 | 0 | 0 | 0 | 238 |
| 13:15 | 0 | 81 | 31 | 112 | 28 | 0 | 4 | 32 | 4 | 71 | 0 | 75 | 0 | 0 | 0 | 0 | 219 |
| 13:30 | 0 | 65 | 38 | 103 | 29 | 0 | 5 | 34 | 6 | 76 | 0 | 82 | 0 | 0 | 0 | 0 | 219 |
| 13:45 | 0 | 86 | 37 | 123 | 28 | 0 | 5 | 33 | 0 | 63 | 0 | 63 | 0 | 0 | 0 | 0 | 219 |
| Total | 0 | 305 | 138 | 443 | 122 | 0 | 19 | 141 | 10 | 301 | 0 | 311 | 0 | 0 | 0 | 0 | 895 |
| 14:00 | 0 | 80 | 48 | 128 | 22 | 0 | 4 | 26 | 1 | 75 | 0 | 76 | 0 | 0 | 0 | 0 | 230 |
| 14:15 | 0 | 94 | 30 | 124 | 43 | 0 | 11 | 54 | 1 | 75 | 0 | 76 | 0 | 0 | 0 | 0 | 254 |
| 14:30 | 0 | 79 | 52 | 131 | 32 | 0 | 9 | 41 | 4 | 71 | 0 | 75 | 0 | 0 | 0 | 0 | 247 |
| 14:45 | 0 | 81 | 58 | 139 | 29 | 0 | 6 | 35 | 0 | 68 | 0 | 68 | 0 | 0 | 0 | 0 | 242 |
| Total | 0 | 334 | 188 | 522 | 126 | 0 | 30 | 156 | 6 | 289 | 0 | 295 | 0 | 0 | 0 | 0 | 973 |
| 15:00 | 0 | 90 | 53 | 143 | 38 | 0 | 7 | 45 | 2 | 79 | 0 | 81 | 0 | 0 | 0 | 0 | 269 |
| 15:15 | 0 | 84 | 53 | 137 | 47 | 0 | 7 | 54 | 5 | 79 | 0 | 84 | 0 | 0 | 0 | 0 | 275 |
| 15:30 | 0 | 91 | 85 | 176 | 44 | 0 | 7 | 51 | 0 | 70 | 0 | 70 | 0 | 0 | 0 | 0 | 297 |
| 15:45 | 0 | 85 | 58 | 143 | 40 | 0 | 8 | 48 | 3 | 93 | 0 | 96 | 0 | 0 | 0 | 0 | 287 |
| Total | 0 | 350 | 249 | 599 | 169 | 0 | 29 | 198 | 10 | 321 | 0 | 331 | 0 | 0 | 0 | 0 | 1128 |
| 16:00 | 0 | 91 | 58 | 149 | 37 | 0 | 7 | 44 | 2 | 74 | 0 | 76 | 0 | 0 | 0 | 0 | 269 |

T3 Design

10340 Democracy Ln, Suite 305
Fairfax, VA 22030

File Name : Rte 220 at Morehead Ave
Start Date : 5/16/2018
Page No : 3

Groups Printed- Combined

| Start Time | Rte 220 (Greensboro) From North | | | | Morehead Ave From East | | | | Rte 220 (Greensboro) From South | | | | From West | | | | Int. Total |
|--|------------------------------------|------|------|------------|---------------------------|------|------|------------|------------------------------------|------|------|------------|-----------|------|------|------------|------------|
| | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | |
| Peak Hour Analysis From 07:15 to 08:00 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 0 | 69 | 37 | 106 | 74 | 0 | 13 | 87 | 1 | 100 | 0 | 101 | 0 | 0 | 0 | 0 | 294 |
| 07:30 | 0 | 74 | 52 | 126 | 64 | 0 | 9 | 73 | 0 | 105 | 0 | 105 | 0 | 0 | 0 | 0 | 304 |
| 07:45 | 0 | 89 | 48 | 137 | 61 | 0 | 3 | 64 | 3 | 107 | 0 | 110 | 0 | 0 | 0 | 0 | 311 |
| 08:00 | 0 | 84 | 37 | 121 | 37 | 0 | 10 | 47 | 1 | 92 | 0 | 93 | 0 | 0 | 0 | 0 | 261 |
| Total Volume | 0 | 316 | 174 | 490 | 236 | 0 | 35 | 271 | 5 | 404 | 0 | 409 | 0 | 0 | 0 | 0 | 1170 |
| % App. Total | 0 | 64.5 | 35.5 | | 87.1 | 0 | 12.9 | | 1.2 | 98.8 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .888 | .837 | .894 | .797 | .000 | .673 | .779 | .417 | .944 | .000 | .930 | .000 | .000 | .000 | .000 | .941 |

| | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 17:00 to 18:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 0 | 100 | 58 | 158 | 29 | 0 | 9 | 38 | 3 | 71 | 0 | 74 | 0 | 0 | 0 | 0 | 270 |
| 17:15 | 0 | 103 | 69 | 172 | 48 | 0 | 9 | 57 | 4 | 91 | 0 | 95 | 0 | 0 | 0 | 0 | 324 |
| 17:30 | 0 | 100 | 84 | 184 | 42 | 0 | 5 | 47 | 2 | 131 | 0 | 133 | 0 | 0 | 0 | 0 | 364 |
| 17:45 | 0 | 117 | 69 | 186 | 45 | 0 | 13 | 58 | 3 | 71 | 0 | 74 | 0 | 0 | 0 | 0 | 318 |
| Total Volume | 0 | 420 | 280 | 700 | 164 | 0 | 36 | 200 | 12 | 364 | 0 | 376 | 0 | 0 | 0 | 0 | 1276 |
| % App. Total | 0 | 60 | 40 | | 82 | 0 | 18 | | 3.2 | 96.8 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .897 | .833 | .941 | .854 | .000 | .692 | .862 | .750 | .695 | .000 | .707 | .000 | .000 | .000 | .000 | .876 |

APPENDIX C

TRAVEL DEMAND MODEL VOLUME MAPS

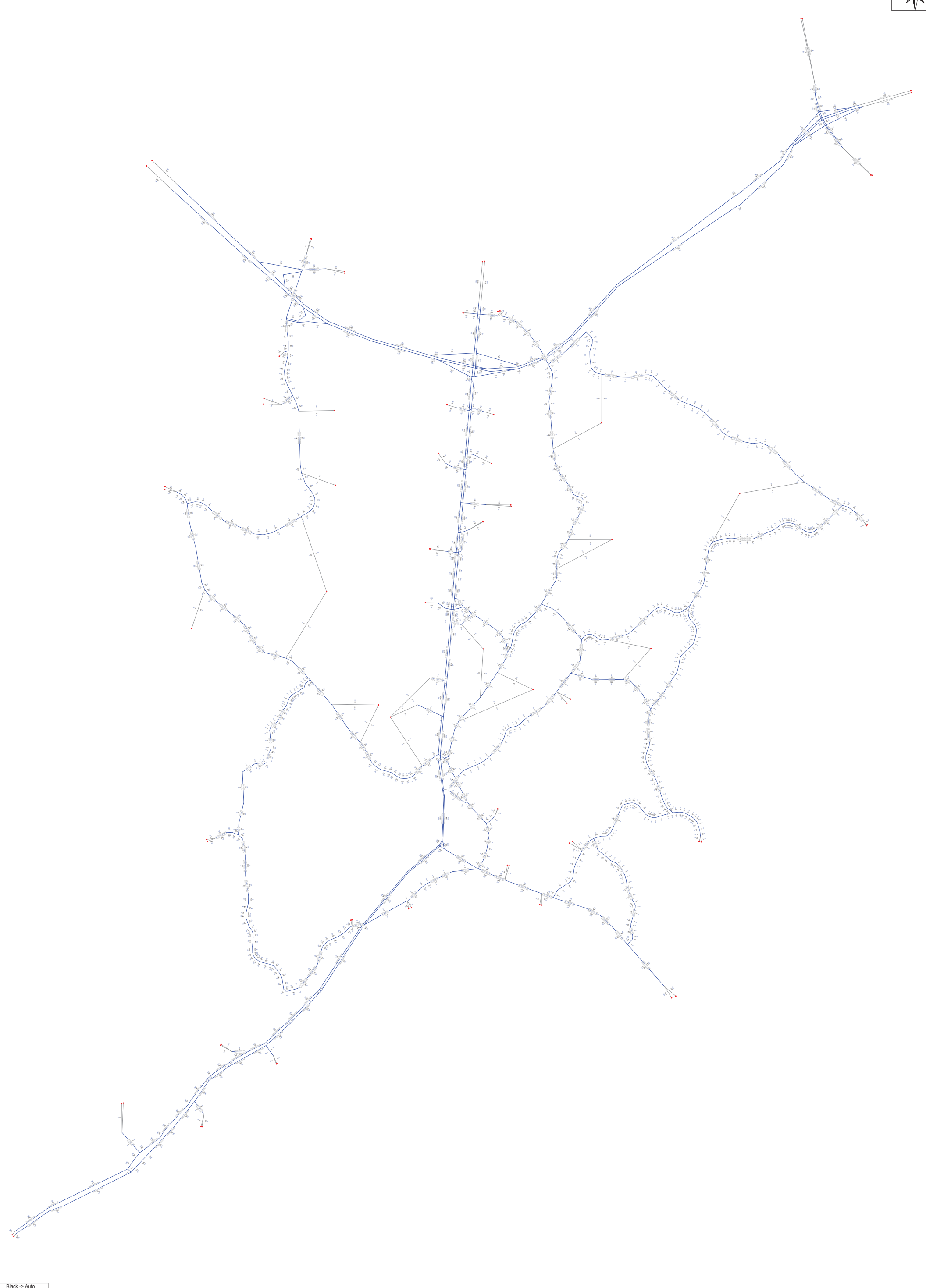


Black -> Auto
Blue -> Truck
• Centroid

Existing 2018 AM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Existing 2018 PM

(Licensed to CH2M Hill)





Black -> Auto
Blue -> Truck
• Centroid

Existing 2018 Daily



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

No Build 2025 AM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

No Build 2025 PM



Black -> Auto
Blue -> Truck
• Centroid

No Build 2025 Daily



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

No Build 2040 AM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

No Build 2040 PM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

No Build 2040 Daily



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate A 2025 AM



Black -> Auto
Blue -> Truck
• Centroid

Alternate A 2025 PM



Black -> Auto
Blue -> Truck
• Centroid



Black -> Auto
Blue -> Truck
• Centroid

Alternate A 2040 AM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate A 2040 PM



Black -> Auto
Blue -> Truck
• Centroid

Alternate A 2040 Daily



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate B and C 2025 AM



Black -> Auto
Blue -> Truck
• Centroid

Alternate B and C 2025 PM



Black -> Auto
Blue -> Truck
• Centroid

Alternate B and C 2025 Daily



Black -> Auto
Blue -> Truck
• Centroid

Alternate B and C 2040 AM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate B and C 2040 PM



Black -> Auto
Blue -> Truck
• Centroid

Alternate B and C 2040 Daily



Black -> Auto
Blue -> Truck
• Centroid

Alternate D 2025 AM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
Red -> Centroid

Alternate D 2025 PM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate D 2025 Daily



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate D 2040 AM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate D 2040 PM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate D 2040 Daily



Black -> Auto
Blue -> Truck
• Centroid

Alternate E 2025 AM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate E 2025 PM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate E 2025 Daily



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate E 2040 AM



(Licensed to CH2M Hill)



Black -> Auto
Blue -> Truck
• Centroid

Alternate E 2040 PM



Black -> Auto
Blue -> Truck
• Centroid

Alternate E 2040 Daily

APPENDIX D

SIGNAL TIMINGS

Lanes, Volumes, Timings
 14: US 220 & US 58 WB Ramp

03/28/2019

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|------|------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 309 | 0 | 108 | 0 | 603 | 0 | 0 | 673 | 69 |
| Future Volume (vph) | 0 | 0 | 0 | 309 | 0 | 108 | 0 | 603 | 0 | 0 | 673 | 69 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 250 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frnt | | | | | | 0.850 | | | | | | 0.850 |
| Flt Protected | | | | | 0.950 | | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1752 | 1524 | 0 | 3471 | 0 | 0 | 3505 | 1568 |
| Flt Permitted | | | | | 0.950 | | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1752 | 1524 | 0 | 3471 | 0 | 0 | 3505 | 1568 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 117 | | | | | | 75 |
| Link Speed (mph) | | 30 | | | 30 | | | 45 | | | 45 | |
| Link Distance (ft) | | 1169 | | | 1310 | | | 212 | | | 803 | |
| Travel Time (s) | | 26.6 | | | 29.8 | | | 3.2 | | | 12.2 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 0% | 6% | 0% | 4% | 14% | 0% | 3% | 3% |
| Adj. Flow (vph) | 0 | 0 | 0 | 336 | 0 | 117 | 0 | 655 | 0 | 0 | 732 | 75 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 336 | 117 | 0 | 655 | 0 | 0 | 732 | 75 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 36 | | | 36 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | | | 1 | 2 | 1 | | 2 | | | 2 | 1 |
| Detector Template | | | | Left | Thru | Right | | Thru | | | Thru | Right |
| Leading Detector (ft) | | | | 20 | 100 | 20 | | 100 | | | 100 | 20 |
| Trailing Detector (ft) | | | | 0 | 0 | 0 | | 0 | | | 0 | 0 |
| Detector 1 Position(ft) | | | | 0 | 0 | 0 | | 0 | | | 0 | 0 |
| Detector 1 Size(ft) | | | | 20 | 6 | 20 | | 6 | | | 6 | 20 |
| Detector 1 Type | | | | CI+Ex | CI+Ex | CI+Ex | | CI+Ex | | | CI+Ex | CI+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | | | 0.0 | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 |
| Detector 1 Queue (s) | | | | 0.0 | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 |
| Detector 1 Delay (s) | | | | 0.0 | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | | | | CI+Ex | | | CI+Ex | | | CI+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | |

Lanes, Volumes, Timings
14: US 220 & US 58 WB Ramp

03/28/2019

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------|-----|-----|-----|-------|-------|-------|-----|-------|-----|-----|-------|-------|
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 |
| Detector Phase | | | | 3 | 3 | 3 | | 2 | | | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | | 8.0 | 8.0 | 8.0 | | 20.0 | | | 20.0 | 20.0 |
| Minimum Split (s) | | | | 15.8 | 15.8 | 15.8 | | 25.7 | | | 25.7 | 25.7 |
| Total Split (s) | | | | 25.0 | 25.0 | 25.0 | | 60.0 | | | 60.0 | 60.0 |
| Total Split (%) | | | | 29.4% | 29.4% | 29.4% | | 70.6% | | | 70.6% | 70.6% |
| Maximum Green (s) | | | | 17.2 | 17.2 | 17.2 | | 54.3 | | | 54.3 | 54.3 |
| Yellow Time (s) | | | | 3.8 | 3.8 | 3.8 | | 4.7 | | | 4.7 | 4.7 |
| All-Red Time (s) | | | | 4.0 | 4.0 | 4.0 | | 1.0 | | | 1.0 | 1.0 |
| Lost Time Adjust (s) | | | | | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 |
| Total Lost Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 |
| Recall Mode | | | | None | None | None | | C-Max | | | C-Max | C-Max |
| Act Effct Green (s) | | | | | 17.2 | 17.2 | | 54.3 | | | 54.3 | 54.3 |
| Actuated g/C Ratio | | | | | 0.20 | 0.20 | | 0.64 | | | 0.64 | 0.64 |
| v/c Ratio | | | | | 0.95 | 0.29 | | 0.30 | | | 0.33 | 0.07 |
| Control Delay | | | | | 72.4 | 8.0 | | 7.3 | | | 7.5 | 1.7 |
| Queue Delay | | | | | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 |
| Total Delay | | | | | 72.4 | 8.0 | | 7.3 | | | 7.5 | 1.7 |
| LOS | | | | | E | A | | A | | | A | A |
| Approach Delay | | | | | 55.8 | | | 7.3 | | | 7.0 | |
| Approach LOS | | | | | E | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 18.6
 Intersection LOS: B
 Intersection Capacity Utilization 79.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 14: US 220 & US 58 WB Ramp















Lanes, Volumes, Timings
8: US 220 & US 58 EB Ramp

03/28/2019

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|------|-------|------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 117 | 0 | 571 | 0 | 0 | 0 | 0 | 959 | 234 | 134 | 848 | 0 |
| Future Volume (vph) | 117 | 0 | 571 | 0 | 0 | 0 | 0 | 959 | 234 | 134 | 848 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 100 | 425 | | 0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Fr't | | | 0.850 | | | | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | | | | 0.950 | | |
| Satd. Flow (prot) | 1703 | 0 | 1380 | 0 | 0 | 0 | 0 | 3343 | 1568 | 1770 | 3471 | 0 |
| Flt Permitted | 0.950 | | | | | | | | | 0.950 | | |
| Satd. Flow (perm) | 1703 | 0 | 1380 | 0 | 0 | 0 | 0 | 3343 | 1568 | 1770 | 3471 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 230 | | | | | | 111 | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 45 | | | 45 | |
| Link Distance (ft) | | 1111 | | | 1420 | | | 663 | | | 599 | |
| Travel Time (s) | | 25.3 | | | 32.3 | | | 10.0 | | | 9.1 | |
| Peak Hour Factor | 0.71 | 0.92 | 0.78 | 0.92 | 0.92 | 0.92 | 0.92 | 0.94 | 0.94 | 0.76 | 0.98 | 0.92 |
| Heavy Vehicles (%) | 6% | 0% | 17% | 2% | 2% | 2% | 0% | 8% | 3% | 2% | 4% | 0% |
| Adj. Flow (vph) | 165 | 0 | 732 | 0 | 0 | 0 | 0 | 1020 | 249 | 176 | 865 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 165 | 0 | 732 | 0 | 0 | 0 | 0 | 1020 | 249 | 176 | 865 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 36 | | | 36 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | | 1 | | | | | 2 | 1 | 1 | 2 | |
| Detector Template | Left | | Right | | | | | Thru | Right | Left | Thru | |
| Leading Detector (ft) | 20 | | 20 | | | | | 100 | 20 | 20 | 100 | |
| Trailing Detector (ft) | 0 | | 0 | | | | | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | | 0 | | | | | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | | 20 | | | | | 6 | 20 | 20 | 6 | |
| Detector 1 Type | CI+Ex | | CI+Ex | | | | | CI+Ex | CI+Ex | CI+Ex | CI+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(ft) | | | | | | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | | | | | | | 6 | | | 6 | |
| Detector 2 Type | | | | | | | | CI+Ex | | | CI+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | | | | | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | |

Lanes, Volumes, Timings
8: US 220 & US 58 EB Ramp

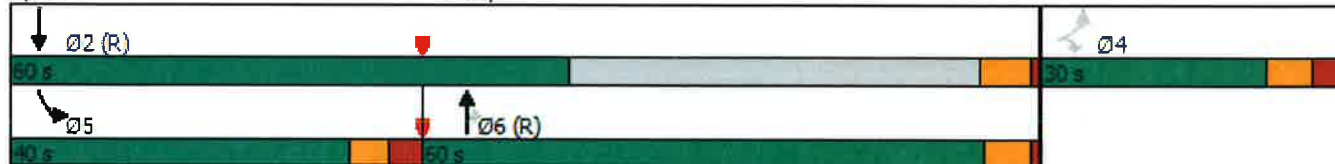
03/28/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | |
| Detector Phase | 4 | | 4 | | | | | 6 | 6 | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | | 8.0 | | | | | 20.0 | 20.0 | 7.0 | 20.0 | |
| Minimum Split (s) | 26.2 | | 26.2 | | | | | 25.4 | 25.4 | 14.1 | 25.7 | |
| Total Split (s) | 30.0 | | 30.0 | | | | | 60.0 | 60.0 | 40.0 | 60.0 | |
| Total Split (%) | 23.1% | | 23.1% | | | | | 46.2% | 46.2% | 30.8% | 46.2% | |
| Maximum Green (s) | 21.8 | | 21.8 | | | | | 54.6 | 54.6 | 32.9 | 54.3 | |
| Yellow Time (s) | 4.6 | | 4.6 | | | | | 4.4 | 4.4 | 3.8 | 4.7 | |
| All-Red Time (s) | 3.6 | | 3.6 | | | | | 1.0 | 1.0 | 3.3 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | |
| Lead/Lag | | | | | | | | Lag | Lag | Lead | | |
| Lead-Lag Optimize? | | | | | | | | Yes | Yes | Yes | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | | None | | | | | C-Max | C-Max | None | C-Max | |
| Walk Time (s) | 7.0 | | 7.0 | | | | | 7.0 | 7.0 | | 7.0 | |
| Flash Dont Walk (s) | 11.0 | | 11.0 | | | | | 11.0 | 11.0 | | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | | 0 | | | | | 0 | 0 | | 0 | |
| Act Effct Green (s) | 21.8 | | 21.8 | | | | | 69.2 | 69.2 | 18.3 | 94.3 | |
| Actuated g/C Ratio | 0.17 | | 0.17 | | | | | 0.53 | 0.53 | 0.14 | 0.73 | |
| v/c Ratio | 0.58 | | 1.73 | | | | | 0.57 | 0.28 | 0.71 | 0.34 | |
| Control Delay | 58.9 | | 363.2 | | | | | 22.8 | 10.6 | 68.2 | 7.0 | |
| Queue Delay | 0.0 | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 58.9 | | 363.2 | | | | | 22.8 | 10.6 | 68.2 | 7.0 | |
| LOS | E | | F | | | | | C | B | E | A | |
| Approach Delay | | 307.2 | | | | | | 20.4 | | | 17.3 | |
| Approach LOS | | F | | | | | | C | | | B | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.73
 Intersection Signal Delay: 99.6
 Intersection Capacity Utilization 70.4%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service C

Splits and Phases: 8: US 220 & US 58 EB Ramp



Lanes, Volumes, Timings
31: US 220 & Water Plant Road

03/28/2019



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | ↖ | ↖ | ↗ | ↖ | ↖ | ↗ | ↖ |
| Traffic Volume (vph) | 68 | 4 | 32 | 2 | 2 | 0 | 52 | 927 | 8 | 54 | 1066 | 147 |
| Future Volume (vph) | 68 | 4 | 32 | 2 | 2 | 0 | 52 | 927 | 8 | 54 | 1066 | 147 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | 0 | 100 | | 75 | 500 | | 175 | 250 | | 200 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frnt | | 0.867 | | | | | | | 0.850 | | | 0.850 |
| Fit Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1570 | 1633 | 0 | 1805 | 1900 | 1900 | 1597 | 3223 | 1252 | 1805 | 3252 | 1568 |
| Fit Permitted | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1570 | 1633 | 0 | 1805 | 1900 | 1900 | 1597 | 3223 | 1252 | 1805 | 3252 | 1568 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 46 | | | | | | | 167 | | | 167 |
| Link Speed (mph) | | 30 | | | 30 | | | 55 | | | 45 | |
| Link Distance (ft) | | 1081 | | | 788 | | | 4858 | | | 1961 | |
| Travel Time (s) | | 24.6 | | | 17.9 | | | 60.2 | | | 29.7 | |
| Peak Hour Factor | 0.75 | 0.62 | 0.69 | 0.42 | 0.58 | 0.92 | 0.82 | 0.92 | 0.58 | 0.66 | 0.78 | 0.90 |
| Heavy Vehicles (%) | 15% | 0% | 1% | 0% | 0% | 0% | 13% | 12% | 29% | 0% | 11% | 3% |
| Adj. Flow (vph) | 91 | 6 | 46 | 5 | 3 | 0 | 63 | 1008 | 14 | 82 | 1367 | 163 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 91 | 52 | 0 | 5 | 3 | 0 | 63 | 1008 | 14 | 82 | 1367 | 163 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 36 | | | 36 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Split | NA | | Split | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 8 | 8 | | 4 | 4 | | 5 | 2 | | 1 | 6 | |

Lanes, Volumes, Timings
31: US 220 & Water Plant Road

03/28/2019

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------|-------|-------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Permitted Phases | | | | | | 4 | | | 2 | | | 6 |
| Detector Phase | 8 | 8 | | 4 | 4 | 4 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | 6.0 | 12.0 | 12.0 | 6.0 | 12.0 | 12.0 |
| Minimum Split (s) | 13.6 | 13.6 | | 14.4 | 14.4 | 14.4 | 13.3 | 17.9 | 17.9 | 13.7 | 17.9 | 17.9 |
| Total Split (s) | 30.0 | 30.0 | | 20.0 | 20.0 | 20.0 | 25.0 | 60.0 | 60.0 | 25.0 | 60.0 | 60.0 |
| Total Split (%) | 22.2% | 22.2% | | 14.8% | 14.8% | 14.8% | 18.5% | 44.4% | 44.4% | 18.5% | 44.4% | 44.4% |
| Maximum Green (s) | 22.4 | 22.4 | | 11.6 | 11.6 | 11.6 | 17.7 | 54.1 | 54.1 | 17.3 | 54.1 | 54.1 |
| Yellow Time (s) | 3.2 | 3.2 | | 4.4 | 4.4 | 4.4 | 4.0 | 4.9 | 4.9 | 4.0 | 4.9 | 4.9 |
| All-Red Time (s) | 4.4 | 4.4 | | 4.0 | 4.0 | 4.0 | 3.3 | 1.0 | 1.0 | 3.7 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.6 | 7.6 | | 8.4 | 8.4 | 8.4 | 7.3 | 5.9 | 5.9 | 7.7 | 5.9 | 5.9 |
| Lead/Lag | | | | | | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | 11.2 | 11.2 | | 6.3 | 6.3 | | 9.4 | 55.5 | 55.5 | 10.0 | 56.2 | 56.2 |
| Actuated g/C Ratio | 0.12 | 0.12 | | 0.06 | 0.06 | | 0.10 | 0.57 | 0.57 | 0.10 | 0.58 | 0.58 |
| v/c Ratio | 0.50 | 0.23 | | 0.04 | 0.02 | | 0.41 | 0.55 | 0.02 | 0.44 | 0.73 | 0.17 |
| Control Delay | 53.4 | 17.7 | | 50.5 | 50.5 | | 53.1 | 17.6 | 0.0 | 52.3 | 21.2 | 3.0 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.4 | 17.7 | | 50.5 | 50.5 | | 53.1 | 17.6 | 0.0 | 52.3 | 21.2 | 3.0 |
| LOS | D | B | | D | D | | D | B | A | D | C | A |
| Approach Delay | | 40.4 | | | 50.5 | | | 19.4 | | | 20.9 | |
| Approach LOS | | D | | | D | | | B | | | C | |

Intersection Summary

Area Type: Other
 Cycle Length: 135
 Actuated Cycle Length: 97.1
 Natural Cycle: 90
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 21.4 Intersection LOS: C
 Intersection Capacity Utilization 62.2% ICU Level of Service B
 Analysis Period (min) 15

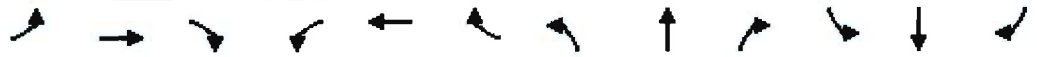
Splits and Phases: 31: US 220 & Water Plant Road



Lanes, Volumes, Timings

7: US 220 & Soapstone Road/Main Street

03/28/2019



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↕ | ↗ | | ↕ | ↗ | ↘ | ↕↕ | ↗ | ↘ | ↕↕ | ↗ |
| Traffic Volume (vph) | 28 | 39 | 30 | 5 | 36 | 192 | 34 | 767 | 9 | 196 | 863 | 41 |
| Future Volume (vph) | 28 | 39 | 30 | 5 | 36 | 192 | 34 | 767 | 9 | 196 | 863 | 41 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 25 | 0 | | 75 | 100 | | 100 | 225 | | 225 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Fr t | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | | 0.975 | | | 0.994 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1826 | 1615 | 0 | 1889 | 1583 | 1805 | 3223 | 1615 | 1787 | 3312 | 1615 |
| Flt Permitted | | 0.975 | | | 0.994 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 1826 | 1615 | 0 | 1889 | 1583 | 1805 | 3223 | 1615 | 1787 | 3312 | 1615 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 115 | | | 218 | | | 125 | | | 125 |
| Link Speed (mph) | | 30 | | | 30 | | | 55 | | | 55 | |
| Link Distance (ft) | | 1150 | | | 931 | | | 3129 | | | 4858 | |
| Travel Time (s) | | 26.1 | | | 21.2 | | | 38.8 | | | 60.2 | |
| Peak Hour Factor | 0.57 | 0.83 | 0.55 | 0.62 | 0.56 | 0.88 | 0.81 | 0.96 | 0.67 | 0.74 | 0.95 | 0.64 |
| Heavy Vehicles (%) | 0% | 3% | 0% | 0% | 0% | 2% | 0% | 12% | 0% | 1% | 9% | 0% |
| Adj. Flow (vph) | 49 | 47 | 55 | 8 | 64 | 218 | 42 | 799 | 13 | 265 | 908 | 64 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 96 | 55 | 0 | 72 | 218 | 42 | 799 | 13 | 265 | 908 | 64 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 36 | | | 36 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | CI+Ex | | | CI+Ex | | | CI+Ex | | | CI+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Split | NA | Perm | Split | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 8 | 8 | | 4 | 4 | | 5 | 2 | | 1 | 6 | |

Lanes, Volumes, Timings
7: US 220 & Soapstone Road/Main Street

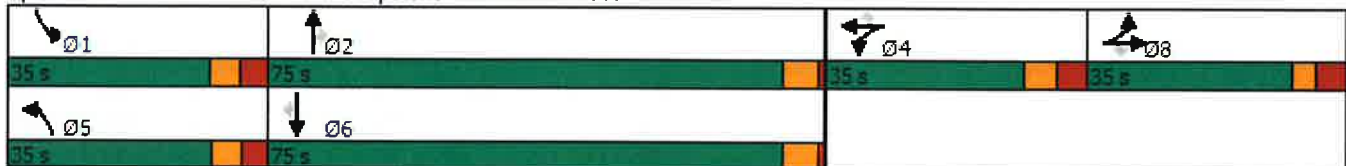
03/28/2019

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Permitted Phases | | | 8 | | | 4 | | | 2 | | | 6 |
| Detector Phase | 8 | 8 | 8 | 4 | 4 | 4 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 12.0 | 12.0 | 6.0 | 12.0 | 12.0 |
| Minimum Split (s) | 13.6 | 13.6 | 13.6 | 14.4 | 14.4 | 14.4 | 13.3 | 17.9 | 17.9 | 13.7 | 17.9 | 17.9 |
| Total Split (s) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 75.0 | 75.0 | 35.0 | 75.0 | 75.0 |
| Total Split (%) | 19.4% | 19.4% | 19.4% | 19.4% | 19.4% | 19.4% | 19.4% | 41.7% | 41.7% | 19.4% | 41.7% | 41.7% |
| Maximum Green (s) | 27.4 | 27.4 | 27.4 | 26.6 | 26.6 | 26.6 | 27.7 | 69.1 | 69.1 | 27.3 | 69.1 | 69.1 |
| Yellow Time (s) | 3.2 | 3.2 | 3.2 | 4.4 | 4.4 | 4.4 | 4.0 | 4.9 | 4.9 | 4.0 | 4.9 | 4.9 |
| All-Red Time (s) | 4.4 | 4.4 | 4.4 | 4.0 | 4.0 | 4.0 | 3.3 | 1.0 | 1.0 | 3.7 | 1.0 | 1.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 7.6 | 7.6 | | 8.4 | 8.4 | 7.3 | 5.9 | 5.9 | 7.7 | 5.9 | 5.9 |
| Lead/Lag | | | | | | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Max | Max | None | Max | Max |
| Act Effct Green (s) | | 13.2 | 13.2 | | 11.1 | 11.1 | 9.0 | 69.3 | 69.3 | 27.0 | 90.6 | 90.6 |
| Actuated g/C Ratio | | 0.09 | 0.09 | | 0.07 | 0.07 | 0.06 | 0.46 | 0.46 | 0.18 | 0.60 | 0.60 |
| v/c Ratio | | 0.60 | 0.22 | | 0.52 | 0.69 | 0.39 | 0.54 | 0.02 | 0.83 | 0.46 | 0.06 |
| Control Delay | | 82.1 | 2.1 | | 81.0 | 19.4 | 80.0 | 31.6 | 0.0 | 81.2 | 19.1 | 0.1 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 82.1 | 2.1 | | 81.0 | 19.4 | 80.0 | 31.6 | 0.0 | 81.2 | 19.1 | 0.1 |
| LOS | | F | A | | F | B | F | C | A | F | B | A |
| Approach Delay | | 52.9 | | | 34.7 | | | 33.5 | | | 31.4 | |
| Approach LOS | | D | | | C | | | C | | | C | |

Intersection Summary

Area Type: Other
 Cycle Length: 180
 Actuated Cycle Length: 150.3
 Natural Cycle: 80
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 33.8
 Intersection LOS: C
 Intersection Capacity Utilization 60.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 7: US 220 & Soapstone Road/Main Street



Lanes, Volumes, Timings
6: US 220 & Morehead Ave

03/28/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↙ | ↙ | ↕ | ↘ | ↙ | ↘ |
| Traffic Volume (vph) | 59 | 311 | 499 | 14 | 359 | 539 |
| Future Volume (vph) | 59 | 311 | 499 | 14 | 359 | 539 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 50 | | 175 | 375 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 |
| Frnt | | 0.850 | | 0.850 | | |
| Fit Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1752 | 1495 | 3223 | 1495 | 1736 | 3195 |
| Fit Permitted | 0.950 | | | | 0.225 | |
| Satd. Flow (perm) | 1752 | 1495 | 3223 | 1495 | 411 | 3195 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 366 | | 17 | | |
| Link Speed (mph) | 30 | | 55 | | | 55 |
| Link Distance (ft) | 1535 | | 3730 | | | 3129 |
| Travel Time (s) | 34.9 | | 46.2 | | | 38.8 |
| Peak Hour Factor | 0.69 | 0.85 | 0.65 | 0.75 | 0.83 | 0.90 |
| Heavy Vehicles (%) | 3% | 8% | 12% | 8% | 4% | 13% |
| Adj. Flow (vph) | 86 | 366 | 768 | 19 | 433 | 599 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 86 | 366 | 768 | 19 | 433 | 599 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 12 | | 12 | | | 12 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | 1 | 1 | 2 |
| Detector Template | Left | Right | Thru | Right | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | 20 | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | 20 | 20 | 6 |
| Detector 1 Type | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | CI+Ex | | | CI+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | Perm | pm+pt | NA |
| Protected Phases | 4 | | 2 | | 1 | 6 |

Lanes, Volumes, Timings
6: US 220 & Morehead Ave

03/28/2019

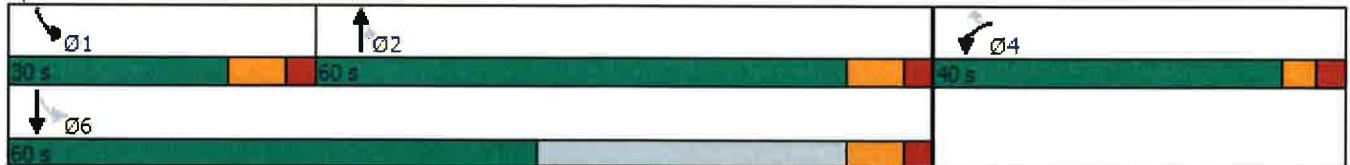


| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Permitted Phases | | 4 | | 2 | 6 | |
| Detector Phase | 4 | 4 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 15.0 | 15.0 | 8.0 | 15.0 |
| Minimum Split (s) | 24.4 | 24.4 | 26.6 | 26.6 | 16.6 | 26.6 |
| Total Split (s) | 40.0 | 40.0 | 60.0 | 60.0 | 30.0 | 60.0 |
| Total Split (%) | 30.8% | 30.8% | 46.2% | 46.2% | 23.1% | 46.2% |
| Maximum Green (s) | 33.6 | 33.6 | 51.4 | 51.4 | 21.4 | 51.4 |
| Yellow Time (s) | 3.4 | 3.4 | 5.6 | 5.6 | 5.6 | 5.6 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.4 | 6.4 | 8.6 | 8.6 | 8.6 | 8.6 |
| Lead/Lag | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | Max | Max | Max | Max | None | None |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | 11.0 | | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | | 0 |
| Act Effct Green (s) | 33.6 | 33.6 | 51.4 | 51.4 | 80.9 | 80.9 |
| Actuated g/C Ratio | 0.26 | 0.26 | 0.40 | 0.40 | 0.62 | 0.62 |
| v/c Ratio | 0.19 | 0.56 | 0.60 | 0.03 | 0.92 | 0.30 |
| Control Delay | 38.9 | 7.3 | 33.4 | 10.9 | 43.7 | 11.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 38.9 | 7.3 | 33.4 | 10.9 | 43.7 | 11.7 |
| LOS | D | A | C | B | D | B |
| Approach Delay | 13.3 | | 32.9 | | | 25.1 |
| Approach LOS | B | | C | | | C |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 129.5
 Natural Cycle: 80
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 25.5
 Intersection Capacity Utilization 61.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 6: US 220 & Morehead Ave



APPENDIX E

EXISTING CONDITION OPERATIONAL ANALYSIS WORKSHEETS

Queues

1: US 220 & US 58 WB Ramp

04/02/2019




















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 217 | 83 | 842 | 580 | 51 |
| v/c Ratio | 0.72 | 0.24 | 0.38 | 0.26 | 0.05 |
| Control Delay | 46.3 | 9.0 | 7.4 | 6.6 | 1.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 46.3 | 9.0 | 7.4 | 6.6 | 1.4 |
| Queue Length 50th (ft) | 107 | 0 | 100 | 62 | 0 |
| Queue Length 95th (ft) | 182 | 31 | 126 | 78 | 9 |
| Internal Link Dist (ft) | 1343 | | 142 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 338 | 368 | 2226 | 2205 | 931 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.64 | 0.23 | 0.38 | 0.26 | 0.05 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: US 220 & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  | | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 169 | 0 | 70 | 0 | 724 | 0 | 0 | 476 | 45 | |
| Future Volume (vph) | 0 | 0 | 0 | 169 | 0 | 70 | 0 | 724 | 0 | 0 | 476 | 45 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1671 | 1495 | | 3374 | | | 3343 | 1380 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1671 | 1495 | | 3374 | | | 3343 | 1380 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.78 | 0.92 | 0.84 | 0.92 | 0.86 | 0.92 | 0.92 | 0.82 | 0.88 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 217 | 0 | 83 | 0 | 842 | 0 | 0 | 580 | 51 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 68 | 0 | 0 | 0 | 0 | 0 | 17 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 217 | 15 | 0 | 842 | 0 | 0 | 580 | 34 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 8% | 0% | 8% | 0% | 7% | 19% | 0% | 8% | 17% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 15.4 | 15.4 | | 56.1 | | | 56.1 | 56.1 | |
| Effective Green, g (s) | | | | | 15.4 | 15.4 | | 56.1 | | | 56.1 | 56.1 | |
| Actuated g/C Ratio | | | | | 0.18 | 0.18 | | 0.66 | | | 0.66 | 0.66 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 4.0 | 4.0 | | 5.0 | | | 5.0 | 5.0 | |
| Lane Grp Cap (vph) | | | | | 302 | 270 | | 2226 | | | 2206 | 910 | |
| v/s Ratio Prot | | | | | | | | c0.25 | | | 0.17 | | |
| v/s Ratio Perm | | | | | 0.13 | 0.01 | | | | | | 0.02 | |
| v/c Ratio | | | | | 0.72 | 0.06 | | 0.38 | | | 0.26 | 0.04 | |
| Uniform Delay, d1 | | | | | 32.8 | 28.8 | | 6.5 | | | 5.9 | 5.0 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 8.5 | 0.1 | | 0.5 | | | 0.3 | 0.1 | |
| Delay (s) | | | | | 41.2 | 28.9 | | 7.0 | | | 6.2 | 5.1 | |
| Level of Service | | | | | D | C | | A | | | A | A | |
| Approach Delay (s) | | 0.0 | | | 37.8 | | | 7.0 | | | 6.1 | | |
| Approach LOS | | A | | | D | | | A | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 11.9 | | HCM 2000 Level of Service | | | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.45 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 85.0 | | Sum of lost time (s) | | | | | 13.5 | | | |
| Intersection Capacity Utilization | | | 40.6% | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 181 | 504 | 1117 | 367 | 108 | 698 |
| v/c Ratio | 0.68 | 1.06 | 0.62 | 0.41 | 0.63 | 0.29 |
| Control Delay | 64.6 | 76.8 | 21.8 | 11.3 | 70.8 | 6.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 64.6 | 76.8 | 21.8 | 11.3 | 70.8 | 6.6 |
| Queue Length 50th (ft) | 145 | ~230 | 320 | 94 | 88 | 96 |
| Queue Length 95th (ft) | 170 | #451 | 435 | 168 | 117 | 105 |
| Internal Link Dist (ft) | | | 585 | | | 516 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 267 | 477 | 1793 | 897 | 387 | 2380 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.68 | 1.06 | 0.62 | 0.41 | 0.28 | 0.29 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.





















95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: US 220 & US 58 EB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|--|---|---|--|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  | |  | | | | |   |  |  |   | | |
| Traffic Volume (vph) | 127 | 0 | 469 | 0 | 0 | 0 | 0 | 1028 | 316 | 80 | 565 | 0 | |
| Future Volume (vph) | 127 | 0 | 469 | 0 | 0 | 0 | 0 | 1028 | 316 | 80 | 565 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1597 | | 1292 | | | | | 3195 | 1482 | 1530 | 3282 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1597 | | 1292 | | | | | 3195 | 1482 | 1530 | 3282 | | |
| Peak-hour factor, PHF | 0.70 | 0.92 | 0.93 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.86 | 0.74 | 0.81 | 0.92 | |
| Adj. Flow (vph) | 181 | 0 | 504 | 0 | 0 | 0 | 0 | 1117 | 367 | 108 | 698 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 261 | 0 | 0 | 0 | 0 | 0 | 65 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 181 | 0 | 243 | 0 | 0 | 0 | 0 | 1117 | 302 | 108 | 698 | 0 | |
| Heavy Vehicles (%) | 13% | 0% | 25% | 2% | 2% | 2% | 0% | 13% | 9% | 18% | 10% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 21.8 | | 21.8 | | | | | 73.0 | 73.0 | 14.5 | 94.3 | | |
| Effective Green, g (s) | 21.8 | | 21.8 | | | | | 73.0 | 73.0 | 14.5 | 94.3 | | |
| Actuated g/C Ratio | 0.17 | | 0.17 | | | | | 0.56 | 0.56 | 0.11 | 0.73 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 267 | | 216 | | | | | 1794 | 832 | 170 | 2380 | | |
| v/s Ratio Prot | | | | | | | | c0.35 | | c0.07 | 0.21 | | |
| v/s Ratio Perm | 0.11 | | c0.19 | | | | | | 0.20 | | | | |
| v/c Ratio | 0.68 | | 1.13 | | | | | 0.62 | 0.36 | 0.64 | 0.29 | | |
| Uniform Delay, d1 | 50.8 | | 54.1 | | | | | 19.2 | 15.7 | 55.2 | 6.2 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 6.7 | | 99.7 | | | | | 1.6 | 1.2 | 7.5 | 0.3 | | |
| Delay (s) | 57.5 | | 153.8 | | | | | 20.9 | 16.9 | 62.8 | 6.5 | | |
| Level of Service | E | | F | | | | | C | B | E | A | | |
| Approach Delay (s) | | 128.3 | | | 0.0 | | | 19.9 | | | 14.1 | | |
| Approach LOS | | F | | | A | | | B | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 43.3 | | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 0.72 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 57.3% | | | | | | | | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 18 | 2 | 16 | 6 | 0 | 7 | 2 | 1319 | 1 | 6 | 1025 | 3 |
| Future Vol, veh/h | 18 | 2 | 16 | 6 | 0 | 7 | 2 | 1319 | 1 | 6 | 1025 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 83 | 25 | 75 | 50 | 92 | 62 | 50 | 94 | 25 | 33 | 89 | 38 |
| Heavy Vehicles, % | 0 | 0 | 11 | 0 | 0 | 1 | 0 | 14 | 0 | 0 | 8 | 6 |
| Mvmt Flow | 22 | 8 | 21 | 12 | 0 | 11 | 4 | 1403 | 4 | 18 | 1152 | 8 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1898 | 2603 | 576 | 2027 | 2607 | 702 | 1160 | 0 | 0 | 1407 | 0 | 0 |
| Stage 1 | 1188 | 1188 | - | 1411 | 1411 | - | - | - | - | - | - | - |
| Stage 2 | 710 | 1415 | - | 616 | 1196 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.5 | 6.5 | 6.92 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.5 | 4 | 3.31 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 43 | 25 | 438 | 35 | 25 | 383 | 610 | - | - | 491 | - | - |
| Stage 1 | 203 | 264 | - | 148 | 206 | - | - | - | - | - | - | - |
| Stage 2 | 395 | 206 | - | 450 | 262 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 40 | 24 | 438 | 24 | 24 | 383 | 610 | - | - | 491 | - | - |
| Mov Cap-2 Maneuver | 40 | 24 | - | 24 | 24 | - | - | - | - | - | - | - |
| Stage 1 | 202 | 254 | - | 147 | 205 | - | - | - | - | - | - | - |
| Stage 2 | 381 | 205 | - | 399 | 252 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|-------|-------|----|-----|
| HCM Control Delay, s | 220.3 | 156.1 | 0 | 0.2 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 610 | - | - | 55 | 44 | 491 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | - | 0.928 | 0.529 | 0.037 | - | - |
| HCM Control Delay (s) | 10.9 | - | - | 220.3 | 156.1 | 12.6 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4.1 | 1.9 | 0.1 | - | - |

HCM 6th TWSC
4: US 220 & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 63.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕↕ | ↕ | ↕ | ↕↕ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 2 | 40 | 33 | 1282 | 7 | 2 | 999 | 46 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 2 | 40 | 33 | 1282 | 7 | 2 | 999 | 46 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 50 | 25 | 92 | 45 | 25 | 42 | 66 | 90 | 50 | 25 | 85 | 84 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 3 | 12 | 0 | 14 | 19 |
| Mvmt Flow | 0 | 0 | 0 | 42 | 8 | 95 | 50 | 1424 | 14 | 8 | 1175 | 55 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 2035 | 2757 | 615 | 2128 | 2770 | 712 | 1230 | 0 | 0 | 1438 | 0 | 0 |
| Stage 1 | 1219 | 1219 | - | 1524 | 1524 | - | - | - | - | - | - | - |
| Stage 2 | 816 | 1538 | - | 604 | 1246 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.02 | 4.22 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.36 | 2.26 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 34 | 20 | 439 | ~ 29 | 20 | 366 | 541 | - | - | 478 | - | - |
| Stage 1 | 194 | 255 | - | 126 | 182 | - | - | - | - | - | - | - |
| Stage 2 | 341 | 179 | - | 457 | 248 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 7 | 11 | 439 | ~ 18 | 11 | 366 | 541 | - | - | 478 | - | - |
| Mov Cap-2 Maneuver | 7 | 11 | - | ~ 18 | 11 | - | - | - | - | - | - | - |
| Stage 1 | 104 | 251 | - | 68 | 98 | - | - | - | - | - | - | - |
| Stage 2 | 124 | 96 | - | 449 | 244 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|-----------|----|-----|
| HCM Control Delay, s | 0 | \$ 1230.9 | 3 | 0.1 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 541 | - | - | - | 44 | 478 | - |
| HCM Lane V/C Ratio | 0.092 | - | - | - | 3.306 | 0.017 | - |
| HCM Control Delay (s) | 12.3 | 2.7 | - | \$ 1230.9 | 12.7 | - | - |
| HCM Lane LOS | B | A | - | A | F | B | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | - | 16.1 | 0.1 | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 55.4 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 141 | 22 | 0 | 1181 | 1004 | 14 |
| Future Vol, veh/h | 141 | 22 | 0 | 1181 | 1004 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 83 | 40 | 25 | 91 | 92 | 45 |
| Heavy Vehicles, % | 0 | 0 | 0 | 10 | 16 | 0 |
| Mvmt Flow | 170 | 55 | 0 | 1298 | 1091 | 31 |

| Major/Minor | Minor2 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | 1740 | 546 | - | 0 | - |
| Stage 1 | 1091 | - | - | - | - |
| Stage 2 | 649 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - |
| Pot Cap-1 Maneuver | ~ 80 | 487 | 0 | - | - |
| Stage 1 | 288 | - | 0 | - | - |
| Stage 2 | 487 | - | 0 | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | ~ 80 | 487 | - | - | - |
| Mov Cap-2 Maneuver | ~ 80 | - | - | - | - |
| Stage 1 | 288 | - | - | - | - |
| Stage 2 | 487 | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|----|----|
| HCM Control Delay, s | \$ 651.1 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT EBLn1 | SBT | SBR |
|-----------------------|-----------|-----|-----|
| Capacity (veh/h) | - 101 | - | - |
| HCM Lane V/C Ratio | - 2.227 | - | - |
| HCM Control Delay (s) | -\$ 651.1 | - | - |
| HCM Lane LOS | - F | - | - |
| HCM 95th %tile Q(veh) | - 19.8 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 8.4 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | TT | | ↑↑ | ↑ | ↑ | ↑↑ |
| Traffic Vol, veh/h | 28 | 69 | 1112 | 6 | 15 | 1011 |
| Future Vol, veh/h | 28 | 69 | 1112 | 6 | 15 | 1011 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 72 | 58 | 82 | 31 | 62 | 91 |
| Heavy Vehicles, % | 0 | 8 | 10 | 1 | 0 | 13 |
| Mvmt Flow | 39 | 119 | 1356 | 19 | 24 | 1111 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 1960 | 678 | 0 | 0 | 1375 |
| Stage 1 | 1356 | - | - | - | - |
| Stage 2 | 604 | - | - | - | - |
| Critical Hdwy | 6.8 | 7.06 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.38 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 57 | 381 | - | - | 505 |
| Stage 1 | 208 | - | - | - | - |
| Stage 2 | 514 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 54 | 381 | - | - | 505 |
| Mov Cap-2 Maneuver | 54 | - | - | - | - |
| Stage 1 | 208 | - | - | - | - |
| Stage 2 | 489 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|-------|----|-----|
| HCM Control Delay, s | 140.4 | 0 | 0.3 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 153 | 505 |
| HCM Lane V/C Ratio | - | - | 1.032 | 0.048 |
| HCM Control Delay (s) | - | - | 140.4 | 12.5 |
| HCM Lane LOS | - | - | F | B |
| HCM 95th %tile Q(veh) | - | - | 8 | 0.2 |

HCM 6th TWSC
 7: US 220 & Steve Drive/Drewry Mason School Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↕ | ↕ | ↕ | ↕ | ↕ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1118 | 136 | 127 | 898 | 14 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1118 | 136 | 127 | 898 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 65 | 75 | 81 | 92 | 92 | 92 | 50 | 94 | 67 | 86 | 83 | 62 |
| Heavy Vehicles, % | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 13 | 4 | 4 | 14 | 1 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1189 | 203 | 148 | 1082 | 23 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|------|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1993 | 2790 | 553 | | | | 1105 | 0 | 0 | 1392 | 0 | 0 |
| Stage 1 | 1390 | 1390 | - | | | | - | - | - | - | - | - |
| Stage 2 | 603 | 1400 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 7.2 | | | | 4.1 | - | - | 4.18 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.45 | | | | 2.2 | - | - | 2.24 | - | - |
| Pot Cap-1 Maneuver | 54 | 19 | 445 | | | | 639 | - | - | 477 | - | - |
| Stage 1 | 200 | 211 | - | | | | - | - | - | - | - | - |
| Stage 2 | 515 | 209 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 37 | 0 | 445 | | | | 639 | - | - | 477 | - | - |
| Mov Cap-2 Maneuver | 37 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 199 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 355 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 1.9 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|------|-----|-----|
| Capacity (veh/h) | 639 | - | - | - | 477 | - | - |
| HCM Lane V/C Ratio | 0.006 | - | - | - | 0.31 | - | - |
| HCM Control Delay (s) | 10.7 | - | - | 0 | 15.9 | - | - |
| HCM Lane LOS | B | - | - | A | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 1.3 | - | - |

Queues

8: US 220 & Water Plant Road

04/02/2019



| Lane Group | EBL | EBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 131 | 65 | 58 | 1333 | 4 | 47 | 805 | 137 |
| v/c Ratio | 0.56 | 0.24 | 0.36 | 0.71 | 0.00 | 0.30 | 0.46 | 0.15 |
| Control Delay | 49.2 | 15.9 | 48.7 | 19.1 | 0.0 | 48.1 | 14.5 | 1.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 49.2 | 15.9 | 48.7 | 19.1 | 0.0 | 48.1 | 14.5 | 1.6 |
| Queue Length 50th (ft) | 77 | 6 | 34 | 308 | 0 | 28 | 150 | 0 |
| Queue Length 95th (ft) | 130 | 0 | 62 | 439 | 0 | 60 | 241 | 12 |
| Internal Link Dist (ft) | | 1026 | | 4759 | | | 1863 | |
| Turn Bay Length (ft) | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 399 | 430 | 315 | 1869 | 1007 | 320 | 1749 | 925 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.33 | 0.15 | 0.18 | 0.71 | 0.00 | 0.15 | 0.46 | 0.15 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 8: US 220 & Water Plant Road

04/02/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 110 | 4 | 31 | 0 | 0 | 0 | 42 | 1146 | 1 | 38 | 749 | 111 |
| Future Volume (veh/h) | 110 | 4 | 31 | 0 | 0 | 0 | 42 | 1146 | 1 | 38 | 749 | 111 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1781 | 1796 | 1796 | 1900 | 1900 | 1900 | 1781 | 1722 | 1900 | 1841 | 1618 | 1767 |
| Adj Flow Rate, veh/h | 131 | 11 | 54 | 0 | 0 | 0 | 58 | 1333 | 4 | 47 | 805 | 137 |
| Peak Hour Factor | 0.84 | 0.38 | 0.57 | 0.50 | 0.62 | 0.92 | 0.73 | 0.86 | 0.25 | 0.81 | 0.93 | 0.81 |
| Percent Heavy Veh, % | 8 | 7 | 7 | 0 | 0 | 0 | 8 | 12 | 0 | 4 | 19 | 9 |
| Cap, veh/h | 178 | 28 | 136 | 2 | 2 | 2 | 87 | 1996 | 982 | 81 | 1874 | 913 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.05 | 0.61 | 0.61 | 0.05 | 0.61 | 0.61 |
| Sat Flow, veh/h | 1697 | 264 | 1298 | 1810 | 1900 | 1610 | 1697 | 3272 | 1610 | 1753 | 3075 | 1497 |
| Grp Volume(v), veh/h | 131 | 0 | 65 | 0 | 0 | 0 | 58 | 1333 | 4 | 47 | 805 | 137 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 0 | 1563 | 1810 | 1900 | 1610 | 1697 | 1636 | 1610 | 1753 | 1537 | 1497 |
| Q Serve(g_s), s | 6.6 | 0.0 | 3.4 | 0.0 | 0.0 | 0.0 | 3.0 | 23.8 | 0.1 | 2.3 | 12.3 | 3.5 |
| Cycle Q Clear(g_c), s | 6.6 | 0.0 | 3.4 | 0.0 | 0.0 | 0.0 | 3.0 | 23.8 | 0.1 | 2.3 | 12.3 | 3.5 |
| Prop In Lane | 1.00 | | 0.83 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 178 | 0 | 164 | 2 | 2 | 2 | 87 | 1996 | 982 | 81 | 1874 | 913 |
| V/C Ratio(X) | 0.74 | 0.00 | 0.40 | 0.00 | 0.00 | 0.00 | 0.66 | 0.67 | 0.00 | 0.58 | 0.43 | 0.15 |
| Avail Cap(c_a), veh/h | 428 | 0 | 394 | 237 | 248 | 210 | 338 | 1996 | 982 | 342 | 1874 | 913 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 38.5 | 0.0 | 37.1 | 0.0 | 0.0 | 0.0 | 41.3 | 11.4 | 6.8 | 41.5 | 9.2 | 7.4 |
| Incr Delay (d2), s/veh | 7.0 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 10.0 | 1.8 | 0.0 | 7.6 | 0.7 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.1 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 1.4 | 6.8 | 0.0 | 1.1 | 3.5 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.6 | 0.0 | 39.0 | 0.0 | 0.0 | 0.0 | 51.4 | 13.2 | 6.8 | 49.1 | 9.9 | 7.8 |
| LnGrp LOS | D | A | D | A | A | A | D | B | A | D | A | A |
| Approach Vol, veh/h | | 196 | | | 0 | | | 1395 | | | 989 | |
| Approach Delay, s/veh | | 43.4 | | | 0.0 | | | 14.7 | | | 11.5 | |
| Approach LOS | | D | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 11.8 | 60.0 | | 0.0 | 11.9 | 60.0 | | 16.9 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 17 | 54.1 | | * 12 | * 18 | 54.1 | | 22.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.3 | 25.8 | | 0.0 | 5.0 | 14.3 | | 8.6 | | | | |
| Green Ext Time (p_c), s | 0.1 | 16.3 | | 0.0 | 0.1 | 11.8 | | 0.7 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 15.7 | | | | | | | | |
| HCM 6th LOS | | | | B | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

Queues

9: US 220 & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | NBL | NBT | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 123 | 89 | 51 | 1497 | 106 | 704 | 139 |
| v/c Ratio | 0.55 | 0.30 | 0.28 | 0.82 | 0.55 | 0.32 | 0.14 |
| Control Delay | 59.6 | 5.5 | 54.5 | 26.0 | 62.0 | 13.3 | 2.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 59.6 | 5.5 | 54.5 | 26.0 | 62.0 | 13.3 | 2.8 |
| Queue Length 50th (ft) | 90 | 0 | 37 | 457 | 78 | 140 | 2 |
| Queue Length 95th (ft) | 105 | 0 | 57 | 496 | 109 | 212 | 0 |
| Internal Link Dist (ft) | 868 | | | 3075 | | 4759 | |
| Turn Bay Length (ft) | | 25 | 100 | | 225 | | 225 |
| Base Capacity (vph) | 419 | 456 | 384 | 1823 | 387 | 2188 | 1002 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.29 | 0.20 | 0.13 | 0.82 | 0.27 | 0.32 | 0.14 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 9: US 220 & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|------|-------|-------|------|-------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↑↑ | ↗ | ↖ | ↑↑ | ↗ |
| Traffic Volume (veh/h) | 51 | 17 | 50 | 0 | 0 | 0 | 33 | 1138 | 0 | 75 | 641 | 64 |
| Future Volume (veh/h) | 51 | 17 | 50 | 0 | 0 | 0 | 33 | 1138 | 0 | 75 | 641 | 64 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1900 | 1900 | 1856 | 1781 | 1781 | 1826 | 1841 | 1678 | 1900 | 1811 | 1885 | 1841 |
| Adj Flow Rate, veh/h | 96 | 27 | 89 | 0 | 0 | 0 | 51 | 1497 | 0 | 106 | 704 | 139 |
| Peak Hour Factor | 0.53 | 0.62 | 0.56 | 0.25 | 0.63 | 0.69 | 0.65 | 0.76 | 0.92 | 0.71 | 0.91 | 0.46 |
| Percent Heavy Veh, % | 0 | 0 | 3 | 8 | 8 | 5 | 4 | 15 | 0 | 6 | 1 | 4 |
| Cap, veh/h | 135 | 38 | 149 | 0 | 2 | 1 | 69 | 1990 | 1005 | 134 | 2351 | 1024 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.00 | 0.00 | 0.00 | 0.04 | 0.62 | 0.00 | 0.08 | 0.66 | 0.66 |
| Sat Flow, veh/h | 1427 | 401 | 1572 | 0 | 1781 | 1547 | 1753 | 3188 | 1610 | 1725 | 3582 | 1560 |
| Grp Volume(v), veh/h | 123 | 0 | 89 | 0 | 0 | 0 | 51 | 1497 | 0 | 106 | 704 | 139 |
| Grp Sat Flow(s),veh/h/ln | 1829 | 0 | 1572 | 0 | 1781 | 1547 | 1753 | 1594 | 1610 | 1725 | 1791 | 1560 |
| Q Serve(g_s), s | 7.2 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 3.2 | 36.7 | 0.0 | 6.7 | 9.3 | 3.7 |
| Cycle Q Clear(g_c), s | 7.2 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 3.2 | 36.7 | 0.0 | 6.7 | 9.3 | 3.7 |
| Prop In Lane | 0.78 | | 1.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 173 | 0 | 149 | 0 | 2 | 1 | 69 | 1990 | 1005 | 134 | 2351 | 1024 |
| V/C Ratio(X) | 0.71 | 0.00 | 0.60 | 0.00 | 0.00 | 0.00 | 0.74 | 0.75 | 0.00 | 0.79 | 0.30 | 0.14 |
| Avail Cap(c_a), veh/h | 451 | 0 | 388 | 0 | 430 | 374 | 418 | 1990 | 1005 | 423 | 2351 | 1024 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 48.4 | 0.0 | 47.9 | 0.0 | 0.0 | 0.0 | 52.4 | 14.7 | 0.0 | 49.9 | 8.1 | 7.1 |
| Incr Delay (d2), s/veh | 7.5 | 0.0 | 5.4 | 0.0 | 0.0 | 0.0 | 51.4 | 2.7 | 0.0 | 11.7 | 0.3 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.6 | 0.0 | 2.6 | 0.0 | 0.0 | 0.0 | 2.3 | 11.3 | 0.0 | 3.2 | 3.0 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 55.9 | 0.0 | 53.3 | 0.0 | 0.0 | 0.0 | 103.8 | 17.3 | 0.0 | 61.6 | 8.4 | 7.4 |
| LnGrp LOS | E | A | D | A | A | A | F | B | A | E | A | A |
| Approach Vol, veh/h | | 212 | | | 0 | | | 1548 | | | | 949 |
| Approach Delay, s/veh | | 54.8 | | | 0.0 | | | 20.2 | | | | 14.2 |
| Approach LOS | | D | | | | | | C | | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 16.6 | 75.4 | | 0.0 | 13.0 | 78.9 | | 18.2 | | | | |
| Change Period (Y+Rc), s | * 8 | * 6.6 | | * 8.4 | * 8.7 | 6.6 | | 7.8 | | | | |
| Max Green Setting (Gmax), s | * 27 | * 69 | | * 27 | * 26 | 68.4 | | 27.2 | | | | |
| Max Q Clear Time (g_c+l1), s | 8.7 | 38.7 | | 0.0 | 5.2 | 11.3 | | 9.2 | | | | |
| Green Ext Time (p_c), s | 0.3 | 24.1 | | 0.0 | 0.3 | 16.2 | | 1.2 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 20.8 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 84 | 606 | 730 | 17 | 292 | 501 |
| v/c Ratio | 0.21 | 0.94 | 0.52 | 0.03 | 0.68 | 0.26 |
| Control Delay | 38.2 | 40.6 | 28.3 | 10.7 | 19.3 | 10.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 38.2 | 40.6 | 28.3 | 10.7 | 19.3 | 10.6 |
| Queue Length 50th (ft) | 52 | 195 | 233 | 1 | 106 | 93 |
| Queue Length 95th (ft) | 73 | 277 | 315 | 3 | 143 | 121 |
| Internal Link Dist (ft) | 1686 | | 3621 | | | 3075 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 468 | 689 | 1394 | 655 | 486 | 2043 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 0.88 | 0.52 | 0.03 | 0.60 | 0.25 |

Intersection Summary

HCM 6th Signalized Intersection Summary

10: US 220 & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 56 | 485 | 686 | 7 | 245 | 446 |
| Future Volume (veh/h) | 56 | 485 | 686 | 7 | 245 | 446 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1767 | 1737 | 1722 | 1781 | 1707 | 1589 |
| Adj Flow Rate, veh/h | 84 | 606 | 730 | 17 | 292 | 501 |
| Peak Hour Factor | 0.67 | 0.80 | 0.94 | 0.42 | 0.84 | 0.89 |
| Percent Heavy Veh, % | 9 | 11 | 12 | 8 | 13 | 21 |
| Cap, veh/h | 459 | 402 | 1365 | 630 | 414 | 1828 |
| Arrive On Green | 0.27 | 0.27 | 0.42 | 0.42 | 0.12 | 0.61 |
| Sat Flow, veh/h | 1682 | 1472 | 3358 | 1510 | 1626 | 3098 |
| Grp Volume(v), veh/h | 84 | 606 | 730 | 17 | 292 | 501 |
| Grp Sat Flow(s),veh/h/ln | 1682 | 1472 | 1636 | 1510 | 1626 | 1509 |
| Q Serve(g_s), s | 4.7 | 33.6 | 20.6 | 0.8 | 12.1 | 9.7 |
| Cycle Q Clear(g_c), s | 4.7 | 33.6 | 20.6 | 0.8 | 12.1 | 9.7 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 459 | 402 | 1365 | 630 | 414 | 1828 |
| V/C Ratio(X) | 0.18 | 1.51 | 0.53 | 0.03 | 0.71 | 0.27 |
| Avail Cap(c_a), veh/h | 459 | 402 | 1365 | 630 | 504 | 1828 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.3 | 44.8 | 26.9 | 21.1 | 18.8 | 11.5 |
| Incr Delay (d2), s/veh | 0.3 | 241.7 | 1.5 | 0.1 | 3.5 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.0 | 39.1 | 7.8 | 0.3 | 4.4 | 2.9 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 34.5 | 286.5 | 28.4 | 21.2 | 22.3 | 11.7 |
| LnGrp LOS | C | F | C | C | C | B |
| Approach Vol, veh/h | 690 | | 747 | | | 793 |
| Approach Delay, s/veh | 255.8 | | 28.3 | | | 15.6 |
| Approach LOS | F | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 23.2 | 60.0 | | 40.0 | | 83.2 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 21 | * 51 | | 33.6 | | * 51 |
| Max Q Clear Time (g_c+I1), s | 14.1 | 22.6 | | 35.6 | | 11.7 |
| Green Ext Time (p_c), s | 0.5 | 9.2 | | 0.0 | | 6.4 |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 94.2 |
| HCM 6th LOS | F |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
 11: US 220 & Lee Ford Camp Rd/Church St

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↕ | ↑↑ | ↕ | ↕ | ↑↑ | ↕ |
| Traffic Vol, veh/h | 35 | 13 | 11 | 11 | 19 | 11 | 10 | 647 | 46 | 11 | 449 | 42 |
| Future Vol, veh/h | 35 | 13 | 11 | 11 | 19 | 11 | 10 | 647 | 46 | 11 | 449 | 42 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 14 | 12 | 12 | 21 | 12 | 11 | 703 | 50 | 12 | 488 | 46 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 896 | 1287 | 244 | 1000 | 1283 | 352 | 534 | 0 | 0 | 753 | 0 | 0 |
| Stage 1 | 512 | 512 | - | 725 | 725 | - | - | - | - | - | - | - |
| Stage 2 | 384 | 775 | - | 275 | 558 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 235 | 163 | 757 | 197 | 164 | 644 | 1030 | - | - | 853 | - | - |
| Stage 1 | 513 | 535 | - | 383 | 428 | - | - | - | - | - | - | - |
| Stage 2 | 611 | 406 | - | 708 | 510 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 204 | 159 | 757 | 177 | 160 | 644 | 1030 | - | - | 853 | - | - |
| Mov Cap-2 Maneuver | 204 | 159 | - | 177 | 160 | - | - | - | - | - | - | - |
| Stage 1 | 507 | 528 | - | 379 | 423 | - | - | - | - | - | - | - |
| Stage 2 | 564 | 402 | - | 669 | 503 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|-----|-----|
| HCM Control Delay, s | 28 | 27.1 | 0.1 | 0.2 |
| HCM LOS | D | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1030 | - | - | 220 | 207 | 853 | - | - |
| HCM Lane V/C Ratio | 0.011 | - | - | 0.292 | 0.215 | 0.014 | - | - |
| HCM Control Delay (s) | 8.5 | - | - | 28 | 27.1 | 9.3 | - | - |
| HCM Lane LOS | A | - | - | D | D | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.2 | 0.8 | 0 | - | - |

Queues

1: US 220 & US 58 WB Ramp

04/02/2019



| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 336 | 117 | 655 | 732 | 75 |
| v/c Ratio | 0.95 | 0.29 | 0.30 | 0.33 | 0.07 |
| Control Delay | 72.4 | 8.0 | 7.3 | 7.5 | 1.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 72.4 | 8.0 | 7.3 | 7.5 | 1.7 |
| Queue Length 50th (ft) | 178 | 0 | 73 | 83 | 0 |
| Queue Length 95th (ft) | #340 | 43 | 99 | 112 | 14 |
| Internal Link Dist (ft) | 1230 | | 132 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 354 | 401 | 2217 | 2239 | 1028 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.95 | 0.29 | 0.30 | 0.33 | 0.07 |


















Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: US 220 & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  | | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 309 | 0 | 108 | 0 | 603 | 0 | 0 | 673 | 69 | |
| Future Volume (vph) | 0 | 0 | 0 | 309 | 0 | 108 | 0 | 603 | 0 | 0 | 673 | 69 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1752 | 1524 | | 3471 | | | 3505 | 1568 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1752 | 1524 | | 3471 | | | 3505 | 1568 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 336 | 0 | 117 | 0 | 655 | 0 | 0 | 732 | 75 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 93 | 0 | 0 | 0 | 0 | 0 | 27 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 336 | 24 | 0 | 655 | 0 | 0 | 732 | 48 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 0% | 6% | 0% | 4% | 14% | 0% | 3% | 3% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 17.2 | 17.2 | | 54.3 | | | 54.3 | 54.3 | |
| Effective Green, g (s) | | | | | 17.2 | 17.2 | | 54.3 | | | 54.3 | 54.3 | |
| Actuated g/C Ratio | | | | | 0.20 | 0.20 | | 0.64 | | | 0.64 | 0.64 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | | | | 354 | 308 | | 2217 | | | 2239 | 1001 | |
| v/s Ratio Prot | | | | | | | | 0.19 | | | c0.21 | | |
| v/s Ratio Perm | | | | | 0.19 | 0.02 | | | | | | 0.03 | |
| v/c Ratio | | | | | 0.95 | 0.08 | | 0.30 | | | 0.33 | 0.05 | |
| Uniform Delay, d1 | | | | | 33.5 | 27.5 | | 6.8 | | | 7.0 | 5.7 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 34.3 | 0.1 | | 0.3 | | | 0.4 | 0.1 | |
| Delay (s) | | | | | 67.8 | 27.6 | | 7.2 | | | 7.4 | 5.8 | |
| Level of Service | | | | | E | C | | A | | | A | A | |
| Approach Delay (s) | | 0.0 | | | 57.4 | | | 7.2 | | | 7.2 | | |
| Approach LOS | | A | | | E | | | A | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 19.1 | | HCM 2000 Level of Service | | | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.48 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 85.0 | | Sum of lost time (s) | | | | | 13.5 | | | |
| Intersection Capacity Utilization | | | 79.6% | | ICU Level of Service | | | | | D | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|-------|------|------|------|------|
| Lane Group Flow (vph) | 165 | 732 | 1020 | 249 | 176 | 865 |
| v/c Ratio | 0.58 | 1.73 | 0.57 | 0.28 | 0.71 | 0.34 |
| Control Delay | 58.9 | 363.2 | 22.8 | 10.6 | 68.2 | 7.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 58.9 | 363.2 | 22.8 | 10.6 | 68.2 | 7.0 |
| Queue Length 50th (ft) | 130 | ~747 | 294 | 58 | 143 | 125 |
| Queue Length 95th (ft) | 157 | #784 | 401 | 123 | 174 | 154 |
| Internal Link Dist (ft) | | | 583 | | | 519 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 285 | 422 | 1780 | 886 | 447 | 2517 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.58 | 1.73 | 0.57 | 0.28 | 0.39 | 0.34 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: US 220 & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
|-----------------------------------|------|-------|-------|------|------|------|------|-------|------|-------|------|---------------------------|------|
| Lane Configurations | ↖ | | ↗ | | | | | ↑↑ | ↖ | ↗ | ↑↑ | | |
| Traffic Volume (vph) | 117 | 0 | 571 | 0 | 0 | 0 | 0 | 959 | 234 | 134 | 848 | 0 | |
| Future Volume (vph) | 117 | 0 | 571 | 0 | 0 | 0 | 0 | 959 | 234 | 134 | 848 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1380 | | | | | 3343 | 1568 | 1770 | 3471 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1380 | | | | | 3343 | 1568 | 1770 | 3471 | | |
| Peak-hour factor, PHF | 0.71 | 0.92 | 0.78 | 0.92 | 0.92 | 0.92 | 0.92 | 0.94 | 0.94 | 0.76 | 0.98 | 0.92 | |
| Adj. Flow (vph) | 165 | 0 | 732 | 0 | 0 | 0 | 0 | 1020 | 249 | 176 | 865 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 191 | 0 | 0 | 0 | 0 | 0 | 52 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 165 | 0 | 541 | 0 | 0 | 0 | 0 | 1020 | 197 | 176 | 865 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 17% | 2% | 2% | 2% | 0% | 8% | 3% | 2% | 4% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 21.8 | | 21.8 | | | | | 69.2 | 69.2 | 18.3 | 94.3 | | |
| Effective Green, g (s) | 21.8 | | 21.8 | | | | | 69.2 | 69.2 | 18.3 | 94.3 | | |
| Actuated g/C Ratio | 0.17 | | 0.17 | | | | | 0.53 | 0.53 | 0.14 | 0.73 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 285 | | 231 | | | | | 1779 | 834 | 249 | 2517 | | |
| v/s Ratio Prot | | | | | | | | c0.31 | | c0.10 | 0.25 | | |
| v/s Ratio Perm | 0.10 | | c0.39 | | | | | | 0.13 | | | | |
| v/c Ratio | 0.58 | | 2.34 | | | | | 0.57 | 0.24 | 0.71 | 0.34 | | |
| Uniform Delay, d1 | 49.9 | | 54.1 | | | | | 20.5 | 16.3 | 53.3 | 6.5 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 2.8 | | 616.4 | | | | | 1.4 | 0.7 | 8.8 | 0.4 | | |
| Delay (s) | 52.7 | | 670.5 | | | | | 21.8 | 16.9 | 62.1 | 6.9 | | |
| Level of Service | D | | F | | | | | C | B | E | A | | |
| Approach Delay (s) | | 556.8 | | | 0.0 | | | 20.9 | | | 16.2 | | |
| Approach LOS | | F | | | A | | | C | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 169.3 | | | | | | | | | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | | | 0.95 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 70.4% | | | | | | | | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

HCM 6th TWSC
3: US 220 & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↕ | ↗ | ↗ | ↕ | ↗ |
| Traffic Vol, veh/h | 19 | 0 | 5 | 2 | 0 | 18 | 5 | 1156 | 2 | 27 | 1374 | 18 |
| Future Vol, veh/h | 19 | 0 | 5 | 2 | 0 | 18 | 5 | 1156 | 2 | 27 | 1374 | 18 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 92 | 50 | 25 | 92 | 56 | 62 | 91 | 50 | 64 | 91 | 67 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 8 | 0 | 0 | 8 | 6 |
| Mvmt Flow | 22 | 0 | 10 | 8 | 0 | 32 | 8 | 1270 | 4 | 42 | 1510 | 27 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 2245 | 2884 | 755 | 2125 | 2907 | 635 | 1537 | 0 | 0 | 1274 | 0 | 0 |
| Stage 1 | 1594 | 1594 | - | 1286 | 1286 | - | - | - | - | - | - | - |
| Stage 2 | 651 | 1290 | - | 839 | 1621 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 24 | 16 | 356 | 29 | 16 | 400 | 438 | - | - | 552 | - | - |
| Stage 1 | 114 | 168 | - | 177 | 237 | - | - | - | - | - | - | - |
| Stage 2 | 429 | 236 | - | 331 | 163 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | ~ 20 | 15 | 356 | 26 | 15 | 400 | 438 | - | - | 552 | - | - |
| Mov Cap-2 Maneuver | ~ 20 | 15 | - | 26 | 15 | - | - | - | - | - | - | - |
| Stage 1 | 112 | 155 | - | 174 | 233 | - | - | - | - | - | - | - |
| Stage 2 | 387 | 232 | - | 297 | 151 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|-------|------|-----|-----|
| HCM Control Delay, s | 396.7 | 60.7 | 0.1 | 0.3 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 438 | - | - | 29 | 103 | 552 | - | - |
| HCM Lane V/C Ratio | 0.018 | - | - | 1.089 | 0.39 | 0.076 | - | - |
| HCM Control Delay (s) | 13.4 | - | - | 396.7 | 60.7 | 12.1 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 3.6 | 1.6 | 0.2 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
4: US 220 & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 17.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 1120 | 11 | 22 | 1359 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 1120 | 11 | 22 | 1359 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 75 | 50 | 92 | 44 | 50 | 65 | 83 | 92 | 50 | 50 | 87 | 69 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 43 | 0 | 66 | 0 | 1217 | 22 | 44 | 1562 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 2259 | 2889 | 781 | 2086 | 2867 | 609 | - | 0 | 0 | 1239 | 0 | 0 |
| Stage 1 | 1650 | 1650 | - | 1217 | 1217 | - | - | - | - | - | - | - |
| Stage 2 | 609 | 1239 | - | 869 | 1650 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 23 | 16 | 342 | ~ 31 | 17 | 426 | 0 | - | - | 569 | - | 0 |
| Stage 1 | 105 | 158 | - | 195 | 256 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 454 | 250 | - | 317 | 158 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 18 | 15 | 342 | ~ 29 | 16 | 426 | - | - | - | 569 | - | - |
| Mov Cap-2 Maneuver | 18 | 15 | - | ~ 29 | 16 | - | - | - | - | - | - | - |
| Stage 1 | 105 | 146 | - | 195 | 256 | - | - | - | - | - | - | - |
| Stage 2 | 383 | 250 | - | 292 | 146 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|----------|----|-----|
| HCM Control Delay, s | 0 | \$ 457.3 | 0 | 0.3 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|-------|-------|
| Capacity (veh/h) | - | - | - | 66 | 569 |
| HCM Lane V/C Ratio | - | - | - | 1.657 | 0.077 |
| HCM Control Delay (s) | - | - | \$ 457.3 | 11.9 | - |
| HCM Lane LOS | - | - | A | F | B |
| HCM 95th %tile Q(veh) | - | - | - | 9.7 | 0.2 |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 286.3

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 130 | 38 | 0 | 1001 | 1347 | 31 |
| Future Vol, veh/h | 130 | 38 | 0 | 1001 | 1347 | 31 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 48 | 58 | 50 | 91 | 85 | 62 |
| Heavy Vehicles, % | 0 | 0 | 0 | 10 | 16 | 0 |
| Mvmt Flow | 271 | 66 | 0 | 1100 | 1585 | 50 |

Major/Minor

| | Minor2 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | 2135 | 793 | - | 0 | - |
| Stage 1 | 1585 | - | - | - | - |
| Stage 2 | 550 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - |
| Pot Cap-1 Maneuver | ~ 43 | 336 | 0 | - | - |
| Stage 1 | ~ 157 | - | 0 | - | - |
| Stage 2 | 547 | - | 0 | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | ~ 43 | 336 | - | - | - |
| Mov Cap-2 Maneuver | ~ 43 | - | - | - | - |
| Stage 1 | ~ 157 | - | - | - | - |
| Stage 2 | 547 | - | - | - | - |

Approach

| | EB | NB | SB |
|-----------------------|--------|----|----|
| HCM Control Delay, \$ | 2614.3 | 0 | 0 |
| HCM LOS | F | | |

Minor Lane/Major Mvmt

| | NBT EBLn1 | SBT | SBR |
|-----------------------|-----------|-----|-----|
| Capacity (veh/h) | - 52 | - | - |
| HCM Lane V/C Ratio | - 6.468 | - | - |
| HCM Control Delay (s) | \$ 2614.3 | - | - |
| HCM Lane LOS | - F | - | - |
| HCM 95th %tile Q(veh) | - 38.8 | - | - |

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.1 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 7 | 27 | 974 | 14 | 50 | 1335 |
| Future Vol, veh/h | 7 | 27 | 974 | 14 | 50 | 1335 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 44 | 75 | 98 | 54 | 70 | 91 |
| Heavy Vehicles, % | 0 | 0 | 8 | 0 | 0 | 6 |
| Mvmt Flow | 16 | 36 | 994 | 26 | 71 | 1467 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 1870 | 497 | 0 | 0 | 1020 |
| Stage 1 | 994 | - | - | - | - |
| Stage 2 | 876 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 65 | 524 | - | - | 688 |
| Stage 1 | 323 | - | - | - | - |
| Stage 2 | 373 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 58 | 524 | - | - | 688 |
| Mov Cap-2 Maneuver | 58 | - | - | - | - |
| Stage 1 | 323 | - | - | - | - |
| Stage 2 | 335 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 40.8 | 0 | 0.5 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 151 | 688 |
| HCM Lane V/C Ratio | - | - | 0.344 | 0.104 |
| HCM Control Delay (s) | - | - | 40.8 | 10.8 |
| HCM Lane LOS | - | - | E | B |
| HCM 95th %tile Q(veh) | - | - | 1.4 | 0.3 |

HCM 6th TWSC
 7: US 220 & Steve Drive/Drewry Mason School Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↕↕ | ↕ | ↕ | ↕↕ | |
| Traffic Vol, veh/h | 21 | 0 | 5 | 0 | 0 | 0 | 11 | 967 | 17 | 45 | 1262 | 35 |
| Future Vol, veh/h | 21 | 0 | 5 | 0 | 0 | 0 | 11 | 967 | 17 | 45 | 1262 | 35 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 50 | 92 | 75 | 92 | 92 | 92 | 55 | 85 | 39 | 61 | 88 | 84 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 9 | 0 | 3 | 7 | 0 |
| Mvmt Flow | 42 | 0 | 7 | 0 | 0 | 0 | 20 | 1138 | 44 | 74 | 1434 | 42 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 2212 | 2825 | 738 | | | | 1476 | 0 | 0 | 1182 | 0 | 0 |
| Stage 1 | 1603 | 1603 | - | | | | - | - | - | - | - | - |
| Stage 2 | 609 | 1222 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | ~ 38 | 18 | 365 | | | | 462 | - | - | 581 | - | - |
| Stage 1 | 153 | 167 | - | | | | - | - | - | - | - | - |
| Stage 2 | 511 | 254 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | ~ 32 | 0 | 365 | | | | 462 | - | - | 581 | - | - |
| Mov Cap-2 Maneuver | ~ 32 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 146 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 446 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|-----|-----|
| HCM Control Delay, s | \$ 423.5 | 0.2 | 0.6 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|----------|-------|-----|-----|
| Capacity (veh/h) | 462 | - | - | 37 | 581 | - | - |
| HCM Lane V/C Ratio | 0.043 | - | - | 1.315 | 0.127 | - | - |
| HCM Control Delay (s) | 13.1 | - | - | \$ 423.5 | 12.1 | - | - |
| HCM Lane LOS | B | - | - | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 5.1 | 0.4 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Queues

8: US 220 & Water Plant Road

04/02/2019



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 91 | 52 | 5 | 3 | 63 | 1008 | 14 | 82 | 1367 | 163 |
| v/c Ratio | 0.50 | 0.23 | 0.04 | 0.02 | 0.41 | 0.55 | 0.02 | 0.44 | 0.73 | 0.17 |
| Control Delay | 53.4 | 17.7 | 50.5 | 50.5 | 53.1 | 17.6 | 0.0 | 52.3 | 21.2 | 3.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.4 | 17.7 | 50.5 | 50.5 | 53.1 | 17.6 | 0.0 | 52.3 | 21.2 | 3.0 |
| Queue Length 50th (ft) | 53 | 3 | 3 | 2 | 37 | 192 | 0 | 48 | 301 | 0 |
| Queue Length 95th (ft) | 100 | 18 | 8 | 8 | 84 | 415 | 0 | 81 | 501 | 37 |
| Internal Link Dist (ft) | | 1001 | | 708 | | 4778 | | | 1881 | |
| Turn Bay Length (ft) | 100 | | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 371 | 421 | 221 | 232 | 298 | 1842 | 787 | 329 | 1883 | 978 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.25 | 0.12 | 0.02 | 0.01 | 0.21 | 0.55 | 0.02 | 0.25 | 0.73 | 0.17 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 8: US 220 & Water Plant Road

04/02/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 68 | 4 | 32 | 2 | 2 | 0 | 52 | 927 | 8 | 54 | 1066 | 147 |
| Future Volume (veh/h) | 68 | 4 | 32 | 2 | 2 | 0 | 52 | 927 | 8 | 54 | 1066 | 147 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1722 | 1470 | 1900 | 1737 | 1856 |
| Adj Flow Rate, veh/h | 91 | 6 | 46 | 5 | 3 | 0 | 63 | 1008 | 14 | 82 | 1367 | 163 |
| Peak Hour Factor | 0.75 | 0.62 | 0.69 | 0.42 | 0.58 | 0.92 | 0.82 | 0.92 | 0.58 | 0.66 | 0.78 | 0.90 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 12 | 29 | 0 | 11 | 3 |
| Cap, veh/h | 126 | 15 | 114 | 22 | 23 | 19 | 81 | 1799 | 685 | 107 | 1857 | 885 |
| Arrive On Green | 0.08 | 0.08 | 0.08 | 0.01 | 0.01 | 0.00 | 0.05 | 0.55 | 0.55 | 0.06 | 0.56 | 0.56 |
| Sat Flow, veh/h | 1598 | 189 | 1450 | 1810 | 1900 | 1610 | 1626 | 3272 | 1246 | 1810 | 3300 | 1572 |
| Grp Volume(v), veh/h | 91 | 0 | 52 | 5 | 3 | 0 | 63 | 1008 | 14 | 82 | 1367 | 163 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1639 | 1810 | 1900 | 1610 | 1626 | 1636 | 1246 | 1810 | 1650 | 1572 |
| Q Serve(g_s), s | 5.5 | 0.0 | 3.0 | 0.3 | 0.2 | 0.0 | 3.8 | 19.7 | 0.5 | 4.4 | 30.4 | 5.0 |
| Cycle Q Clear(g_c), s | 5.5 | 0.0 | 3.0 | 0.3 | 0.2 | 0.0 | 3.8 | 19.7 | 0.5 | 4.4 | 30.4 | 5.0 |
| Prop In Lane | 1.00 | | 0.88 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 126 | 0 | 129 | 22 | 23 | 19 | 81 | 1799 | 685 | 107 | 1857 | 885 |
| V/C Ratio(X) | 0.72 | 0.00 | 0.40 | 0.23 | 0.13 | 0.00 | 0.77 | 0.56 | 0.02 | 0.77 | 0.74 | 0.18 |
| Avail Cap(c_a), veh/h | 364 | 0 | 373 | 213 | 224 | 190 | 292 | 1799 | 685 | 318 | 1857 | 885 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 44.3 | 0.0 | 43.2 | 48.2 | 48.1 | 0.0 | 46.2 | 14.4 | 10.1 | 45.6 | 16.1 | 10.5 |
| Incr Delay (d2), s/veh | 7.7 | 0.0 | 2.0 | 5.3 | 2.6 | 0.0 | 14.3 | 1.3 | 0.1 | 10.9 | 2.6 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.4 | 0.0 | 1.3 | 0.2 | 0.1 | 0.0 | 1.8 | 6.4 | 0.1 | 2.2 | 10.5 | 1.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 52.0 | 0.0 | 45.2 | 53.5 | 50.7 | 0.0 | 60.5 | 15.7 | 10.1 | 56.5 | 18.7 | 11.0 |
| LnGrp LOS | D | A | D | D | D | A | E | B | B | E | B | B |
| Approach Vol, veh/h | | 143 | | | 8 | | | 1085 | | | 1612 | |
| Approach Delay, s/veh | | 49.5 | | | 52.4 | | | 18.2 | | | 19.8 | |
| Approach LOS | | D | | | D | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 13.5 | 60.0 | | 9.6 | 12.2 | 61.3 | | 15.3 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 17 | 54.1 | | * 12 | * 18 | 54.1 | | 22.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 6.4 | 21.7 | | 2.3 | 5.8 | 32.4 | | 7.5 | | | | |
| Green Ext Time (p_c), s | 0.1 | 7.3 | | 0.0 | 0.1 | 10.6 | | 0.4 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 20.8 | | | | | | | | |
| HCM 6th LOS | | | | C | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

Queues

9: US 220 & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 96 | 55 | 72 | 218 | 42 | 799 | 13 | 265 | 908 | 64 |
| v/c Ratio | 0.60 | 0.22 | 0.52 | 0.69 | 0.39 | 0.54 | 0.02 | 0.83 | 0.46 | 0.06 |
| Control Delay | 82.1 | 2.1 | 81.0 | 19.4 | 80.0 | 31.6 | 0.0 | 81.2 | 19.1 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 82.1 | 2.1 | 81.0 | 19.4 | 80.0 | 31.6 | 0.0 | 81.2 | 19.1 | 0.1 |
| Queue Length 50th (ft) | 92 | 0 | 69 | 0 | 40 | 292 | 0 | 253 | 257 | 0 |
| Queue Length 95th (ft) | 146 | 0 | 77 | 77 | 77 | 398 | 0 | 305 | 381 | 0 |
| Internal Link Dist (ft) | 1070 | | 851 | | | 3049 | | | 4778 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 100 | 225 | | 225 |
| Base Capacity (vph) | 333 | 389 | 334 | 460 | 333 | 1485 | 811 | 325 | 1995 | 1022 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.29 | 0.14 | 0.22 | 0.47 | 0.13 | 0.54 | 0.02 | 0.82 | 0.46 | 0.06 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 9: US 220 & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↑↑ | ↗ | ↖ | ↑↑ | ↗ |
| Traffic Volume (veh/h) | 28 | 39 | 30 | 5 | 36 | 192 | 34 | 767 | 9 | 196 | 863 | 41 |
| Future Volume (veh/h) | 28 | 39 | 30 | 5 | 36 | 192 | 34 | 767 | 9 | 196 | 863 | 41 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1722 | 1900 | 1885 | 1767 | 1900 |
| Adj Flow Rate, veh/h | 49 | 47 | 55 | 8 | 64 | 218 | 42 | 799 | 13 | 265 | 908 | 64 |
| Peak Hour Factor | 0.57 | 0.83 | 0.55 | 0.62 | 0.56 | 0.88 | 0.81 | 0.96 | 0.67 | 0.74 | 0.95 | 0.64 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 12 | 0 | 1 | 9 | 0 |
| Cap, veh/h | 63 | 60 | 110 | 32 | 252 | 238 | 58 | 1425 | 701 | 286 | 1898 | 911 |
| Arrive On Green | 0.07 | 0.07 | 0.07 | 0.15 | 0.15 | 0.15 | 0.03 | 0.44 | 0.44 | 0.16 | 0.57 | 0.57 |
| Sat Flow, veh/h | 924 | 886 | 1610 | 210 | 1680 | 1585 | 1810 | 3272 | 1610 | 1795 | 3357 | 1610 |
| Grp Volume(v), veh/h | 96 | 0 | 55 | 72 | 0 | 218 | 42 | 799 | 13 | 265 | 908 | 64 |
| Grp Sat Flow(s),veh/h/ln | 1809 | 0 | 1610 | 1890 | 0 | 1585 | 1810 | 1636 | 1610 | 1795 | 1678 | 1610 |
| Q Serve(g_s), s | 8.3 | 0.0 | 5.2 | 5.3 | 0.0 | 21.5 | 3.6 | 28.9 | 0.7 | 23.1 | 25.6 | 2.9 |
| Cycle Q Clear(g_c), s | 8.3 | 0.0 | 5.2 | 5.3 | 0.0 | 21.5 | 3.6 | 28.9 | 0.7 | 23.1 | 25.6 | 2.9 |
| Prop In Lane | 0.51 | | 1.00 | 0.11 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 124 | 0 | 110 | 284 | 0 | 238 | 58 | 1425 | 701 | 286 | 1898 | 911 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.50 | 0.25 | 0.00 | 0.92 | 0.73 | 0.56 | 0.02 | 0.93 | 0.48 | 0.07 |
| Avail Cap(c_a), veh/h | 313 | 0 | 278 | 317 | 0 | 266 | 316 | 1425 | 701 | 309 | 1898 | 911 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 72.7 | 0.0 | 71.3 | 59.5 | 0.0 | 66.4 | 76.1 | 33.4 | 25.5 | 65.8 | 20.5 | 15.6 |
| Incr Delay (d2), s/veh | 10.0 | 0.0 | 3.5 | 0.5 | 0.0 | 31.9 | 16.0 | 1.6 | 0.0 | 31.6 | 0.9 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.2 | 0.0 | 2.3 | 2.6 | 0.0 | 10.8 | 1.9 | 11.3 | 0.3 | 12.8 | 9.6 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 82.7 | 0.0 | 74.8 | 60.0 | 0.0 | 98.3 | 92.1 | 35.0 | 25.5 | 97.4 | 21.4 | 15.7 |
| LnGrp LOS | F | A | E | E | A | F | F | D | C | F | C | B |
| Approach Vol, veh/h | | 151 | | | 290 | | | 854 | | | 1237 | |
| Approach Delay, s/veh | | 79.8 | | | 88.8 | | | 37.7 | | | 37.4 | |
| Approach LOS | | E | | | F | | | D | | | D | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 33.0 | 75.0 | | 32.2 | 12.4 | 95.6 | | 18.4 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 27 | 69.1 | | * 27 | * 28 | 69.1 | | 27.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 25.1 | 30.9 | | 23.5 | 5.6 | 27.6 | | 10.3 | | | | |
| Green Ext Time (p_c), s | 0.2 | 5.5 | | 0.3 | 0.1 | 6.7 | | 0.6 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 45.9 |
| HCM 6th LOS | D |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 86 | 366 | 768 | 19 | 433 | 599 |
| v/c Ratio | 0.19 | 0.56 | 0.60 | 0.03 | 0.92 | 0.30 |
| Control Delay | 38.9 | 7.3 | 33.4 | 10.9 | 43.7 | 11.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 38.9 | 7.3 | 33.4 | 10.9 | 43.7 | 11.7 |
| Queue Length 50th (ft) | 57 | 0 | 267 | 1 | 183 | 114 |
| Queue Length 95th (ft) | 77 | 57 | 218 | 13 | #305 | 147 |
| Internal Link Dist (ft) | 1455 | | 3650 | | | 3049 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 454 | 658 | 1279 | 603 | 475 | 2008 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.19 | 0.56 | 0.60 | 0.03 | 0.91 | 0.30 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 10: US 220 & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | ↶ | ↶ | ↕ | ↷ | ↶ | ↕ |
| Traffic Volume (veh/h) | 59 | 311 | 499 | 14 | 359 | 539 |
| Future Volume (veh/h) | 59 | 311 | 499 | 14 | 359 | 539 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1856 | 1781 | 1722 | 1781 | 1841 | 1707 |
| Adj Flow Rate, veh/h | 86 | 366 | 768 | 19 | 433 | 599 |
| Peak Hour Factor | 0.69 | 0.85 | 0.65 | 0.75 | 0.83 | 0.90 |
| Percent Heavy Veh, % | 3 | 8 | 12 | 8 | 4 | 13 |
| Cap, veh/h | 461 | 393 | 1305 | 602 | 477 | 2021 |
| Arrive On Green | 0.26 | 0.26 | 0.40 | 0.40 | 0.16 | 0.62 |
| Sat Flow, veh/h | 1767 | 1510 | 3358 | 1510 | 1753 | 3329 |
| Grp Volume(v), veh/h | 86 | 366 | 768 | 19 | 433 | 599 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 1510 | 1636 | 1510 | 1753 | 1622 |
| Q Serve(g_s), s | 4.9 | 30.5 | 23.8 | 1.0 | 18.1 | 11.0 |
| Cycle Q Clear(g_c), s | 4.9 | 30.5 | 23.8 | 1.0 | 18.1 | 11.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 461 | 393 | 1305 | 602 | 477 | 2021 |
| V/C Ratio(X) | 0.19 | 0.93 | 0.59 | 0.03 | 0.91 | 0.30 |
| Avail Cap(c_a), veh/h | 461 | 393 | 1305 | 602 | 492 | 2021 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.0 | 46.5 | 30.5 | 23.6 | 22.1 | 11.2 |
| Incr Delay (d2), s/veh | 0.9 | 30.8 | 2.0 | 0.1 | 20.2 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.2 | 14.8 | 9.1 | 0.4 | 9.2 | 3.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 37.9 | 77.3 | 32.4 | 23.7 | 42.3 | 11.3 |
| LnGrp LOS | D | E | C | C | D | B |
| Approach Vol, veh/h | 452 | | 787 | | | 1032 |
| Approach Delay, s/veh | 69.8 | | 32.2 | | | 24.3 |
| Approach LOS | E | | C | | | C |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 28.9 | 60.0 | | 40.0 | | 88.9 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 21 | * 51 | | 33.6 | | * 51 |
| Max Q Clear Time (g_c+l1), s | 20.1 | 25.8 | | 32.5 | | 13.0 |
| Green Ext Time (p_c), s | 0.2 | 4.9 | | 0.2 | | 3.8 |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 36.1 |
| HCM 6th LOS | D |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 25 | 21 | 4 | 0 | 0 | 0 | 13 | 488 | 70 | 36 | 500 | 62 |
| Future Vol, veh/h | 25 | 21 | 4 | 0 | 0 | 0 | 13 | 488 | 70 | 36 | 500 | 62 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 23 | 4 | 0 | 0 | 0 | 14 | 530 | 76 | 39 | 543 | 67 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 914 | 1255 | 272 | 919 | 1246 | 265 | 610 | 0 | 0 | 606 | 0 | 0 |
| Stage 1 | 621 | 621 | - | 558 | 558 | - | - | - | - | - | - | - |
| Stage 2 | 293 | 634 | - | 361 | 688 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 228 | 170 | 726 | 226 | 172 | 733 | 965 | - | - | 968 | - | - |
| Stage 1 | 442 | 477 | - | 482 | 510 | - | - | - | - | - | - | - |
| Stage 2 | 691 | 471 | - | 630 | 445 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 219 | 161 | 726 | 192 | 163 | 733 | 965 | - | - | 968 | - | - |
| Mov Cap-2 Maneuver | 219 | 161 | - | 192 | 163 | - | - | - | - | - | - | - |
| Stage 1 | 435 | 458 | - | 475 | 502 | - | - | - | - | - | - | - |
| Stage 2 | 681 | 464 | - | 571 | 427 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|----|--|-----|--|-----|--|
| HCM Control Delay, s | 29.6 | | 0 | | 0.2 | | 0.5 | |
| HCM LOS | D | | A | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-----|------|-----|
| Capacity (veh/h) | 965 | - | - | 200 | - | 968 | - |
| HCM Lane V/C Ratio | 0.015 | - | - | 0.272 | - | 0.04 | - |
| HCM Control Delay (s) | 8.8 | - | - | 29.6 | 0 | 8.9 | - |
| HCM Lane LOS | A | - | - | D | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.1 | - | 0.1 | - |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|------------|----------------|
| | 38 | - | - | 0.7 | - |
| Church St | 11 | 0.8 | 16.8 | 0.5 | 105 |
| Morehead Ave | 10 | 23.8 | 65.2 | 0.7 | 39 |
| Main Street | 9 | 21.1 | 57.9 | 0.6 | 37 |
| Water Plant Road | 8 | 21.8 | 79.4 | 0.9 | 42 |
| Drewry Mason School | 7 | 5.6 | 35.1 | 0.4 | 38 |
| Covington Lane | 6 | 2.1 | 26.7 | 0.3 | 43 |
| Shamrock Drive | 5 | 1.7 | 19.0 | 0.2 | 40 |
| Marrowbone Circle | 4 | 1.6 | 8.7 | 0.1 | 39 |
| Villa Road | 3 | 2.0 | 22.0 | 0.3 | 45 |
| | 20 | 1.0 | 7.9 | 0.1 | 39 |
| | 2 | 13.1 | 23.0 | 0.1 | 20 |
| | 12 | 3.4 | 12.0 | 0.1 | 34 |
| US 58 WB Ramp | 1 | 4.3 | 8.0 | 0.0 | 19 |
| Total | | 102.3 | 381.7 | 5.1 | 48 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 5.4 | 17.3 | 0.2 | 32 |
| | 12 | 1.1 | 3.3 | 0.0 | 45 |
| US 58 EB Ramp | 2 | 4.5 | 14.7 | 0.1 | 28 |
| | 20 | 2.4 | 12.5 | 0.1 | 36 |
| Kilarney Court | 3 | 0.5 | 6.8 | 0.1 | 45 |
| | 4 | 1.4 | 22.3 | 0.3 | 45 |
| Shamrock Drive | 5 | 0.6 | 8.0 | 0.1 | 43 |
| Covington Lane | 6 | 0.9 | 17.7 | 0.2 | 43 |
| Steve Drive | 7 | 1.8 | 27.2 | 0.3 | 42 |
| Water Plant Road | 8 | 9.7 | 38.0 | 0.4 | 35 |
| Soapstone Road | 9 | 12.5 | 63.2 | 0.9 | 52 |
| Morehead Ave | 10 | 11.1 | 42.9 | 0.6 | 50 |
| Lee Ford Camp Rd | 11 | 4.4 | 42.2 | 0.7 | 60 |
| Total | | 56.4 | 316.2 | 4.0 | 46 |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|------------|----------------|
| | 38 | - | - | 0.7 | - |
| Church St | 11 | 0.6 | 17.0 | 0.5 | 106 |
| Morehead Ave | 10 | 25.7 | 67.4 | 0.7 | 38 |
| Main Street | 9 | 28.5 | 65.8 | 0.6 | 32 |
| Water Plant Road | 8 | 19.2 | 76.8 | 0.9 | 43 |
| Drewry Mason School | 7 | 4.2 | 33.0 | 0.4 | 40 |
| Covington Lane | 6 | 1.9 | 26.7 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.4 | 18.3 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.9 | 8.0 | 0.1 | 45 |
| Villa Road | 3 | 1.9 | 22.8 | 0.3 | 44 |
| | 20 | 0.9 | 7.6 | 0.1 | 40 |
| | 2 | 13.3 | 23.3 | 0.1 | 19 |
| | 12 | 3.3 | 12.2 | 0.1 | 33 |
| US 58 WB Ramp | 1 | 5.1 | 8.6 | 0.0 | 17 |
| Total | | 107.0 | 387.7 | 5.1 | 47 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 6.5 | 18.6 | 0.2 | 30 |
| | 12 | 1.2 | 3.4 | 0.0 | 43 |
| US 58 EB Ramp | 2 | 4.9 | 15.3 | 0.1 | 27 |
| | 20 | 3.2 | 13.3 | 0.1 | 34 |
| Kilarney Court | 3 | 0.6 | 7.3 | 0.1 | 42 |
| | 4 | 1.6 | 23.8 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.0 | 8.3 | 0.1 | 43 |
| Covington Lane | 6 | 1.3 | 16.9 | 0.2 | 45 |
| Steve Drive | 7 | 2.1 | 27.0 | 0.3 | 42 |
| Water Plant Road | 8 | 10.6 | 39.2 | 0.4 | 34 |
| Soapstone Road | 9 | 22.7 | 80.8 | 0.9 | 41 |
| Morehead Ave | 10 | 20.2 | 58.5 | 0.6 | 36 |
| Lee Ford Camp Rd | 11 | 6.4 | 47.2 | 0.7 | 54 |
| Total | | 82.3 | 359.4 | 4.0 | 40 |

APPENDIX F

CRASH DATA WORKSHEETS

Crash Data - US 220 South of Lee Ford Camp

| Object ID | Type | Cause | Pedestrians Injured | Injuries | Year | NB/SB | Int./Related |
|-----------|---------------|--|---------------------|-----------|------|-------|--------------|
| 43969 | Angle | VEHICLE # 1 MADE AN UNSAFE LANE CHANGE IN FRONT OF VEHICLE # 2. | 0 | 0 | 2014 | NB | No |
| 623024 | Angle | VEHICLE #1 RAN OFF ROAD LEFT TO AVOID ANOTHER VEHICLE THAT WAS STRADDLING CENTER LINE BETWEEN VEHICLE #1 AND VEHICLE #2. VEHICLE #1 FAILED TO MAINTAIN CONTROL OF HER VEHICLE UPON REENTERING THE ROADWAY AND ENTERED THE RIGHT LANE WHERE SHE WAS STRUCK BY VEHICLE #2. VEHICLE 1 CHANGING LANES TO PASS SLOWER TRAFFIC. DID NOT SEE VEHICLE 2 IN LEFT TRAVEL LANE. | 0 | 0 | 2015 | NB | No |
| 52598 | Angle | VEHICLE # 1 STRUCK A DEER IN THE ROADWAY. | 0 | 0 | 2016 | NB | No |
| 558843 | Deer | Deer removed by VDOT. | 0 | 0 | 2011 | NB | No |
| 907438 | Deer | VEHICLE # 1 STRUCK A DEER IN THE ROADWAY. A DEER JUMPED OVER GUARD RAIL FROM THE MEDIAN INTO THE PATH OF VEHICLE # 1, CAUSING VEHICLE # 1, TO STRIKE THE DEER. NOTE: THE DEER KEPT RUNNING INTO THE WOODS. | 0 | 0 | 2016 | NB | No |
| 1371000 | Deer | VEHICLE 1, AVOIDING DEER, RAN OFF ROAD TO LEFT STRUCK EMBANKMENT. | 0 | 0 | 2012 | NB | No |
| 1583689 | Fixed Object | VEHICLE 1 WAS DRIVING ON SHOULDER RAN OFF EMBANKMENT. | 0 | 0 | 2012 | NB | No |
| 986636 | Fixed Object | VEHICLE #1 RAN THROUGH DEBRIS THAT HAD WASHED INTO ROADWAY DUE TO HEAVY RAIN. VEHICLE #1 LOST CONTROL AND RAN OFF ROAD TO LEFT AND STRUCK EMBANKMENT. | 0 | 0 | 2013 | NB | No |
| 511641 | Fixed Object | VEHICLE # 1 RAN OFF THE ROAD RIGHT STRIKING MAIL BOX INTO DITCH CAUSING TRAILER TO OVERTURN. | 0 | 0 | 2014 | NB | No |
| 1419306 | Fixed Object | VEHICLE 1 SWERVED TO MISS DEER, RAN OFF ROAD TO THE LEFT STRUCK EMBANKMENT AND OVERTURNED VEHICLE LANDED RIGHT SIDE UP. | 0 | 0 | 2015 | NB | No |
| 830967 | Fixed Object | | 0 | 0 | | | |
| 848903 | Fixed Object | VEHICLE #1 RAN OFF THE ROAD TO THE RIGHT AND STRUCK A TREE. | 0 | 0 | 2016 | NB | No |
| 1393342 | Fixed Object | VEHICLE #1 RAN OFF THE ROAD TO THE LEFT, STRUCK AN EMBANKMENT AND OVERTURNED. | 0 | 0 | 2017 | NB | No |
| 258557 | Sideswipe | VEHICLE #2 CHANGED LANES AND STRUCK VEHICLE #1. | 0 | 0 | 2012 | NB | No |
| 95557 | Sideswipe | VEHICLE 1 WAS MOVING OVER FOR A VEHICLE THAT WAS NOT INVOLVED, WHICH WAS PULLING OFF THE ROADWAY, AS A RESULT VEHICLE 1 SIDESWIPE VEHICLE 2. | 0 | 0 | 2012 | NB | No |
| 635716 | Angle | VEHICLE 1 MADE AN UNSAFE LANE CHANGE IN FRONT OF VEHICLE 2. VEHICLE 2 HIT VEHICLE 1, THEN BOTH VEHICLES HIT THE GUARDRAIL. | 0 | 1 | 2013 | NB | No |
| 1495193 | Deer | VEHICLE 1 STRUCK DEER, VDOT NOTIFIED TO REMOVE DEER. | 0 | 1 | 2013 | NB | No |
| 627407 | Fixed Object | VEHICLE # 1 RAN OUT OFF ROAD RIGHT INTO GUARD RAIL. | 0 | 1 | 2014 | NB | No |
| 227325 | Fixed Object | VEHICLE 1 RAN OFF ROAD LEFT DOWN EMBANKMENT STRIKING TREES. | 0 | 1 | 2014 | NB | No |
| 278970 | Fixed Object | VEHICLE 1 RAN OFF ROAD TO LEFT AND STRUCK AN EMBANKMENT. | 0 | 1 | 2014 | NB | No |
| 451490 | Fixed Object | VEHICLE 1 SWERVED TO MISS AN ANIMAL IN THE ROADWAY, RAN OFF THE ROAD TO THE RIGHT, WENT DOWN AN EMBANKMENT, AND STRUCK SOME BRUSH. | 0 | 1 | 2014 | NB | No |
| 188041 | Fixed Object | VEHICLE #1 MADE AN UNSAFE LANE CHANGE. VEHICLE #2 RAN OFF THE ROAD TO THE RIGHT AND STRUCK AN EMBANKMENT. | 0 | 1 | 2015 | NB | No |
| 1155249 | Non-Collision | VEHICLE RAN OFF ROAD TO RIGHT OVER CORRECTED ROLLING OVER ONTO RIGHT SIDE SLIDING OFF ROAD TO RIGHT. | 0 | 1 | 2012 | NB | No |
| 736485 | Fixed Object | VEHICLE 1 RAN OFF THE ROAD TO THE RIGHT, OVER CORRECTED, RAN OFF THE ROAD TO THE LEFT, HIT EMBANKMENT, OVERTURNED AND HIT TREE. | 0 | 1 (fatal) | 2014 | NB | No |
| 299360 | Fixed Object | VEHICLE # 1 RAN OFF ROAD RIGHT STRIKING TREE OVERTURNING. DRIVER DIED AT SCENE. | 0 | 1 (fatal) | 2013 | NB | No |
| 612795 | Deer | VEHICLE 1 STRUCK DEER. DEER FLED. | 0 | 0 | 2011 | SB | No |
| 1470075 | Deer | VEHICLE #1 STRUCK A DEER IN THE ROADWAY. VEHICLE # 1 AVOIDING A DEER IN THE ROADWAY, RAN OFF THE ROAD TO THE RIGHT AND STRUCK A EMBANKMENT. | 0 | 0 | 2017 | SB | No |
| 900843 | Fixed Object | | 0 | 0 | 2011 | SB | No |

| | | | | | | |
|---------|---------------|--|---|---|---------|----|
| 111808 | Fixed Object | VEHICLE # 1 RAN OFF ROAD RIGHT STRIKING EMBANKMENT THEN CAME BACK ACROSS ROAD STRIKING GUARD RAIL ON LEFT SHOULDER. | 0 | 0 | 2011 SB | No |
| 284298 | Fixed Object | TREE FELL ACROSS ROAD AND VEH #1 STRUCK TREE. VEH. # 1 RAN OFF THE RIGHT SHOULDER OFF THE ROADWAY, DRIVER THEN OVER CORRECTED STEERING, CAUSING VEH. # 1, TO CROSS BACK OVER AND OFF THE LEFT SIDE OF THE ROADWAY, AND STRUCK A GUARD RAIL, THEN VEH. # 1, CROSSED BACK ACROSS TO THE RIGHT SIDE OF THE ROADWAY, AND STRUCK AN EMBANKMENT, CAUSING VEH. # 1, TO VEH. 1 DRIVER LOST CONTROL DURING HARD | 0 | 0 | 2012 SB | No |
| 707872 | Fixed Object | RAN WHEN VEHICLE HYDRAPLANTED AND SKIDDED INTO THE MEDIAN AND STRUCK AN EMBANKMENT. | 0 | 0 | 2012 SB | No |
| 751820 | Fixed Object | VEHICLE # 1 SLID ON ICY ROAD, RAN OFF ROADWAY TO THE RIGHT AND OVERTURNED. | 0 | 0 | 2013 SB | No |
| 1313021 | Fixed Object | VEH. # 1, CAME AROUND THE CURVE, AND A LARGE ROCK WAS IN THE ROADWAY, DRIVER TRIED TO SWERVE ABRUPTLY, TO AVOID HITTING THE ROCK, BUT IT WENT UNDER THE BACK TIRE, CAUSING THE TIRE TO BLOW, CAUSING VEH. # 1, TO SKID OUT OF CONTROL, OFF THE RIGHT SIDE OF THE ROADWAY, AND STRUCK AN EMBANKMENT, CAUSING VEH. # 1, TO ROLL OVER, STRIKING SOME SMALL TREES, COMING TO REST BACK ON ITS WHEELS, BACK IN THE ROADWAY. | 0 | 0 | 2014 SB | No |
| 449372 | Fixed Object | VEHICLE #1 STRUCK A TREE IN THE ROADWAY. | 0 | 0 | 2014 SB | No |
| 170749 | Fixed Object | VEHICLE 1 RAN OFF ROADWAY TO RIGHT WENT OVER EMBANKMENT AND STRUCK TREE. | 0 | 0 | 2014 SB | No |
| 465081 | Fixed Object | VEHICLE 1 RAN OFF THE ROAD TO THE LEFT, HIT GUARD RAIL, OVERCORRECTED RAN OFF THE ROAD TO THE RIGHT AND HIT EMBANKMENT. | 0 | 0 | 2014 SB | No |
| 702449 | Fixed Object | VEHICLE#1 RAN OFF THE ROAD TO THE LEFT AND STRUCK A BANK AND SIGN. | 0 | 0 | 2014 SB | No |
| 1420540 | Fixed Object | VEHICLE # 1 RAN OFF ROADWAY LEFT STRUCK EMBANKMENT AND GUARDRAIL. | 0 | 0 | 2015 SB | No |
| 790901 | Fixed Object | VEHICLE #1 RAN OFF ROAD AND STRUCK GUARD RAIL. | 0 | 0 | 2015 SB | No |
| 103880 | Fixed Object | VEHICLE #1 RAN OFF THE ROAD TO THE RIGHT, BACK OFF THE ROAD TO THE LEFT AND HIT A TREE. | 0 | 0 | 2015 SB | No |
| 564444 | Fixed Object | VEHICLE 1 RAN OFF ROAD TO THE RIGHT AND HIT MAILBOX, THEN OVER CORRECTED AND RAN OFF ROAD TO THE LEFT AND WENT OVER EMBANKMENT AND HIT TREE. | 0 | 0 | 2015 SB | No |
| 1018604 | Fixed Object | HIGH WINDS CAUSED VEHICLE #1 TO RUN OFF ROADWAY ONTO LOW SHOULDER AND OVERTURNED C2 - OTHER - WIND | 0 | 0 | 2017 SB | No |
| 628908 | Fixed Object | ROADWAY AND STRUCK AN EMBANKMENT AND CULVERT, CAUSING VEHICLE # 1, TO THEN STRIKE A GUARD RAIL, AND GO OVER AN EMBANKMENT COMING TO REST UP AGAINST SOME TREES. | 0 | 0 | 2017 SB | No |
| 742355 | Fixed Object | VEHICLE 1 RAN OFF ROAD TO THE LEFT INTO THE MEDIAN. | 0 | 0 | 2016 SB | No |
| 1286979 | Non-Collision | VEHICLE 1 RAN OFF ROAD TO THE LEFT INTO THE MEDIAN. | 0 | 0 | 2016 SB | No |
| 706999 | Rear End | VEHICLE 1 HIT VEHICLE 2 IN THE REAR. | 0 | 0 | 2017 SB | No |
| 785573 | Rear End | VEHICLE TRAVELING ON ROADWAY CHANGED LANES STRUCK VEHICLE 2 IN THE REAR. | 0 | 0 | 2017 SB | No |
| 741788 | Angle | VEHICLE 1 WAS CHANGING LANES TO MAKE A LEFT TURN. VEHICLE 2 STRUCK VEHICLE 1. DRIVER OF VEH. # 1, RAN AT EXCESSIVE SPEED, WHICH CAUSED VEH. # 1, TO RUN OFF THE RIGHT SHOULDER OF THE ROADWAY, DRIVER THEN JERKED THE WHEEL, AND OVER CORRECTED CAUSING THE VEHICLE TO RUN | 0 | 1 | 2013 SB | No |
| 107164 | Fixed Object | VEHICLE 1 WAS CHANGING LANES TO MAKE A LEFT TURN. VEHICLE 2 STRUCK VEHICLE 1. DRIVER OF VEH. # 1, RAN AT EXCESSIVE SPEED, WHICH CAUSED VEH. # 1, TO RUN OFF THE RIGHT SHOULDER OF THE ROADWAY, DRIVER THEN JERKED THE WHEEL, AND OVER CORRECTED CAUSING THE VEHICLE TO RUN | 0 | 1 | 2011 SB | No |
| 1256935 | Fixed Object | VEH#1 RAN OFF ROAD RIGHT OVERCORRECTED RAN OFF ROAD LEFT HIT GUARDRAIL ON LEFT TWICE THEN RAN OFF ROAD RIGHT AND HIT BANK. * NO DAMAGE TO GUARDRAIL* | 0 | 1 | 2011 SB | No |
| 116686 | Fixed Object | VEHICLE # 1 RAN OFF THE ROAD TO THE LEFT, STRUCK A BANK, THEN A HIGHWAY SIGN AND OVERTURNED. | 0 | 1 | 2011 SB | No |
| 1363703 | Fixed Object | VEHICLE 1 RAN OFF THE ROAD TO THE RIGHT, STRUCK AN EMBANKMENT, THEN OVERTURNED IN THE ROADWAY. | 0 | 1 | 2012 SB | No |
| 771961 | Fixed Object | VEHICLE # 1 RAN OFF ROAD LEFT STRIKING EMBANKMENT AND OVERTURNING. | 0 | 1 | 2013 SB | No |
| 1122010 | Fixed Object | VEHICLE 1 RAN OFF ROAD LEFT, OVER CORRECTED WENT ACROSS THE ROAD TO RIGHT STRUCK GUARDRAIL WENT ACROSS THE ROAD RAN OFF ROAD TO THE LEFT. | 0 | 1 | 2013 SB | No |

Crash Data - US 220 @ Morehead

| Object ID: | Type | Cause | Pedestrians Injured | Injuries | Year | NB/SB | nt, Related? |
|------------|--------------|---|---------------------|----------|------|-------|--------------|
| 976191 | Deer | DEER RAN OUT INTO ROADWAY, VEHICLE 1 STRUCK DEER. | 0 | 0 | 2016 | NB | No |
| 1380444 | Rear End | VEHICLE #1 STRUCK VEHICLE #2 ON THE ROADWAY. | 0 | 0 | 2016 | NB | No |
| 784694 | Sideswipe | VEHICLE#1 SIDESWIPE VEHICLE #2 BECAUSE VEHICLE #1 WAS TRYING TO PASS VEHICLE #2 WHILE TURNING. | 0 | 0 | 2017 | NB | No |
| 1555387 | Fixed Object | VEHICLE 1 STRUCK GUARDRAIL MAKING BOAT ON BED OF TRUCK FALL OFF. VEHICLE 2 HIT BOAT IN ROADWAY ON BOAT BELONGED TO CLETON, ROBERT LEWIS 1708 TERRY LANE YADKINVILLE, NC 27055 | 0 | 1 | 2011 | NB | No |
| 968774 | Fixed Object | VEHICLE#1 RAN OFF THE ROAD TO THE RIGHT AND STRUCK THE GUARDRAIL. *NO DAMAGE TO GUARDRAIL* | 0 | 0 | 2016 | SB | No |
| 320944 | Fixed Object | VEHICLE #1 HAD A MECHANICAL PROBLEM, DRIVER LOST CONTROL AND RAN OFF THE ROADWAY TO THE RIGHT, STRUCK A BANK AND OVERTURNED. VS- OTHER - DRIVER HEARD A LOUD BANG FROM UNDERCARRIAGE THEN LOST CONTROL | 0 | 0 | 2017 | SB | No |
| 1391208 | Fixed Object | VEHICLE 1 STRUCK A PIECE OF METAL LAYING IN ROADWAY CAUSING DAMAGE TO CRANKCASE AND OIL POURED ON ROADWAY AND REAR TIRE CAUSING VEHICLE TO LOSE CONTROL, RUN OFF ROAD - RIGHT, STRIKING DITCH. | 0 | 1 | 2012 | SB | No |
| 379076 | Angle | VEHICLE 1 PULLED INTO PATH OF VEHICLE 2. VEHICLE 2 HIT VEHICLE 1. VEHICLE 2 THEN OVERTURNED AND VEHICLE 1 RAN OFF ROAD. | 0 | 0 | 2011 | NB | Yes |
| 1335184 | Rear End | VEHICLE 1 WAS STOPPED IN THE TRAFFIC LANE WAITING FOR A GREEN LIGHT TO PROCEED. VEHICLE 2 WAS NORTH BOUND AND APPROACHED VEHICLE 1 FROM BEHIND. OPERATOR OF VEHICLE 2 APPLIED BRAKES AND HER FOOT SLIPPED OFF THE BRAKE AND ON TO THE GAS PEDAL. VEHICLE 2 STRUCK VEHICLE 1 IN THE REAR. | 0 | 0 | 2011 | NB | Yes |
| 700200 | Rear End | YELLOW LIGHT. VEHICLE 2 HIT VEHICLE 1 IN REAR. #1 V1 OTHER VEHICLE STOP IN MIDDLE OF THE ROAD AT YELLOW | 0 | 0 | 2011 | NB | Yes |
| 211409 | Angle | VEHICLE #1 TURNED IN FRONT OF VEHICLE #2. VEHICLE #1 FAILED TO STOP AT A RED LIGHT STRIKING VEHICLE #2 IN THE SIDE. | 0 | 0 | 2012 | NB | Yes |
| 109224 | Angle | | 0 | 0 | 2012 | NB | Yes |
| 479937 | Angle | NO.1 WAS HEADED NORTH ON U. S. 220. NO.1 HAD A GREEN LIGHT FOR PROCEEDING STRAIGHT AHEAD. NO.2 WAS ATTEMPTING TO MAKE A LEFT TURN FROM U. S. 220 SOUTHBOUND, ACROSS THE NORTHBOUND LANES OF U. S. 220 ONTO S. R. 87. NO.2 HAD A GREEN TRAFFIC LIGHT, BUT DID NOT HAVE THE GREEN ARROW WHICH WOULD HAVE ALLOWED HIM TO MAKE THE TURN. NO.2 FAILED TO YIELD THE RIGHT OF WAY TO NO.1 AND STRUCK NO.1. VEHICLE#1 WAS EXCEEDING THE SAFE SPEED AS IT MADE A RIGHT TURN ONTO RT 220 FROM RT 87 AND OVERTURNED. | 0 | 0 | 2013 | NB | Yes |
| 1235091 | Other | VEHICLE #2 WAS SLOWING FOR TRAFFIC SIGNAL TURNING FROM YELLOW TO RED. VEHICLE #1 HIT VEHICLE #2 IN THE REAR. | 0 | 0 | 2015 | NB | Yes |
| 1029640 | Rear End | | 0 | 0 | 2015 | NB | Yes |

| | | | | | | | |
|---------|--------------|--|---|---|------|----|-----|
| 520305 | Angle | VEHICLE 2 WAS MAKING LEFT TURN WITH GREEN SIGNAL, VEHICLE 1 DISREGARDED RED SIGNAL AND STRUCK VEHICLE 2. | 0 | 0 | 2016 | NB | Yes |
| 794639 | Sideswipe | VEHICLE # 1, PULLED OUT INTO THE SIDE OF VEHICLE # 2. | 0 | 0 | 2017 | NB | Yes |
| 91408 | Angle | VEHICLE # 1 FAILED TO YIELD RIGHT OF WAY TURNING IN FRONT OF VEHICLE # 2. | 0 | 1 | 2012 | NB | Yes |
| 215186 | Angle | VEHICLE # 1 FAILED TO YIELD RIGHT OF WAY, TURNING IN FRONT OF VEHICLE #2 CAUSING VEHICLES TO COLLIDE. | 0 | 1 | 2012 | NB | Yes |
| 766951 | Angle | VEHICLE # 1 PULLED OUT IN FRONT OF VEHICLE #2 CAUSING VEHICLES TO COLLIDE. | 0 | 1 | 2012 | NB | Yes |
| 717494 | Angle | VEHICLE # 1 FAILED TO YIELD RIGHT AWAY STRIKING VEHICLE # 2. | 0 | 1 | 2013 | NB | Yes |
| 727322 | Angle | VEHICLE 1 MADE LEFT TURN IN FRONT OF VEHICLE 2, VEHICLE 1 DID NOT YIELD RIGHT OF WAY TO VEHICLE 2 AT TRAFFIC LIGHT, VEHICLE 2 STRUCK VEHICLE 1. | 0 | 1 | 2013 | NB | Yes |
| 1529900 | Angle | VEHICLE 1 DID NOT HAVE RIGHT OF WAY, TURNED IN FRONT OF VEHICLE 2, VEHICLE 2 STRUCK VEHICLE 1. | 0 | 1 | 2014 | NB | Yes |
| 1376820 | Angle | VEHICLE #1 STRUCK VEHICLE #2 WHILE MAKING AN ILLEGAL LEFT TURN WITH OUT YIELDING TO ON COMMING TRAFFIC. | 0 | 1 | 2014 | NB | Yes |
| 1180971 | Rear End | VEHICLE 2 STOPPPED FOR TRAFFIC LIGHT VEHICLE 1 STRUCK VEHICLE 2 IN REAR. | 0 | 1 | 2014 | NB | Yes |
| 485570 | Rear End | VEHICLE # 1 STRUCK VEHICLE # 2 IN THE REAR. | 0 | 1 | 2014 | NB | Yes |
| 982569 | Angle | VEHICLE 1 DISREGARDED YELLOW ARROW MAKING LEFT TURN. VEHICLE 2 DISREGARDED YELLOW LIGHT, VEHICLE 1 STRUCK VEHICLE 2. | 0 | 1 | 2015 | NB | Yes |
| 624653 | Head On | VEHICLE # 1 FAILED TO YIELD RIGHT OF WAY TO VEHICLE # 2. | 0 | 1 | 2015 | NB | Yes |
| 215720 | Rear End | VEHICLE #2 WAS STOPPED AT TRAFFIC LIGHT. VEHICLE #1 HIT VEHICLE #2 IN THE REAR. | 0 | 1 | 2016 | NB | Yes |
| 990556 | Head On | VEH#1 PULLED OUT VEHR2 STRUCK VEHR1. | 0 | 1 | 2017 | NB | Yes |
| 379778 | Rear End | VEH#2 TURNED LEFT LOST CONTROL RAN OFF ROAD RIGHT AND HIT BANK,VEH#2 CAME ACROSS ROAD IN FRONT OF VEH#1, VEH#1 THEN HIT VEH#2, VEH#1 THEN WENT AROUND VEH#2 ON LEFT VEH#2 THEN HIT VEH#1, VEH#1 THEN HIT VEH#2 IN DRIVER DOOR. | 0 | 0 | 2012 | SB | Yes |
| 591892 | Rear End | VEHICLE 1 HIT VEHICLE 2 IN THE REAR AS VEHICLE 2 WAS STOPPED AT A RED TRAFFIC LIGHT. | 0 | 0 | 2014 | SB | Yes |
| 915775 | Angle | VEHICLE #1 TURNED LEFT IN FRONT OF VEHICLE #2. VEHICLE #2 STRUCK VEHICLE #1. -No Charges due to conflicting statements. | 0 | 1 | 2012 | SB | Yes |
| 998727 | Fixed Object | VEHICLE # 1 DISREGARDED TRAFFIC SIGNAL, CROSSED THROUGH THE INTERSECTION, RAN OFF THE ROADWAY AND STRUCK THE GUARDRAIL HEAD ON. P2 - (OTHER) - SUBJECT WAS DISORIENTED, MEDICAL REVIEW REQUEST HAS BEEN SUBMITTED. | 0 | 1 | 2014 | SB | Yes |

| | | | | | | | | | |
|----------|--------|----------|------|------|------|------|----|-------|-------|
| FO | A | RE | SS | Deer | Ped | HO | NC | Other | Total |
| 5 | 14 | 9 | 2 | 1 | 0 | 2 | 0 | 1 | 34 |
| 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | | | Total |
| 4 | 8 | 3 | 6 | 4 | 5 | 4 | | | 34 |
| Fatality | Injury | Property | | | | | | | Total |
| 0 | 17 | 17 | | | | | | | 34 |
| NB | SB | | | | | | | | Total |
| 27 | 7 | | | | | | | | 34 |
| Int Yes | Int No | | | | | | | | Total |
| 27 | 7 | | | | | | | | 34 |

Crash Data - US 230 @ Soopetone

| Object ID | Type | Cause | Pedestrian Injured | Injuries | Year | Mo/Do | Int. Response |
|-----------|--------------|---|--------------------|----------|------|-------|---------------|
| 1167143 | Deer | VEHICLE 1 WAS NORTH ON ROUTE 230. A DEER CAME FROM THE RIGHT SHOULDER INTO THE PATH OF VEHICLE 1. VEHICLE 1 STRUCK THE DEER. DEER RAN INTO A WOODED AREA. | 0 | 0 | 2011 | NR | No |
| 108665 | Rear End | VEHICLE #1 RAN INTO THE REAR OF VEHICLE #2. VEHICLE #1 STRUCK SIDEW. | 0 | 0 | 2013 | NR | No |
| 1433413 | Other Animal | VEHICLE #1 WAS TRAVELING IN THE LEFT LANE AND STRUCK A DEER. | 0 | 0 | 2014 | NR | No |
| 240832 | Deer | VEHICLE #1 STRUCK VEHICLE #2 ON THE ROADWAY. | 0 | 0 | 2015 | NR | No |
| 965725 | Rear End | VEHICLE #1 STRUCK DEER. | 0 | 0 | 2015 | NR | No |
| 760959 | Over | EQUIPMENT FAILURE. VEHICLE #1 STALLED IN THE RIGHT NORTH BOUND LANE, NO VEHICLE MADE UNSAFE LANE CHANGE AND STRUCK VEHICLE #2 CAUSING VEHICLE #2 TO LOSE CONTROL. | 0 | 0 | 2016 | NR | No |
| 1308923 | Rear End | VEHICLE #1 HIT VEHICLE #2 IN THE SIDE. | 0 | 0 | 2017 | NR | No |
| 740178 | Angle | ROAD TO LEFT INTO MEDIAN HITTING CONCRETE DITCH. VEHICLE #2 WERE TRAVELLING STRAIGHT. | 0 | 1 | 2015 | NR | No |
| 96760 | Fleed Object | VEHICLE #1 RAN OFF ROAD RIGHT DUE TO A CURB BEING STUCK UNDER THE GAS PEDAL. VEHICLE 3 STOPPED IN LEFT LANE TO AVOID A SINK IN TRAVEL LANE. VEHICLE 2 STOPPED. | 0 | 1 | 2016 | NR | No |
| 473850 | Rear End | VEHICLE 1 WAS PULLING OFF FROM PARKING WITH INTENT TO TURN INTO PARKING LOT. VEHICLE 2 WAS TURNING RIGHT INTO SAME PARKING LOT. | 0 | 1 | 2018 | NR | No |
| 1354086 | Sideswipe | VEHICLE 1 HIT VEHICLE 2 IN THE SIDE. | 0 | 0 | 2011 | SR | No |
| 1530815 | Fleed Object | ROAD TO LEFT INTO MEDIAN HITTING CONCRETE DITCH. VEHICLE #2 WERE TRAVELLING STRAIGHT. | 0 | 0 | 2013 | SR | No |
| 353471 | Angle | VEHICLE #1 RAN OFF ROAD RIGHT. | 0 | 0 | 2013 | SR | No |
| 1125585 | Fleed Object | VEHICLE 1 SKIDDED ON BLACKICE STRIKING GUARDRAIL. | 0 | 0 | 2015 | SR | No |
| 1163584 | Rear End | SLOWING DOWN IN TRAFFIC LANE, VEHICLE 1 STRUCK VEHICLE 2 IN REAR. | 0 | 0 | 2015 | SR | No |
| 1107530 | Rear End | VEHICLE #2 WAS STOPPING IN LANE OF TRAVEL FOR A VEHICLE THAT HAD STOPPED. VEHICLE 1 STRUCK DEER, DEER FLEW SCENE. | 0 | 0 | 2015 | SR | No |
| 704555 | Deer | RIGHT SHOULDER AND STRUCK A HARBOR AND THEN SKIDDED INTO MEDIAN AND STRUCK VEHICLE #1. PULLED INTO PATHWAY OF VEHICLE #2. VEHICLE #2 STRUCK VEHICLE #1. | 0 | 0 | 2017 | SR | No |
| 704529 | Fleed Object | VEHICLE #1 PULLED INTO PATHWAY OF VEHICLE #2. VEHICLE #2 STRUCK VEHICLE #1. | 0 | 1 | 2011 | SR | No |
| 192729 | Angle | VEHICLE #1 PULLED OUT INTO ROADWAY MAKING A RIGHT TURN AND STRUCK VEHICLE 2. | 0 | 0 | 2015 | NR | Yes |
| 1121379 | Angle | SLOWING DOWN AT STOP LIGHT, VEHICLE 1 STRUCK VEHICLE 2 IN THE REAR. | 0 | 0 | 2013 | NR | Yes |
| 1356272 | Rear End | SLOWING FOR A RED TRAFFIC LIGHT, VEHICLE 1 HIT VEHICLE 2 IN THE REAR. | 0 | 0 | 2013 | NR | Yes |
| 1153220 | Rear End | VEHICLE 2 WAS SLOWING TO TURN LEFT. VEHICLE 1 STRUCK 2 IN THE REAR. 33 OTHER VEHICLE 2 WAS STOP IN TRAFFIC LANE, VEHICLE 1 WAS CHANGING INTO VEHICLE #1 TURNED RIGHT INTO THE PATHWAY OF VEHICLE #2 AND WAS STRUCK BY VEHICLE #2. | 0 | 0 | 2015 | NR | Yes |
| 393811 | Angle | VEHICLE #2 WAS ATTEMPTING TO MAKE A LEFT TURN, AT A GREEN TURN ARROW SIGNAL, DRIVER OF VEHICLE #1 WAS STOPPED AT A RED TRAFFIC SIGNAL, WHEN DRIVER OF VEHICLE #1, WAS DISTRACTED BY HIS CELL PHONE AND THOUGH THE LIGHT HAD TURNED GREEN, THEN STARTED TO MOVE FORWARD AND STRUCK VEHICLE #2. | 0 | 0 | 2016 | NR | Yes |
| 1074470 | Rear End | VEHICLE 1 MADE LEFT TURN FROM WAYSIDE LANE, IN FRONT OF VEHICLE 2. VEHICLE 2 STRUCK VEHICLE 1. | 0 | 0 | 2016 | NR | Yes |
| 279176 | Rear End | VEHICLE 1 HIT VEHICLE 2 IN THE REAR AT TRAFFIC LIGHT. | 0 | 0 | 2014 | NR | Yes |
| 679376 | Rear End | VEHICLE #3 WAS STOPPED AT RED LIGHT TO MAKE A LEFT TURN. VEHICLE #2 WAS STOPPED BEHIND VEHICLE #3. VEHICLE #1 HIT VEHICLE #2, CAUSING VEHICLE #2 TO HIT REAR OF VEHICLE #3. | 0 | 0 | 2016 | NR | Yes |
| 1460015 | Angle | VEHICLE #2 WAS TURNING LEFT, VEHICLE #1 DID NOT STOP FOR RED TRAFFIC SIGNAL AND STRUCK VEHICLE #2. | 0 | 1 | 2017 | NR | Yes |
| 1172723 | Angle | VEHICLE #1 WAS STOPPED AT RED LIGHT, VEHICLE 2 STRUCK VEHICLE 1. | 0 | 1 | 2017 | NR | Yes |

Crash Data - US 220 @ Water Plant

| Object ID: | Type | Cause | Pedestrians Injured | Injures | Year | NB/SB | Int.-Related? |
|------------|--------------|--|---------------------|---------|------|-------|---------------|
| 527655 | Sidesw/pe | VEH. 2 CHANGED LANES AND STRUCK VEH. 1 AND VEH. 1 RAN INTO MEDIAN AND STRUCK AN EMBANKMENT. VEHICLE 1 HIT | 0 | 0 | 2011 | NB | No |
| 976678 | Rear End | VEHICLE 2 IN THE REAR AS VEHICLE 2 WAS STOPPED VEHICLE 1 RAN REDLIGHT HITTING VEHICLE | 0 | 2 | 2011 | NB | Yes |
| 1040476 | Angle | 2 NO. 1 WAS STOPPED IN THE LEFT TURN LANE | 0 | 0 | 2011 | SB | Yes |
| 1140058 | Rear End | AT A TRAFFIC VEHICLE 1 TURNED IN FRONT OF VEHICLE 2. | 0 | 0 | 2011 | SB | Yes |
| 350903 | Angle | VEHICLE 2 HIT | 0 | 1 | 2011 | SB | Yes |
| 577693 | Angle | " | 0 | 1 | 2011 | SB | Yes |
| 104544 | Angle | VEH. 1 WAS IN THE LEFT TURN LANE AND ATTEMPTED TO CHANGE LANES INTO THE LEFT NORTHBOUND LANE AND STRUCK VEH. 2. | 0 | 0 | 2013 | NB | Yes |
| 472721 | Rear End | VEH#2 WAS STOPPED AT LIGHT VEH#1 THEN HIT VEH#2 | 0 | 0 | 2013 | NB | Yes |
| 709091 | Fixed Object | VEHICLE 1 ATTEMPTED TO AVOID COLLISION WITH ANOTHER VEHICLE, RAN OFF THE ROAD TO THE LEFT CAME BACK ACROSS THE ROAD TO THE RIGHT AND STRUCK A CURB AND SIGN. | 0 | 1 | 2013 | SB | No |
| 284037 | Rear End | VEH. # 2, WAS STOPPED IN THE BACKED UP FLOW OF TRAFFIC, WHEN VEH. # 1, STRUCK VEH.# 2 IN THE REAR. | 0 | 0 | 2013 | SB | Yes |
| 121348 | Rear End | VEHICLE 1 STOPPED IN ROADWAY DUE TO A PHYSICAL ALTERCATION WITH THE PASSENGER. VEHICLE 2 STRUCK VEHICLE 1. | 0 | 0 | 2014 | SB | No |
| 707522 | Angle | VEHICLE 1 RAN RED LIGHT STRUCK VEHICLE 2 IN PASSENGER SIDE FRONT. | 0 | 2 | 2014 | SB | Yes |
| 1292474 | Rear End | VEH. # 2 (BEING MOTORCYCLES) WERE TRAVELING AT A HIGH RATE OF SPEED, WHEN THEY CAME UP ON VEH. #3, WHICH WAS TRAVELING THE SPEED LIMIT, AT THIS TIME VEH.# 2 SWERVED TO THE RIGHT, CAUSING VEH. # 1, TO SWERVE TO THE LEFT, AT THIS TIME VEH. # 1, STRUCK VEH. # 3, IN THE LEFT REAR, CAUSING VEH. # 1, TO GO OUT OF CONTROL, SPINNING AND FLIPPING DOWN THE ROADWAY, EJECTING THE DRIVER ONTO THE | 0 | 1 | 2015 | SB | No |

APPENDIX G

FUTURE NO-BUILD OPERATIONAL ANALYSIS WORKSHEETS

Queues

1: US 220 & US 58 WB Ramp

04/02/2019



| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 268 | 101 | 855 | 612 | 53 |
| v/c Ratio | 0.83 | 0.27 | 0.39 | 0.28 | 0.06 |
| Control Delay | 55.0 | 8.4 | 7.9 | 7.0 | 1.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 55.0 | 8.4 | 7.9 | 7.0 | 1.6 |
| Queue Length 50th (ft) | 137 | 0 | 103 | 67 | 0 |
| Queue Length 95th (ft) | #259 | 34 | 129 | 83 | 9 |
| Internal Link Dist (ft) | 1343 | | 142 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 338 | 383 | 2183 | 2163 | 914 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.79 | 0.26 | 0.39 | 0.28 | 0.06 |



















Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: US 220 & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 209 | 0 | 85 | 0 | 735 | 0 | 0 | 502 | 47 | |
| Future Volume (vph) | 0 | 0 | 0 | 209 | 0 | 85 | 0 | 735 | 0 | 0 | 502 | 47 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1671 | 1495 | | 3374 | | | 3343 | 1380 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1671 | 1495 | | 3374 | | | 3343 | 1380 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.78 | 0.92 | 0.84 | 0.92 | 0.86 | 0.92 | 0.92 | 0.82 | 0.88 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 268 | 0 | 101 | 0 | 855 | 0 | 0 | 612 | 53 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 81 | 0 | 0 | 0 | 0 | 0 | 19 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 268 | 20 | 0 | 855 | 0 | 0 | 612 | 34 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 8% | 0% | 8% | 0% | 7% | 19% | 0% | 8% | 17% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 16.5 | 16.5 | | 55.0 | | | 55.0 | 55.0 | |
| Effective Green, g (s) | | | | | 16.5 | 16.5 | | 55.0 | | | 55.0 | 55.0 | |
| Actuated g/C Ratio | | | | | 0.19 | 0.19 | | 0.65 | | | 0.65 | 0.65 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 4.0 | 4.0 | | 5.0 | | | 5.0 | 5.0 | |
| Lane Grp Cap (vph) | | | | | 324 | 290 | | 2183 | | | 2163 | 892 | |
| v/s Ratio Prot | | | | | | | | c0.25 | | | 0.18 | | |
| v/s Ratio Perm | | | | | 0.16 | 0.01 | | | | | | 0.02 | |
| v/c Ratio | | | | | 0.83 | 0.07 | | 0.39 | | | 0.28 | 0.04 | |
| Uniform Delay, d1 | | | | | 32.9 | 28.0 | | 7.1 | | | 6.5 | 5.4 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 16.4 | 0.1 | | 0.5 | | | 0.3 | 0.1 | |
| Delay (s) | | | | | 49.3 | 28.1 | | 7.6 | | | 6.8 | 5.5 | |
| Level of Service | | | | | D | C | | A | | | A | A | |
| Approach Delay (s) | | 0.0 | | | 43.5 | | | 7.6 | | | 6.7 | | |
| Approach LOS | | A | | | D | | | A | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 14.3 | | HCM 2000 Level of Service | | | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.49 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 85.0 | | Sum of lost time (s) | | | | | 13.5 | | | |
| Intersection Capacity Utilization | | | 43.1% | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|-------|------|------|------|------|
| Lane Group Flow (vph) | 197 | 535 | 1109 | 381 | 119 | 769 |
| v/c Ratio | 0.74 | 1.20 | 0.63 | 0.43 | 0.66 | 0.32 |
| Control Delay | 68.7 | 133.4 | 22.5 | 11.8 | 70.8 | 6.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 68.7 | 133.4 | 22.5 | 11.8 | 70.8 | 6.8 |
| Queue Length 50th (ft) | 160 | ~342 | 323 | 101 | 97 | 109 |
| Queue Length 95th (ft) | 184 | #568 | 441 | 179 | 125 | 117 |
| Internal Link Dist (ft) | | | 585 | | | 516 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 267 | 445 | 1770 | 890 | 387 | 2380 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.74 | 1.20 | 0.63 | 0.43 | 0.31 | 0.32 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.






















95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: US 220 & US 58 EB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | | |
|-----------------------------------|---|---|---|---|---|---|--|--|---|---|--|---|----------------------|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | | |
| Lane Configurations |  | |  | | | | |   |  |  |   |  | | |
| Traffic Volume (vph) | 138 | 0 | 498 | 0 | 0 | 0 | 0 | 1020 | 328 | 88 | 623 | 0 | | |
| Future Volume (vph) | 138 | 0 | 498 | 0 | 0 | 0 | 0 | 1020 | 328 | 88 | 623 | 0 | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1597 | | 1292 | | | | | 3195 | 1482 | 1530 | 3282 | | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1597 | | 1292 | | | | | 3195 | 1482 | 1530 | 3282 | | | |
| Peak-hour factor, PHF | 0.70 | 0.92 | 0.93 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.86 | 0.74 | 0.81 | 0.92 | | |
| Adj. Flow (vph) | 197 | 0 | 535 | 0 | 0 | 0 | 0 | 1109 | 381 | 119 | 769 | 0 | | |
| RTOR Reduction (vph) | 0 | 0 | 229 | 0 | 0 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | | |
| Lane Group Flow (vph) | 197 | 0 | 306 | 0 | 0 | 0 | 0 | 1109 | 311 | 119 | 769 | 0 | | |
| Heavy Vehicles (%) | 13% | 0% | 25% | 2% | 2% | 2% | 0% | 13% | 9% | 18% | 10% | 0% | | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | | |
| Actuated Green, G (s) | 21.8 | | 21.8 | | | | | 72.0 | 72.0 | 15.5 | 94.3 | | | |
| Effective Green, g (s) | 21.8 | | 21.8 | | | | | 72.0 | 72.0 | 15.5 | 94.3 | | | |
| Actuated g/C Ratio | 0.17 | | 0.17 | | | | | 0.55 | 0.55 | 0.12 | 0.73 | | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| Lane Grp Cap (vph) | 267 | | 216 | | | | | 1769 | 820 | 182 | 2380 | | | |
| v/s Ratio Prot | | | | | | | | c0.35 | | c0.08 | 0.23 | | | |
| v/s Ratio Perm | 0.12 | | c0.24 | | | | | | 0.21 | | | | | |
| v/c Ratio | 0.74 | | 1.42 | | | | | 0.63 | 0.38 | 0.65 | 0.32 | | | |
| Uniform Delay, d1 | 51.4 | | 54.1 | | | | | 19.8 | 16.4 | 54.7 | 6.4 | | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 10.2 | | 212.7 | | | | | 1.7 | 1.3 | 8.2 | 0.4 | | | |
| Delay (s) | 61.6 | | 266.8 | | | | | 21.5 | 17.7 | 62.9 | 6.8 | | | |
| Level of Service | E | | F | | | | | C | B | E | A | | | |
| Approach Delay (s) | | 211.6 | | | 0.0 | | | 20.5 | | | 14.3 | | | |
| Approach LOS | | F | | | A | | | C | | | B | | | |
| Intersection Summary | | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 63.7 | | | | | | | | | HCM 2000 Level of Service | E | |
| HCM 2000 Volume to Capacity ratio | | | 0.79 | | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | | | | | | | | 20.7 | | | |
| Intersection Capacity Utilization | | | 59.6% | | | | | | | | | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 18 | 2 | 16 | 6 | 0 | 7 | 2 | 1323 | 1 | 6 | 1111 | 4 |
| Future Vol, veh/h | 18 | 2 | 16 | 6 | 0 | 7 | 2 | 1323 | 1 | 6 | 1111 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 83 | 25 | 75 | 50 | 92 | 62 | 50 | 94 | 25 | 33 | 89 | 38 |
| Heavy Vehicles, % | 0 | 0 | 11 | 0 | 0 | 1 | 0 | 14 | 0 | 0 | 8 | 6 |
| Mvmt Flow | 22 | 8 | 21 | 12 | 0 | 11 | 4 | 1407 | 4 | 18 | 1248 | 11 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1996 | 2703 | 624 | 2079 | 2710 | 704 | 1259 | 0 | 0 | 1411 | 0 | 0 |
| Stage 1 | 1284 | 1284 | - | 1415 | 1415 | - | - | - | - | - | - | - |
| Stage 2 | 712 | 1419 | - | 664 | 1295 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.5 | 6.5 | 6.92 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.5 | 4 | 3.31 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 36 | 22 | 407 | 32 | 21 | 382 | 559 | - | - | 490 | - | - |
| Stage 1 | 177 | 238 | - | 147 | 206 | - | - | - | - | - | - | - |
| Stage 2 | 394 | 205 | - | 421 | 235 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 34 | 21 | 407 | 21 | 20 | 382 | 559 | - | - | 490 | - | - |
| Mov Cap-2 Maneuver | 34 | 21 | - | 21 | 20 | - | - | - | - | - | - | - |
| Stage 1 | 176 | 229 | - | 146 | 205 | - | - | - | - | - | - | - |
| Stage 2 | 380 | 204 | - | 371 | 226 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|-------|--|-------|--|----|--|-----|--|
| HCM Control Delay, s | 284.1 | | 188.4 | | 0 | | 0.2 | |
| HCM LOS | F | | F | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 559 | - | - | 48 | 39 | 490 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | - | 1.063 | 0.597 | 0.037 | - | - |
| HCM Control Delay (s) | 11.5 | - | - | 284.1 | 188.4 | 12.6 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4.6 | 2.1 | 0.1 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 22.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | ↕ | ↕ | ↕ | ↕ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 20 | 0 | 39 | 0 | 1287 | 7 | 2 | 1131 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 20 | 0 | 39 | 0 | 1287 | 7 | 2 | 1131 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 50 | 25 | 92 | 45 | 25 | 42 | 66 | 90 | 50 | 25 | 85 | 84 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 3 | 12 | 0 | 14 | 19 |
| Mvmt Flow | 0 | 0 | 0 | 44 | 0 | 93 | 0 | 1430 | 14 | 8 | 1331 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 2062 | 2791 | 666 | 2112 | 2777 | 715 | 1331 | 0 | 0 | 1444 | 0 | 0 |
| Stage 1 | 1347 | 1347 | - | 1430 | 1430 | - | - | - | - | - | - | - |
| Stage 2 | 715 | 1444 | - | 682 | 1347 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.02 | 4.22 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.36 | 2.26 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 32 | 19 | 407 | ~ 30 | 19 | 364 | 494 | - | - | 476 | - | - |
| Stage 1 | 162 | 222 | - | 144 | 202 | - | - | - | - | - | - | - |
| Stage 2 | 392 | 199 | - | 411 | 222 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 24 | 19 | 407 | ~ 30 | 19 | 364 | 494 | - | - | 476 | - | - |
| Mov Cap-2 Maneuver | 24 | 19 | - | ~ 30 | 19 | - | - | - | - | - | - | - |
| Stage 1 | 162 | 218 | - | 144 | 202 | - | - | - | - | - | - | - |
| Stage 2 | 292 | 199 | - | 404 | 218 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|--------|----|-----|
| HCM Control Delay, s | 0 | \$ 468 | 0 | 0.1 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-----|-----|-----|-------|--------|-------|-----|-----|
| Capacity (veh/h) | 494 | - | - | - | 79 | 476 | - | - |
| HCM Lane V/C Ratio | - | - | - | - | 1.738 | 0.017 | - | - |
| HCM Control Delay (s) | 0 | - | - | 0 | \$ 468 | 12.7 | - | - |
| HCM Lane LOS | A | - | - | A | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 11.7 | 0.1 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 79.2 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 147 | 23 | 0 | 1147 | 1136 | 15 |
| Future Vol, veh/h | 147 | 23 | 0 | 1147 | 1136 | 15 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 83 | 40 | 25 | 91 | 92 | 45 |
| Heavy Vehicles, % | 0 | 0 | 0 | 10 | 16 | 0 |
| Mvmt Flow | 177 | 58 | 0 | 1260 | 1235 | 33 |

| Major/Minor | Minor2 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | 1865 | 618 | - | 0 | - |
| Stage 1 | 1235 | - | - | - | - |
| Stage 2 | 630 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - |
| Pot Cap-1 Maneuver | ~ 66 | 437 | 0 | - | - |
| Stage 1 | 242 | - | 0 | - | - |
| Stage 2 | 498 | - | 0 | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | ~ 66 | 437 | - | - | - |
| Mov Cap-2 Maneuver | ~ 66 | - | - | - | - |
| Stage 1 | 242 | - | - | - | - |
| Stage 2 | 498 | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|----|----|
| HCM Control Delay, s | \$ 932.7 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|----------|-----|-----|
| Capacity (veh/h) | - | 83 | - | - |
| HCM Lane V/C Ratio | - | 2.827 | - | - |
| HCM Control Delay (s) | - | \$ 932.7 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 22.8 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 8.6 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | TT | | ↑↑ | ↑ | ↑ | ↑↑ |
| Traffic Vol, veh/h | 28 | 65 | 1082 | 6 | 18 | 1141 |
| Future Vol, veh/h | 28 | 65 | 1082 | 6 | 18 | 1141 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 72 | 58 | 82 | 31 | 62 | 91 |
| Heavy Vehicles, % | 0 | 8 | 10 | 1 | 0 | 13 |
| Mvmt Flow | 39 | 112 | 1320 | 19 | 29 | 1254 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 2005 | 660 | 0 | 0 | 1339 |
| Stage 1 | 1320 | - | - | - | - |
| Stage 2 | 685 | - | - | - | - |
| Critical Hdwy | 6.8 | 7.06 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.38 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 53 | 392 | - | - | 521 |
| Stage 1 | 218 | - | - | - | - |
| Stage 2 | 467 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 50 | 392 | - | - | 521 |
| Mov Cap-2 Maneuver | 50 | - | - | - | - |
| Stage 1 | 218 | - | - | - | - |
| Stage 2 | 441 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|-------|----|-----|
| HCM Control Delay, s | 155.6 | 0 | 0.3 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 142 | 521 |
| HCM Lane V/C Ratio | - | - | 1.063 | 0.056 |
| HCM Control Delay (s) | - | - | 155.6 | 12.3 |
| HCM Lane LOS | - | - | F | B |
| HCM 95th %tile Q(veh) | - | - | 8.1 | 0.2 |

HCM 6th TWSC
 7: US 220 & Steve Drive/Drewry Mason School Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕↔ | | | | | ↕ | ↕↕ | ↕ | ↕ | ↕↕ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1088 | 140 | 143 | 1010 | 16 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1088 | 140 | 143 | 1010 | 16 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 65 | 75 | 81 | 92 | 92 | 92 | 50 | 94 | 67 | 86 | 83 | 62 |
| Heavy Vehicles, % | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 13 | 4 | 4 | 14 | 1 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1157 | 209 | 166 | 1217 | 26 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|------|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 2149 | 2936 | 622 | | | | 1243 | 0 | 0 | 1366 | 0 | 0 |
| Stage 1 | 1562 | 1562 | - | | | | - | - | - | - | - | - |
| Stage 2 | 587 | 1374 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 7.2 | | | | 4.1 | - | - | 4.18 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.45 | | | | 2.2 | - | - | 2.24 | - | - |
| Pot Cap-1 Maneuver | 42 | 15 | 399 | | | | 567 | - | - | 488 | - | - |
| Stage 1 | 161 | 174 | - | | | | - | - | - | - | - | - |
| Stage 2 | 524 | 215 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 28 | 0 | 399 | | | | 567 | - | - | 488 | - | - |
| Mov Cap-2 Maneuver | 28 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 160 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 346 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 1.9 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 567 | - | - | - | 488 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | - | - | 0.341 | - | - |
| HCM Control Delay (s) | 11.4 | - | - | 0 | 16.1 | - | - |
| HCM Lane LOS | B | - | - | A | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 1.5 | - | - |

Queues

8: US 220 & Water Plant Road

04/02/2019



| Lane Group | EBL | EBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 125 | 65 | 60 | 1308 | 4 | 53 | 906 | 153 |
| v/c Ratio | 0.55 | 0.24 | 0.36 | 0.70 | 0.00 | 0.33 | 0.52 | 0.17 |
| Control Delay | 49.0 | 16.1 | 48.6 | 18.8 | 0.0 | 48.1 | 15.2 | 2.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 49.0 | 16.1 | 48.6 | 18.8 | 0.0 | 48.1 | 15.2 | 2.2 |
| Queue Length 50th (ft) | 74 | 6 | 35 | 298 | 0 | 31 | 175 | 0 |
| Queue Length 95th (ft) | 126 | 0 | 63 | 425 | 0 | 65 | 281 | 18 |
| Internal Link Dist (ft) | | 1026 | | 4759 | | | 1863 | |
| Turn Bay Length (ft) | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 399 | 431 | 316 | 1868 | 1006 | 320 | 1753 | 927 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.31 | 0.15 | 0.19 | 0.70 | 0.00 | 0.17 | 0.52 | 0.17 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 8: US 220 & Water Plant Road

04/02/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 105 | 4 | 31 | 0 | 0 | 0 | 44 | 1125 | 1 | 43 | 843 | 124 |
| Future Volume (veh/h) | 105 | 4 | 31 | 0 | 0 | 0 | 44 | 1125 | 1 | 43 | 843 | 124 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1781 | 1796 | 1796 | 1900 | 1900 | 1900 | 1781 | 1722 | 1900 | 1841 | 1618 | 1767 |
| Adj Flow Rate, veh/h | 125 | 11 | 54 | 0 | 0 | 0 | 60 | 1308 | 4 | 53 | 906 | 153 |
| Peak Hour Factor | 0.84 | 0.38 | 0.57 | 0.50 | 0.62 | 0.92 | 0.73 | 0.86 | 0.25 | 0.81 | 0.93 | 0.81 |
| Percent Heavy Veh, % | 8 | 7 | 7 | 0 | 0 | 0 | 8 | 12 | 0 | 4 | 19 | 9 |
| Cap, veh/h | 171 | 27 | 131 | 2 | 2 | 2 | 89 | 1997 | 983 | 86 | 1882 | 916 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.05 | 0.61 | 0.61 | 0.05 | 0.61 | 0.61 |
| Sat Flow, veh/h | 1697 | 264 | 1298 | 1810 | 1900 | 1610 | 1697 | 3272 | 1610 | 1753 | 3075 | 1497 |
| Grp Volume(v), veh/h | 125 | 0 | 65 | 0 | 0 | 0 | 60 | 1308 | 4 | 53 | 906 | 153 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 0 | 1563 | 1810 | 1900 | 1610 | 1697 | 1636 | 1610 | 1753 | 1537 | 1497 |
| Q Serve(g_s), s | 6.3 | 0.0 | 3.5 | 0.0 | 0.0 | 0.0 | 3.1 | 23.0 | 0.1 | 2.6 | 14.4 | 3.9 |
| Cycle Q Clear(g_c), s | 6.3 | 0.0 | 3.5 | 0.0 | 0.0 | 0.0 | 3.1 | 23.0 | 0.1 | 2.6 | 14.4 | 3.9 |
| Prop In Lane | 1.00 | | 0.83 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 171 | 0 | 158 | 2 | 2 | 2 | 89 | 1997 | 983 | 86 | 1882 | 916 |
| V/C Ratio(X) | 0.73 | 0.00 | 0.41 | 0.00 | 0.00 | 0.00 | 0.68 | 0.65 | 0.00 | 0.61 | 0.48 | 0.17 |
| Avail Cap(c_a), veh/h | 429 | 0 | 395 | 237 | 249 | 211 | 339 | 1997 | 983 | 342 | 1882 | 916 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 38.7 | 0.0 | 37.4 | 0.0 | 0.0 | 0.0 | 41.3 | 11.2 | 6.7 | 41.3 | 9.5 | 7.4 |
| Incr Delay (d2), s/veh | 7.0 | 0.0 | 2.1 | 0.0 | 0.0 | 0.0 | 10.4 | 1.7 | 0.0 | 8.2 | 0.9 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.9 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 1.5 | 6.6 | 0.0 | 1.3 | 4.1 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.6 | 0.0 | 39.4 | 0.0 | 0.0 | 0.0 | 51.6 | 12.9 | 6.7 | 49.5 | 10.3 | 7.8 |
| LnGrp LOS | D | A | D | A | A | A | D | B | A | D | B | A |
| Approach Vol, veh/h | | 190 | | | 0 | | | 1372 | | | 1112 | |
| Approach Delay, s/veh | | 43.5 | | | 0.0 | | | 14.6 | | | 11.9 | |
| Approach LOS | | D | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.1 | 60.0 | | 0.0 | 11.9 | 60.1 | | 16.6 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 17 | 54.1 | | * 12 | * 18 | 54.1 | | 22.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.6 | 25.0 | | 0.0 | 5.1 | 16.4 | | 8.3 | | | | |
| Green Ext Time (p_c), s | 0.1 | 16.2 | | 0.0 | 0.1 | 13.5 | | 0.7 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 15.5 |
| HCM 6th LOS | B |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

9: US 220 & Soapstone Road/Main Street

04/02/2019

























| Lane Group | EBT | EBR | NBL | NBT | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 136 | 89 | 52 | 1474 | 120 | 788 | 157 |
| v/c Ratio | 0.59 | 0.29 | 0.29 | 0.82 | 0.59 | 0.36 | 0.16 |
| Control Delay | 60.9 | 5.3 | 55.9 | 27.3 | 63.1 | 14.1 | 3.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 60.9 | 5.3 | 55.9 | 27.3 | 63.1 | 14.1 | 3.7 |
| Queue Length 50th (ft) | 101 | 0 | 38 | 466 | 90 | 166 | 8 |
| Queue Length 95th (ft) | 116 | 0 | 59 | 511 | 123 | 248 | 0 |
| Internal Link Dist (ft) | 868 | | | 3075 | | 4759 | |
| Turn Bay Length (ft) | | 25 | 100 | | 225 | | 225 |
| Base Capacity (vph) | 411 | 450 | 378 | 1789 | 380 | 2180 | 999 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.33 | 0.20 | 0.14 | 0.82 | 0.32 | 0.36 | 0.16 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 9: US 220 & Soapstone Road/Main Street

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  |  | |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 58 | 17 | 50 | 0 | 0 | 0 | 34 | 1120 | 0 | 85 | 717 | 72 |
| Future Volume (veh/h) | 58 | 17 | 50 | 0 | 0 | 0 | 34 | 1120 | 0 | 85 | 717 | 72 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1900 | 1900 | 1856 | 1781 | 1781 | 1826 | 1841 | 1678 | 1900 | 1811 | 1885 | 1841 |
| Adj Flow Rate, veh/h | 109 | 27 | 89 | 0 | 0 | 0 | 52 | 1474 | 0 | 120 | 788 | 157 |
| Peak Hour Factor | 0.53 | 0.62 | 0.56 | 0.25 | 0.63 | 0.69 | 0.65 | 0.76 | 0.92 | 0.71 | 0.91 | 0.46 |
| Percent Heavy Veh, % | 0 | 0 | 3 | 8 | 8 | 5 | 4 | 15 | 0 | 6 | 1 | 4 |
| Cap, veh/h | 149 | 37 | 160 | 0 | 2 | 1 | 70 | 1952 | 986 | 150 | 2337 | 1018 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.04 | 0.61 | 0.00 | 0.09 | 0.65 | 0.65 |
| Sat Flow, veh/h | 1464 | 363 | 1572 | 0 | 1781 | 1547 | 1753 | 3188 | 1610 | 1725 | 3582 | 1560 |
| Grp Volume(v), veh/h | 136 | 0 | 89 | 0 | 0 | 0 | 52 | 1474 | 0 | 120 | 788 | 157 |
| Grp Sat Flow(s),veh/h/ln | 1827 | 0 | 1572 | 0 | 1781 | 1547 | 1753 | 1594 | 1610 | 1725 | 1791 | 1560 |
| Q Serve(g_s), s | 8.1 | 0.0 | 6.1 | 0.0 | 0.0 | 0.0 | 3.3 | 37.5 | 0.0 | 7.7 | 11.0 | 4.4 |
| Cycle Q Clear(g_c), s | 8.1 | 0.0 | 6.1 | 0.0 | 0.0 | 0.0 | 3.3 | 37.5 | 0.0 | 7.7 | 11.0 | 4.4 |
| Prop In Lane | 0.80 | | 1.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 186 | 0 | 160 | 0 | 2 | 1 | 70 | 1952 | 986 | 150 | 2337 | 1018 |
| V/C Ratio(X) | 0.73 | 0.00 | 0.56 | 0.00 | 0.00 | 0.00 | 0.74 | 0.76 | 0.00 | 0.80 | 0.34 | 0.15 |
| Avail Cap(c_a), veh/h | 442 | 0 | 381 | 0 | 422 | 366 | 410 | 1952 | 986 | 414 | 2337 | 1018 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 49.0 | 0.0 | 48.1 | 0.0 | 0.0 | 0.0 | 53.3 | 15.7 | 0.0 | 50.4 | 8.7 | 7.5 |
| Incr Delay (d2), s/veh | 7.7 | 0.0 | 4.3 | 0.0 | 0.0 | 0.0 | 50.5 | 2.8 | 0.0 | 11.3 | 0.4 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.1 | 0.0 | 2.6 | 0.0 | 0.0 | 0.0 | 2.4 | 11.8 | 0.0 | 3.6 | 3.6 | 1.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 56.7 | 0.0 | 52.3 | 0.0 | 0.0 | 0.0 | 103.9 | 18.5 | 0.0 | 61.6 | 9.1 | 7.9 |
| LnGrp LOS | E | A | D | A | A | A | F | B | A | E | A | A |
| Approach Vol, veh/h | | 225 | | | 0 | | | 1526 | | | 1065 | |
| Approach Delay, s/veh | | 54.9 | | | 0.0 | | | 21.4 | | | 14.8 | |
| Approach LOS | | D | | | | | | C | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 17.7 | 75.4 | | 0.0 | 13.2 | 79.9 | | 19.2 | | | | |
| Change Period (Y+Rc), s | * 8 | * 6.6 | | * 8.4 | * 8.7 | 6.6 | | 7.8 | | | | |
| Max Green Setting (Gmax), s | * 27 | * 69 | | * 27 | * 26 | 68.4 | | 27.2 | | | | |
| Max Q Clear Time (g_c+l1), s | 9.7 | 39.5 | | 0.0 | 5.3 | 13.0 | | 10.1 | | | | |
| Green Ext Time (p_c), s | 0.3 | 23.3 | | 0.0 | 0.3 | 18.8 | | 1.3 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 21.6 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

Queues

10: US 220 & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 87 | 591 | 724 | 17 | 325 | 555 |
| v/c Ratio | 0.23 | 0.94 | 0.52 | 0.03 | 0.73 | 0.29 |
| Control Delay | 39.1 | 38.9 | 28.2 | 10.7 | 21.0 | 10.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 39.1 | 38.9 | 28.2 | 10.7 | 21.0 | 10.5 |
| Queue Length 50th (ft) | 55 | 179 | 235 | 1 | 121 | 106 |
| Queue Length 95th (ft) | 76 | 255 | 311 | 3 | 160 | 136 |
| Internal Link Dist (ft) | 1686 | | 3621 | | | 3075 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 470 | 691 | 1401 | 659 | 494 | 2054 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.19 | 0.86 | 0.52 | 0.03 | 0.66 | 0.27 |

Intersection Summary

HCM 6th Signalized Intersection Summary

10: US 220 & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 58 | 473 | 681 | 7 | 273 | 494 |
| Future Volume (veh/h) | 58 | 473 | 681 | 7 | 273 | 494 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1767 | 1737 | 1722 | 1781 | 1707 | 1589 |
| Adj Flow Rate, veh/h | 87 | 591 | 724 | 17 | 325 | 555 |
| Peak Hour Factor | 0.67 | 0.80 | 0.94 | 0.42 | 0.84 | 0.89 |
| Percent Heavy Veh, % | 9 | 11 | 12 | 8 | 13 | 21 |
| Cap, veh/h | 453 | 396 | 1347 | 621 | 430 | 1844 |
| Arrive On Green | 0.27 | 0.27 | 0.41 | 0.41 | 0.13 | 0.61 |
| Sat Flow, veh/h | 1682 | 1472 | 3358 | 1510 | 1626 | 3098 |
| Grp Volume(v), veh/h | 87 | 591 | 724 | 17 | 325 | 555 |
| Grp Sat Flow(s),veh/h/ln | 1682 | 1472 | 1636 | 1510 | 1626 | 1509 |
| Q Serve(g_s), s | 5.0 | 33.6 | 20.9 | 0.8 | 13.8 | 10.9 |
| Cycle Q Clear(g_c), s | 5.0 | 33.6 | 20.9 | 0.8 | 13.8 | 10.9 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 453 | 396 | 1347 | 621 | 430 | 1844 |
| V/C Ratio(X) | 0.19 | 1.49 | 0.54 | 0.03 | 0.76 | 0.30 |
| Avail Cap(c_a), veh/h | 453 | 396 | 1347 | 621 | 497 | 1844 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.2 | 45.6 | 27.8 | 21.9 | 19.4 | 11.6 |
| Incr Delay (d2), s/veh | 0.3 | 234.4 | 1.5 | 0.1 | 5.7 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 38.0 | 7.9 | 0.3 | 5.3 | 3.3 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 35.5 | 280.0 | 29.3 | 21.9 | 25.1 | 11.8 |
| LnGrp LOS | D | F | C | C | C | B |
| Approach Vol, veh/h | 678 | | 741 | | | 880 |
| Approach Delay, s/veh | 248.7 | | 29.1 | | | 16.7 |
| Approach LOS | F | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 24.9 | 60.0 | | 40.0 | | 84.9 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 21 | * 51 | | 33.6 | | * 51 |
| Max Q Clear Time (g_c+l1), s | 15.8 | 22.9 | | 35.6 | | 12.9 |
| Green Ext Time (p_c), s | 0.5 | 9.1 | | 0.0 | | 7.2 |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 89.1 |
| HCM 6th LOS | F |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
 11: US 220 & Lee Ford Camp Rd/Church St

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 22 | 13 | 11 | 8 | 20 | 11 | 10 | 655 | 49 | 13 | 499 | 40 |
| Future Vol, veh/h | 22 | 13 | 11 | 8 | 20 | 11 | 10 | 655 | 49 | 13 | 499 | 40 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 24 | 14 | 12 | 9 | 22 | 12 | 11 | 712 | 53 | 14 | 542 | 43 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 959 | 1357 | 271 | 1040 | 1347 | 356 | 585 | 0 | 0 | 765 | 0 | 0 |
| Stage 1 | 570 | 570 | - | 734 | 734 | - | - | - | - | - | - | - |
| Stage 2 | 389 | 787 | - | 306 | 613 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 211 | 148 | 727 | 185 | 150 | 640 | 986 | - | - | 844 | - | - |
| Stage 1 | 474 | 504 | - | 378 | 424 | - | - | - | - | - | - | - |
| Stage 2 | 606 | 401 | - | 679 | 481 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 180 | 144 | 727 | 165 | 146 | 640 | 986 | - | - | 844 | - | - |
| Mov Cap-2 Maneuver | 180 | 144 | - | 165 | 146 | - | - | - | - | - | - | - |
| Stage 1 | 469 | 495 | - | 374 | 419 | - | - | - | - | - | - | - |
| Stage 2 | 558 | 397 | - | 638 | 473 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|----|--|-----|--|-----|--|
| HCM Control Delay, s | 28.6 | | 29 | | 0.1 | | 0.2 | |
| HCM LOS | D | | D | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 986 | - | - | 202 | 192 | 844 | - | - |
| HCM Lane V/C Ratio | 0.011 | - | - | 0.248 | 0.221 | 0.017 | - | - |
| HCM Control Delay (s) | 8.7 | - | - | 28.6 | 29 | 9.3 | - | - |
| HCM Lane LOS | A | - | - | D | D | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.9 | 0.8 | 0.1 | - | - |

Queues

1: US 220 & US 58 WB Ramp

04/02/2019



| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|-------|------|------|------|------|
| Lane Group Flow (vph) | 419 | 133 | 729 | 843 | 80 |
| v/c Ratio | 1.24 | 0.33 | 0.34 | 0.39 | 0.09 |
| Control Delay | 162.7 | 7.9 | 7.6 | 8.1 | 1.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 162.7 | 7.9 | 7.6 | 8.1 | 1.7 |
| Queue Length 50th (ft) | ~281 | 0 | 84 | 101 | 0 |
| Queue Length 95th (ft) | #456 | 37 | 106 | 119 | 14 |
| Internal Link Dist (ft) | 1343 | | 142 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 338 | 408 | 2155 | 2135 | 910 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.24 | 0.33 | 0.34 | 0.39 | 0.09 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.


















95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: US 220 & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | |  |  | |  | | |  |  |
| Traffic Volume (vph) | 0 | 0 | 0 | 327 | 0 | 112 | 0 | 627 | 0 | 0 | 691 | 70 |
| Future Volume (vph) | 0 | 0 | 0 | 327 | 0 | 112 | 0 | 627 | 0 | 0 | 691 | 70 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1671 | 1495 | | 3374 | | | 3343 | 1380 |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1671 | 1495 | | 3374 | | | 3343 | 1380 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.78 | 0.92 | 0.84 | 0.92 | 0.86 | 0.92 | 0.92 | 0.82 | 0.88 |
| Adj. Flow (vph) | 0 | 0 | 0 | 419 | 0 | 133 | 0 | 729 | 0 | 0 | 843 | 80 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 106 | 0 | 0 | 0 | 0 | 0 | 29 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 419 | 27 | 0 | 729 | 0 | 0 | 843 | 51 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 8% | 0% | 8% | 0% | 7% | 19% | 0% | 8% | 17% |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 |
| Actuated Green, G (s) | | | | | 17.2 | 17.2 | | 54.3 | | | 54.3 | 54.3 |
| Effective Green, g (s) | | | | | 17.2 | 17.2 | | 54.3 | | | 54.3 | 54.3 |
| Actuated g/C Ratio | | | | | 0.20 | 0.20 | | 0.64 | | | 0.64 | 0.64 |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Vehicle Extension (s) | | | | | 4.0 | 4.0 | | 5.0 | | | 5.0 | 5.0 |
| Lane Grp Cap (vph) | | | | | 338 | 302 | | 2155 | | | 2135 | 881 |
| v/s Ratio Prot | | | | | | | | 0.22 | | | c0.25 | |
| v/s Ratio Perm | | | | | 0.25 | 0.02 | | | | | | 0.04 |
| v/c Ratio | | | | | 1.24 | 0.09 | | 0.34 | | | 0.39 | 0.06 |
| Uniform Delay, d1 | | | | | 33.9 | 27.5 | | 7.1 | | | 7.4 | 5.8 |
| Progression Factor | | | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 130.6 | 0.2 | | 0.4 | | | 0.5 | 0.1 |
| Delay (s) | | | | | 164.5 | 27.7 | | 7.5 | | | 8.0 | 5.9 |
| Level of Service | | | | | F | C | | A | | | A | A |
| Approach Delay (s) | | 0.0 | | | 131.5 | | | 7.5 | | | 7.8 | |
| Approach LOS | | A | | | F | | | A | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 38.7 | | HCM 2000 Level of Service | | | | | | D | |
| HCM 2000 Volume to Capacity ratio | | | 0.60 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 85.0 | | Sum of lost time (s) | | | | | 13.5 | | |
| Intersection Capacity Utilization | | | 82.3% | | ICU Level of Service | | | | | E | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: US 220 & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|-------|------|------|------|------|
| Lane Group Flow (vph) | 171 | 710 | 1086 | 287 | 186 | 1086 |
| v/c Ratio | 0.64 | 2.07 | 0.67 | 0.35 | 0.75 | 0.46 |
| Control Delay | 62.5 | 513.4 | 27.1 | 12.8 | 70.0 | 8.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 62.5 | 513.4 | 27.1 | 12.8 | 70.0 | 8.1 |
| Queue Length 50th (ft) | 136 | ~838 | 346 | 77 | 151 | 176 |
| Queue Length 95th (ft) | 161 | #1082 | 479 | 146 | 175 | 182 |
| Internal Link Dist (ft) | | | 585 | | | 516 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 267 | 343 | 1632 | 816 | 387 | 2380 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.64 | 2.07 | 0.67 | 0.35 | 0.48 | 0.46 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: US 220 & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|-------|-------|------|------|------|------|-------|------|-------|---------------------------|------|
| Lane Configurations | ↖ | | ↗ | | | | | ↑↑ | ↗ | ↖ | ↑↑ | |
| Traffic Volume (vph) | 120 | 0 | 660 | 0 | 0 | 0 | 0 | 999 | 247 | 138 | 880 | 0 |
| Future Volume (vph) | 120 | 0 | 660 | 0 | 0 | 0 | 0 | 999 | 247 | 138 | 880 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1597 | | 1292 | | | | | 3195 | 1482 | 1530 | 3282 | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1597 | | 1292 | | | | | 3195 | 1482 | 1530 | 3282 | |
| Peak-hour factor, PHF | 0.70 | 0.92 | 0.93 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.86 | 0.74 | 0.81 | 0.92 |
| Adj. Flow (vph) | 171 | 0 | 710 | 0 | 0 | 0 | 0 | 1086 | 287 | 186 | 1086 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 127 | 0 | 0 | 0 | 0 | 0 | 59 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 171 | 0 | 583 | 0 | 0 | 0 | 0 | 1086 | 228 | 186 | 1086 | 0 |
| Heavy Vehicles (%) | 13% | 0% | 25% | 2% | 2% | 2% | 0% | 13% | 9% | 18% | 10% | 0% |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | |
| Actuated Green, G (s) | 21.8 | | 21.8 | | | | | 66.4 | 66.4 | 21.1 | 94.3 | |
| Effective Green, g (s) | 21.8 | | 21.8 | | | | | 66.4 | 66.4 | 21.1 | 94.3 | |
| Actuated g/C Ratio | 0.17 | | 0.17 | | | | | 0.51 | 0.51 | 0.16 | 0.73 | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 267 | | 216 | | | | | 1631 | 756 | 248 | 2380 | |
| v/s Ratio Prot | | | | | | | | c0.34 | | c0.12 | 0.33 | |
| v/s Ratio Perm | 0.11 | | c0.45 | | | | | | 0.15 | | | |
| v/c Ratio | 0.64 | | 2.70 | | | | | 0.67 | 0.30 | 0.75 | 0.46 | |
| Uniform Delay, d1 | 50.4 | | 54.1 | | | | | 23.6 | 18.4 | 51.9 | 7.3 | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 5.2 | | 778.6 | | | | | 2.2 | 1.0 | 12.0 | 0.6 | |
| Delay (s) | 55.6 | | 832.7 | | | | | 25.7 | 19.4 | 63.9 | 8.0 | |
| Level of Service | E | | F | | | | | C | B | E | A | |
| Approach Delay (s) | | 681.9 | | | 0.0 | | | 24.4 | | | 16.1 | |
| Approach LOS | | F | | | A | | | C | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 185.7 | | | | | | | | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | | | 1.09 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | | | | | | | 20.7 | | |
| Intersection Capacity Utilization | | | 76.8% | | | | | | | | ICU Level of Service | D |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 10 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↕ | ↗ | ↗ | ↕ | ↗ |
| Traffic Vol, veh/h | 21 | 0 | 6 | 2 | 0 | 18 | 6 | 1207 | 2 | 28 | 1402 | 20 |
| Future Vol, veh/h | 21 | 0 | 6 | 2 | 0 | 18 | 6 | 1207 | 2 | 28 | 1402 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 83 | 25 | 75 | 50 | 92 | 62 | 50 | 94 | 25 | 33 | 89 | 38 |
| Heavy Vehicles, % | 0 | 0 | 11 | 0 | 0 | 1 | 0 | 14 | 0 | 0 | 8 | 6 |
| Mvmt Flow | 25 | 0 | 8 | 4 | 0 | 29 | 12 | 1284 | 8 | 85 | 1575 | 53 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 2411 | 3061 | 788 | 2266 | 3106 | 642 | 1628 | 0 | 0 | 1292 | 0 | 0 |
| Stage 1 | 1745 | 1745 | - | 1308 | 1308 | - | - | - | - | - | - | - |
| Stage 2 | 666 | 1316 | - | 958 | 1798 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.5 | 6.5 | 6.92 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.5 | 4 | 3.31 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 18 | 13 | 315 | 23 | 12 | 419 | 405 | - | - | 543 | - | - |
| Stage 1 | 91 | 142 | - | 171 | 231 | - | - | - | - | - | - | - |
| Stage 2 | 420 | 229 | - | 280 | 133 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | ~ 14 | 11 | 315 | 19 | 10 | 419 | 405 | - | - | 543 | - | - |
| Mov Cap-2 Maneuver | ~ 14 | 11 | - | 19 | 10 | - | - | - | - | - | - | - |
| Stage 1 | 88 | 120 | - | 166 | 224 | - | - | - | - | - | - | - |
| Stage 2 | 379 | 222 | - | 230 | 112 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----------|----|-----|-----|
| HCM Control Delay, s | \$ 846.9 | 47 | 0.1 | 0.6 |
| HCM LOS | F | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|----------|-------|-------|-----|-----|
| Capacity (veh/h) | 405 | - | - | 18 | 118 | 543 | - | - |
| HCM Lane V/C Ratio | 0.03 | - | - | 1.85 | 0.28 | 0.156 | - | - |
| HCM Control Delay (s) | 14.2 | - | - | \$ 846.9 | 47 | 12.9 | - | - |
| HCM Lane LOS | B | - | - | F | E | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 4.6 | 1.1 | 0.6 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
4: US 220 & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 40 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | ↕ | ↕ | ↕ | ↕ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 1172 | 11 | 23 | 1387 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 1172 | 11 | 23 | 1387 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 50 | 25 | 92 | 45 | 25 | 42 | 66 | 90 | 50 | 25 | 85 | 84 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 3 | 12 | 0 | 14 | 19 |
| Mvmt Flow | 0 | 0 | 0 | 42 | 0 | 102 | 0 | 1302 | 22 | 92 | 1632 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 2467 | 3140 | 816 | 2302 | 3118 | 651 | 1632 | 0 | 0 | 1324 | 0 | 0 |
| Stage 1 | 1816 | 1816 | - | 1302 | 1302 | - | - | - | - | - | - | - |
| Stage 2 | 651 | 1324 | - | 1000 | 1816 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.02 | 4.22 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.36 | 2.26 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 16 | 11 | 324 | ~ 21 | 12 | 402 | 376 | - | - | 528 | - | - |
| Stage 1 | 83 | 131 | - | 173 | 233 | - | - | - | - | - | - | - |
| Stage 2 | 429 | 227 | - | 264 | 131 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 10 | 9 | 324 | ~ 18 | 10 | 402 | 376 | - | - | 528 | - | - |
| Mov Cap-2 Maneuver | 10 | 9 | - | ~ 18 | 10 | - | - | - | - | - | - | - |
| Stage 1 | 83 | 108 | - | 173 | 233 | - | - | - | - | - | - | - |
| Stage 2 | 320 | 227 | - | 218 | 108 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|----------|----|-----|
| HCM Control Delay, s | 0 | \$ 874.1 | 0 | 0.7 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-----|-----|-----|-------|----------|-------|-----|-----|
| Capacity (veh/h) | 376 | - | - | - | 56 | 528 | - | - |
| HCM Lane V/C Ratio | - | - | - | - | 2.582 | 0.174 | - | - |
| HCM Control Delay (s) | 0 | - | - | 0 | \$ 874.1 | 13.3 | - | - |
| HCM Lane LOS | A | - | - | A | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 14.8 | 0.6 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|-------|------|------|------|------|------|
| Int Delay, s/veh | 115.7 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 135 | 40 | 0 | 1048 | 1374 | 32 |
| Future Vol, veh/h | 135 | 40 | 0 | 1048 | 1374 | 32 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 83 | 40 | 25 | 91 | 92 | 45 |
| Heavy Vehicles, % | 0 | 0 | 0 | 10 | 16 | 0 |
| Mvmt Flow | 163 | 100 | 0 | 1152 | 1493 | 71 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 2069 | 747 | - | 0 | - | 0 |
| Stage 1 | 1493 | - | - | - | - | - |
| Stage 2 | 576 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 48 | 360 | 0 | - | - | - |
| Stage 1 | 176 | - | 0 | - | - | - |
| Stage 2 | 531 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 48 | 360 | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 48 | - | - | - | - | - |
| Stage 1 | 176 | - | - | - | - | - |
| Stage 2 | 531 | - | - | - | - | - |

| Approach | EB | NB | SB |
|-----------------------|--------|----|----|
| HCM Control Delay, \$ | 1311.9 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT EBLn1 | SBT | SBR |
|-----------------------|-----------|-----|-----|
| Capacity (veh/h) | - 72 | - | - |
| HCM Lane V/C Ratio | - 3.648 | - | - |
| HCM Control Delay (s) | \$ 1311.9 | - | - |
| HCM Lane LOS | - F | - | - |
| HCM 95th %tile Q(veh) | - 27.4 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.5 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 8 | 33 | 1015 | 13 | 53 | 1361 |
| Future Vol, veh/h | 8 | 33 | 1015 | 13 | 53 | 1361 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 72 | 58 | 82 | 31 | 62 | 91 |
| Heavy Vehicles, % | 0 | 8 | 10 | 1 | 0 | 13 |
| Mvmt Flow | 11 | 57 | 1238 | 42 | 85 | 1496 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 2156 | 619 | 0 | 0 | 1280 |
| Stage 1 | 1238 | - | - | - | - |
| Stage 2 | 918 | - | - | - | - |
| Critical Hdwy | 6.8 | 7.06 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.38 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 42 | 417 | - | - | 549 |
| Stage 1 | 241 | - | - | - | - |
| Stage 2 | 354 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 35 | 417 | - | - | 549 |
| Mov Cap-2 Maneuver | 35 | - | - | - | - |
| Stage 1 | 241 | - | - | - | - |
| Stage 2 | 299 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 47.5 | 0 | 0.7 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 150 | 549 |
| HCM Lane V/C Ratio | - | - | 0.453 | 0.156 |
| HCM Control Delay (s) | - | - | 47.5 | 12.8 |
| HCM Lane LOS | - | - | E | B |
| HCM 95th %tile Q(veh) | - | - | 2.1 | 0.5 |

HCM 6th TWSC
 7: US 220 & Steve Drive/Drewry Mason School Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 4.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↕↕ | ↕ | ↕ | ↕↕ | |
| Traffic Vol, veh/h | 20 | 0 | 6 | 0 | 0 | 0 | 13 | 1008 | 19 | 47 | 1285 | 37 |
| Future Vol, veh/h | 20 | 0 | 6 | 0 | 0 | 0 | 13 | 1008 | 19 | 47 | 1285 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 65 | 75 | 81 | 92 | 92 | 92 | 50 | 94 | 67 | 86 | 83 | 62 |
| Heavy Vehicles, % | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 13 | 4 | 4 | 14 | 1 |
| Mvmt Flow | 31 | 0 | 7 | 0 | 0 | 0 | 26 | 1072 | 28 | 55 | 1548 | 60 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|------|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 2276 | 2840 | 804 | | | | 1608 | 0 | 0 | 1100 | 0 | 0 |
| Stage 1 | 1688 | 1688 | - | | | | - | - | - | - | - | - |
| Stage 2 | 588 | 1152 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 7.2 | | | | 4.1 | - | - | 4.18 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.45 | | | | 2.2 | - | - | 2.24 | - | - |
| Pot Cap-1 Maneuver | 35 | 18 | 300 | | | | 412 | - | - | 619 | - | - |
| Stage 1 | 138 | 151 | - | | | | - | - | - | - | - | - |
| Stage 2 | 524 | 275 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | ~ 30 | 0 | 300 | | | | 412 | - | - | 619 | - | - |
| Mov Cap-2 Maneuver | ~ 30 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 129 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 477 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|-----|-----|
| HCM Control Delay, s | \$ 337.5 | 0.3 | 0.4 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|----------|-------|-----|-----|
| Capacity (veh/h) | 412 | - | - | 36 | 619 | - | - |
| HCM Lane V/C Ratio | 0.063 | - | - | 1.06 | 0.088 | - | - |
| HCM Control Delay (s) | 14.3 | - | - | \$ 337.5 | 11.4 | - | - |
| HCM Lane LOS | B | - | - | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 3.9 | 0.3 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Queues

8: US 220 & Water Plant Road

04/02/2019



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 92 | 76 | 4 | 3 | 74 | 1120 | 32 | 32 | 1196 | 189 |
| v/c Ratio | 0.47 | 0.31 | 0.03 | 0.02 | 0.42 | 0.56 | 0.03 | 0.23 | 0.69 | 0.21 |
| Control Delay | 51.6 | 17.8 | 50.5 | 50.5 | 51.6 | 15.4 | 0.0 | 50.5 | 21.1 | 4.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.6 | 17.8 | 50.5 | 50.5 | 51.6 | 15.4 | 0.0 | 50.5 | 21.1 | 4.2 |
| Queue Length 50th (ft) | 53 | 6 | 2 | 2 | 43 | 213 | 0 | 19 | 260 | 6 |
| Queue Length 95th (ft) | 113 | 0 | 8 | 8 | 83 | 419 | 0 | 51 | #576 | 39 |
| Internal Link Dist (ft) | | 1026 | | 657 | | 4759 | | | 1863 | |
| Turn Bay Length (ft) | 100 | | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 394 | 433 | 220 | 232 | 311 | 2002 | 1066 | 316 | 1730 | 917 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.23 | 0.18 | 0.02 | 0.01 | 0.24 | 0.56 | 0.03 | 0.10 | 0.69 | 0.21 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 & Water Plant Road

04/02/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 77 | 4 | 37 | 2 | 2 | 0 | 54 | 963 | 8 | 26 | 1112 | 153 |
| Future Volume (veh/h) | 77 | 4 | 37 | 2 | 2 | 0 | 54 | 963 | 8 | 26 | 1112 | 153 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1781 | 1796 | 1796 | 1900 | 1900 | 1900 | 1781 | 1722 | 1900 | 1841 | 1618 | 1767 |
| Adj Flow Rate, veh/h | 92 | 11 | 65 | 4 | 3 | 0 | 74 | 1120 | 32 | 32 | 1196 | 189 |
| Peak Hour Factor | 0.84 | 0.38 | 0.57 | 0.50 | 0.62 | 0.92 | 0.73 | 0.86 | 0.25 | 0.81 | 0.93 | 0.81 |
| Percent Heavy Veh, % | 8 | 7 | 7 | 0 | 0 | 0 | 8 | 12 | 0 | 4 | 19 | 9 |
| Cap, veh/h | 135 | 18 | 106 | 19 | 20 | 17 | 95 | 1868 | 919 | 63 | 1705 | 830 |
| Arrive On Green | 0.08 | 0.08 | 0.08 | 0.01 | 0.01 | 0.00 | 0.06 | 0.57 | 0.57 | 0.04 | 0.55 | 0.55 |
| Sat Flow, veh/h | 1697 | 225 | 1331 | 1810 | 1900 | 1610 | 1697 | 3272 | 1610 | 1753 | 3075 | 1497 |
| Grp Volume(v), veh/h | 92 | 0 | 76 | 4 | 3 | 0 | 74 | 1120 | 32 | 32 | 1196 | 189 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 0 | 1557 | 1810 | 1900 | 1610 | 1697 | 1636 | 1610 | 1753 | 1537 | 1497 |
| Q Serve(g_s), s | 5.1 | 0.0 | 4.6 | 0.2 | 0.2 | 0.0 | 4.2 | 21.8 | 0.8 | 1.7 | 27.7 | 6.3 |
| Cycle Q Clear(g_c), s | 5.1 | 0.0 | 4.6 | 0.2 | 0.2 | 0.0 | 4.2 | 21.8 | 0.8 | 1.7 | 27.7 | 6.3 |
| Prop In Lane | 1.00 | | 0.86 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 135 | 0 | 124 | 19 | 20 | 17 | 95 | 1868 | 919 | 63 | 1705 | 830 |
| V/C Ratio(X) | 0.68 | 0.00 | 0.62 | 0.21 | 0.15 | 0.00 | 0.78 | 0.60 | 0.03 | 0.51 | 0.70 | 0.23 |
| Avail Cap(c_a), veh/h | 390 | 0 | 357 | 215 | 226 | 191 | 308 | 1868 | 919 | 311 | 1705 | 830 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 43.7 | 0.0 | 43.5 | 47.8 | 47.8 | 0.0 | 45.4 | 13.7 | 9.2 | 46.2 | 15.8 | 11.1 |
| Incr Delay (d2), s/veh | 7.2 | 0.0 | 5.9 | 6.3 | 4.0 | 0.0 | 15.0 | 1.4 | 0.1 | 7.6 | 2.4 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.4 | 0.0 | 2.0 | 0.1 | 0.1 | 0.0 | 2.1 | 6.9 | 0.3 | 0.9 | 8.9 | 2.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 50.9 | 0.0 | 49.3 | 54.1 | 51.8 | 0.0 | 60.4 | 15.1 | 9.2 | 53.8 | 18.3 | 11.7 |
| LnGrp LOS | D | A | D | D | D | A | E | B | A | D | B | B |
| Approach Vol, veh/h | | 168 | | | 7 | | | 1226 | | | 1417 | |
| Approach Delay, s/veh | | 50.2 | | | 53.2 | | | 17.7 | | | 18.2 | |
| Approach LOS | | D | | | D | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 11.2 | 61.6 | | 9.4 | 12.8 | 60.0 | | 15.3 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 17 | 54.1 | | * 12 | * 18 | 54.1 | | 22.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 3.7 | 23.8 | | 2.2 | 6.2 | 29.7 | | 7.1 | | | | |
| Green Ext Time (p_c), s | 0.0 | 13.9 | | 0.0 | 0.1 | 15.0 | | 0.7 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 20.0 | | | | | | | | |
| HCM 6th LOS | | | | B | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

Queues

9: US 220 & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|-------|------|------|
| Lane Group Flow (vph) | 123 | 57 | 64 | 232 | 57 | 1099 | 11 | 290 | 991 | 93 |
| v/c Ratio | 0.62 | 0.21 | 0.46 | 0.69 | 0.37 | 0.79 | 0.01 | 0.98 | 0.51 | 0.10 |
| Control Delay | 81.1 | 1.7 | 79.7 | 19.1 | 74.5 | 43.0 | 0.0 | 110.0 | 25.8 | 1.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 81.1 | 1.7 | 79.7 | 19.1 | 74.5 | 43.0 | 0.0 | 110.0 | 25.8 | 1.2 |
| Queue Length 50th (ft) | 121 | 0 | 63 | 0 | 55 | 493 | 0 | 295 | 339 | 0 |
| Queue Length 95th (ft) | 133 | 0 | 82 | 8 | 78 | 517 | 0 | #365 | 499 | 0 |
| Internal Link Dist (ft) | 868 | | 611 | | | 3075 | | | 4759 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 100 | 225 | | 225 |
| Base Capacity (vph) | 325 | 378 | 304 | 456 | 294 | 1393 | 791 | 296 | 1957 | 910 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.38 | 0.15 | 0.21 | 0.51 | 0.19 | 0.79 | 0.01 | 0.98 | 0.51 | 0.10 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 9: US 220 & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|------|-------|-------|-------|-------|------|------|-------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↑↑ | ↗ | ↖ | ↑↑ | ↗ |
| Traffic Volume (veh/h) | 30 | 41 | 32 | 4 | 30 | 160 | 37 | 835 | 10 | 206 | 902 | 43 |
| Future Volume (veh/h) | 30 | 41 | 32 | 4 | 30 | 160 | 37 | 835 | 10 | 206 | 902 | 43 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1900 | 1900 | 1856 | 1781 | 1781 | 1826 | 1841 | 1678 | 1900 | 1811 | 1885 | 1841 |
| Adj Flow Rate, veh/h | 57 | 66 | 57 | 16 | 48 | 232 | 57 | 1099 | 11 | 290 | 991 | 93 |
| Peak Hour Factor | 0.53 | 0.62 | 0.56 | 0.25 | 0.63 | 0.69 | 0.65 | 0.76 | 0.92 | 0.71 | 0.91 | 0.46 |
| Percent Heavy Veh, % | 0 | 0 | 3 | 8 | 8 | 5 | 4 | 15 | 0 | 6 | 1 | 4 |
| Cap, veh/h | 71 | 82 | 130 | 70 | 210 | 246 | 75 | 1313 | 663 | 279 | 1886 | 821 |
| Arrive On Green | 0.08 | 0.08 | 0.08 | 0.16 | 0.16 | 0.16 | 0.04 | 0.41 | 0.41 | 0.16 | 0.53 | 0.53 |
| Sat Flow, veh/h | 861 | 996 | 1572 | 440 | 1320 | 1547 | 1753 | 3188 | 1610 | 1725 | 3582 | 1560 |
| Grp Volume(v), veh/h | 123 | 0 | 57 | 64 | 0 | 232 | 57 | 1099 | 11 | 290 | 991 | 93 |
| Grp Sat Flow(s),veh/h/ln | 1857 | 0 | 1572 | 1759 | 0 | 1547 | 1753 | 1594 | 1610 | 1725 | 1791 | 1560 |
| Q Serve(g_s), s | 10.9 | 0.0 | 5.8 | 5.3 | 0.0 | 24.8 | 5.4 | 51.7 | 0.7 | 27.0 | 30.2 | 5.0 |
| Cycle Q Clear(g_c), s | 10.9 | 0.0 | 5.8 | 5.3 | 0.0 | 24.8 | 5.4 | 51.7 | 0.7 | 27.0 | 30.2 | 5.0 |
| Prop In Lane | 0.46 | | 1.00 | 0.25 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 153 | 0 | 130 | 280 | 0 | 246 | 75 | 1313 | 663 | 279 | 1886 | 821 |
| V/C Ratio(X) | 0.80 | 0.00 | 0.44 | 0.23 | 0.00 | 0.94 | 0.76 | 0.84 | 0.02 | 1.04 | 0.53 | 0.11 |
| Avail Cap(c_a), veh/h | 302 | 0 | 256 | 280 | 0 | 246 | 276 | 1313 | 663 | 279 | 1886 | 821 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 75.3 | 0.0 | 72.9 | 61.2 | 0.0 | 69.4 | 79.1 | 44.1 | 29.1 | 70.0 | 25.9 | 19.9 |
| Incr Delay (d2), s/veh | 12.8 | 0.0 | 3.3 | 0.6 | 0.0 | 41.7 | 50.9 | 6.5 | 0.0 | 64.7 | 1.1 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.8 | 0.0 | 2.5 | 2.4 | 0.0 | 12.7 | 3.4 | 20.7 | 0.3 | 16.6 | 12.6 | 1.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 88.0 | 0.0 | 76.2 | 61.8 | 0.0 | 111.1 | 130.0 | 50.5 | 29.1 | 134.7 | 26.9 | 20.2 |
| LnGrp LOS | F | A | E | E | A | F | F | D | C | F | C | C |
| Approach Vol, veh/h | | 180 | | | 296 | | | 1167 | | | 1374 | |
| Approach Delay, s/veh | | 84.3 | | | 100.5 | | | 54.2 | | | 49.2 | |
| Approach LOS | | F | | | F | | | D | | | D | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 35.0 | 75.4 | | 35.0 | 15.9 | 94.5 | | 21.6 | | | | |
| Change Period (Y+Rc), s | * 8 | * 6.6 | | * 8.4 | * 8.7 | 6.6 | | 7.8 | | | | |
| Max Green Setting (Gmax), s | * 27 | * 69 | | * 27 | * 26 | 68.4 | | 27.2 | | | | |
| Max Q Clear Time (g_c+l1), s | 29.0 | 53.7 | | 26.8 | 7.4 | 32.2 | | 12.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 11.0 | | 0.0 | 0.3 | 19.4 | | 0.9 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 58.3 |
| HCM 6th LOS | E |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 91 | 404 | 595 | 38 | 446 | 633 |
| v/c Ratio | 0.43 | 0.75 | 0.39 | 0.05 | 0.74 | 0.29 |
| Control Delay | 50.0 | 13.9 | 19.8 | 6.1 | 14.6 | 5.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 50.0 | 13.9 | 19.8 | 6.1 | 14.6 | 5.7 |
| Queue Length 50th (ft) | 59 | 0 | 131 | 0 | 91 | 62 |
| Queue Length 95th (ft) | 80 | 43 | 212 | 0 | 174 | 117 |
| Internal Link Dist (ft) | 1686 | | 3621 | | | 3075 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 519 | 733 | 1545 | 736 | 627 | 2265 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 0.55 | 0.39 | 0.05 | 0.71 | 0.28 |

Intersection Summary

HCM 6th Signalized Intersection Summary

10: US 220 & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 61 | 323 | 559 | 16 | 375 | 563 |
| Future Volume (veh/h) | 61 | 323 | 559 | 16 | 375 | 563 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1767 | 1737 | 1722 | 1781 | 1707 | 1589 |
| Adj Flow Rate, veh/h | 91 | 404 | 595 | 38 | 446 | 633 |
| Peak Hour Factor | 0.67 | 0.80 | 0.94 | 0.42 | 0.84 | 0.89 |
| Percent Heavy Veh, % | 9 | 11 | 12 | 8 | 13 | 21 |
| Cap, veh/h | 435 | 380 | 1294 | 597 | 512 | 1890 |
| Arrive On Green | 0.26 | 0.26 | 0.40 | 0.40 | 0.16 | 0.63 |
| Sat Flow, veh/h | 1682 | 1472 | 3358 | 1510 | 1626 | 3098 |
| Grp Volume(v), veh/h | 91 | 404 | 595 | 38 | 446 | 633 |
| Grp Sat Flow(s),veh/h/ln | 1682 | 1472 | 1636 | 1510 | 1626 | 1509 |
| Q Serve(g_s), s | 5.5 | 33.6 | 17.5 | 2.0 | 20.9 | 12.9 |
| Cycle Q Clear(g_c), s | 5.5 | 33.6 | 17.5 | 2.0 | 20.9 | 12.9 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 435 | 380 | 1294 | 597 | 512 | 1890 |
| V/C Ratio(X) | 0.21 | 1.06 | 0.46 | 0.06 | 0.87 | 0.33 |
| Avail Cap(c_a), veh/h | 435 | 380 | 1294 | 597 | 512 | 1890 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.8 | 48.2 | 29.0 | 24.4 | 19.9 | 11.5 |
| Incr Delay (d2), s/veh | 0.3 | 63.5 | 1.2 | 0.2 | 15.0 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.3 | 19.0 | 6.7 | 0.7 | 9.1 | 3.9 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 38.1 | 111.7 | 30.2 | 24.6 | 34.9 | 11.7 |
| LnGrp LOS | D | F | C | C | C | B |
| Approach Vol, veh/h | 495 | | 633 | | | 1079 |
| Approach Delay, s/veh | 98.1 | | 29.9 | | | 21.3 |
| Approach LOS | F | | C | | | C |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 30.0 | 60.0 | | 40.0 | | 90.0 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 21 | * 51 | | 33.6 | | * 51 |
| Max Q Clear Time (g_c+l1), s | 22.9 | 19.5 | | 35.6 | | 14.9 |
| Green Ext Time (p_c), s | 0.0 | 7.7 | | 0.0 | | 8.3 |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 41.0 |
| HCM 6th LOS | D |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 22 | 21 | 4 | 5 | 6 | 3 | 15 | 550 | 81 | 30 | 548 | 46 |
| Future Vol, veh/h | 22 | 21 | 4 | 5 | 6 | 3 | 15 | 550 | 81 | 30 | 548 | 46 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 24 | 23 | 4 | 5 | 7 | 3 | 16 | 598 | 88 | 33 | 596 | 50 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 997 | 1380 | 298 | 1006 | 1342 | 299 | 646 | 0 | 0 | 686 | 0 | 0 |
| Stage 1 | 662 | 662 | - | 630 | 630 | - | - | - | - | - | - | - |
| Stage 2 | 335 | 718 | - | 376 | 712 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 198 | 143 | 698 | 195 | 151 | 697 | 935 | - | - | 904 | - | - |
| Stage 1 | 417 | 457 | - | 436 | 473 | - | - | - | - | - | - | - |
| Stage 2 | 653 | 431 | - | 617 | 434 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 183 | 135 | 698 | 162 | 143 | 697 | 935 | - | - | 904 | - | - |
| Mov Cap-2 Maneuver | 183 | 135 | - | 162 | 143 | - | - | - | - | - | - | - |
| Stage 1 | 410 | 440 | - | 429 | 465 | - | - | - | - | - | - | - |
| Stage 2 | 630 | 424 | - | 560 | 418 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 35.8 | | 26.6 | | 0.2 | | 0.4 | |
| HCM LOS | E | | D | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 935 | - | - | 167 | 182 | 904 | - | - |
| HCM Lane V/C Ratio | 0.017 | - | - | 0.306 | 0.084 | 0.036 | - | - |
| HCM Control Delay (s) | 8.9 | - | - | 35.8 | 26.6 | 9.1 | - | - |
| HCM Lane LOS | A | - | - | E | D | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 1.2 | 0.3 | 0.1 | - | - |

Queues

1: US 220 & US 58 WB Ramp

04/02/2019



| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 351 | 134 | 870 | 617 | 54 |
| v/c Ratio | 0.77 | 0.28 | 0.40 | 0.29 | 0.06 |
| Control Delay | 44.7 | 10.9 | 1.5 | 9.5 | 3.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 44.7 | 10.9 | 1.5 | 9.5 | 3.1 |
| Queue Length 50th (ft) | 206 | 21 | 12 | 83 | 0 |
| Queue Length 95th (ft) | 270 | 58 | m21 | 146 | 17 |
| Internal Link Dist (ft) | 1387 | | 179 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 743 | 715 | 2152 | 2132 | 899 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.47 | 0.19 | 0.40 | 0.29 | 0.06 |


















Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: US 220 & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  | | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 323 | 0 | 123 | 0 | 800 | 0 | 0 | 568 | 50 | |
| Future Volume (vph) | 0 | 0 | 0 | 323 | 0 | 123 | 0 | 800 | 0 | 0 | 568 | 50 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 4.5 | 4.5 | | 4.5 | | | 4.5 | 4.5 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1671 | 1495 | | 3374 | | | 3343 | 1380 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1671 | 1495 | | 3374 | | | 3343 | 1380 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 351 | 0 | 134 | 0 | 870 | 0 | 0 | 617 | 54 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 66 | 0 | 0 | 0 | 0 | 0 | 20 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 351 | 68 | 0 | 870 | 0 | 0 | 617 | 34 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 8% | 0% | 8% | 0% | 7% | 19% | 0% | 8% | 17% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 27.2 | 27.2 | | 63.8 | | | 63.8 | 63.8 | |
| Effective Green, g (s) | | | | | 27.2 | 27.2 | | 63.8 | | | 63.8 | 63.8 | |
| Actuated g/C Ratio | | | | | 0.27 | 0.27 | | 0.64 | | | 0.64 | 0.64 | |
| Clearance Time (s) | | | | | 4.5 | 4.5 | | 4.5 | | | 4.5 | 4.5 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | | | | 454 | 406 | | 2152 | | | 2132 | 880 | |
| v/s Ratio Prot | | | | | | | | c0.26 | | | 0.18 | | |
| v/s Ratio Perm | | | | | 0.21 | 0.05 | | | | | | 0.02 | |
| v/c Ratio | | | | | 0.77 | 0.17 | | 0.40 | | | 0.29 | 0.04 | |
| Uniform Delay, d1 | | | | | 33.6 | 27.8 | | 8.8 | | | 8.0 | 6.7 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.12 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 8.0 | 0.2 | | 0.2 | | | 0.3 | 0.1 | |
| Delay (s) | | | | | 41.5 | 28.0 | | 1.3 | | | 8.4 | 6.8 | |
| Level of Service | | | | | D | C | | A | | | A | A | |
| Approach Delay (s) | | 0.0 | | | 37.8 | | | 1.3 | | | 8.3 | | |
| Approach LOS | | A | | | D | | | A | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 12.3 | | HCM 2000 Level of Service | | | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.51 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 100.0 | | Sum of lost time (s) | | | | | 9.0 | | | |
| Intersection Capacity Utilization | | | 72.9% | | ICU Level of Service | | | | | C | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|-------|------|
| Lane Group Flow (vph) | 173 | 638 | 1196 | 364 | 121 | 848 |
| v/c Ratio | 0.26 | 1.07 | 1.01 | 0.56 | 0.96 | 0.52 |
| Control Delay | 20.9 | 81.3 | 60.0 | 16.7 | 116.9 | 12.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.9 | 81.3 | 60.0 | 16.7 | 116.9 | 12.3 |
| Queue Length 50th (ft) | 71 | ~406 | ~401 | 95 | 73 | 152 |
| Queue Length 95th (ft) | 121 | #624 | #553 | 186 | #192 | 159 |
| Internal Link Dist (ft) | | | 545 | | | 488 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 654 | 598 | 1188 | 655 | 126 | 1641 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 1.07 | 1.01 | 0.56 | 0.96 | 0.52 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.






















95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: US 220 & US 58 EB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|--|---|---|--|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  | |  | | | | |   |  |  |   |  | |
| Traffic Volume (vph) | 159 | 0 | 587 | 0 | 0 | 0 | 0 | 1100 | 335 | 111 | 780 | 0 | |
| Future Volume (vph) | 159 | 0 | 587 | 0 | 0 | 0 | 0 | 1100 | 335 | 111 | 780 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 4.5 | | 4.5 | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1597 | | 1292 | | | | | 3195 | 1482 | 1530 | 3282 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1597 | | 1292 | | | | | 3195 | 1482 | 1530 | 3282 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 173 | 0 | 638 | 0 | 0 | 0 | 0 | 1196 | 364 | 121 | 848 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 68 | 0 | 0 | 0 | 0 | 0 | 104 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 173 | 0 | 570 | 0 | 0 | 0 | 0 | 1196 | 260 | 121 | 848 | 0 | |
| Heavy Vehicles (%) | 13% | 0% | 25% | 2% | 2% | 2% | 0% | 13% | 9% | 18% | 10% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 41.0 | | 41.0 | | | | | 37.2 | 37.2 | 8.3 | 50.0 | | |
| Effective Green, g (s) | 41.0 | | 41.0 | | | | | 37.2 | 37.2 | 8.3 | 50.0 | | |
| Actuated g/C Ratio | 0.41 | | 0.41 | | | | | 0.37 | 0.37 | 0.08 | 0.50 | | |
| Clearance Time (s) | 4.5 | | 4.5 | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 654 | | 529 | | | | | 1188 | 551 | 126 | 1641 | | |
| v/s Ratio Prot | | | | | | | | c0.37 | | c0.08 | 0.26 | | |
| v/s Ratio Perm | 0.11 | | c0.44 | | | | | | 0.18 | | | | |
| v/c Ratio | 0.26 | | 1.08 | | | | | 1.01 | 0.47 | 0.96 | 0.52 | | |
| Uniform Delay, d1 | 19.5 | | 29.5 | | | | | 31.4 | 23.9 | 45.7 | 16.9 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.02 | 0.65 | | |
| Incremental Delay, d2 | 0.2 | | 61.4 | | | | | 27.8 | 2.9 | 65.8 | 1.1 | | |
| Delay (s) | 19.7 | | 90.9 | | | | | 59.2 | 26.8 | 112.3 | 12.1 | | |
| Level of Service | B | | F | | | | | E | C | F | B | | |
| Approach Delay (s) | | 75.7 | | | 0.0 | | | 51.6 | | | 24.6 | | |
| Approach LOS | | E | | | A | | | D | | | C | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 49.6 | | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 1.03 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 100.0 | | | | | | | | | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | | | 65.4% | | | | | | | | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↕ | ↑↑ | ↕ | ↕ | ↑↑ | ↕ |
| Traffic Vol, veh/h | 17 | 2 | 16 | 7 | 0 | 8 | 3 | 1410 | 1 | 6 | 1356 | 5 |
| Future Vol, veh/h | 17 | 2 | 16 | 7 | 0 | 8 | 3 | 1410 | 1 | 6 | 1356 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 11 | 0 | 0 | 1 | 0 | 14 | 0 | 0 | 8 | 6 |
| Mvmt Flow | 18 | 2 | 17 | 8 | 0 | 9 | 3 | 1533 | 1 | 7 | 1474 | 5 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 2261 | 3028 | 737 | 2291 | 3032 | 767 | 1479 | 0 | 0 | 1534 | 0 | 0 |
| Stage 1 | 1488 | 1488 | - | 1539 | 1539 | - | - | - | - | - | - | - |
| Stage 2 | 773 | 1540 | - | 752 | 1493 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 7.12 | 7.5 | 6.5 | 6.92 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.41 | 3.5 | 4 | 3.31 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 23 | 13 | 341 | 22 | 13 | 347 | 461 | - | - | 439 | - | - |
| Stage 1 | 133 | 189 | - | 123 | 179 | - | - | - | - | - | - | - |
| Stage 2 | 362 | 179 | - | 373 | 188 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 22 | 13 | 341 | 18 | 13 | 347 | 461 | - | - | 439 | - | - |
| Mov Cap-2 Maneuver | 22 | 13 | - | 18 | 13 | - | - | - | - | - | - | - |
| Stage 1 | 132 | 186 | - | 122 | 178 | - | - | - | - | - | - | - |
| Stage 2 | 351 | 178 | - | 344 | 185 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|-------|--|-------|--|----|--|-----|--|
| HCM Control Delay, s | 336.2 | | 170.4 | | 0 | | 0.1 | |
| HCM LOS | F | | F | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 461 | - | - | 36 | 36 | 439 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | - | 1.057 | 0.453 | 0.015 | - | - |
| HCM Control Delay (s) | 12.9 | - | - | 336.2 | 170.4 | 13.3 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 3.9 | 1.5 | 0 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
4: US 220 & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 20.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | ↕ | ↕ | ↕ | ↕ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 2 | 38 | 36 | 1376 | 8 | 3 | 1316 | 60 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 2 | 38 | 36 | 1376 | 8 | 3 | 1316 | 60 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 3 | 12 | 0 | 14 | 19 |
| Mvmt Flow | 0 | 0 | 0 | 21 | 2 | 41 | 39 | 1496 | 9 | 3 | 1430 | 65 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 2296 | 3052 | 748 | 2295 | 3075 | 748 | 1495 | 0 | 0 | 1505 | 0 | 0 |
| Stage 1 | 1469 | 1469 | - | 1574 | 1574 | - | - | - | - | - | - | - |
| Stage 2 | 827 | 1583 | - | 721 | 1501 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.02 | 4.22 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.36 | 2.26 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 22 | 13 | 359 | 22 | 12 | 346 | 426 | - | - | 451 | - | - |
| Stage 1 | 136 | 194 | - | 117 | 172 | - | - | - | - | - | - | - |
| Stage 2 | 336 | 170 | - | 389 | 187 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 7 | 6 | 359 | ~ 12 | 5 | 346 | 426 | - | - | 451 | - | - |
| Mov Cap-2 Maneuver | 7 | 6 | - | ~ 12 | 5 | - | - | - | - | - | - | - |
| Stage 1 | 60 | 193 | - | 51 | 76 | - | - | - | - | - | - | - |
| Stage 2 | 126 | 75 | - | 386 | 186 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|----------|----|----|
| HCM Control Delay, s | 0 | \$ 889.5 | 4 | 0 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|------|-------|-----|
| Capacity (veh/h) | 426 | - | - | - | 28 | 451 | - |
| HCM Lane V/C Ratio | 0.092 | - | - | - | 2.29 | 0.007 | - |
| HCM Control Delay (s) | 14.3 | 3.8 | - | \$ 889.5 | 13 | - | - |
| HCM Lane LOS | B | A | - | A | F | B | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | - | 7.7 | 0 | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 4.9 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 39 | 6 | 0 | 1381 | 1317 | 18 |
| Future Vol, veh/h | 39 | 6 | 0 | 1381 | 1317 | 18 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 0 | 10 | 16 | 0 |
| Mvmt Flow | 42 | 7 | 0 | 1501 | 1432 | 20 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 2183 | 716 | - | 0 | - | 0 |
| Stage 1 | 1432 | - | - | - | - | - |
| Stage 2 | 751 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 40 | 377 | 0 | - | - | - |
| Stage 1 | 190 | - | 0 | - | - | - |
| Stage 2 | 432 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 40 | 377 | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 40 | - | - | - | - | - |
| Stage 1 | 190 | - | - | - | - | - |
| Stage 2 | 432 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|-------|----|----|
| HCM Control Delay, s | 303.3 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-------|-----|-----|
| Capacity (veh/h) | - | 45 | - | - |
| HCM Lane V/C Ratio | - | 1.087 | - | - |
| HCM Control Delay (s) | - | 303.3 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 4.5 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.2 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | YY | | ↑↑ | ↑ | ↑ | ↑↑ |
| Traffic Vol, veh/h | 30 | 78 | 1303 | 7 | 19 | 1304 |
| Future Vol, veh/h | 30 | 78 | 1303 | 7 | 19 | 1304 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 8 | 10 | 1 | 0 | 13 |
| Mvmt Flow | 33 | 85 | 1416 | 8 | 21 | 1417 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 2167 | 708 | 0 | 0 | 1424 |
| Stage 1 | 1416 | - | - | - | - |
| Stage 2 | 751 | - | - | - | - |
| Critical Hdwy | 6.8 | 7.06 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.38 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 41 | 364 | - | - | 484 |
| Stage 1 | 193 | - | - | - | - |
| Stage 2 | 432 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 39 | 364 | - | - | 484 |
| Mov Cap-2 Maneuver | 39 | - | - | - | - |
| Stage 1 | 193 | - | - | - | - |
| Stage 2 | 413 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|-------|----|-----|
| HCM Control Delay, s | 179.1 | 0 | 0.2 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 110 | 484 |
| HCM Lane V/C Ratio | - | - | 1.067 | 0.043 |
| HCM Control Delay (s) | - | - | 179.1 | 12.8 |
| HCM Lane LOS | - | - | F | B |
| HCM 95th %tile Q(veh) | - | - | 7.1 | 0.1 |

HCM 6th TWSC
 7: US 220 & Steve Drive/Drewry Mason School Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↕↕ | ↕ | ↕ | ↕↕ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1310 | 153 | 163 | 1152 | 19 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1310 | 153 | 163 | 1152 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 13 | 4 | 4 | 14 | 1 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1424 | 166 | 177 | 1252 | 21 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|------|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 2335 | 3213 | 637 | | | | 1273 | 0 | 0 | 1590 | 0 | 0 |
| Stage 1 | 1617 | 1617 | - | | | | - | - | - | - | - | - |
| Stage 2 | 718 | 1596 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 7.2 | | | | 4.1 | - | - | 4.18 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.45 | | | | 2.2 | - | - | 2.24 | - | - |
| Pot Cap-1 Maneuver | 32 | 10 | 390 | | | | 552 | - | - | 400 | - | - |
| Stage 1 | 151 | 164 | - | | | | - | - | - | - | - | - |
| Stage 2 | 449 | 168 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 18 | 0 | 390 | | | | 552 | - | - | 400 | - | - |
| Mov Cap-2 Maneuver | 18 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 150 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 251 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 2.6 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 552 | - | - | - | 400 | - | - |
| HCM Lane V/C Ratio | 0.006 | - | - | - | 0.443 | - | - |
| HCM Control Delay (s) | 11.6 | - | - | 0 | 21 | - | - |
| HCM Lane LOS | B | - | - | A | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 2.2 | - | - |

Queues

8: US 220 & Water Plant Road

04/02/2019


























| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 138 | 42 | 4 | 11 | 53 | 1455 | 1 | 53 | 1045 | 154 |
| v/c Ratio | 0.54 | 0.15 | 0.03 | 0.07 | 0.47 | 0.79 | 0.00 | 0.45 | 0.60 | 0.17 |
| Control Delay | 38.7 | 12.9 | 36.8 | 37.1 | 52.6 | 20.0 | 0.0 | 50.9 | 14.9 | 2.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 38.7 | 12.9 | 36.8 | 37.1 | 52.6 | 20.0 | 0.0 | 50.9 | 14.9 | 2.9 |
| Queue Length 50th (ft) | 56 | 2 | 2 | 5 | 23 | 228 | 0 | 23 | 136 | 0 |
| Queue Length 95th (ft) | 124 | 29 | 12 | 22 | #81 | #567 | 0 | #79 | 318 | 31 |
| Internal Link Dist (ft) | | 915 | | 940 | | 4765 | | | 1867 | |
| Turn Bay Length (ft) | 100 | | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 407 | 423 | 440 | 463 | 113 | 1849 | 975 | 117 | 1741 | 916 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.34 | 0.10 | 0.01 | 0.02 | 0.47 | 0.79 | 0.00 | 0.45 | 0.60 | 0.17 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 & Water Plant Road

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 127 | 4 | 35 | 4 | 10 | 0 | 49 | 1339 | 1 | 49 | 961 | 142 |
| Future Volume (veh/h) | 127 | 4 | 35 | 4 | 10 | 0 | 49 | 1339 | 1 | 49 | 961 | 142 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1781 | 1796 | 1796 | 1900 | 1900 | 1900 | 1781 | 1722 | 1900 | 1841 | 1618 | 1767 |
| Adj Flow Rate, veh/h | 138 | 4 | 38 | 4 | 11 | 0 | 53 | 1455 | 1 | 53 | 1045 | 154 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 8 | 7 | 7 | 0 | 0 | 0 | 8 | 12 | 0 | 4 | 19 | 9 |
| Cap, veh/h | 186 | 16 | 153 | 33 | 34 | 29 | 77 | 1880 | 925 | 80 | 1767 | 860 |
| Arrive On Green | 0.11 | 0.11 | 0.11 | 0.02 | 0.02 | 0.00 | 0.05 | 0.57 | 0.57 | 0.05 | 0.57 | 0.57 |
| Sat Flow, veh/h | 1697 | 147 | 1398 | 1810 | 1900 | 1610 | 1697 | 3272 | 1610 | 1753 | 3075 | 1497 |
| Grp Volume(v), veh/h | 138 | 0 | 42 | 4 | 11 | 0 | 53 | 1455 | 1 | 53 | 1045 | 154 |
| Grp Sat Flow(s),veh/h/ln | 1697 | 0 | 1545 | 1810 | 1900 | 1610 | 1697 | 1636 | 1610 | 1753 | 1537 | 1497 |
| Q Serve(g_s), s | 5.6 | 0.0 | 1.8 | 0.2 | 0.4 | 0.0 | 2.2 | 24.3 | 0.0 | 2.1 | 15.6 | 3.5 |
| Cycle Q Clear(g_c), s | 5.6 | 0.0 | 1.8 | 0.2 | 0.4 | 0.0 | 2.2 | 24.3 | 0.0 | 2.1 | 15.6 | 3.5 |
| Prop In Lane | 1.00 | | 0.90 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 186 | 0 | 169 | 33 | 34 | 29 | 77 | 1880 | 925 | 80 | 1767 | 860 |
| V/C Ratio(X) | 0.74 | 0.00 | 0.25 | 0.12 | 0.32 | 0.00 | 0.69 | 0.77 | 0.00 | 0.66 | 0.59 | 0.18 |
| Avail Cap(c_a), veh/h | 428 | 0 | 390 | 457 | 479 | 406 | 119 | 1880 | 925 | 123 | 1767 | 860 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 30.8 | 0.0 | 29.1 | 34.5 | 34.6 | 0.0 | 33.5 | 11.6 | 6.5 | 33.5 | 9.8 | 7.2 |
| Incr Delay (d2), s/veh | 5.8 | 0.0 | 0.8 | 1.7 | 5.3 | 0.0 | 10.2 | 3.2 | 0.0 | 9.1 | 1.5 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.5 | 0.0 | 0.7 | 0.1 | 0.2 | 0.0 | 1.0 | 6.6 | 0.0 | 1.0 | 4.2 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 36.6 | 0.0 | 29.8 | 36.1 | 39.9 | 0.0 | 43.8 | 14.8 | 6.5 | 42.6 | 11.2 | 7.6 |
| LnGrp LOS | D | A | C | D | D | A | D | B | A | D | B | A |
| Approach Vol, veh/h | | 180 | | | 15 | | | 1509 | | | 1252 | |
| Approach Delay, s/veh | | 35.0 | | | 38.9 | | | 15.8 | | | 12.1 | |
| Approach LOS | | C | | | D | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 7.8 | 45.5 | | 5.8 | 7.8 | 45.5 | | 12.3 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | 4.5 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 41.0 | | 18.0 | 5.0 | 41.0 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.1 | 26.3 | | 2.4 | 4.2 | 17.6 | | 7.6 | | | | |
| Green Ext Time (p_c), s | 0.0 | 8.2 | | 0.0 | 0.0 | 8.1 | | 0.4 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 15.5 | | | | | | | | |
| HCM 6th LOS | | | | B | | | | | | | | |

Queues

9: US 220 & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 85 | 59 | 63 | 271 | 32 | 1175 | 104 | 892 | 90 |
| v/c Ratio | 0.47 | 0.23 | 0.37 | 0.69 | 0.08 | 0.67 | 0.35 | 0.40 | 0.09 |
| Control Delay | 50.1 | 2.4 | 46.9 | 14.8 | 3.9 | 17.1 | 10.5 | 13.1 | 2.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 50.1 | 2.4 | 46.9 | 14.8 | 3.9 | 17.1 | 10.5 | 13.1 | 2.0 |
| Queue Length 50th (ft) | 52 | 0 | 39 | 0 | 2 | 320 | 20 | 161 | 0 |
| Queue Length 95th (ft) | 96 | 4 | 74 | 71 | m6 | #508 | 54 | 274 | 18 |
| Internal Link Dist (ft) | 1033 | | 880 | | | 3091 | | 4765 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 225 | | 225 |
| Base Capacity (vph) | 329 | 376 | 316 | 499 | 403 | 1763 | 297 | 2225 | 1010 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.16 | 0.20 | 0.54 | 0.08 | 0.67 | 0.35 | 0.40 | 0.09 |

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
 9: US 220 & Soapstone Road/Main Street

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  |  | |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 59 | 19 | 54 | 1 | 57 | 249 | 29 | 1081 | 0 | 96 | 821 | 83 |
| Future Volume (veh/h) | 59 | 19 | 54 | 1 | 57 | 249 | 29 | 1081 | 0 | 96 | 821 | 83 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1900 | 1900 | 1856 | 1781 | 1781 | 1826 | 1841 | 1678 | 1900 | 1811 | 1885 | 1841 |
| Adj Flow Rate, veh/h | 64 | 21 | 59 | 1 | 62 | 271 | 32 | 1175 | 0 | 104 | 892 | 90 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 0 | 0 | 3 | 8 | 8 | 5 | 4 | 15 | 0 | 6 | 1 | 4 |
| Cap, veh/h | 94 | 31 | 107 | 5 | 315 | 279 | 344 | 1672 | 845 | 268 | 1943 | 846 |
| Arrive On Green | 0.07 | 0.07 | 0.07 | 0.18 | 0.18 | 0.18 | 0.03 | 0.52 | 0.00 | 0.05 | 0.54 | 0.54 |
| Sat Flow, veh/h | 1379 | 452 | 1572 | 28 | 1752 | 1547 | 1753 | 3188 | 1610 | 1725 | 3582 | 1560 |
| Grp Volume(v), veh/h | 85 | 0 | 59 | 63 | 0 | 271 | 32 | 1175 | 0 | 104 | 892 | 90 |
| Grp Sat Flow(s),veh/h/ln | 1831 | 0 | 1572 | 1780 | 0 | 1547 | 1753 | 1594 | 1610 | 1725 | 1791 | 1560 |
| Q Serve(g_s), s | 4.5 | 0.0 | 3.6 | 3.0 | 0.0 | 17.4 | 0.8 | 27.8 | 0.0 | 2.7 | 15.2 | 2.8 |
| Cycle Q Clear(g_c), s | 4.5 | 0.0 | 3.6 | 3.0 | 0.0 | 17.4 | 0.8 | 27.8 | 0.0 | 2.7 | 15.2 | 2.8 |
| Prop In Lane | 0.75 | | 1.00 | 0.02 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 125 | 0 | 107 | 320 | 0 | 279 | 344 | 1672 | 845 | 268 | 1943 | 846 |
| V/C Ratio(X) | 0.68 | 0.00 | 0.55 | 0.20 | 0.00 | 0.97 | 0.09 | 0.70 | 0.00 | 0.39 | 0.46 | 0.11 |
| Avail Cap(c_a), veh/h | 330 | 0 | 283 | 320 | 0 | 279 | 380 | 1672 | 845 | 272 | 1943 | 846 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.83 | 0.83 | 0.00 | 0.77 | 0.77 | 0.77 |
| Uniform Delay (d), s/veh | 45.5 | 0.0 | 45.1 | 34.9 | 0.0 | 40.8 | 11.1 | 17.9 | 0.0 | 14.7 | 13.9 | 11.1 |
| Incr Delay (d2), s/veh | 6.4 | 0.0 | 4.3 | 0.3 | 0.0 | 46.3 | 0.1 | 2.1 | 0.0 | 0.7 | 0.6 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.3 | 0.0 | 1.5 | 1.3 | 0.0 | 10.1 | 0.3 | 9.0 | 0.0 | 0.9 | 5.3 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 51.9 | 0.0 | 49.4 | 35.2 | 0.0 | 87.1 | 11.2 | 20.0 | 0.0 | 15.4 | 14.5 | 11.3 |
| LnGrp LOS | D | A | D | D | A | F | B | B | A | B | B | B |
| Approach Vol, veh/h | | 144 | | | 334 | | | 1207 | | | 1086 | |
| Approach Delay, s/veh | | 50.9 | | | 77.3 | | | 19.7 | | | 14.4 | |
| Approach LOS | | D | | | E | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 9.2 | 57.0 | | 22.5 | 7.4 | 58.7 | | 11.3 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | 4.5 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 41.0 | | 18.0 | 5.0 | 41.0 | | 18.0 | | | | |
| Max Q Clear Time (g_c+l1), s | 4.7 | 29.8 | | 19.4 | 2.8 | 17.2 | | 6.5 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.5 | | 0.0 | 0.0 | 5.9 | | 0.4 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 26.2 | | | | | | | | |
| HCM 6th LOS | | | | C | | | | | | | | |

Queues

10: US 220 & Morehead Ave

04/02/2019

















| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 43 | 353 | 853 | 9 | 338 | 614 |
| v/c Ratio | 0.26 | 0.77 | 0.45 | 0.01 | 0.61 | 0.25 |
| Control Delay | 43.4 | 16.0 | 14.6 | 8.5 | 18.6 | 0.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.4 | 16.0 | 14.6 | 8.5 | 18.6 | 0.7 |
| Queue Length 50th (ft) | 26 | 0 | 139 | 0 | 78 | 1 |
| Queue Length 95th (ft) | 54 | 81 | 292 | 10 | 114 | 4 |
| Internal Link Dist (ft) | 1588 | | 3659 | | | 3091 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 488 | 678 | 1909 | 889 | 626 | 2419 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.09 | 0.52 | 0.45 | 0.01 | 0.54 | 0.25 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 10: US 220 & Morehead Ave

04/02/2019

| |  |  |  |  |  |  |
|------------------------------|---|---|--|---|---|--|
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |   |  |  |   |
| Traffic Volume (veh/h) | 40 | 325 | 785 | 8 | 311 | 565 |
| Future Volume (veh/h) | 40 | 325 | 785 | 8 | 311 | 565 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1767 | 1737 | 1722 | 1781 | 1707 | 1589 |
| Adj Flow Rate, veh/h | 43 | 353 | 853 | 9 | 338 | 614 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 9 | 11 | 12 | 8 | 13 | 21 |
| Cap, veh/h | 437 | 382 | 1571 | 725 | 450 | 1964 |
| Arrive On Green | 0.26 | 0.26 | 0.48 | 0.48 | 0.13 | 0.65 |
| Sat Flow, veh/h | 1682 | 1472 | 3358 | 1510 | 1626 | 3098 |
| Grp Volume(v), veh/h | 43 | 353 | 853 | 9 | 338 | 614 |
| Grp Sat Flow(s),veh/h/ln | 1682 | 1472 | 1636 | 1510 | 1626 | 1509 |
| Q Serve(g_s), s | 1.9 | 23.4 | 18.3 | 0.3 | 9.8 | 8.9 |
| Cycle Q Clear(g_c), s | 1.9 | 23.4 | 18.3 | 0.3 | 9.8 | 8.9 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 437 | 382 | 1571 | 725 | 450 | 1964 |
| V/C Ratio(X) | 0.10 | 0.92 | 0.54 | 0.01 | 0.75 | 0.31 |
| Avail Cap(c_a), veh/h | 496 | 434 | 1571 | 725 | 612 | 1964 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.93 | 0.93 |
| Uniform Delay (d), s/veh | 28.1 | 36.1 | 18.3 | 13.6 | 13.7 | 7.7 |
| Incr Delay (d2), s/veh | 0.1 | 23.9 | 1.4 | 0.0 | 3.3 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 10.7 | 6.3 | 0.1 | 3.1 | 2.3 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 28.2 | 60.0 | 19.6 | 13.6 | 17.0 | 8.1 |
| LnGrp LOS | C | E | B | B | B | A |
| Approach Vol, veh/h | 396 | | 862 | | | 952 |
| Approach Delay, s/veh | 56.5 | | 19.6 | | | 11.2 |
| Approach LOS | E | | B | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 17.1 | 52.5 | | 30.4 | | 69.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 22.5 | 34.5 | | 29.5 | | 61.5 |
| Max Q Clear Time (g_c+I1), s | 11.8 | 20.3 | | 25.4 | | 10.9 |
| Green Ext Time (p_c), s | 0.7 | 4.4 | | 0.6 | | 4.0 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 22.6 | | | |
| HCM 6th LOS | | | C | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 33 | 13 | 11 | 14 | 25 | 15 | 12 | 745 | 56 | 14 | 541 | 50 |
| Future Vol, veh/h | 33 | 13 | 11 | 14 | 25 | 15 | 12 | 745 | 56 | 14 | 541 | 50 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 36 | 14 | 12 | 15 | 27 | 16 | 13 | 810 | 61 | 15 | 588 | 54 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1063 | 1515 | 294 | 1167 | 1508 | 405 | 642 | 0 | 0 | 871 | 0 | 0 |
| Stage 1 | 618 | 618 | - | 836 | 836 | - | - | - | - | - | - | - |
| Stage 2 | 445 | 897 | - | 331 | 672 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 177 | 118 | 702 | 149 | 120 | 595 | 939 | - | - | 770 | - | - |
| Stage 1 | 443 | 479 | - | 328 | 381 | - | - | - | - | - | - | - |
| Stage 2 | 562 | 357 | - | 656 | 453 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 138 | 114 | 702 | 129 | 116 | 595 | 939 | - | - | 770 | - | - |
| Mov Cap-2 Maneuver | 138 | 114 | - | 129 | 116 | - | - | - | - | - | - | - |
| Stage 1 | 437 | 470 | - | 323 | 376 | - | - | - | - | - | - | - |
| Stage 2 | 500 | 352 | - | 613 | 444 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 42.9 | | 41.7 | | 0.1 | | 0.2 | |
| HCM LOS | E | | E | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|------|-----|-----|
| Capacity (veh/h) | 939 | - | - | 155 | 155 | 770 | - | - |
| HCM Lane V/C Ratio | 0.014 | - | - | 0.4 | 0.379 | 0.02 | - | - |
| HCM Control Delay (s) | 8.9 | - | - | 42.9 | 41.7 | 9.8 | - | - |
| HCM Lane LOS | A | - | - | E | E | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.7 | 1.6 | 0.1 | - | - |

Queues

1: US 220 & US 58 WB Ramp

04/02/2019



| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 414 | 142 | 704 | 840 | 85 |
| v/c Ratio | 0.81 | 0.26 | 0.34 | 0.40 | 0.09 |
| Control Delay | 51.9 | 5.4 | 1.2 | 14.7 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.9 | 5.4 | 1.2 | 14.7 | 3.2 |
| Queue Length 50th (ft) | 298 | 0 | 10 | 171 | 0 |
| Queue Length 95th (ft) | 371 | 42 | m10 | 265 | 25 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 747 | 731 | 2070 | 2091 | 969 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.55 | 0.19 | 0.34 | 0.40 | 0.09 |



















Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: US 220 & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 381 | 0 | 131 | 0 | 648 | 0 | 0 | 773 | 78 | |
| Future Volume (vph) | 0 | 0 | 0 | 381 | 0 | 131 | 0 | 648 | 0 | 0 | 773 | 78 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1752 | 1524 | | 3471 | | | 3505 | 1568 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1752 | 1524 | | 3471 | | | 3505 | 1568 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 414 | 0 | 142 | 0 | 704 | 0 | 0 | 840 | 85 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 101 | 0 | 0 | 0 | 0 | 0 | 34 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 414 | 41 | 0 | 704 | 0 | 0 | 840 | 51 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 0% | 6% | 0% | 4% | 14% | 0% | 3% | 3% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 34.9 | 34.9 | | 71.6 | | | 71.6 | 71.6 | |
| Effective Green, g (s) | | | | | 34.9 | 34.9 | | 71.6 | | | 71.6 | 71.6 | |
| Actuated g/C Ratio | | | | | 0.29 | 0.29 | | 0.60 | | | 0.60 | 0.60 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | | | | 509 | 443 | | 2071 | | | 2091 | 935 | |
| v/s Ratio Prot | | | | | | | | 0.20 | | | c0.24 | | |
| v/s Ratio Perm | | | | | 0.24 | 0.03 | | | | | | 0.03 | |
| v/c Ratio | | | | | 0.81 | 0.09 | | 0.34 | | | 0.40 | 0.05 | |
| Uniform Delay, d1 | | | | | 39.5 | 31.0 | | 12.2 | | | 12.8 | 10.1 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.08 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 9.6 | 0.1 | | 0.2 | | | 0.6 | 0.1 | |
| Delay (s) | | | | | 49.1 | 31.1 | | 1.1 | | | 13.4 | 10.2 | |
| Level of Service | | | | | D | C | | A | | | B | B | |
| Approach Delay (s) | | 0.0 | | | 44.5 | | | 1.1 | | | 13.1 | | |
| Approach LOS | | A | | | D | | | A | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 17.3 | | HCM 2000 Level of Service | | | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.54 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | Sum of lost time (s) | | | | | 13.5 | | | |
| Intersection Capacity Utilization | | | 88.6% | | ICU Level of Service | | | | | E | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|-------|------|------|-------|------|
| Lane Group Flow (vph) | 135 | 726 | 1123 | 300 | 171 | 1084 |
| v/c Ratio | 0.21 | 1.25 | 0.95 | 0.47 | 1.07 | 0.62 |
| Control Delay | 26.0 | 155.8 | 54.1 | 20.5 | 140.0 | 16.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 26.0 | 155.8 | 54.1 | 20.5 | 140.0 | 16.9 |
| Queue Length 50th (ft) | 69 | ~659 | 441 | 106 | ~145 | 254 |
| Queue Length 95th (ft) | 117 | #899 | #585 | 190 | #292 | 293 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 649 | 581 | 1186 | 632 | 160 | 1744 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.21 | 1.25 | 0.95 | 0.47 | 1.07 | 0.62 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: US 220 & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
|-----------------------------------|------|-------|-------|------|------|------|------|-------|------|-------|------|---------------------------|------|
| Lane Configurations | ↖ | | ↗ | | | | | ↑↑ | ↗ | ↖ | ↑↑ | | |
| Traffic Volume (vph) | 124 | 0 | 668 | 0 | 0 | 0 | 0 | 1033 | 276 | 157 | 997 | 0 | |
| Future Volume (vph) | 124 | 0 | 668 | 0 | 0 | 0 | 0 | 1033 | 276 | 157 | 997 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1380 | | | | | 3343 | 1568 | 1770 | 3471 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1380 | | | | | 3343 | 1568 | 1770 | 3471 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Adj. Flow (vph) | 135 | 0 | 726 | 0 | 0 | 0 | 0 | 1123 | 300 | 171 | 1084 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 55 | 0 | 0 | 0 | 0 | 0 | 76 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 135 | 0 | 671 | 0 | 0 | 0 | 0 | 1123 | 224 | 171 | 1084 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 17% | 2% | 2% | 2% | 0% | 8% | 3% | 2% | 4% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 45.8 | | 45.8 | | | | | 42.6 | 42.6 | 10.9 | 60.3 | | |
| Effective Green, g (s) | 45.8 | | 45.8 | | | | | 42.6 | 42.6 | 10.9 | 60.3 | | |
| Actuated g/C Ratio | 0.38 | | 0.38 | | | | | 0.36 | 0.36 | 0.09 | 0.50 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 649 | | 526 | | | | | 1186 | 556 | 160 | 1744 | | |
| v/s Ratio Prot | | | | | | | | c0.34 | | c0.10 | 0.31 | | |
| v/s Ratio Perm | 0.08 | | c0.49 | | | | | | 0.14 | | | | |
| v/c Ratio | 0.21 | | 1.28 | | | | | 0.95 | 0.40 | 1.07 | 0.62 | | |
| Uniform Delay, d1 | 24.9 | | 37.1 | | | | | 37.6 | 29.1 | 54.5 | 21.6 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.03 | 0.70 | | |
| Incremental Delay, d2 | 0.2 | | 138.2 | | | | | 16.1 | 2.2 | 87.2 | 1.5 | | |
| Delay (s) | 25.1 | | 175.3 | | | | | 53.7 | 31.3 | 143.3 | 16.7 | | |
| Level of Service | C | | F | | | | | D | C | F | B | | |
| Approach Delay (s) | | 151.8 | | | 0.0 | | | 49.0 | | | 33.9 | | |
| Approach LOS | | F | | | A | | | D | | | C | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 68.7 | | | | | | | | | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | | | 1.11 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 80.5% | | | | | | | | | ICU Level of Service | D |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 9.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↕ | ↑↑ | ↕ | ↕ | ↑↑ | ↕ |
| Traffic Vol, veh/h | 22 | 0 | 6 | 2 | 0 | 17 | 6 | 1270 | 3 | 32 | 1612 | 21 |
| Future Vol, veh/h | 22 | 0 | 6 | 2 | 0 | 17 | 6 | 1270 | 3 | 32 | 1612 | 21 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 8 | 0 | 0 | 8 | 6 |
| Mvmt Flow | 24 | 0 | 7 | 2 | 0 | 18 | 7 | 1380 | 3 | 35 | 1752 | 23 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 2526 | 3219 | 876 | 2340 | 3239 | 690 | 1775 | 0 | 0 | 1383 | 0 | 0 |
| Stage 1 | 1822 | 1822 | - | 1394 | 1394 | - | - | - | - | - | - | - |
| Stage 2 | 704 | 1397 | - | 946 | 1845 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 14 | 10 | 296 | 20 | 10 | 367 | 355 | - | - | 502 | - | - |
| Stage 1 | 82 | 130 | - | 152 | 210 | - | - | - | - | - | - | - |
| Stage 2 | 398 | 210 | - | 285 | 126 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | ~ 12 | 9 | 296 | 18 | 9 | 367 | 355 | - | - | 502 | - | - |
| Mov Cap-2 Maneuver | ~ 12 | 9 | - | 18 | 9 | - | - | - | - | - | - | - |
| Stage 1 | 80 | 121 | - | 149 | 206 | - | - | - | - | - | - | - |
| Stage 2 | 371 | 206 | - | 259 | 117 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|------------------------|-------|------|-----|-----|
| HCM Control Delay, s\$ | 998.8 | 40.8 | 0.1 | 0.2 |
| HCM LOS | F | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|----------|-------|-------|-----|-----|
| Capacity (veh/h) | 355 | - | - | 15 | 121 | 502 | - | - |
| HCM Lane V/C Ratio | 0.018 | - | - | 2.029 | 0.171 | 0.069 | - | - |
| HCM Control Delay (s) | 15.3 | - | - | \$ 998.8 | 40.8 | 12.7 | - | - |
| HCM Lane LOS | C | - | - | F | E | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 4.5 | 0.6 | 0.2 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
4: US 220 & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 21 | 0 | 43 | 0 | 1236 | 13 | 26 | 1594 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 21 | 0 | 43 | 0 | 1236 | 13 | 26 | 1594 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 23 | 0 | 47 | 0 | 1343 | 14 | 28 | 1733 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 2461 | 3146 | 867 | 2266 | 3132 | 672 | - | 0 | 0 | 1357 | 0 | 0 |
| Stage 1 | 1789 | 1789 | - | 1343 | 1343 | - | - | - | - | - | - | - |
| Stage 2 | 672 | 1357 | - | 923 | 1789 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 16 | 11 | 300 | 23 | 11 | 387 | 0 | - | - | 513 | - | 0 |
| Stage 1 | 86 | 135 | - | 163 | 223 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 416 | 219 | - | 294 | 135 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 13 | 10 | 300 | ~ 22 | 10 | 387 | - | - | - | 513 | - | - |
| Mov Cap-2 Maneuver | 13 | 10 | - | ~ 22 | 10 | - | - | - | - | - | - | - |
| Stage 1 | 86 | 128 | - | 163 | 223 | - | - | - | - | - | - | - |
| Stage 2 | 366 | 219 | - | 278 | 128 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|-------|----|-----|
| HCM Control Delay, s | 0 | 281.4 | 0 | 0.2 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|-------|-------|
| Capacity (veh/h) | - | - | - | 60 | 513 |
| HCM Lane V/C Ratio | - | - | - | 1.159 | 0.055 |
| HCM Control Delay (s) | - | - | 0 | 281.4 | 12.4 |
| HCM Lane LOS | - | - | A | F | B |
| HCM 95th %tile Q(veh) | - | - | - | 5.7 | 0.2 |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | TT | | | TT | TT | T |
| Traffic Vol, veh/h | 0 | 0 | 0 | 1249 | 1578 | 37 |
| Future Vol, veh/h | 0 | 0 | 0 | 1249 | 1578 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 0 | 10 | 16 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 1358 | 1715 | 40 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 2394 | 858 | - | 0 | - | 0 |
| Stage 1 | 1715 | - | - | - | - | - |
| Stage 2 | 679 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | 29 | 304 | 0 | - | - | - |
| Stage 1 | 133 | - | 0 | - | - | - |
| Stage 2 | 471 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 29 | 304 | - | - | - | - |
| Mov Cap-2 Maneuver | 29 | - | - | - | - | - |
| Stage 1 | 133 | - | - | - | - | - |
| Stage 2 | 471 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-------|-----|-----|
| Capacity (veh/h) | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - |
| HCM Control Delay (s) | - | 0 | - | - |
| HCM Lane LOS | - | A | - | - |
| HCM 95th %tile Q(veh) | - | - | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 8 | 35 | 1214 | 16 | 57 | 1521 |
| Future Vol, veh/h | 8 | 35 | 1214 | 16 | 57 | 1521 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 8 | 0 | 0 | 6 |
| Mvmt Flow | 9 | 38 | 1320 | 17 | 62 | 1653 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 2271 | 660 | 0 | 0 | 1337 |
| Stage 1 | 1320 | - | - | - | - |
| Stage 2 | 951 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 35 | 410 | - | - | 522 |
| Stage 1 | 218 | - | - | - | - |
| Stage 2 | 341 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 31 | 410 | - | - | 522 |
| Mov Cap-2 Maneuver | 31 | - | - | - | - |
| Stage 1 | 218 | - | - | - | - |
| Stage 2 | 300 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 50.1 | 0 | 0.5 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 125 | 522 |
| HCM Lane V/C Ratio | - | - | 0.374 | 0.119 |
| HCM Control Delay (s) | - | - | 50.1 | 12.8 |
| HCM Lane LOS | - | - | F | B |
| HCM 95th %tile Q(veh) | - | - | 1.5 | 0.4 |

HCM 6th TWSC
7: US 220 & Steve Drive/Drewry Mason School Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↕↕ | ↕ | ↕ | ↕↕ | |
| Traffic Vol, veh/h | 23 | 0 | 6 | 0 | 0 | 0 | 14 | 1207 | 22 | 51 | 1438 | 40 |
| Future Vol, veh/h | 23 | 0 | 6 | 0 | 0 | 0 | 14 | 1207 | 22 | 51 | 1438 | 40 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 9 | 0 | 3 | 7 | 0 |
| Mvmt Flow | 25 | 0 | 7 | 0 | 0 | 0 | 15 | 1312 | 24 | 55 | 1563 | 43 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 2381 | 3061 | 803 | | | | 1606 | 0 | 0 | 1336 | 0 | 0 |
| Stage 1 | 1695 | 1695 | - | | | | - | - | - | - | - | - |
| Stage 2 | 686 | 1366 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 29 | 13 | 331 | | | | 412 | - | - | 507 | - | - |
| Stage 1 | 137 | 150 | - | | | | - | - | - | - | - | - |
| Stage 2 | 467 | 217 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 25 | 0 | 331 | | | | 412 | - | - | 507 | - | - |
| Mov Cap-2 Maneuver | 25 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 132 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 417 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|------------------------|-------|-----|-----|
| HCM Control Delay, s\$ | 355.5 | 0.2 | 0.4 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|----------|-------|-----|-----|
| Capacity (veh/h) | 412 | - | - | 31 | 507 | - | - |
| HCM Lane V/C Ratio | 0.037 | - | - | 1.017 | 0.109 | - | - |
| HCM Control Delay (s) | 14.1 | - | - | \$ 355.5 | 13 | - | - |
| HCM Lane LOS | B | - | - | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 3.5 | 0.4 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Queues

8: US 220 & Water Plant Road

04/02/2019



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 95 | 45 | 3 | 4 | 65 | 1257 | 10 | 67 | 1320 | 183 |
| v/c Ratio | 0.75 | 0.26 | 0.02 | 0.03 | 0.49 | 0.68 | 0.01 | 0.49 | 0.71 | 0.18 |
| Control Delay | 71.5 | 18.1 | 36.7 | 36.8 | 49.4 | 16.1 | 0.0 | 49.3 | 17.2 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 71.5 | 18.1 | 36.7 | 36.8 | 49.4 | 16.1 | 0.0 | 49.3 | 17.2 | 1.0 |
| Queue Length 50th (ft) | 44 | 2 | 1 | 2 | 30 | 207 | 0 | 31 | 226 | 0 |
| Queue Length 95th (ft) | #144 | 35 | 10 | 13 | #89 | 411 | 0 | #92 | #458 | 12 |
| Internal Link Dist (ft) | | 711 | | 593 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 127 | 170 | 138 | 145 | 136 | 1852 | 826 | 138 | 1859 | 1004 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.75 | 0.26 | 0.02 | 0.03 | 0.48 | 0.68 | 0.01 | 0.49 | 0.71 | 0.18 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

8: US 220 & Water Plant Road

04/02/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 87 | 4 | 38 | 3 | 4 | 0 | 60 | 1156 | 9 | 62 | 1214 | 168 |
| Future Volume (veh/h) | 87 | 4 | 38 | 3 | 4 | 0 | 60 | 1156 | 9 | 62 | 1214 | 168 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1722 | 1470 | 1900 | 1737 | 1856 |
| Adj Flow Rate, veh/h | 95 | 4 | 41 | 3 | 4 | 0 | 65 | 1257 | 10 | 67 | 1320 | 183 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 12 | 29 | 0 | 11 | 3 |
| Cap, veh/h | 122 | 11 | 114 | 19 | 20 | 17 | 91 | 1643 | 626 | 102 | 1675 | 798 |
| Arrive On Green | 0.08 | 0.08 | 0.08 | 0.01 | 0.01 | 0.00 | 0.06 | 0.50 | 0.50 | 0.06 | 0.51 | 0.51 |
| Sat Flow, veh/h | 1598 | 145 | 1487 | 1810 | 1900 | 1610 | 1626 | 3272 | 1246 | 1810 | 3300 | 1572 |
| Grp Volume(v), veh/h | 95 | 0 | 45 | 3 | 4 | 0 | 65 | 1257 | 10 | 67 | 1320 | 183 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1632 | 1810 | 1900 | 1610 | 1626 | 1636 | 1246 | 1810 | 1650 | 1572 |
| Q Serve(g_s), s | 4.9 | 0.0 | 2.2 | 0.1 | 0.2 | 0.0 | 3.3 | 26.0 | 0.3 | 3.0 | 27.4 | 5.4 |
| Cycle Q Clear(g_c), s | 4.9 | 0.0 | 2.2 | 0.1 | 0.2 | 0.0 | 3.3 | 26.0 | 0.3 | 3.0 | 27.4 | 5.4 |
| Prop In Lane | 1.00 | | 0.91 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 122 | 0 | 125 | 19 | 20 | 17 | 91 | 1643 | 626 | 102 | 1675 | 798 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.36 | 0.15 | 0.20 | 0.00 | 0.72 | 0.76 | 0.02 | 0.65 | 0.79 | 0.23 |
| Avail Cap(c_a), veh/h | 122 | 0 | 125 | 130 | 136 | 116 | 130 | 1643 | 626 | 130 | 1675 | 798 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.9 | 0.0 | 36.7 | 41.0 | 41.0 | 0.0 | 38.8 | 16.8 | 10.4 | 38.6 | 16.9 | 11.5 |
| Incr Delay (d2), s/veh | 26.4 | 0.0 | 1.7 | 3.6 | 4.6 | 0.0 | 10.0 | 3.5 | 0.0 | 7.6 | 3.8 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.8 | 0.0 | 0.9 | 0.1 | 0.1 | 0.0 | 1.5 | 8.5 | 0.1 | 1.5 | 9.5 | 1.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 64.3 | 0.0 | 38.4 | 44.6 | 45.6 | 0.0 | 48.8 | 20.3 | 10.5 | 46.3 | 20.7 | 12.1 |
| LnGrp LOS | E | A | D | D | D | A | D | C | B | D | C | B |
| Approach Vol, veh/h | | 140 | | | 7 | | | 1332 | | | 1570 | |
| Approach Delay, s/veh | | 56.0 | | | 45.1 | | | 21.6 | | | 20.8 | |
| Approach LOS | | E | | | D | | | C | | | C | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.4 | 47.9 | | 9.3 | 12.0 | 48.4 | | 14.0 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 6 | 42.0 | | * 6 | * 6.7 | 41.7 | | 6.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 5.0 | 28.0 | | 2.2 | 5.3 | 29.4 | | 6.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 6.8 | | 0.0 | 0.0 | 7.3 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 22.8 | | | | | | | | |
| HCM 6th LOS | | | | C | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

Queues

9: US 220 & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 80 | 37 | 47 | 225 | 48 | 1074 | 13 | 243 | 1071 | 50 |
| v/c Ratio | 0.50 | 0.10 | 0.33 | 0.68 | 0.37 | 0.82 | 0.02 | 0.65 | 0.57 | 0.05 |
| Control Delay | 62.0 | 0.6 | 57.7 | 16.6 | 76.0 | 18.8 | 0.0 | 53.2 | 21.9 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 62.0 | 0.6 | 57.7 | 16.6 | 76.0 | 18.8 | 0.0 | 53.2 | 21.9 | 0.1 |
| Queue Length 50th (ft) | 60 | 0 | 35 | 0 | 39 | 404 | 0 | 173 | 294 | 0 |
| Queue Length 95th (ft) | 109 | 0 | 72 | 68 | m62 | #598 | m0 | #284 | 453 | 0 |
| Internal Link Dist (ft) | 631 | | 525 | | | 3118 | | | 4723 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 100 | 225 | | 225 |
| Base Capacity (vph) | 274 | 445 | 283 | 434 | 131 | 1306 | 806 | 372 | 1874 | 994 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.29 | 0.08 | 0.17 | 0.52 | 0.37 | 0.82 | 0.02 | 0.65 | 0.57 | 0.05 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
 9: US 220 & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|-------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↑↑ | ↗ | ↖ | ↑↑ | ↗ |
| Traffic Volume (veh/h) | 30 | 43 | 34 | 5 | 39 | 207 | 44 | 988 | 12 | 224 | 985 | 46 |
| Future Volume (veh/h) | 30 | 43 | 34 | 5 | 39 | 207 | 44 | 988 | 12 | 224 | 985 | 46 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1722 | 1900 | 1885 | 1767 | 1900 |
| Adj Flow Rate, veh/h | 33 | 47 | 37 | 5 | 42 | 225 | 48 | 1074 | 13 | 243 | 1071 | 50 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 12 | 0 | 1 | 9 | 0 |
| Cap, veh/h | 46 | 65 | 99 | 30 | 253 | 238 | 72 | 1357 | 668 | 229 | 1697 | 814 |
| Arrive On Green | 0.06 | 0.06 | 0.06 | 0.15 | 0.15 | 0.15 | 0.04 | 0.41 | 0.41 | 0.13 | 0.51 | 0.51 |
| Sat Flow, veh/h | 750 | 1068 | 1610 | 201 | 1689 | 1585 | 1810 | 3272 | 1610 | 1795 | 3357 | 1610 |
| Grp Volume(v), veh/h | 80 | 0 | 37 | 47 | 0 | 225 | 48 | 1074 | 13 | 243 | 1071 | 50 |
| Grp Sat Flow(s),veh/h/ln | 1818 | 0 | 1610 | 1890 | 0 | 1585 | 1810 | 1636 | 1610 | 1795 | 1678 | 1610 |
| Q Serve(g_s), s | 5.2 | 0.0 | 2.6 | 2.6 | 0.0 | 16.9 | 3.1 | 34.3 | 0.6 | 15.3 | 27.8 | 1.9 |
| Cycle Q Clear(g_c), s | 5.2 | 0.0 | 2.6 | 2.6 | 0.0 | 16.9 | 3.1 | 34.3 | 0.6 | 15.3 | 27.8 | 1.9 |
| Prop In Lane | 0.41 | | 1.00 | 0.11 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 111 | 0 | 99 | 283 | 0 | 238 | 72 | 1357 | 668 | 229 | 1697 | 814 |
| V/C Ratio(X) | 0.72 | 0.00 | 0.38 | 0.17 | 0.00 | 0.95 | 0.66 | 0.79 | 0.02 | 1.06 | 0.63 | 0.06 |
| Avail Cap(c_a), veh/h | 273 | 0 | 242 | 283 | 0 | 238 | 90 | 1357 | 668 | 229 | 1697 | 814 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.73 | 0.73 | 0.73 | 0.64 | 0.64 | 0.64 |
| Uniform Delay (d), s/veh | 55.3 | 0.0 | 54.1 | 44.5 | 0.0 | 50.5 | 56.8 | 30.6 | 20.7 | 52.3 | 21.5 | 15.1 |
| Incr Delay (d2), s/veh | 8.4 | 0.0 | 2.4 | 0.3 | 0.0 | 43.6 | 9.0 | 3.5 | 0.0 | 64.8 | 1.2 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.6 | 0.0 | 1.1 | 1.2 | 0.0 | 9.5 | 1.6 | 13.1 | 0.2 | 10.7 | 10.1 | 0.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 63.7 | 0.0 | 56.5 | 44.7 | 0.0 | 94.1 | 65.8 | 34.2 | 20.8 | 117.1 | 22.7 | 15.2 |
| LnGrp LOS | E | A | E | D | A | F | E | C | C | F | C | B |
| Approach Vol, veh/h | | 117 | | | 272 | | | 1135 | | | 1364 | |
| Approach Delay, s/veh | | 61.4 | | | 85.6 | | | 35.3 | | | 39.2 | |
| Approach LOS | | E | | | F | | | D | | | D | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 23.0 | 55.7 | | 26.4 | 12.1 | 66.6 | | 14.9 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 15 | 39.1 | | * 18 | * 6 | 48.8 | | 18.0 | | | | |
| Max Q Clear Time (g_c+l1), s | 17.3 | 36.3 | | 18.9 | 5.1 | 29.8 | | 7.2 | | | | |
| Green Ext Time (p_c), s | 0.0 | 1.7 | | 0.0 | 0.0 | 6.7 | | 0.3 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 43.0 |
| HCM 6th LOS | D |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 49 | 258 | 877 | 25 | 445 | 668 |
| v/c Ratio | 0.16 | 0.54 | 0.66 | 0.04 | 0.84 | 0.30 |
| Control Delay | 43.1 | 9.6 | 32.9 | 12.2 | 23.7 | 7.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.1 | 9.6 | 32.9 | 12.2 | 23.7 | 7.8 |
| Queue Length 50th (ft) | 32 | 0 | 288 | 2 | 286 | 212 |
| Queue Length 95th (ft) | 69 | 75 | 402 | 22 | 72 | 25 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 315 | 480 | 1328 | 628 | 626 | 2220 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.16 | 0.54 | 0.66 | 0.04 | 0.71 | 0.30 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 10: US 220 & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 45 | 237 | 807 | 23 | 409 | 615 |
| Future Volume (veh/h) | 45 | 237 | 807 | 23 | 409 | 615 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1856 | 1781 | 1722 | 1781 | 1841 | 1707 |
| Adj Flow Rate, veh/h | 49 | 258 | 877 | 25 | 445 | 668 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 3 | 8 | 12 | 8 | 4 | 13 |
| Cap, veh/h | 318 | 272 | 1552 | 716 | 493 | 2255 |
| Arrive On Green | 0.18 | 0.18 | 0.47 | 0.47 | 0.15 | 0.69 |
| Sat Flow, veh/h | 1767 | 1510 | 3358 | 1510 | 1753 | 3329 |
| Grp Volume(v), veh/h | 49 | 258 | 877 | 25 | 445 | 668 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 1510 | 1636 | 1510 | 1753 | 1622 |
| Q Serve(g_s), s | 2.8 | 20.3 | 23.1 | 1.1 | 14.7 | 9.5 |
| Cycle Q Clear(g_c), s | 2.8 | 20.3 | 23.1 | 1.1 | 14.7 | 9.5 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 318 | 272 | 1552 | 716 | 493 | 2255 |
| V/C Ratio(X) | 0.15 | 0.95 | 0.57 | 0.03 | 0.90 | 0.30 |
| Avail Cap(c_a), veh/h | 318 | 272 | 1552 | 716 | 719 | 2255 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 0.81 | 0.81 |
| Uniform Delay (d), s/veh | 41.5 | 48.7 | 22.7 | 16.9 | 18.4 | 7.0 |
| Incr Delay (d2), s/veh | 1.0 | 43.0 | 1.5 | 0.1 | 9.2 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.3 | 10.9 | 8.4 | 0.4 | 6.2 | 2.7 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 42.5 | 91.7 | 24.2 | 17.0 | 27.6 | 7.3 |
| LnGrp LOS | D | F | C | B | C | A |
| Approach Vol, veh/h | 307 | | 902 | | | 1113 |
| Approach Delay, s/veh | 83.8 | | 24.0 | | | 15.4 |
| Approach LOS | F | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 26.5 | 65.5 | | 28.0 | | 92.0 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 33 | * 41 | | 21.6 | | * 83 |
| Max Q Clear Time (g_c+l1), s | 16.7 | 25.1 | | 22.3 | | 11.5 |
| Green Ext Time (p_c), s | 1.2 | 4.9 | | 0.0 | | 4.4 |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 27.8 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
11: US 220 & Lee Ford Camp Rd/Church St

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 4.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↕ | ↗ | ↗ | ↕ | ↗ |
| Traffic Vol, veh/h | 25 | 22 | 4 | 18 | 21 | 7 | 22 | 798 | 119 | 40 | 552 | 68 |
| Future Vol, veh/h | 25 | 22 | 4 | 18 | 21 | 7 | 22 | 798 | 119 | 40 | 552 | 68 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 24 | 4 | 20 | 23 | 8 | 24 | 867 | 129 | 43 | 600 | 74 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 1179 | 1730 | 300 | 1313 | 1675 | 434 | 674 | 0 | 0 | 996 | 0 | 0 |
| Stage 1 | 686 | 686 | - | 915 | 915 | - | - | - | - | - | - | - |
| Stage 2 | 493 | 1044 | - | 398 | 760 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 146 | 87 | 696 | 116 | 94 | 570 | 913 | - | - | 690 | - | - |
| Stage 1 | 404 | 446 | - | 294 | 350 | - | - | - | - | - | - | - |
| Stage 2 | 526 | 304 | - | 599 | 413 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 107 | 80 | 696 | 83 | 86 | 570 | 913 | - | - | 690 | - | - |
| Mov Cap-2 Maneuver | 107 | 80 | - | 83 | 86 | - | - | - | - | - | - | - |
| Stage 1 | 393 | 418 | - | 286 | 341 | - | - | - | - | - | - | - |
| Stage 2 | 472 | 296 | - | 526 | 387 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 80.1 | | 76.3 | | 0.2 | | 0.6 | |
| HCM LOS | F | | F | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 913 | - | - | 99 | 97 | 690 | - | - |
| HCM Lane V/C Ratio | 0.026 | - | - | 0.56 | 0.515 | 0.063 | - | - |
| HCM Control Delay (s) | 9 | - | - | 80.1 | 76.3 | 10.6 | - | - |
| HCM Lane LOS | A | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 2.6 | 2.3 | 0.2 | - | - |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|------------|----------------|
| | 39 | 2.3 | 66.3 | 1.0 | 54 |
| | 13 | 3.1 | 58.9 | 0.9 | 53 |
| | 38 | 3.2 | 49.8 | 0.7 | 52 |
| Church St | 11 | 2.6 | 34.3 | 0.5 | 51 |
| Morehead Ave | 10 | 25.5 | 66.7 | 0.7 | 38 |
| Main Street | 9 | 22.8 | 59.8 | 0.6 | 36 |
| Water Plant Road | 8 | 21.6 | 79.7 | 0.9 | 41 |
| Drewry Mason School | 7 | 5.5 | 34.9 | 0.4 | 38 |
| Covington Lane | 6 | 1.9 | 26.6 | 0.3 | 43 |
| Shamrock Drive | 5 | 1.5 | 18.8 | 0.2 | 41 |
| Marrowbone Circle | 4 | 0.9 | 8.0 | 0.1 | 43 |
| Villa Road | 3 | 1.9 | 21.9 | 0.3 | 46 |
| | 20 | 0.9 | 7.8 | 0.1 | 40 |
| | 2 | 12.9 | 22.8 | 0.1 | 20 |
| | 12 | 3.6 | 12.2 | 0.1 | 33 |
| US 58 WB Ramp | 1 | 5.1 | 8.8 | 0.0 | 17 |
| Total | | 115.4 | 577.2 | 6.9 | 43 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 5.6 | 17.5 | 0.2 | 31 |
| | 12 | 1.1 | 3.3 | 0.0 | 46 |
| US 58 EB Ramp | 2 | 4.6 | 15.0 | 0.1 | 27 |
| | 20 | 2.6 | 12.8 | 0.1 | 35 |
| Kilarney Court | 3 | 0.6 | 6.9 | 0.1 | 45 |
| | 4 | 1.2 | 22.3 | 0.3 | 45 |
| Shamrock Drive | 5 | 0.6 | 8.0 | 0.1 | 43 |
| Covington Lane | 6 | 1.1 | 17.9 | 0.2 | 43 |
| Steve Drive | 7 | 2.1 | 27.5 | 0.3 | 42 |
| Water Plant Road | 8 | 10.2 | 38.4 | 0.4 | 34 |
| Soapstone Road | 9 | 12.7 | 63.3 | 0.9 | 52 |
| Morehead Ave | 10 | 10.3 | 42.1 | 0.6 | 51 |
| Lee Ford Camp Rd | 11 | 4.4 | 42.3 | 0.7 | 60 |
| | 38 | 1.3 | 33.1 | 0.5 | 53 |
| | 13 | 2.2 | 49.0 | 0.7 | 53 |
| | 39 | 3.3 | 59.3 | 0.9 | 52 |
| Total | | 64.0 | 458.6 | 6.1 | 48 |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|------------|----------------|
| | 39 | 2.2 | 66.5 | 1.0 | 54 |
| | 13 | 3.0 | 58.9 | 0.9 | 53 |
| | 38 | 3.0 | 49.9 | 0.7 | 52 |
| Church St | 11 | 2.5 | 34.3 | 0.5 | 51 |
| Morehead Ave | 10 | 21.6 | 63.0 | 0.7 | 40 |
| Main Street | 9 | 30.3 | 67.3 | 0.6 | 32 |
| Water Plant Road | 8 | 20.5 | 78.4 | 0.9 | 42 |
| Drewry Mason School | 7 | 4.6 | 33.8 | 0.4 | 39 |
| Covington Lane | 6 | 2.1 | 26.8 | 0.3 | 43 |
| Shamrock Drive | 5 | 1.6 | 18.9 | 0.2 | 41 |
| Marrowbone Circle | 4 | 1.0 | 8.1 | 0.1 | 42 |
| Villa Road | 3 | 2.0 | 21.9 | 0.3 | 46 |
| | 20 | 1.0 | 7.9 | 0.1 | 39 |
| | 2 | 15.0 | 25.0 | 0.1 | 18 |
| | 12 | 3.6 | 12.3 | 0.1 | 33 |
| US 58 WB Ramp | 1 | 5.5 | 9.1 | 0.0 | 17 |
| Total | | 119.2 | 582.1 | 6.9 | 43 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 7.0 | 19.0 | 0.2 | 29 |
| | 12 | 1.4 | 3.6 | 0.0 | 42 |
| US 58 EB Ramp | 2 | 5.5 | 15.9 | 0.1 | 26 |
| | 20 | 4.1 | 14.3 | 0.1 | 32 |
| Kilarney Court | 3 | 0.7 | 7.2 | 0.1 | 43 |
| | 4 | 1.4 | 22.5 | 0.3 | 44 |
| Shamrock Drive | 5 | 0.8 | 8.2 | 0.1 | 42 |
| Covington Lane | 6 | 1.3 | 18.1 | 0.2 | 42 |
| Steve Drive | 7 | 2.4 | 27.8 | 0.3 | 41 |
| Water Plant Road | 8 | 12.2 | 40.6 | 0.4 | 33 |
| Soapstone Road | 9 | 23.9 | 74.0 | 0.9 | 45 |
| Morehead Ave | 10 | 11.5 | 43.1 | 0.6 | 50 |
| Lee Ford Camp Rd | 11 | 4.7 | 42.5 | 0.7 | 59 |
| | 38 | 1.5 | 33.4 | 0.5 | 53 |
| | 13 | 2.5 | 49.3 | 0.7 | 52 |
| | 39 | 3.5 | 59.5 | 0.9 | 52 |
| Total | | 84.2 | 478.7 | 6.1 | 46 |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|------------|----------------|
| | 40 | 2.5 | 66.9 | 1.0 | 54 |
| | 13 | 3.5 | 59.2 | 0.9 | 52 |
| | 38 | 3.5 | 50.2 | 0.7 | 51 |
| Church St | 11 | 2.9 | 34.8 | 0.5 | 51 |
| Morehead Ave | 10 | 12.6 | 54.3 | 0.7 | 47 |
| Main Street | 9 | 18.4 | 55.6 | 0.6 | 39 |
| Water Plant Road | 8 | 21.3 | 80.2 | 0.9 | 41 |
| Drewry Mason School | 7 | 5.5 | 34.8 | 0.4 | 38 |
| Covington Lane | 6 | 2.2 | 26.8 | 0.3 | 43 |
| Shamrock Drive | 5 | 1.9 | 19.1 | 0.2 | 40 |
| Marrowbone Circle | 4 | 2.6 | 10.1 | 0.1 | 36 |
| Villa Road | 3 | 2.4 | 22.7 | 0.3 | 45 |
| | 20 | 1.3 | 8.2 | 0.1 | 37 |
| | 2 | 14.0 | 23.4 | 0.1 | 18 |
| | 12 | 3.3 | 11.6 | 0.1 | 33 |
| US 58 WB Ramp | 1 | 5.0 | 9.3 | 0.0 | 19 |
| Total | | 103.1 | 567.2 | 6.9 | 44 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 7.8 | 19.8 | 0.2 | 28 |
| | 12 | 1.4 | 4.3 | 0.0 | 41 |
| US 58 EB Ramp | 2 | 3.7 | 13.4 | 0.1 | 29 |
| | 20 | 2.9 | 12.5 | 0.1 | 34 |
| Kilarney Court | 3 | 0.7 | 7.0 | 0.1 | 44 |
| | 4 | 2.0 | 23.2 | 0.3 | 43 |
| Shamrock Drive | 5 | 0.8 | 8.5 | 0.1 | 42 |
| Covington Lane | 6 | 1.2 | 18.0 | 0.2 | 43 |
| Steve Drive | 7 | 2.4 | 27.6 | 0.3 | 41 |
| Water Plant Road | 8 | 9.1 | 37.3 | 0.4 | 36 |
| Soapstone Road | 9 | 14.5 | 65.2 | 0.9 | 51 |
| Morehead Ave | 10 | 5.5 | 37.3 | 0.6 | 58 |
| Lee Ford Camp Rd | 11 | 3.0 | 41.3 | 0.7 | 62 |
| | 38 | 1.4 | 33.3 | 0.5 | 53 |
| | 13 | 2.5 | 49.5 | 0.7 | 52 |
| | 40 | 3.6 | 59.6 | 0.9 | 52 |
| Total | | 62.4 | 457.8 | 6.1 | 48 |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|------------|----------------|
| | 40 | 2.8 | 67.5 | 1.0 | 53 |
| | 13 | 3.7 | 59.7 | 0.9 | 52 |
| | 38 | 3.6 | 49.3 | 0.7 | 51 |
| Church St | 11 | 3.1 | 35.0 | 0.5 | 51 |
| Morehead Ave | 10 | 26.8 | 68.7 | 0.7 | 37 |
| Main Street | 9 | 28.3 | 66.6 | 0.6 | 33 |
| Water Plant Road | 8 | 22.3 | 80.2 | 0.9 | 41 |
| Drewry Mason School | 7 | 5.2 | 34.0 | 0.4 | 40 |
| Covington Lane | 6 | 2.3 | 27.3 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.6 | 18.3 | 0.2 | 42 |
| Marrowbone Circle | 4 | 1.1 | 8.4 | 0.1 | 43 |
| Villa Road | 3 | 2.2 | 22.7 | 0.3 | 44 |
| | 20 | 1.3 | 8.4 | 0.1 | 37 |
| | 2 | 17.6 | 27.5 | 0.1 | 16 |
| | 12 | 4.1 | 13.1 | 0.1 | 30 |
| US 58 WB Ramp | 1 | 5.5 | 8.6 | 0.0 | 17 |
| Total | | 131.5 | 595.3 | 6.9 | 42 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 12.3 | 24.3 | 0.2 | 23 |
| | 12 | 1.5 | 3.7 | 0.0 | 40 |
| US 58 EB Ramp | 2 | 5.4 | 15.4 | 0.1 | 26 |
| | 20 | 3.8 | 13.9 | 0.1 | 32 |
| Kilarney Court | 3 | 0.7 | 7.6 | 0.1 | 41 |
| | 4 | 1.8 | 23.8 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.0 | 8.4 | 0.1 | 43 |
| Covington Lane | 6 | 1.4 | 16.9 | 0.2 | 45 |
| Steve Drive | 7 | 2.5 | 27.6 | 0.3 | 41 |
| Water Plant Road | 8 | 11.9 | 40.1 | 0.4 | 34 |
| Soapstone Road | 9 | 27.5 | 84.6 | 0.9 | 39 |
| Morehead Ave | 10 | 14.5 | 53.8 | 0.6 | 41 |
| Lee Ford Camp Rd | 11 | 5.3 | 46.2 | 0.7 | 55 |
| | 38 | 1.6 | 34.0 | 0.5 | 53 |
| | 13 | 2.4 | 48.0 | 0.7 | 53 |
| | 40 | 3.4 | 59.1 | 0.9 | 53 |
| Total | | 97.0 | 507.7 | 6.1 | 43 |

APPENDIX H

FUTURE BUILD ALTERNATIVE A OPERATIONAL ANALYSIS
WORKSHEETS

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019




















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 231 | 97 | 730 | 553 | 53 |
| v/c Ratio | 0.66 | 0.23 | 0.39 | 0.28 | 0.06 |
| Control Delay | 33.2 | 6.0 | 2.6 | 8.7 | 1.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 33.2 | 6.0 | 2.6 | 8.7 | 1.8 |
| Queue Length 50th (ft) | 91 | 0 | 15 | 56 | 0 |
| Queue Length 95th (ft) | 136 | 28 | 20 | 102 | 10 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 537 | 590 | 1875 | 1945 | 943 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.43 | 0.16 | 0.39 | 0.28 | 0.06 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | |  |  | |  | | |  |  |
| Traffic Volume (vph) | 0 | 0 | 0 | 203 | 0 | 85 | 0 | 642 | 0 | 0 | 487 | 47 |
| Future Volume (vph) | 0 | 0 | 0 | 203 | 0 | 85 | 0 | 642 | 0 | 0 | 487 | 47 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 0 | 0 | 0 | 231 | 0 | 97 | 0 | 730 | 0 | 0 | 553 | 53 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 0 | 0 | 22 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 231 | 22 | 0 | 730 | 0 | 0 | 553 | 31 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 16% | 0% | 6% | 0% | 12% | 14% | 0% | 8% | 3% |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 |
| Actuated Green, G (s) | | | | | 15.8 | 15.8 | | 40.7 | | | 40.7 | 40.7 |
| Effective Green, g (s) | | | | | 15.8 | 15.8 | | 40.7 | | | 40.7 | 40.7 |
| Actuated g/C Ratio | | | | | 0.23 | 0.23 | | 0.58 | | | 0.58 | 0.58 |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 351 | 343 | | 1873 | | | 1943 | 911 |
| v/s Ratio Prot | | | | | | | | c0.23 | | | 0.17 | |
| v/s Ratio Perm | | | | | 0.15 | 0.01 | | | | | | 0.02 |
| v/c Ratio | | | | | 0.66 | 0.06 | | 0.39 | | | 0.28 | 0.03 |
| Uniform Delay, d1 | | | | | 24.6 | 21.3 | | 7.9 | | | 7.3 | 6.3 |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.24 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 4.4 | 0.1 | | 0.5 | | | 0.4 | 0.1 |
| Delay (s) | | | | | 29.1 | 21.4 | | 2.3 | | | 7.7 | 6.3 |
| Level of Service | | | | | C | C | | A | | | A | A |
| Approach Delay (s) | | 0.0 | | | 26.8 | | | 2.3 | | | 7.6 | |
| Approach LOS | | A | | | C | | | A | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 9.1 | | HCM 2000 Level of Service | | | | | | A | |
| HCM 2000 Volume to Capacity ratio | | | 0.46 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | Sum of lost time (s) | | | | | | 13.5 | |
| Intersection Capacity Utilization | | | 40.2% | | ICU Level of Service | | | | | | A | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019























| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 94 | 325 | 1053 | 300 | 97 | 688 |
| v/c Ratio | 0.37 | 0.78 | 0.67 | 0.34 | 0.50 | 0.32 |
| Control Delay | 30.6 | 21.4 | 18.0 | 4.7 | 43.5 | 4.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 30.6 | 21.4 | 18.0 | 4.7 | 43.5 | 4.2 |
| Queue Length 50th (ft) | 37 | 27 | 194 | 15 | 41 | 37 |
| Queue Length 95th (ft) | 73 | #123 | 263 | 56 | #88 | 62 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 311 | 457 | 1570 | 887 | 193 | 2184 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.30 | 0.71 | 0.67 | 0.34 | 0.50 | 0.32 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 2: US 220 Business & US 58 EB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|--|---|---|--|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  | |  | | | | |   |  |  |   | | |
| Traffic Volume (vph) | 83 | 0 | 286 | 0 | 0 | 0 | 0 | 927 | 264 | 85 | 605 | 0 | |
| Future Volume (vph) | 83 | 0 | 286 | 0 | 0 | 0 | 0 | 927 | 264 | 85 | 605 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 94 | 0 | 325 | 0 | 0 | 0 | 0 | 1053 | 300 | 97 | 688 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 218 | 0 | 0 | 0 | 0 | 0 | 128 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 94 | 0 | 107 | 0 | 0 | 0 | 0 | 1053 | 172 | 97 | 688 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 19% | 2% | 2% | 2% | 0% | 12% | 3% | 2% | 8% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 10.4 | | 10.4 | | | | | 32.7 | 32.7 | 6.2 | 45.7 | | |
| Effective Green, g (s) | 10.4 | | 10.4 | | | | | 32.7 | 32.7 | 6.2 | 45.7 | | |
| Actuated g/C Ratio | 0.15 | | 0.15 | | | | | 0.47 | 0.47 | 0.09 | 0.65 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 253 | | 201 | | | | | 1505 | 732 | 156 | 2182 | | |
| v/s Ratio Prot | | | | | | | | c0.33 | | c0.05 | 0.21 | | |
| v/s Ratio Perm | 0.06 | | c0.08 | | | | | | 0.11 | | | | |
| v/c Ratio | 0.37 | | 0.53 | | | | | 0.70 | 0.24 | 0.62 | 0.32 | | |
| Uniform Delay, d1 | 26.9 | | 27.6 | | | | | 14.8 | 11.2 | 30.8 | 5.3 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.14 | 0.67 | | |
| Incremental Delay, d2 | 0.9 | | 2.7 | | | | | 2.7 | 0.8 | 7.2 | 0.4 | | |
| Delay (s) | 27.8 | | 30.3 | | | | | 17.5 | 11.9 | 42.4 | 3.9 | | |
| Level of Service | C | | C | | | | | B | B | D | A | | |
| Approach Delay (s) | | 29.7 | | | 0.0 | | | 16.3 | | | 8.7 | | |
| Approach LOS | | C | | | A | | | B | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 16.1 | | | | | | | | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.65 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 49.8% | | | | | | | | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 18 | 2 | 16 | 6 | 0 | 7 | 2 | 1166 | 1 | 5 | 882 | 4 |
| Future Vol, veh/h | 18 | 2 | 16 | 6 | 0 | 7 | 2 | 1166 | 1 | 5 | 882 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 20 | 2 | 18 | 7 | 0 | 8 | 2 | 1325 | 1 | 6 | 1002 | 5 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1681 | 2344 | 501 | 1843 | 2348 | 663 | 1007 | 0 | 0 | 1326 | 0 | 0 |
| Stage 1 | 1014 | 1014 | - | 1329 | 1329 | - | - | - | - | - | - | - |
| Stage 2 | 667 | 1330 | - | 514 | 1019 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 63 | 37 | 521 | 48 | 37 | 383 | 696 | - | - | 527 | - | - |
| Stage 1 | 259 | 319 | - | 166 | 226 | - | - | - | - | - | - | - |
| Stage 2 | 419 | 226 | - | 517 | 317 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 61 | 36 | 521 | 44 | 36 | 383 | 696 | - | - | 527 | - | - |
| Mov Cap-2 Maneuver | 61 | 36 | - | 44 | 36 | - | - | - | - | - | - | - |
| Stage 1 | 258 | 315 | - | 166 | 225 | - | - | - | - | - | - | - |
| Stage 2 | 409 | 225 | - | 490 | 314 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|----|--|------|--|----|--|-----|--|
| HCM Control Delay, s | 70 | | 56.8 | | 0 | | 0.1 | |
| HCM LOS | F | | F | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 696 | - | - | 94 | 84 | 527 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | - | 0.435 | 0.176 | 0.011 | - | - |
| HCM Control Delay (s) | 10.2 | - | - | 70 | 56.8 | 11.9 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.8 | 0.6 | 0 | - | - |

HCM 6th TWSC
4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | ↔ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 20 | 0 | 40 | 0 | 1129 | 6 | 3 | 901 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 20 | 0 | 40 | 0 | 1129 | 6 | 3 | 901 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 23 | 0 | 45 | 0 | 1283 | 7 | 3 | 1024 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 1672 | 2320 | 512 | 1801 | 2313 | 642 | - | 0 | 0 | 1290 | 0 | 0 |
| Stage 1 | 1030 | 1030 | - | 1283 | 1283 | - | - | - | - | - | - | - |
| Stage 2 | 642 | 1290 | - | 518 | 1030 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 64 | 38 | 512 | 51 | 38 | 405 | 0 | - | - | 544 | - | 0 |
| Stage 1 | 254 | 313 | - | 178 | 238 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 434 | 236 | - | 514 | 313 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 57 | 38 | 512 | 51 | 38 | 405 | - | - | - | 544 | - | - |
| Mov Cap-2 Maneuver | 57 | 38 | - | 51 | 38 | - | - | - | - | - | - | - |
| Stage 1 | 254 | 311 | - | 178 | 238 | - | - | - | - | - | - | - |
| Stage 2 | 385 | 236 | - | 511 | 311 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|----|
| HCM Control Delay, s | 0 | 66.7 | 0 | 0 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-------|-----|
| Capacity (veh/h) | - | - | - | 122 | 544 | - |
| HCM Lane V/C Ratio | - | - | - | 0.559 | 0.006 | - |
| HCM Control Delay (s) | - | - | 0 | 66.7 | 11.7 | - |
| HCM Lane LOS | - | - | A | F | B | - |
| HCM 95th %tile Q(veh) | - | - | - | 2.7 | 0 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 33.9 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | ↘↗ | | | ↑↑ | ↑↑ | ↗ |
| Traffic Vol, veh/h | 144 | 23 | 0 | 991 | 909 | 12 |
| Future Vol, veh/h | 144 | 23 | 0 | 991 | 909 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 12 | 16 | 0 |
| Mvmt Flow | 164 | 26 | 0 | 1126 | 1033 | 14 |

| Major/Minor | Minor2 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | 1596 | 517 | - | 0 | - |
| Stage 1 | 1033 | - | - | - | - |
| Stage 2 | 563 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - |
| Pot Cap-1 Maneuver | ~ 99 | 509 | 0 | - | - |
| Stage 1 | 309 | - | 0 | - | - |
| Stage 2 | 539 | - | 0 | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | ~ 99 | 509 | - | - | - |
| Mov Cap-2 Maneuver | ~ 99 | - | - | - | - |
| Stage 1 | 309 | - | - | - | - |
| Stage 2 | 539 | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|----|----|
| HCM Control Delay, s | \$ 421.7 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|----------|-----|-----|
| Capacity (veh/h) | - | 111 | - | - |
| HCM Lane V/C Ratio | - | 1.71 | - | - |
| HCM Control Delay (s) | - | \$ 421.7 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 14.7 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 28 | 68 | 923 | 5 | 14 | 918 |
| Future Vol, veh/h | 28 | 68 | 923 | 5 | 14 | 918 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 12 | 0 | 0 | 17 |
| Mvmt Flow | 32 | 77 | 1049 | 6 | 16 | 1043 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 1603 | 525 | 0 | 0 | 1055 |
| Stage 1 | 1049 | - | - | - | - |
| Stage 2 | 554 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 98 | 502 | - | - | 668 |
| Stage 1 | 303 | - | - | - | - |
| Stage 2 | 545 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 96 | 502 | - | - | 668 |
| Mov Cap-2 Maneuver | 96 | - | - | - | - |
| Stage 1 | 303 | - | - | - | - |
| Stage 2 | 532 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 35.2 | 0 | 0.2 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 225 | 668 |
| HCM Lane V/C Ratio | - | - | 0.485 | 0.024 |
| HCM Control Delay (s) | - | - | 35.2 | 10.5 |
| HCM Lane LOS | - | - | E | B |
| HCM 95th %tile Q(veh) | - | - | 2.4 | 0.1 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | | | ↔ | ↑↑ | ↔ | ↔ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 928 | 114 | 116 | 817 | 13 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 928 | 114 | 116 | 817 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 12 | 0 | 3 | 17 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1055 | 130 | 132 | 928 | 15 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1732 | 2389 | 472 | | | | 943 | 0 | 0 | 1185 | 0 | 0 |
| Stage 1 | 1200 | 1200 | - | | | | - | - | - | - | - | - |
| Stage 2 | 532 | 1189 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 81 | 34 | 544 | | | | 736 | - | - | 579 | - | - |
| Stage 1 | 252 | 261 | - | | | | - | - | - | - | - | - |
| Stage 2 | 559 | 264 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 62 | 0 | 544 | | | | 736 | - | - | 579 | - | - |
| Mov Cap-2 Maneuver | 62 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 251 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 432 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 1.6 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 736 | - | - | - | 579 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | - | - | 0.228 | - | - |
| HCM Control Delay (s) | 9.9 | - | - | 0 | 13 | - | - |
| HCM Lane LOS | A | - | - | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.9 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019



| Lane Group | EBL | EBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 125 | 40 | 40 | 1061 | 1 | 40 | 774 | 115 |
| v/c Ratio | 0.57 | 0.16 | 0.24 | 0.60 | 0.00 | 0.22 | 0.46 | 0.12 |
| Control Delay | 37.4 | 13.0 | 29.4 | 12.4 | 0.0 | 29.3 | 10.7 | 0.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 37.4 | 13.0 | 29.4 | 12.4 | 0.0 | 29.3 | 10.7 | 0.2 |
| Queue Length 50th (ft) | 35 | 1 | 11 | 92 | 0 | 11 | 60 | 0 |
| Queue Length 95th (ft) | #111 | 25 | 41 | 231 | 0 | 41 | 156 | 0 |
| Internal Link Dist (ft) | | 711 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 222 | 261 | 177 | 1773 | 815 | 182 | 1694 | 988 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.56 | 0.15 | 0.23 | 0.60 | 0.00 | 0.22 | 0.46 | 0.12 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 Business & Water Plant Road

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↖ | ↖ | ↖ | ↖↖ | ↖ | ↖ | ↖↖ | ↖ |
| Traffic Volume (veh/h) | 110 | 4 | 31 | 0 | 0 | 0 | 35 | 934 | 1 | 35 | 681 | 101 |
| Future Volume (veh/h) | 110 | 4 | 31 | 0 | 0 | 0 | 35 | 934 | 1 | 35 | 681 | 101 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1722 | 1470 | 1900 | 1648 | 1856 |
| Adj Flow Rate, veh/h | 125 | 5 | 35 | 0 | 0 | 0 | 40 | 1061 | 1 | 40 | 774 | 115 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 12 | 29 | 0 | 17 | 3 |
| Cap, veh/h | 166 | 21 | 149 | 3 | 3 | 3 | 79 | 1625 | 619 | 88 | 1576 | 791 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.05 | 0.50 | 0.50 | 0.05 | 0.50 | 0.50 |
| Sat Flow, veh/h | 1598 | 205 | 1436 | 1810 | 1900 | 1610 | 1626 | 3272 | 1246 | 1810 | 3131 | 1572 |
| Grp Volume(v), veh/h | 125 | 0 | 40 | 0 | 0 | 0 | 40 | 1061 | 1 | 40 | 774 | 115 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1641 | 1810 | 1900 | 1610 | 1626 | 1636 | 1246 | 1810 | 1566 | 1572 |
| Q Serve(g_s), s | 4.6 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 1.4 | 14.6 | 0.0 | 1.3 | 9.8 | 2.4 |
| Cycle Q Clear(g_c), s | 4.6 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 1.4 | 14.6 | 0.0 | 1.3 | 9.8 | 2.4 |
| Prop In Lane | 1.00 | | 0.88 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 166 | 0 | 170 | 3 | 3 | 3 | 79 | 1625 | 619 | 88 | 1576 | 791 |
| V/C Ratio(X) | 0.75 | 0.00 | 0.23 | 0.00 | 0.00 | 0.00 | 0.51 | 0.65 | 0.00 | 0.46 | 0.49 | 0.15 |
| Avail Cap(c_a), veh/h | 222 | 0 | 228 | 180 | 189 | 160 | 178 | 1625 | 619 | 180 | 1576 | 791 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 26.3 | 0.0 | 24.9 | 0.0 | 0.0 | 0.0 | 28.0 | 11.3 | 7.7 | 28.0 | 9.9 | 8.0 |
| Incr Delay (d2), s/veh | 9.6 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 4.9 | 2.1 | 0.0 | 3.6 | 1.1 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 3.9 | 0.0 | 0.6 | 2.7 | 0.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 35.9 | 0.0 | 25.6 | 0.0 | 0.0 | 0.0 | 33.0 | 13.4 | 7.7 | 31.6 | 11.0 | 8.4 |
| LnGrp LOS | D | A | C | A | A | A | C | B | A | C | B | A |
| Approach Vol, veh/h | | 165 | | | 0 | | | 1102 | | | 929 | |
| Approach Delay, s/veh | | 33.4 | | | 0.0 | | | 14.1 | | | 11.6 | |
| Approach LOS | | C | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 10.6 | 35.9 | | 0.0 | 10.2 | 36.3 | | 13.9 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 6 | 30.0 | | * 6 | * 6.6 | 29.8 | | 8.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 3.3 | 16.6 | | 0.0 | 3.4 | 11.8 | | 6.6 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.5 | | 0.0 | 0.0 | 5.1 | | 0.1 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 14.5 |
| HCM 6th LOS | B |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | NBL | NBT | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 67 | 48 | 31 | 1051 | 77 | 666 | 66 |
| v/c Ratio | 0.29 | 0.13 | 0.17 | 0.59 | 0.44 | 0.34 | 0.06 |
| Control Delay | 28.6 | 0.7 | 29.6 | 14.9 | 35.9 | 9.2 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 28.6 | 0.7 | 29.6 | 14.9 | 35.9 | 9.2 | 0.1 |
| Queue Length 50th (ft) | 24 | 0 | 11 | 165 | 29 | 47 | 0 |
| Queue Length 95th (ft) | 55 | 0 | 34 | 238 | 66 | 134 | 0 |
| Internal Link Dist (ft) | 631 | | | 3118 | | 4723 | |
| Turn Bay Length (ft) | | 25 | 100 | | 225 | | 225 |
| Base Capacity (vph) | 541 | 623 | 179 | 1791 | 177 | 1975 | 1121 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.12 | 0.08 | 0.17 | 0.59 | 0.44 | 0.34 | 0.06 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↗ | ↗ | ↖ | ↗ | ↗ |
| Traffic Volume (veh/h) | 45 | 14 | 42 | 0 | 0 | 0 | 27 | 925 | 0 | 68 | 586 | 58 |
| Future Volume (veh/h) | 45 | 14 | 42 | 0 | 0 | 0 | 27 | 925 | 0 | 68 | 586 | 58 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1722 | 1900 | 1885 | 1633 | 1900 |
| Adj Flow Rate, veh/h | 51 | 16 | 48 | 0 | 0 | 0 | 31 | 1051 | 0 | 77 | 666 | 66 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 12 | 0 | 1 | 18 | 0 |
| Cap, veh/h | 117 | 37 | 139 | 0 | 3 | 3 | 73 | 1575 | 775 | 131 | 1616 | 838 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.00 | 0.00 | 0.00 | 0.04 | 0.48 | 0.00 | 0.07 | 0.52 | 0.52 |
| Sat Flow, veh/h | 1361 | 427 | 1610 | 0 | 1900 | 1585 | 1810 | 3272 | 1610 | 1795 | 3103 | 1610 |
| Grp Volume(v), veh/h | 67 | 0 | 48 | 0 | 0 | 0 | 31 | 1051 | 0 | 77 | 666 | 66 |
| Grp Sat Flow(s),veh/h/ln | 1788 | 0 | 1610 | 0 | 1900 | 1585 | 1810 | 1636 | 1610 | 1795 | 1552 | 1610 |
| Q Serve(g_s), s | 2.1 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 1.0 | 14.5 | 0.0 | 2.5 | 7.7 | 1.2 |
| Cycle Q Clear(g_c), s | 2.1 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 1.0 | 14.5 | 0.0 | 2.5 | 7.7 | 1.2 |
| Prop In Lane | 0.76 | | 1.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 154 | 0 | 139 | 0 | 3 | 3 | 73 | 1575 | 775 | 131 | 1616 | 838 |
| V/C Ratio(X) | 0.43 | 0.00 | 0.35 | 0.00 | 0.00 | 0.00 | 0.42 | 0.67 | 0.00 | 0.59 | 0.41 | 0.08 |
| Avail Cap(c_a), veh/h | 545 | 0 | 491 | 0 | 580 | 484 | 184 | 1575 | 775 | 183 | 1616 | 838 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 25.6 | 0.0 | 25.4 | 0.0 | 0.0 | 0.0 | 27.6 | 11.7 | 0.0 | 26.5 | 8.6 | 7.1 |
| Incr Delay (d2), s/veh | 1.9 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 | 3.8 | 2.3 | 0.0 | 4.2 | 0.8 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.4 | 4.0 | 0.0 | 1.1 | 1.8 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 27.5 | 0.0 | 26.9 | 0.0 | 0.0 | 0.0 | 31.5 | 13.9 | 0.0 | 30.6 | 9.4 | 7.3 |
| LnGrp LOS | C | A | C | A | A | A | C | B | A | C | A | A |
| Approach Vol, veh/h | | 115 | | | 0 | | | 1082 | | | 809 | |
| Approach Delay, s/veh | | 27.2 | | | 0.0 | | | 14.4 | | | 11.3 | |
| Approach LOS | | C | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.0 | 34.3 | | 0.0 | 9.7 | 36.6 | | 12.7 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 6 | 28.4 | | * 18 | * 6 | 28.8 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.5 | 16.5 | | 0.0 | 3.0 | 9.7 | | 4.1 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.1 | | 0.0 | 0.0 | 4.0 | | 0.3 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 13.9 |
| HCM 6th LOS | B |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 66 | 557 | 525 | 6 | 252 | 461 |
| v/c Ratio | 0.18 | 0.86 | 0.66 | 0.02 | 0.56 | 0.28 |
| Control Delay | 21.0 | 23.0 | 24.5 | 10.8 | 12.6 | 8.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.0 | 23.0 | 24.5 | 10.8 | 12.6 | 8.1 |
| Queue Length 50th (ft) | 20 | 44 | 88 | 0 | 44 | 43 |
| Queue Length 95th (ft) | 47 | #202 | 131 | 7 | 78 | 64 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 367 | 644 | 792 | 398 | 451 | 1638 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 0.86 | 0.66 | 0.02 | 0.56 | 0.28 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | ↶ | ↶ | ↕ | ↷ | ↶ | ↕ |
| Traffic Volume (veh/h) | 58 | 490 | 462 | 5 | 222 | 406 |
| Future Volume (veh/h) | 58 | 490 | 462 | 5 | 222 | 406 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1856 | 1781 | 1604 | 1781 | 1841 | 1618 |
| Adj Flow Rate, veh/h | 66 | 557 | 525 | 6 | 252 | 461 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 8 | 20 | 8 | 4 | 19 |
| Cap, veh/h | 372 | 318 | 804 | 398 | 446 | 1658 |
| Arrive On Green | 0.21 | 0.21 | 0.26 | 0.26 | 0.13 | 0.54 |
| Sat Flow, veh/h | 1767 | 1510 | 3127 | 1510 | 1753 | 3156 |
| Grp Volume(v), veh/h | 66 | 557 | 525 | 6 | 252 | 461 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 1510 | 1523 | 1510 | 1753 | 1537 |
| Q Serve(g_s), s | 1.8 | 12.6 | 9.2 | 0.2 | 5.7 | 4.9 |
| Cycle Q Clear(g_c), s | 1.8 | 12.6 | 9.2 | 0.2 | 5.7 | 4.9 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 372 | 318 | 804 | 398 | 446 | 1658 |
| V/C Ratio(X) | 0.18 | 1.75 | 0.65 | 0.02 | 0.57 | 0.28 |
| Avail Cap(c_a), veh/h | 372 | 318 | 804 | 398 | 449 | 1664 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.4 | 23.6 | 19.6 | 16.3 | 12.9 | 7.5 |
| Incr Delay (d2), s/veh | 1.0 | 351.7 | 4.1 | 0.1 | 1.6 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 35.2 | 3.1 | 0.1 | 1.8 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 20.4 | 375.4 | 23.7 | 16.4 | 14.5 | 7.6 |
| LnGrp LOS | C | F | C | B | B | A |
| Approach Vol, veh/h | 623 | | 531 | | | 713 |
| Approach Delay, s/veh | 337.8 | | 23.6 | | | 10.0 |
| Approach LOS | F | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 16.5 | 24.4 | | 19.0 | | 40.9 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 8 | * 16 | | 12.6 | | * 32 |
| Max Q Clear Time (g_c+I1), s | 7.7 | 11.2 | | 14.6 | | 6.9 |
| Green Ext Time (p_c), s | 0.0 | 1.3 | | 0.0 | | 2.7 |

Intersection Summary

| | |
|--------------------|-------|
| HCM 6th Ctrl Delay | 123.3 |
| HCM 6th LOS | F |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 27 | 13 | 11 | 11 | 20 | 12 | 7 | 428 | 32 | 10 | 434 | 20 |
| Future Vol, veh/h | 27 | 13 | 11 | 11 | 20 | 12 | 7 | 428 | 32 | 10 | 434 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 19 | 2 | 2 | 20 | 2 |
| Mvmt Flow | 31 | 15 | 13 | 13 | 23 | 14 | 8 | 486 | 36 | 11 | 493 | 23 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 786 | 1053 | 247 | 778 | 1040 | 243 | 516 | 0 | 0 | 522 | 0 | 0 |
| Stage 1 | 515 | 515 | - | 502 | 502 | - | - | - | - | - | - | - |
| Stage 2 | 271 | 538 | - | 276 | 538 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 283 | 225 | 753 | 286 | 229 | 758 | 1046 | - | - | 1041 | - | - |
| Stage 1 | 511 | 533 | - | 520 | 540 | - | - | - | - | - | - | - |
| Stage 2 | 712 | 521 | - | 707 | 521 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 253 | 221 | 753 | 263 | 225 | 758 | 1046 | - | - | 1041 | - | - |
| Mov Cap-2 Maneuver | 253 | 221 | - | 263 | 225 | - | - | - | - | - | - | - |
| Stage 1 | 507 | 527 | - | 516 | 536 | - | - | - | - | - | - | - |
| Stage 2 | 664 | 517 | - | 669 | 515 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | | SB | | |
|----------------------|----|--|------|--|-----|--|--|-----|--|--|
| HCM Control Delay, s | 21 | | 19.7 | | 0.1 | | | 0.2 | | |
| HCM LOS | C | | C | | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1046 | - | - | 283 | 293 | 1041 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.205 | 0.167 | 0.011 | - | - |
| HCM Control Delay (s) | 8.5 | - | - | 21 | 19.7 | 8.5 | - | - |
| HCM Lane LOS | A | - | - | C | C | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.8 | 0.6 | 0 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↗ | ↘ | ↗ | | | ↗ | ↘ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 46 | 32 | 421 | 0 | 0 | 33 | 423 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 46 | 32 | 421 | 0 | 0 | 33 | 423 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 19 | 2 | 2 | 2 | 20 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 52 | 36 | 478 | 0 | 0 | 38 | 481 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 829 | - 478 519 | 0 - - - 0 |
| Stage 1 | 550 | - - - | - - - - - |
| Stage 2 | 279 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 340 | 0 587 1047 | - 0 0 - - |
| Stage 1 | 578 | 0 - - | - 0 0 - - |
| Stage 2 | 768 | 0 - - | - 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 328 | 0 587 1047 | - - - - - |
| Mov Cap-2 Maneuver | 328 | 0 - - | - - - - - |
| Stage 1 | 558 | 0 - - | - - - - - |
| Stage 2 | 768 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 11.7 | 0.6 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 1047 | - - 587 | - - | |
| HCM Lane V/C Ratio | 0.035 | - - 0.089 | - - | |
| HCM Control Delay (s) | 8.6 | - 0 11.7 | - - | |
| HCM Lane LOS | A | - A B | - - | |
| HCM 95th %tile Q(veh) | 0.1 | - - 0.3 | - - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 453 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 |
| Future Vol, veh/h | 453 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 19 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 515 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 76 | 76 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 76 | 76 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.59 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.59 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.59 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.671 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 887 | 814 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 906 | 832 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 887 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 887 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 906 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | | 0 | |
| HCM LOS | - | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 887 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.58 | - | - | - |
| HCM Control Delay (s) | - | - | 14.5 | - | - | - |
| HCM Lane LOS | - | - | B | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 3.8 | - | - | - |

HCM 6th TWSC
 131: Soapstone Rd & US 220 Bypass SB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 4.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | ↑ | | ↑ |
| Traffic Vol, veh/h | 0 | 138 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 99 |
| Future Vol, veh/h | 0 | 138 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 99 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 157 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 113 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 157 | 0 | 0 | | | 158 | - | 1 |
| Stage 1 | - | - | - | - | - | - | | | 1 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 157 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1423 | - | 0 | | | 833 | 0 | 1084 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 1022 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 871 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1423 | - | - | | | 833 | 0 | 1084 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 833 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 1022 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 871 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 8.9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1423 | - | 833 | 1084 |
| HCM Lane V/C Ratio | - | - | - | - | 0.045 | 0.104 |
| HCM Control Delay (s) | - | - | 0 | - | 9.5 | 8.7 |
| HCM Lane LOS | - | - | A | - | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 | 0.3 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 3.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | ↘ | | ↘ | | | |
| Traffic Vol, veh/h | 99 | 72 | 0 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 99 | 72 | 0 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | 0 | 0 | - | 100 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 113 | 82 | 0 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 36 | 0 | 0 |
| Stage 1 | - | - | 308 |
| Stage 2 | - | - | 18 |
| Critical Hdwy | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | 1575 | 0 | 668 |
| Stage 1 | - | 0 | 745 |
| Stage 2 | - | 0 | 1005 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1575 | - | 620 |
| Mov Cap-2 Maneuver | - | - | 620 |
| Stage 1 | - | - | 691 |
| Stage 2 | - | - | 1005 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 4.3 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1575 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.071 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 7.5 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | - | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019



| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 351 | 124 | 565 | 819 | 85 |
| v/c Ratio | 0.73 | 0.24 | 0.31 | 0.44 | 0.09 |
| Control Delay | 34.8 | 4.9 | 3.3 | 12.5 | 3.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 34.8 | 4.9 | 3.3 | 12.5 | 3.3 |
| Queue Length 50th (ft) | 160 | 0 | 17 | 115 | 0 |
| Queue Length 95th (ft) | 209 | 30 | m21 | 195 | 22 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 727 | 705 | 1794 | 1861 | 910 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.48 | 0.18 | 0.31 | 0.44 | 0.09 |



















Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 309 | 0 | 109 | 0 | 497 | 0 | 0 | 721 | 75 | |
| Future Volume (vph) | 0 | 0 | 0 | 309 | 0 | 109 | 0 | 497 | 0 | 0 | 721 | 75 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1752 | 1524 | | 3223 | | | 3343 | 1568 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1752 | 1524 | | 3223 | | | 3343 | 1568 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 351 | 0 | 124 | 0 | 565 | 0 | 0 | 819 | 85 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 38 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 351 | 34 | 0 | 565 | 0 | 0 | 819 | 47 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 0% | 6% | 0% | 12% | 14% | 0% | 8% | 3% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 22.0 | 22.0 | | 44.5 | | | 44.5 | 44.5 | |
| Effective Green, g (s) | | | | | 22.0 | 22.0 | | 44.5 | | | 44.5 | 44.5 | |
| Actuated g/C Ratio | | | | | 0.28 | 0.28 | | 0.56 | | | 0.56 | 0.56 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | | | | 481 | 419 | | 1792 | | | 1859 | 872 | |
| v/s Ratio Prot | | | | | | | | 0.18 | | | c0.25 | | |
| v/s Ratio Perm | | | | | 0.20 | 0.02 | | | | | | 0.03 | |
| v/c Ratio | | | | | 0.73 | 0.08 | | 0.32 | | | 0.44 | 0.05 | |
| Uniform Delay, d1 | | | | | 26.3 | 21.5 | | 9.6 | | | 10.4 | 8.1 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.28 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 5.5 | 0.1 | | 0.2 | | | 0.8 | 0.1 | |
| Delay (s) | | | | | 31.8 | 21.6 | | 2.9 | | | 11.2 | 8.2 | |
| Level of Service | | | | | C | C | | A | | | B | A | |
| Approach Delay (s) | | 0.0 | | | 29.1 | | | 2.9 | | | 10.9 | | |
| Approach LOS | | A | | | C | | | A | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 13.0 | | HCM 2000 Level of Service | | | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.54 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | Sum of lost time (s) | | | | | 13.5 | | | |
| Intersection Capacity Utilization | | | 75.8% | | ICU Level of Service | | | | | D | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 107 | 536 | 901 | 223 | 159 | 1011 |
| v/c Ratio | 0.19 | 0.99 | 0.91 | 0.37 | 0.85 | 0.61 |
| Control Delay | 20.4 | 58.3 | 42.0 | 8.5 | 71.8 | 13.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.4 | 58.3 | 42.0 | 8.5 | 71.8 | 13.3 |
| Queue Length 50th (ft) | 38 | 209 | 226 | 20 | 81 | 145 |
| Queue Length 95th (ft) | 73 | #402 | #328 | 67 | #180 | 222 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 559 | 543 | 987 | 596 | 188 | 1663 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.19 | 0.99 | 0.91 | 0.37 | 0.85 | 0.61 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
|-----------------------------------|---------------------|------|-------|------|------|------|------|-------|------|------|-------|---------------------------|------|
| Lane Configurations | ↖ | | ↗ | | | | | ↑↑ | ↖ | ↗ | ↑↑ | | |
| Traffic Volume (vph) | 94 | 0 | 472 | 0 | 0 | 0 | 0 | 793 | 196 | 140 | 890 | 0 | |
| Future Volume (vph) | 94 | 0 | 472 | 0 | 0 | 0 | 0 | 793 | 196 | 140 | 890 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1380 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1380 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 107 | 0 | 536 | 0 | 0 | 0 | 0 | 901 | 223 | 159 | 1011 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 107 | 0 | 446 | 0 | 0 | 0 | 0 | 901 | 106 | 159 | 1011 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 17% | 2% | 2% | 2% | 0% | 12% | 3% | 2% | 8% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 26.3 | | 26.3 | | | | | 24.5 | 24.5 | 8.5 | 39.8 | | |
| Effective Green, g (s) | 26.3 | | 26.3 | | | | | 24.5 | 24.5 | 8.5 | 39.8 | | |
| Actuated g/C Ratio | 0.33 | | 0.33 | | | | | 0.31 | 0.31 | 0.11 | 0.50 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 559 | | 453 | | | | | 987 | 480 | 188 | 1663 | | |
| v/s Ratio Prot | | | | | | | | c0.28 | | 0.09 | c0.30 | | |
| v/s Ratio Perm | 0.06 | | c0.32 | | | | | | 0.07 | | | | |
| v/c Ratio | 0.19 | | 0.98 | | | | | 0.91 | 0.22 | 0.85 | 0.61 | | |
| Uniform Delay, d1 | 19.2 | | 26.6 | | | | | 26.7 | 20.7 | 35.1 | 14.5 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.04 | 0.80 | | |
| Incremental Delay, d2 | 0.2 | | 38.0 | | | | | 14.1 | 1.1 | 25.8 | 1.5 | | |
| Delay (s) | 19.4 | | 64.6 | | | | | 40.8 | 21.7 | 62.4 | 13.0 | | |
| Level of Service | B | | E | | | | | D | C | E | B | | |
| Approach Delay (s) | | 57.1 | | | 0.0 | | | 37.0 | | | 19.8 | | |
| Approach LOS | | E | | | A | | | D | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 34.5 | | | | | | | | | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | | | 0.95 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 65.4% | | | | | | | | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 21 | 0 | 6 | 2 | 0 | 18 | 4 | 950 | 2 | 26 | 1318 | 18 |
| Future Vol, veh/h | 21 | 0 | 6 | 2 | 0 | 18 | 4 | 950 | 2 | 26 | 1318 | 18 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 24 | 0 | 7 | 2 | 0 | 20 | 5 | 1080 | 2 | 30 | 1498 | 20 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 2108 | 2650 | 749 | 1899 | 2668 | 540 | 1518 | 0 | 0 | 1082 | 0 | 0 |
| Stage 1 | 1558 | 1558 | - | 1090 | 1090 | - | - | - | - | - | - | - |
| Stage 2 | 550 | 1092 | - | 809 | 1578 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 30 | 23 | 359 | 43 | 23 | 464 | 446 | - | - | 652 | - | - |
| Stage 1 | 120 | 175 | - | 233 | 294 | - | - | - | - | - | - | - |
| Stage 2 | 492 | 293 | - | 345 | 171 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 27 | 22 | 359 | 40 | 22 | 464 | 446 | - | - | 652 | - | - |
| Mov Cap-2 Maneuver | 27 | 22 | - | 40 | 22 | - | - | - | - | - | - | - |
| Stage 1 | 119 | 167 | - | 230 | 291 | - | - | - | - | - | - | - |
| Stage 2 | 465 | 290 | - | 323 | 163 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|-------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 297.4 | | 22.8 | | 0.1 | | 0.2 | |
| HCM LOS | F | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 446 | - | - | 34 | 225 | 652 | - | - |
| HCM Lane V/C Ratio | 0.01 | - | - | 0.902 | 0.101 | 0.045 | - | - |
| HCM Control Delay (s) | 13.2 | - | - | 297.4 | 22.8 | 10.8 | - | - |
| HCM Lane LOS | B | - | - | F | C | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 3.2 | 0.3 | 0.1 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 913 | 9 | 21 | 1305 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 913 | 9 | 21 | 1305 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 22 | 0 | 49 | 0 | 1038 | 10 | 24 | 1483 | 0 |

| Major/Minor | Minor2 | | Minor1 | | | Major1 | | | Major2 | | | |
|----------------------|--------|------|--------|------|------|--------|---|---|--------|------|---|---|
| Conflicting Flow All | 2050 | 2579 | 742 | 1828 | 2569 | 519 | - | 0 | 0 | 1048 | 0 | 0 |
| Stage 1 | 1531 | 1531 | - | 1038 | 1038 | - | - | - | - | - | - | - |
| Stage 2 | 519 | 1048 | - | 790 | 1531 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 33 | 26 | 363 | 49 | 26 | 489 | 0 | - | - | 672 | - | 0 |
| Stage 1 | 125 | 181 | - | 251 | 311 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 513 | 307 | - | 354 | 181 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | - | - | - | | |
| Mov Cap-1 Maneuver | 29 | 25 | 363 | 48 | 25 | 489 | - | - | - | 672 | - | - |
| Mov Cap-2 Maneuver | 29 | 25 | - | 48 | 25 | - | - | - | - | - | - | - |
| Stage 1 | 125 | 174 | - | 251 | 311 | - | - | - | - | - | - | - |
| Stage 2 | 462 | 307 | - | 341 | 174 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|-----|
| HCM Control Delay, s | 0 | 63.1 | 0 | 0.2 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|------|-------|
| Capacity (veh/h) | - | - | - | 128 | 672 |
| HCM Lane V/C Ratio | - | - | - | 0.55 | 0.036 |
| HCM Control Delay (s) | - | - | 0 | 63.1 | 10.6 |
| HCM Lane LOS | - | - | A | F | B |
| HCM 95th %tile Q(veh) | - | - | - | 2.7 | 0.1 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 67.2 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 136 | 40 | 0 | 786 | 1294 | 30 |
| Future Vol, veh/h | 136 | 40 | 0 | 786 | 1294 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 12 | 16 | 0 |
| Mvmt Flow | 155 | 45 | 0 | 893 | 1470 | 34 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 1917 | 735 | - | 0 | - | 0 |
| Stage 1 | 1470 | - | - | - | - | - |
| Stage 2 | 447 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 61 | 367 | 0 | - | - | - |
| Stage 1 | 181 | - | 0 | - | - | - |
| Stage 2 | 617 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 61 | 367 | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 61 | - | - | - | - | - |
| Stage 1 | 181 | - | - | - | - | - |
| Stage 2 | 617 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|----|----|
| HCM Control Delay, s | \$ 873.2 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|----------|-----|-----|
| Capacity (veh/h) | - | 75 | - | - |
| HCM Lane V/C Ratio | - | 2.667 | - | - |
| HCM Control Delay (s) | - | \$ 873.2 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 19.5 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 8 | 33 | 753 | 11 | 48 | 1286 |
| Future Vol, veh/h | 8 | 33 | 753 | 11 | 48 | 1286 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 12 | 0 | 0 | 17 |
| Mvmt Flow | 9 | 38 | 856 | 13 | 55 | 1461 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|-----|---|
| Conflicting Flow All | 1697 | 428 | 0 | 0 | 869 | 0 |
| Stage 1 | 856 | - | - | - | - | - |
| Stage 2 | 841 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 | - |
| Pot Cap-1 Maneuver | 85 | 581 | - | - | 784 | - |
| Stage 1 | 382 | - | - | - | - | - |
| Stage 2 | 388 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | |
| Mov Cap-1 Maneuver | 79 | 581 | - | - | 784 | - |
| Mov Cap-2 Maneuver | 79 | - | - | - | - | - |
| Stage 1 | 382 | - | - | - | - | - |
| Stage 2 | 361 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 21.9 | 0 | 0.4 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|------|------|
| Capacity (veh/h) | - | - | 259 | 784 |
| HCM Lane V/C Ratio | - | - | 0.18 | 0.07 |
| HCM Control Delay (s) | - | - | 21.9 | 9.9 |
| HCM Lane LOS | - | - | C | A |
| HCM 95th %tile Q(veh) | - | - | 0.6 | 0.2 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↕↕ | ↕ | ↕ | ↕↕ | |
| Traffic Vol, veh/h | 22 | 0 | 6 | 0 | 0 | 0 | 9 | 742 | 14 | 40 | 1217 | 37 |
| Future Vol, veh/h | 22 | 0 | 6 | 0 | 0 | 0 | 9 | 742 | 14 | 40 | 1217 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 12 | 0 | 3 | 17 | 0 |
| Mvmt Flow | 25 | 0 | 7 | 0 | 0 | 0 | 10 | 843 | 16 | 45 | 1383 | 42 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1936 | 2373 | 713 | | | | 1425 | 0 | 0 | 859 | 0 | 0 |
| Stage 1 | 1494 | 1494 | - | | | | - | - | - | - | - | - |
| Stage 2 | 442 | 879 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 59 | 35 | 379 | | | | 484 | - | - | 772 | - | - |
| Stage 1 | 176 | 188 | - | | | | - | - | - | - | - | - |
| Stage 2 | 621 | 368 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 54 | 0 | 379 | | | | 484 | - | - | 772 | - | - |
| Mov Cap-2 Maneuver | 54 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 172 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 585 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|-------|-----|-----|
| HCM Control Delay, s | 102.4 | 0.1 | 0.3 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 484 | - | - | 66 | 772 | - | - |
| HCM Lane V/C Ratio | 0.021 | - | - | 0.482 | 0.059 | - | - |
| HCM Control Delay (s) | 12.6 | - | - | 102.4 | 10 | - | - |
| HCM Lane LOS | B | - | - | F | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 1.9 | 0.2 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019



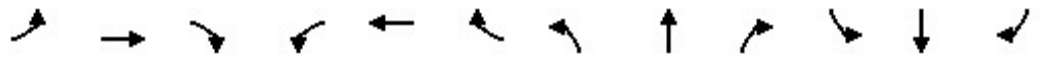
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 88 | 47 | 2 | 2 | 44 | 782 | 7 | 60 | 1168 | 161 |
| v/c Ratio | 0.54 | 0.23 | 0.01 | 0.01 | 0.28 | 0.41 | 0.01 | 0.31 | 0.63 | 0.15 |
| Control Delay | 45.8 | 15.9 | 31.5 | 31.5 | 35.9 | 12.6 | 0.0 | 34.7 | 16.0 | 0.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 45.8 | 15.9 | 31.5 | 31.5 | 35.9 | 12.6 | 0.0 | 34.7 | 16.0 | 0.3 |
| Queue Length 50th (ft) | 35 | 2 | 1 | 1 | 17 | 107 | 0 | 23 | 187 | 0 |
| Queue Length 95th (ft) | #112 | 32 | 8 | 8 | 52 | 214 | 0 | 64 | #408 | 0 |
| Internal Link Dist (ft) | | 711 | | 593 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 162 | 206 | 175 | 184 | 155 | 1905 | 853 | 201 | 1858 | 1054 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.23 | 0.01 | 0.01 | 0.28 | 0.41 | 0.01 | 0.30 | 0.63 | 0.15 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 Business & Water Plant Road

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | ↖ | ↖ | ↗ | ↗ | ↖ | ↗ | ↖ |
| Traffic Volume (veh/h) | 77 | 4 | 37 | 2 | 2 | 0 | 39 | 688 | 6 | 53 | 1028 | 142 |
| Future Volume (veh/h) | 77 | 4 | 37 | 2 | 2 | 0 | 39 | 688 | 6 | 53 | 1028 | 142 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1722 | 1470 | 1900 | 1648 | 1856 |
| Adj Flow Rate, veh/h | 88 | 5 | 42 | 2 | 2 | 0 | 44 | 782 | 7 | 60 | 1168 | 161 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 12 | 29 | 0 | 17 | 3 |
| Cap, veh/h | 125 | 14 | 115 | 12 | 12 | 10 | 80 | 1441 | 549 | 106 | 1426 | 716 |
| Arrive On Green | 0.08 | 0.08 | 0.08 | 0.01 | 0.01 | 0.00 | 0.05 | 0.44 | 0.44 | 0.06 | 0.46 | 0.46 |
| Sat Flow, veh/h | 1598 | 174 | 1463 | 1810 | 1900 | 1610 | 1626 | 3272 | 1246 | 1810 | 3131 | 1572 |
| Grp Volume(v), veh/h | 88 | 0 | 47 | 2 | 2 | 0 | 44 | 782 | 7 | 60 | 1168 | 161 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1637 | 1810 | 1900 | 1610 | 1626 | 1636 | 1246 | 1810 | 1566 | 1572 |
| Q Serve(g_s), s | 3.8 | 0.0 | 1.9 | 0.1 | 0.1 | 0.0 | 1.9 | 12.5 | 0.2 | 2.3 | 23.0 | 4.4 |
| Cycle Q Clear(g_c), s | 3.8 | 0.0 | 1.9 | 0.1 | 0.1 | 0.0 | 1.9 | 12.5 | 0.2 | 2.3 | 23.0 | 4.4 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 125 | 0 | 128 | 12 | 12 | 10 | 80 | 1441 | 549 | 106 | 1426 | 716 |
| V/C Ratio(X) | 0.70 | 0.00 | 0.37 | 0.17 | 0.16 | 0.00 | 0.55 | 0.54 | 0.01 | 0.57 | 0.82 | 0.22 |
| Avail Cap(c_a), veh/h | 144 | 0 | 147 | 153 | 160 | 136 | 137 | 1441 | 549 | 176 | 1426 | 716 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 32.0 | 0.0 | 31.1 | 35.1 | 35.1 | 0.0 | 33.1 | 14.6 | 11.2 | 32.6 | 16.8 | 11.7 |
| Incr Delay (d2), s/veh | 12.1 | 0.0 | 1.7 | 6.9 | 6.2 | 0.0 | 5.9 | 1.5 | 0.0 | 4.7 | 5.4 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.8 | 0.0 | 0.8 | 0.1 | 0.1 | 0.0 | 0.8 | 3.9 | 0.1 | 1.1 | 7.8 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 44.1 | 0.0 | 32.8 | 42.0 | 41.3 | 0.0 | 38.9 | 16.1 | 11.2 | 37.3 | 22.2 | 12.5 |
| LnGrp LOS | D | A | C | D | D | A | D | B | B | D | C | B |
| Approach Vol, veh/h | | 135 | | | 4 | | | 833 | | | 1389 | |
| Approach Delay, s/veh | | 40.2 | | | 41.7 | | | 17.3 | | | 21.7 | |
| Approach LOS | | D | | | D | | | B | | | C | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 11.9 | 37.2 | | 8.9 | 10.8 | 38.3 | | 13.2 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 6.9 | 31.1 | | * 6 | * 6 | 32.4 | | 6.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.3 | 14.5 | | 2.1 | 3.9 | 25.0 | | 5.8 | | | | |
| Green Ext Time (p_c), s | 0.0 | 4.3 | | 0.0 | 0.0 | 4.5 | | 0.0 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 21.2 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 57 | 26 | 38 | 183 | 27 | 626 | 8 | 217 | 951 | 44 |
| v/c Ratio | 0.30 | 0.06 | 0.21 | 0.46 | 0.19 | 0.69 | 0.01 | 0.71 | 0.63 | 0.05 |
| Control Delay | 37.6 | 0.3 | 36.9 | 4.4 | 38.9 | 30.5 | 0.0 | 46.8 | 21.0 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 37.6 | 0.3 | 36.9 | 4.4 | 38.9 | 30.5 | 0.0 | 46.8 | 21.0 | 0.1 |
| Queue Length 50th (ft) | 27 | 0 | 18 | 0 | 13 | 146 | 0 | 102 | 154 | 0 |
| Queue Length 95th (ft) | 60 | 0 | 46 | 6 | 38 | 214 | 0 | #211 | #351 | 0 |
| Internal Link Dist (ft) | 631 | | 525 | | | 3118 | | | 4723 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 100 | 225 | | 225 |
| Base Capacity (vph) | 436 | 604 | 451 | 589 | 143 | 911 | 618 | 311 | 1499 | 904 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.13 | 0.04 | 0.08 | 0.31 | 0.19 | 0.69 | 0.01 | 0.70 | 0.63 | 0.05 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|-------|------|-------|-------|-------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↑↑ | ↗ | ↖ | ↑↑ | ↗ |
| Traffic Volume (veh/h) | 21 | 29 | 23 | 4 | 29 | 161 | 24 | 551 | 7 | 191 | 837 | 39 |
| Future Volume (veh/h) | 21 | 29 | 23 | 4 | 29 | 161 | 24 | 551 | 7 | 191 | 837 | 39 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1722 | 1900 | 1885 | 1633 | 1900 |
| Adj Flow Rate, veh/h | 24 | 33 | 26 | 5 | 33 | 183 | 27 | 626 | 8 | 217 | 951 | 44 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 12 | 0 | 1 | 18 | 0 |
| Cap, veh/h | 49 | 67 | 103 | 35 | 232 | 225 | 62 | 886 | 436 | 264 | 1136 | 590 |
| Arrive On Green | 0.06 | 0.06 | 0.06 | 0.14 | 0.14 | 0.14 | 0.03 | 0.27 | 0.27 | 0.15 | 0.37 | 0.37 |
| Sat Flow, veh/h | 765 | 1052 | 1610 | 248 | 1639 | 1585 | 1810 | 3272 | 1610 | 1795 | 3103 | 1610 |
| Grp Volume(v), veh/h | 57 | 0 | 26 | 38 | 0 | 183 | 27 | 626 | 8 | 217 | 951 | 44 |
| Grp Sat Flow(s),veh/h/ln | 1817 | 0 | 1610 | 1888 | 0 | 1585 | 1810 | 1636 | 1610 | 1795 | 1552 | 1610 |
| Q Serve(g_s), s | 2.4 | 0.0 | 1.2 | 1.4 | 0.0 | 8.8 | 1.2 | 13.6 | 0.3 | 9.2 | 22.0 | 1.4 |
| Cycle Q Clear(g_c), s | 2.4 | 0.0 | 1.2 | 1.4 | 0.0 | 8.8 | 1.2 | 13.6 | 0.3 | 9.2 | 22.0 | 1.4 |
| Prop In Lane | 0.42 | | 1.00 | 0.13 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 116 | 0 | 103 | 268 | 0 | 225 | 62 | 886 | 436 | 264 | 1136 | 590 |
| V/C Ratio(X) | 0.49 | 0.00 | 0.25 | 0.14 | 0.00 | 0.81 | 0.44 | 0.71 | 0.02 | 0.82 | 0.84 | 0.07 |
| Avail Cap(c_a), veh/h | 416 | 0 | 369 | 432 | 0 | 363 | 138 | 886 | 436 | 299 | 1136 | 590 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.6 | 0.0 | 35.0 | 29.6 | 0.0 | 32.7 | 37.3 | 25.9 | 21.0 | 32.5 | 22.8 | 16.2 |
| Incr Delay (d2), s/veh | 3.2 | 0.0 | 1.3 | 0.2 | 0.0 | 7.2 | 4.9 | 4.7 | 0.1 | 15.0 | 7.4 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.0 | 0.5 | 0.6 | 0.0 | 3.7 | 0.6 | 5.2 | 0.1 | 4.7 | 7.9 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.8 | 0.0 | 36.3 | 29.8 | 0.0 | 39.9 | 42.1 | 30.6 | 21.1 | 47.6 | 30.2 | 16.5 |
| LnGrp LOS | D | A | D | C | A | D | D | C | C | D | C | B |
| Approach Vol, veh/h | | 83 | | | 221 | | | 661 | | | 1212 | |
| Approach Delay, s/veh | | 38.0 | | | 38.2 | | | 30.9 | | | 32.8 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 19.3 | 27.2 | | 19.6 | 10.0 | 36.5 | | 12.6 | | | | |
| Change Period (Y+Rc), s | 7.7 | * 5.9 | | * 8.4 | * 7.3 | * 7.7 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | 13.1 | * 21 | | * 18 | * 6 | * 29 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 11.2 | 15.6 | | 10.8 | 3.2 | 24.0 | | 4.4 | | | | |
| Green Ext Time (p_c), s | 0.1 | 1.8 | | 0.4 | 0.0 | 2.5 | | 0.2 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 33.0 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 69 | 369 | 292 | 8 | 392 | 590 |
| v/c Ratio | 0.22 | 0.65 | 0.37 | 0.02 | 0.70 | 0.34 |
| Control Delay | 23.3 | 9.1 | 19.6 | 10.4 | 15.3 | 7.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 23.3 | 9.1 | 19.6 | 10.4 | 15.3 | 7.5 |
| Queue Length 50th (ft) | 22 | 0 | 45 | 0 | 69 | 52 |
| Queue Length 95th (ft) | 51 | 58 | 73 | 8 | #116 | 76 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 310 | 568 | 795 | 400 | 564 | 1745 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.22 | 0.65 | 0.37 | 0.02 | 0.70 | 0.34 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|--|-------|-------|------|------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 61 | 325 | 257 | 7 | 345 | 519 |
| Future Volume (veh/h) | 61 | 325 | 257 | 7 | 345 | 519 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1856 | 1781 | 1604 | 1781 | 1841 | 1618 |
| Adj Flow Rate, veh/h | 69 | 369 | 292 | 8 | 392 | 590 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 8 | 20 | 8 | 4 | 19 |
| Cap, veh/h | 312 | 267 | 802 | 398 | 609 | 1763 |
| Arrive On Green | 0.18 | 0.18 | 0.26 | 0.26 | 0.17 | 0.57 |
| Sat Flow, veh/h | 1767 | 1510 | 3127 | 1510 | 1753 | 3156 |
| Grp Volume(v), veh/h | 69 | 369 | 292 | 8 | 392 | 590 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 1510 | 1523 | 1510 | 1753 | 1537 |
| Q Serve(g_s), s | 2.0 | 10.6 | 4.7 | 0.2 | 9.3 | 6.1 |
| Cycle Q Clear(g_c), s | 2.0 | 10.6 | 4.7 | 0.2 | 9.3 | 6.1 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 312 | 267 | 802 | 398 | 609 | 1763 |
| V/C Ratio(X) | 0.22 | 1.38 | 0.36 | 0.02 | 0.64 | 0.33 |
| Avail Cap(c_a), veh/h | 312 | 267 | 802 | 398 | 609 | 1763 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.2 | 24.7 | 18.0 | 16.4 | 11.7 | 6.8 |
| Incr Delay (d2), s/veh | 1.6 | 194.2 | 1.3 | 0.1 | 2.3 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 17.9 | 1.5 | 0.1 | 2.9 | 1.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 22.8 | 218.9 | 19.3 | 16.5 | 14.0 | 6.9 |
| LnGrp LOS | C | F | B | B | B | A |
| Approach Vol, veh/h | 438 | | 300 | | | 982 |
| Approach Delay, s/veh | 188.0 | | 19.2 | | | 9.7 |
| Approach LOS | F | | B | | | A |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 18.6 | 24.4 | | 17.0 | | 43.0 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 10 | * 16 | | 10.6 | | * 34 |
| Max Q Clear Time (g_c+I1), s | 11.3 | 6.7 | | 12.6 | | 8.1 |
| Green Ext Time (p_c), s | 0.0 | 1.0 | | 0.0 | | 3.6 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 56.8 | | | |
| HCM 6th LOS | | | E | | | |
| Notes | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | |

HCM 6th TWSC
 11: US 220 Business & Lee Ford Camp Rd/Church St

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 23 | 21 | 4 | 0 | 0 | 0 | 7 | 241 | 38 | 25 | 514 | 41 |
| Future Vol, veh/h | 23 | 21 | 4 | 0 | 0 | 0 | 7 | 241 | 38 | 25 | 514 | 41 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 19 | 2 | 2 | 20 | 2 |
| Mvmt Flow | 26 | 24 | 5 | 0 | 0 | 0 | 8 | 274 | 43 | 28 | 584 | 47 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 793 | 973 | 292 | 650 | 977 | 137 | 631 | 0 | 0 | 317 | 0 | 0 |
| Stage 1 | 640 | 640 | - | 290 | 290 | - | - | - | - | - | - | - |
| Stage 2 | 153 | 333 | - | 360 | 687 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 279 | 251 | 704 | 354 | 249 | 886 | 947 | - | - | 1240 | - | - |
| Stage 1 | 430 | 468 | - | 694 | 671 | - | - | - | - | - | - | - |
| Stage 2 | 834 | 642 | - | 631 | 446 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 272 | 243 | 704 | 318 | 241 | 886 | 947 | - | - | 1240 | - | - |
| Mov Cap-2 Maneuver | 272 | 243 | - | 318 | 241 | - | - | - | - | - | - | - |
| Stage 1 | 427 | 457 | - | 688 | 666 | - | - | - | - | - | - | - |
| Stage 2 | 827 | 637 | - | 581 | 436 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|------|----|-----|-----|
| HCM Control Delay, s | 21.5 | 0 | 0.2 | 0.3 |
| HCM LOS | C | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-----|-------|-----|
| Capacity (veh/h) | 947 | - | - | 272 | - | 1240 | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.201 | - | 0.023 | - |
| HCM Control Delay (s) | 8.8 | - | - | 21.5 | 0 | 8 | - |
| HCM Lane LOS | A | - | - | C | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.7 | - | 0.1 | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↗ | ↘ | ↗ | | | ↗ | ↘ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 1 | 0 | 18 | 32 | 268 | 0 | 0 | 62 | 456 |
| Future Vol, veh/h | 0 | 0 | 0 | 1 | 0 | 18 | 32 | 268 | 0 | 0 | 62 | 456 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 1 | 0 | 20 | 36 | 305 | 0 | 0 | 70 | 518 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 706 | - 305 588 | 0 - - - 0 |
| Stage 1 | 377 | - - - | - - - - - |
| Stage 2 | 329 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 402 | 0 735 987 | - 0 0 - - |
| Stage 1 | 694 | 0 - - | - 0 0 - - |
| Stage 2 | 729 | 0 - - | - 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 388 | 0 735 987 | - - - - - |
| Mov Cap-2 Maneuver | 388 | 0 - - | - - - - - |
| Stage 1 | 669 | 0 - - | - - - - - |
| Stage 2 | 729 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 10.2 | 0.9 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 987 | - 388 735 | - - | - |
| HCM Lane V/C Ratio | 0.037 | - 0.003 0.028 | - - | - |
| HCM Control Delay (s) | 8.8 | - 14.3 10 | - - | - |
| HCM Lane LOS | A | - B B | - - | - |
| HCM 95th %tile Q(veh) | 0.1 | - 0 0.1 | - - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 10 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | 0 | 0 |
| Future Vol, veh/h | 300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 341 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 144 | 144 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 144 | 144 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 849 | 747 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 883 | 778 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 849 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 849 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 883 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 12.1 | 0 | |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 849 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.402 | - | - | - |
| HCM Control Delay (s) | - | - | 12.1 | 0 | - | - |
| HCM Lane LOS | - | - | B | A | - | - |
| HCM 95th %tile Q(veh) | - | - | 2 | - | - | - |

HCM 6th TWSC
 131: Soapstone Rd & US 220 Bypass SB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 1.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↗ | ↘ | ↑ | | | | | ↘ | | ↗ |
| Traffic Vol, veh/h | 0 | 136 | 0 | 0 | 81 | 0 | 0 | 0 | 0 | 3 | 0 | 46 |
| Future Vol, veh/h | 0 | 136 | 0 | 0 | 81 | 0 | 0 | 0 | 0 | 3 | 0 | 46 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 155 | 0 | 0 | 92 | 0 | 0 | 0 | 0 | 3 | 0 | 52 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 155 | 0 | 0 | | | 247 | - | 92 |
| Stage 1 | - | - | - | - | - | - | | | 92 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 155 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1425 | - | 0 | | | 741 | 0 | 965 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 932 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 873 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1425 | - | - | | | 741 | 0 | 965 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 741 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 932 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 873 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0 | 0 | 9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1425 | - | 741 | 965 |
| HCM Lane V/C Ratio | - | - | - | - | 0.005 | 0.054 |
| HCM Control Delay (s) | - | - | 0 | - | 9.9 | 8.9 |
| HCM Lane LOS | - | - | A | - | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0 | 0.2 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 3.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | ↘ | | ↘ | | | |
| Traffic Vol, veh/h | 101 | 38 | 0 | 0 | 81 | 31 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 101 | 38 | 0 | 0 | 81 | 31 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | 0 | 0 | - | 100 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 115 | 43 | 0 | 0 | 92 | 35 | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 127 | 0 | 0 |
| Stage 1 | - | - | 273 |
| Stage 2 | - | - | 110 |
| Critical Hdwy | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | 1459 | 0 | 620 |
| Stage 1 | - | 0 | 773 |
| Stage 2 | - | 0 | 915 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1459 | - | 571 |
| Mov Cap-2 Maneuver | - | - | 571 |
| Stage 1 | - | - | 712 |
| Stage 2 | - | - | 915 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 5.6 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1459 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.079 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 7.7 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.3 | - | - | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019





















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 344 | 140 | 788 | 609 | 58 |
| v/c Ratio | 0.74 | 0.27 | 0.48 | 0.36 | 0.07 |
| Control Delay | 31.4 | 8.9 | 3.5 | 12.3 | 2.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 31.4 | 8.9 | 3.5 | 12.3 | 2.8 |
| Queue Length 50th (ft) | 132 | 18 | 17 | 77 | 0 |
| Queue Length 95th (ft) | 181 | 46 | 22 | 135 | 14 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 626 | 662 | 1638 | 1699 | 833 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.55 | 0.21 | 0.48 | 0.36 | 0.07 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 303 | 0 | 123 | 0 | 693 | 0 | 0 | 536 | 51 | |
| Future Volume (vph) | 0 | 0 | 0 | 303 | 0 | 123 | 0 | 693 | 0 | 0 | 536 | 51 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 344 | 0 | 140 | 0 | 788 | 0 | 0 | 609 | 58 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 58 | 0 | 0 | 0 | 0 | 0 | 29 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 344 | 82 | 0 | 788 | 0 | 0 | 609 | 29 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 16% | 0% | 6% | 0% | 12% | 14% | 0% | 8% | 3% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 20.9 | 20.9 | | 35.6 | | | 35.6 | 35.6 | |
| Effective Green, g (s) | | | | | 20.9 | 20.9 | | 35.6 | | | 35.6 | 35.6 | |
| Actuated g/C Ratio | | | | | 0.30 | 0.30 | | 0.51 | | | 0.51 | 0.51 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | | | | 464 | 455 | | 1639 | | | 1700 | 797 | |
| v/s Ratio Prot | | | | | | | | c0.24 | | | 0.18 | | |
| v/s Ratio Perm | | | | | 0.22 | 0.05 | | | | | | 0.02 | |
| v/c Ratio | | | | | 0.74 | 0.18 | | 0.48 | | | 0.36 | 0.04 | |
| Uniform Delay, d1 | | | | | 22.1 | 18.2 | | 11.2 | | | 10.3 | 8.6 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.22 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 6.3 | 0.2 | | 0.7 | | | 0.6 | 0.1 | |
| Delay (s) | | | | | 28.4 | 18.4 | | 3.1 | | | 10.9 | 8.7 | |
| Level of Service | | | | | C | B | | A | | | B | A | |
| Approach Delay (s) | | 0.0 | | | 25.5 | | | 3.1 | | | 10.7 | | |
| Approach LOS | | A | | | C | | | A | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 11.3 | | HCM 2000 Level of Service | | | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.58 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | Sum of lost time (s) | | | | | 13.5 | | | |
| Intersection Capacity Utilization | | | 72.7% | | ICU Level of Service | | | | | C | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|-------|------|
| Lane Group Flow (vph) | 101 | 351 | 1139 | 327 | 118 | 835 |
| v/c Ratio | 0.35 | 0.91 | 0.75 | 0.38 | 0.66 | 0.40 |
| Control Delay | 28.9 | 44.1 | 20.9 | 5.5 | 52.0 | 7.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 28.9 | 44.1 | 20.9 | 5.5 | 52.0 | 7.0 |
| Queue Length 50th (ft) | 38 | 69 | 223 | 22 | 52 | 47 |
| Queue Length 95th (ft) | 78 | #207 | 295 | 66 | m#117 | 139 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 311 | 400 | 1525 | 869 | 179 | 2110 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.32 | 0.88 | 0.75 | 0.38 | 0.66 | 0.40 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|------|-------|------|------|------|------|---------------------------|------|-------|------|------|
| Lane Configurations | ↖ | | ↗ | | | | | ↑↑ | ↗ | ↖ | ↑↑ | |
| Traffic Volume (vph) | 89 | 0 | 309 | 0 | 0 | 0 | 0 | 1002 | 288 | 104 | 735 | 0 |
| Future Volume (vph) | 89 | 0 | 309 | 0 | 0 | 0 | 0 | 1002 | 288 | 104 | 735 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 101 | 0 | 351 | 0 | 0 | 0 | 0 | 1139 | 327 | 118 | 835 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 154 | 0 | 0 | 0 | 0 | 0 | 132 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 101 | 0 | 197 | 0 | 0 | 0 | 0 | 1139 | 195 | 118 | 835 | 0 |
| Heavy Vehicles (%) | 6% | 0% | 19% | 2% | 2% | 2% | 0% | 12% | 3% | 2% | 8% | 0% |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | |
| Actuated Green, G (s) | 11.9 | | 11.9 | | | | | 31.7 | 31.7 | 5.7 | 44.2 | |
| Effective Green, g (s) | 11.9 | | 11.9 | | | | | 31.7 | 31.7 | 5.7 | 44.2 | |
| Actuated g/C Ratio | 0.17 | | 0.17 | | | | | 0.45 | 0.45 | 0.08 | 0.63 | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 289 | | 230 | | | | | 1459 | 710 | 144 | 2110 | |
| v/s Ratio Prot | | | | | | | | c0.35 | | c0.07 | 0.25 | |
| v/s Ratio Perm | 0.06 | | c0.14 | | | | | | 0.12 | | | |
| v/c Ratio | 0.35 | | 0.85 | | | | | 0.78 | 0.27 | 0.82 | 0.40 | |
| Uniform Delay, d1 | 25.6 | | 28.2 | | | | | 16.2 | 12.0 | 31.6 | 6.3 | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.11 | 0.98 | |
| Incremental Delay, d2 | 0.7 | | 25.3 | | | | | 4.2 | 1.0 | 27.2 | 0.5 | |
| Delay (s) | 26.4 | | 53.5 | | | | | 20.4 | 12.9 | 62.3 | 6.7 | |
| Level of Service | C | | D | | | | | C | B | E | A | |
| Approach Delay (s) | | 47.4 | | | 0.0 | | | 18.7 | | | 13.6 | |
| Approach LOS | | D | | | A | | | B | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 21.6 | | | | | HCM 2000 Level of Service | | C | | |
| HCM 2000 Volume to Capacity ratio | | | 0.80 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | | | | Sum of lost time (s) | | 20.7 | | |
| Intersection Capacity Utilization | | | 52.2% | | | | | ICU Level of Service | | A | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 18 | 2 | 16 | 7 | 0 | 8 | 2 | 1264 | 1 | 5 | 1036 | 3 |
| Future Vol, veh/h | 18 | 2 | 16 | 7 | 0 | 8 | 2 | 1264 | 1 | 5 | 1036 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 20 | 2 | 18 | 8 | 0 | 9 | 2 | 1436 | 1 | 6 | 1177 | 3 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1911 | 2630 | 589 | 2042 | 2632 | 718 | 1180 | 0 | 0 | 1437 | 0 | 0 |
| Stage 1 | 1189 | 1189 | - | 1440 | 1440 | - | - | - | - | - | - | - |
| Stage 2 | 722 | 1441 | - | 602 | 1192 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 42 | 24 | 457 | 34 | 24 | 352 | 599 | - | - | 479 | - | - |
| Stage 1 | 203 | 264 | - | 142 | 200 | - | - | - | - | - | - | - |
| Stage 2 | 389 | 200 | - | 458 | 263 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 40 | 24 | 457 | 30 | 24 | 352 | 599 | - | - | 479 | - | - |
| Mov Cap-2 Maneuver | 40 | 24 | - | 30 | 24 | - | - | - | - | - | - | - |
| Stage 1 | 202 | 261 | - | 142 | 199 | - | - | - | - | - | - | - |
| Stage 2 | 378 | 199 | - | 430 | 260 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | | |
|----------------------|-------|--|------|--|----|--|-----|--|--|
| HCM Control Delay, s | 134.6 | | 89.1 | | 0 | | 0.1 | | |
| HCM LOS | F | | F | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 599 | - | - | 63 | 59 | 479 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.649 | 0.289 | 0.012 | - | - |
| HCM Control Delay (s) | 11 | - | - | 134.6 | 89.1 | 12.6 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 2.8 | 1 | 0 | - | - |

HCM 6th TWSC
4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 40 | 0 | 1227 | 6 | 5 | 1054 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 40 | 0 | 1227 | 6 | 5 | 1054 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 22 | 0 | 45 | 0 | 1394 | 7 | 6 | 1198 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 1907 | 2611 | 599 | 2005 | 2604 | 697 | - | 0 | 0 | 1401 | 0 | 0 |
| Stage 1 | 1210 | 1210 | - | 1394 | 1394 | - | - | - | - | - | - | - |
| Stage 2 | 697 | 1401 | - | 611 | 1210 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 43 | 25 | 450 | 36 | 25 | 372 | 0 | - | - | 494 | - | 0 |
| Stage 1 | 197 | 258 | - | 152 | 210 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 402 | 209 | - | 453 | 258 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 37 | 25 | 450 | 36 | 25 | 372 | - | - | - | 494 | - | - |
| Mov Cap-2 Maneuver | 37 | 25 | - | 36 | 25 | - | - | - | - | - | - | - |
| Stage 1 | 197 | 255 | - | 152 | 210 | - | - | - | - | - | - | - |
| Stage 2 | 353 | 209 | - | 447 | 255 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|-------|----|-----|
| HCM Control Delay, s | 0 | 109.4 | 0 | 0.1 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|-------|-------|
| Capacity (veh/h) | - | - | - | 93 | 494 |
| HCM Lane V/C Ratio | - | - | - | 0.721 | 0.012 |
| HCM Control Delay (s) | - | - | 0 | 109.4 | 12.4 |
| HCM Lane LOS | - | - | A | F | B |
| HCM 95th %tile Q(veh) | - | - | - | 3.6 | 0 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | TT | | | TT | TT | T |
| Traffic Vol, veh/h | 30 | 6 | 0 | 1203 | 1060 | 13 |
| Future Vol, veh/h | 30 | 6 | 0 | 1203 | 1060 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 12 | 16 | 0 |
| Mvmt Flow | 34 | 7 | 0 | 1367 | 1205 | 15 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 1889 | 603 | - | 0 | - | 0 |
| Stage 1 | 1205 | - | - | - | - | - |
| Stage 2 | 684 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | 63 | 447 | 0 | - | - | - |
| Stage 1 | 251 | - | 0 | - | - | - |
| Stage 2 | 468 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 63 | 447 | - | - | - | - |
| Mov Cap-2 Maneuver | 63 | - | - | - | - | - |
| Stage 1 | 251 | - | - | - | - | - |
| Stage 2 | 468 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|-------|----|----|
| HCM Control Delay, s | 102.1 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-------|-----|-----|
| Capacity (veh/h) | - | 74 | - | - |
| HCM Lane V/C Ratio | - | 0.553 | - | - |
| HCM Control Delay (s) | - | 102.1 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 2.4 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.9 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 30 | 76 | 1127 | 5 | 14 | 1052 |
| Future Vol, veh/h | 30 | 76 | 1127 | 5 | 14 | 1052 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 12 | 0 | 0 | 17 |
| Mvmt Flow | 34 | 86 | 1281 | 6 | 16 | 1195 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 1911 | 641 | 0 | 0 | 1287 |
| Stage 1 | 1281 | - | - | - | - |
| Stage 2 | 630 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 61 | 422 | - | - | 546 |
| Stage 1 | 228 | - | - | - | - |
| Stage 2 | 498 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 59 | 422 | - | - | 546 |
| Mov Cap-2 Maneuver | 59 | - | - | - | - |
| Stage 1 | 228 | - | - | - | - |
| Stage 2 | 484 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 82.5 | 0 | 0.2 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 154 | 546 |
| HCM Lane V/C Ratio | - | - | 0.782 | 0.029 |
| HCM Control Delay (s) | - | - | 82.5 | 11.8 |
| HCM Lane LOS | - | - | F | B |
| HCM 95th %tile Q(veh) | - | - | 4.9 | 0.1 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | | | ↗ | ↗↗ | ↗ | ↗ | ↗↗ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1132 | 126 | 100 | 968 | 14 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1132 | 126 | 100 | 968 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 12 | 0 | 3 | 17 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1286 | 143 | 114 | 1100 | 16 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1983 | 2769 | 558 | | | | 1116 | 0 | 0 | 1429 | 0 | 0 |
| Stage 1 | 1336 | 1336 | - | | | | - | - | - | - | - | - |
| Stage 2 | 647 | 1433 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 55 | 20 | 478 | | | | 633 | - | - | 467 | - | - |
| Stage 1 | 213 | 224 | - | | | | - | - | - | - | - | - |
| Stage 2 | 489 | 201 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 41 | 0 | 478 | | | | 633 | - | - | 467 | - | - |
| Mov Cap-2 Maneuver | 41 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 212 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 370 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 1.4 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 633 | - | - | - | 467 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | - | 0.243 | - | - |
| HCM Control Delay (s) | 10.7 | - | - | 0 | 15.2 | - | - |
| HCM Lane LOS | B | - | - | A | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.9 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019


























| Lane Group | EBL | EBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 155 | 45 | 43 | 1277 | 1 | 44 | 927 | 128 |
| v/c Ratio | 0.67 | 0.16 | 0.28 | 0.72 | 0.00 | 0.28 | 0.55 | 0.13 |
| Control Delay | 47.0 | 13.3 | 36.8 | 16.2 | 0.0 | 37.4 | 13.3 | 0.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 47.0 | 13.3 | 36.8 | 16.2 | 0.0 | 37.4 | 13.3 | 0.3 |
| Queue Length 50th (ft) | 71 | 2 | 19 | 244 | 0 | 20 | 156 | 0 |
| Queue Length 95th (ft) | #151 | 28 | 48 | 316 | 0 | 49 | 206 | 0 |
| Internal Link Dist (ft) | | 711 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 235 | 279 | 161 | 1770 | 801 | 156 | 1680 | 968 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.66 | 0.16 | 0.27 | 0.72 | 0.00 | 0.28 | 0.55 | 0.13 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 Business & Water Plant Road

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 136 | 4 | 35 | 0 | 0 | 0 | 38 | 1124 | 1 | 39 | 816 | 113 |
| Future Volume (veh/h) | 136 | 4 | 35 | 0 | 0 | 0 | 38 | 1124 | 1 | 39 | 816 | 113 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1722 | 1470 | 1900 | 1648 | 1856 |
| Adj Flow Rate, veh/h | 155 | 5 | 40 | 0 | 0 | 0 | 43 | 1277 | 1 | 44 | 927 | 128 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 12 | 29 | 0 | 17 | 3 |
| Cap, veh/h | 194 | 22 | 177 | 3 | 3 | 2 | 78 | 1742 | 663 | 89 | 1687 | 847 |
| Arrive On Green | 0.12 | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.05 | 0.53 | 0.53 | 0.05 | 0.54 | 0.54 |
| Sat Flow, veh/h | 1598 | 182 | 1456 | 1810 | 1900 | 1610 | 1626 | 3272 | 1246 | 1810 | 3131 | 1572 |
| Grp Volume(v), veh/h | 155 | 0 | 45 | 0 | 0 | 0 | 43 | 1277 | 1 | 44 | 927 | 128 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1638 | 1810 | 1900 | 1610 | 1626 | 1636 | 1246 | 1810 | 1566 | 1572 |
| Q Serve(g_s), s | 6.7 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 1.8 | 21.4 | 0.0 | 1.7 | 13.8 | 2.9 |
| Cycle Q Clear(g_c), s | 6.7 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 1.8 | 21.4 | 0.0 | 1.7 | 13.8 | 2.9 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 194 | 0 | 199 | 3 | 3 | 2 | 78 | 1742 | 663 | 89 | 1687 | 847 |
| V/C Ratio(X) | 0.80 | 0.00 | 0.23 | 0.00 | 0.00 | 0.00 | 0.55 | 0.73 | 0.00 | 0.50 | 0.55 | 0.15 |
| Avail Cap(c_a), veh/h | 233 | 0 | 239 | 152 | 160 | 135 | 159 | 1742 | 663 | 152 | 1687 | 847 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 30.5 | 0.0 | 28.3 | 0.0 | 0.0 | 0.0 | 33.2 | 12.8 | 7.8 | 33.1 | 10.8 | 8.3 |
| Incr Delay (d2), s/veh | 15.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 5.9 | 2.8 | 0.0 | 4.3 | 1.3 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.3 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.8 | 6.2 | 0.0 | 0.8 | 4.0 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.4 | 0.0 | 28.9 | 0.0 | 0.0 | 0.0 | 39.1 | 15.6 | 7.8 | 37.3 | 12.1 | 8.6 |
| LnGrp LOS | D | A | C | A | A | A | D | B | A | D | B | A |
| Approach Vol, veh/h | | 200 | | | 0 | | | 1321 | | | 1099 | |
| Approach Delay, s/veh | | 41.7 | | | 0.0 | | | 16.3 | | | 12.7 | |
| Approach LOS | | D | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 11.2 | 43.9 | | 0.0 | 10.7 | 44.4 | | 16.3 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 6 | 38.0 | | * 6 | * 7 | 37.4 | | 10.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 3.7 | 23.4 | | 0.0 | 3.8 | 15.8 | | 8.7 | | | | |
| Green Ext Time (p_c), s | 0.0 | 7.1 | | 0.0 | 0.0 | 6.7 | | 0.1 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 16.7 | | | | | | | | | |
| HCM 6th LOS | | | B | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 75 | 53 | 66 | 170 | 24 | 1094 | 89 | 803 | 75 |
| v/c Ratio | 0.43 | 0.17 | 0.39 | 0.57 | 0.22 | 0.73 | 0.62 | 0.45 | 0.07 |
| Control Delay | 52.4 | 1.2 | 51.8 | 15.3 | 53.2 | 26.8 | 66.4 | 16.4 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 52.4 | 1.2 | 51.8 | 15.3 | 53.2 | 26.8 | 66.4 | 16.4 | 0.1 |
| Queue Length 50th (ft) | 47 | 0 | 42 | 0 | 15 | 305 | 57 | 136 | 0 |
| Queue Length 95th (ft) | 94 | 0 | 85 | 59 | 44 | 423 | #132 | 274 | 0 |
| Internal Link Dist (ft) | 631 | | 525 | | | 3118 | | 4723 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 225 | | 225 |
| Base Capacity (vph) | 331 | 432 | 346 | 428 | 109 | 1506 | 150 | 1765 | 1010 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.23 | 0.12 | 0.19 | 0.40 | 0.22 | 0.73 | 0.59 | 0.45 | 0.07 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↗ | ↗ | ↖ | ↗ | ↗ |
| Traffic Volume (veh/h) | 50 | 16 | 47 | 1 | 57 | 150 | 21 | 963 | 0 | 78 | 707 | 66 |
| Future Volume (veh/h) | 50 | 16 | 47 | 1 | 57 | 150 | 21 | 963 | 0 | 78 | 707 | 66 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1722 | 1900 | 1885 | 1633 | 1900 |
| Adj Flow Rate, veh/h | 57 | 18 | 53 | 1 | 65 | 170 | 24 | 1094 | 0 | 89 | 803 | 75 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 12 | 0 | 1 | 18 | 0 |
| Cap, veh/h | 85 | 27 | 101 | 4 | 240 | 203 | 53 | 1487 | 732 | 113 | 1528 | 793 |
| Arrive On Green | 0.06 | 0.06 | 0.06 | 0.13 | 0.13 | 0.13 | 0.03 | 0.45 | 0.00 | 0.06 | 0.49 | 0.49 |
| Sat Flow, veh/h | 1359 | 429 | 1610 | 29 | 1870 | 1585 | 1810 | 3272 | 1610 | 1795 | 3103 | 1610 |
| Grp Volume(v), veh/h | 75 | 0 | 53 | 66 | 0 | 170 | 24 | 1094 | 0 | 89 | 803 | 75 |
| Grp Sat Flow(s),veh/h/ln | 1788 | 0 | 1610 | 1899 | 0 | 1585 | 1810 | 1636 | 1610 | 1795 | 1552 | 1610 |
| Q Serve(g_s), s | 4.2 | 0.0 | 3.2 | 3.2 | 0.0 | 10.6 | 1.3 | 27.8 | 0.0 | 5.0 | 18.0 | 2.5 |
| Cycle Q Clear(g_c), s | 4.2 | 0.0 | 3.2 | 3.2 | 0.0 | 10.6 | 1.3 | 27.8 | 0.0 | 5.0 | 18.0 | 2.5 |
| Prop In Lane | 0.76 | | 1.00 | 0.02 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 112 | 0 | 101 | 243 | 0 | 203 | 53 | 1487 | 732 | 113 | 1528 | 793 |
| V/C Ratio(X) | 0.67 | 0.00 | 0.53 | 0.27 | 0.00 | 0.84 | 0.46 | 0.74 | 0.00 | 0.78 | 0.53 | 0.09 |
| Avail Cap(c_a), veh/h | 317 | 0 | 286 | 337 | 0 | 281 | 107 | 1487 | 732 | 147 | 1528 | 793 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 46.5 | 0.0 | 46.1 | 39.9 | 0.0 | 43.2 | 48.5 | 22.7 | 0.0 | 46.8 | 17.6 | 13.7 |
| Incr Delay (d2), s/veh | 6.8 | 0.0 | 4.2 | 0.6 | 0.0 | 14.4 | 6.1 | 3.3 | 0.0 | 18.6 | 1.3 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.0 | 1.4 | 1.5 | 0.0 | 4.9 | 0.7 | 10.0 | 0.0 | 2.7 | 5.9 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.3 | 0.0 | 50.3 | 40.5 | 0.0 | 57.6 | 54.5 | 26.0 | 0.0 | 65.4 | 18.9 | 13.9 |
| LnGrp LOS | D | A | D | D | A | E | D | C | A | E | B | B |
| Approach Vol, veh/h | | 128 | | | 236 | | | 1118 | | | | 967 |
| Approach Delay, s/veh | | 52.1 | | | 52.8 | | | 26.6 | | | | 22.8 |
| Approach LOS | | D | | | D | | | C | | | | C |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 14.1 | 52.0 | | 21.4 | 10.2 | 55.9 | | 13.9 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 8.3 | 46.1 | | * 18 | * 6 | 48.8 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 7.0 | 29.8 | | 12.6 | 3.3 | 20.0 | | 6.2 | | | | |
| Green Ext Time (p_c), s | 0.0 | 6.3 | | 0.4 | 0.0 | 5.5 | | 0.4 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 29.0 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 45 | 422 | 697 | 7 | 303 | 555 |
| v/c Ratio | 0.12 | 0.66 | 0.74 | 0.01 | 0.70 | 0.32 |
| Control Delay | 24.3 | 9.6 | 28.4 | 11.0 | 18.6 | 8.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 24.3 | 9.6 | 28.4 | 11.0 | 18.6 | 8.8 |
| Queue Length 50th (ft) | 17 | 10 | 151 | 0 | 65 | 63 |
| Queue Length 95th (ft) | 41 | 82 | 206 | 8 | 112 | 88 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 391 | 639 | 947 | 475 | 442 | 1772 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.12 | 0.66 | 0.74 | 0.01 | 0.69 | 0.31 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | ↶ | ↶↷ | ↶↷ | ↷ | ↶↷ | ↶↷ |
| Traffic Volume (veh/h) | 40 | 371 | 613 | 6 | 267 | 488 |
| Future Volume (veh/h) | 40 | 371 | 613 | 6 | 267 | 488 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1856 | 1781 | 1604 | 1781 | 1841 | 1618 |
| Adj Flow Rate, veh/h | 45 | 422 | 697 | 7 | 303 | 555 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 8 | 20 | 8 | 4 | 19 |
| Cap, veh/h | 398 | 340 | 967 | 479 | 422 | 1757 |
| Arrive On Green | 0.23 | 0.23 | 0.32 | 0.32 | 0.14 | 0.57 |
| Sat Flow, veh/h | 1767 | 1510 | 3127 | 1510 | 1753 | 3156 |
| Grp Volume(v), veh/h | 45 | 422 | 697 | 7 | 303 | 555 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 1510 | 1523 | 1510 | 1753 | 1537 |
| Q Serve(g_s), s | 1.5 | 16.6 | 14.9 | 0.2 | 8.0 | 7.0 |
| Cycle Q Clear(g_c), s | 1.5 | 16.6 | 14.9 | 0.2 | 8.0 | 7.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 398 | 340 | 967 | 479 | 422 | 1757 |
| V/C Ratio(X) | 0.11 | 1.24 | 0.72 | 0.01 | 0.72 | 0.32 |
| Avail Cap(c_a), veh/h | 398 | 340 | 967 | 479 | 453 | 1811 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.7 | 28.5 | 22.3 | 17.2 | 15.2 | 8.3 |
| Incr Delay (d2), s/veh | 0.6 | 131.0 | 4.6 | 0.1 | 5.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 18.1 | 5.1 | 0.1 | 3.0 | 1.6 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 23.3 | 159.6 | 26.9 | 17.3 | 20.2 | 8.4 |
| LnGrp LOS | C | F | C | B | C | A |
| Approach Vol, veh/h | 467 | | 704 | | | 858 |
| Approach Delay, s/veh | 146.4 | | 26.8 | | | 12.5 |
| Approach LOS | F | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 18.7 | 32.0 | | 23.0 | | 50.7 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 11 | * 23 | | 16.6 | | * 43 |
| Max Q Clear Time (g_c+l1), s | 10.0 | 16.9 | | 18.6 | | 9.0 |
| Green Ext Time (p_c), s | 0.1 | 2.2 | | 0.0 | | 3.5 |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 48.3 |
| HCM 6th LOS | D |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 22 | 13 | 11 | 14 | 25 | 10 | 8 | 587 | 38 | 10 | 488 | 30 |
| Future Vol, veh/h | 22 | 13 | 11 | 14 | 25 | 10 | 8 | 587 | 38 | 10 | 488 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 19 | 2 | 2 | 20 | 2 |
| Mvmt Flow | 25 | 15 | 13 | 16 | 28 | 11 | 9 | 667 | 43 | 11 | 555 | 34 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 943 | 1305 | 278 | 992 | 1296 | 334 | 589 | 0 | 0 | 710 | 0 | 0 |
| Stage 1 | 577 | 577 | - | 685 | 685 | - | - | - | - | - | - | - |
| Stage 2 | 366 | 728 | - | 307 | 611 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 217 | 159 | 719 | 200 | 161 | 662 | 982 | - | - | 885 | - | - |
| Stage 1 | 469 | 500 | - | 404 | 447 | - | - | - | - | - | - | - |
| Stage 2 | 626 | 427 | - | 678 | 482 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 181 | 156 | 719 | 179 | 158 | 662 | 982 | - | - | 885 | - | - |
| Mov Cap-2 Maneuver | 181 | 156 | - | 179 | 158 | - | - | - | - | - | - | - |
| Stage 1 | 465 | 494 | - | 400 | 443 | - | - | - | - | - | - | - |
| Stage 2 | 571 | 423 | - | 638 | 476 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 27.9 | | 30.7 | | 0.1 | | 0.2 | |
| HCM LOS | D | | D | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 982 | - | - | 209 | 195 | 885 | - | - |
| HCM Lane V/C Ratio | 0.009 | - | - | 0.25 | 0.286 | 0.013 | - | - |
| HCM Control Delay (s) | 8.7 | - | - | 27.9 | 30.7 | 9.1 | - | - |
| HCM Lane LOS | A | - | - | D | D | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1 | 1.1 | 0 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↗ | ↘ | ↗ | | | ↗ | ↘ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 118 | 47 | 515 | 0 | 0 | 34 | 479 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 118 | 47 | 515 | 0 | 0 | 34 | 479 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 19 | 2 | 2 | 2 | 20 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 134 | 53 | 585 | 0 | 0 | 39 | 544 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 1002 | - 585 583 | 0 - - - 0 |
| Stage 1 | 691 | - - - | - - - - - |
| Stage 2 | 311 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 269 | 0 511 991 | - 0 0 - - |
| Stage 1 | 497 | 0 - - | - 0 0 - - |
| Stage 2 | 743 | 0 - - | - 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 255 | 0 511 991 | - - - - - |
| Mov Cap-2 Maneuver | 255 | 0 - - | - - - - - |
| Stage 1 | 471 | 0 - - | - - - - - |
| Stage 2 | 743 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 14.5 | 0.7 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 991 | - - 511 | - - | |
| HCM Lane V/C Ratio | 0.054 | - - 0.262 | - - | |
| HCM Control Delay (s) | 8.8 | - 0 14.5 | - - | |
| HCM Lane LOS | A | - A B | - - | |
| HCM 95th %tile Q(veh) | 0.2 | - - 1 | - - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 562 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 |
| Future Vol, veh/h | 562 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 19 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 639 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 78 | 78 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 78 | 78 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.59 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.59 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.59 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.671 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 884 | 812 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 904 | 830 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 884 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 884 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 904 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | | 0 | |
| HCM LOS | - | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 884 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.722 | - | - | - |
| HCM Control Delay (s) | - | - | 18.9 | - | - | - |
| HCM Lane LOS | - | - | C | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 6.5 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 4.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↗ | ↘ | ↑ | | | | | ↘ | | ↗ |
| Traffic Vol, veh/h | 0 | 146 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 105 |
| Future Vol, veh/h | 0 | 146 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 105 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 166 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 119 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 166 | 0 | 0 | | | 167 | - | 1 |
| Stage 1 | - | - | - | - | - | - | | | 1 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 166 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1412 | - | 0 | | | 823 | 0 | 1084 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 1022 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 863 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1412 | - | - | | | 823 | 0 | 1084 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 823 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 1022 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 863 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 8.9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1412 | - | 823 | 1084 |
| HCM Lane V/C Ratio | - | - | - | - | 0.046 | 0.11 |
| HCM Control Delay (s) | - | - | 0 | - | 9.6 | 8.7 |
| HCM Lane LOS | - | - | A | - | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 | 0.4 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 3.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | ↘ | | ↘ | | | |
| Traffic Vol, veh/h | 101 | 78 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 101 | 78 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | 0 | 0 | - | 100 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 115 | 89 | 0 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 38 | 0 | 0 |
| Stage 1 | - | - | 319 |
| Stage 2 | - | - | 19 |
| Critical Hdwy | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | 1572 | 0 | 658 |
| Stage 1 | - | 0 | 737 |
| Stage 2 | - | 0 | 1004 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1572 | - | 610 |
| Mov Cap-2 Maneuver | - | - | 610 |
| Stage 1 | - | - | 683 |
| Stage 2 | - | - | 1004 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 4.2 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1572 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.073 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 7.5 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | - | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019




















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 375 | 136 | 618 | 800 | 86 |
| v/c Ratio | 0.80 | 0.24 | 0.33 | 0.42 | 0.09 |
| Control Delay | 47.1 | 5.0 | 2.1 | 15.3 | 3.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 47.1 | 5.0 | 2.1 | 15.3 | 3.5 |
| Queue Length 50th (ft) | 241 | 0 | 11 | 158 | 0 |
| Queue Length 95th (ft) | 298 | 35 | m18 | 245 | 25 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 695 | 756 | 1850 | 1918 | 936 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.18 | 0.33 | 0.42 | 0.09 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | |  |  | |  | | |  |  |
| Traffic Volume (vph) | 0 | 0 | 0 | 330 | 0 | 120 | 0 | 544 | 0 | 0 | 704 | 76 |
| Future Volume (vph) | 0 | 0 | 0 | 330 | 0 | 120 | 0 | 544 | 0 | 0 | 704 | 76 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 0 | 0 | 0 | 375 | 0 | 136 | 0 | 618 | 0 | 0 | 800 | 86 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 95 | 0 | 0 | 0 | 0 | 0 | 37 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 375 | 41 | 0 | 618 | 0 | 0 | 800 | 49 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 16% | 0% | 6% | 0% | 12% | 14% | 0% | 8% | 3% |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 |
| Actuated Green, G (s) | | | | | 33.4 | 33.4 | | 63.1 | | | 63.1 | 63.1 |
| Effective Green, g (s) | | | | | 33.4 | 33.4 | | 63.1 | | | 63.1 | 63.1 |
| Actuated g/C Ratio | | | | | 0.30 | 0.30 | | 0.57 | | | 0.57 | 0.57 |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 472 | 462 | | 1848 | | | 1917 | 899 |
| v/s Ratio Prot | | | | | | | | 0.19 | | | c0.24 | |
| v/s Ratio Perm | | | | | 0.24 | 0.03 | | | | | | 0.03 |
| v/c Ratio | | | | | 0.79 | 0.09 | | 0.33 | | | 0.42 | 0.05 |
| Uniform Delay, d1 | | | | | 35.2 | 27.4 | | 12.4 | | | 13.1 | 10.3 |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.14 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 9.0 | 0.1 | | 0.2 | | | 0.7 | 0.1 |
| Delay (s) | | | | | 44.1 | 27.5 | | 1.9 | | | 13.8 | 10.4 |
| Level of Service | | | | | D | C | | A | | | B | B |
| Approach Delay (s) | | 0.0 | | | 39.7 | | | 1.9 | | | 13.5 | |
| Approach LOS | | A | | | D | | | A | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 16.6 | | HCM 2000 Level of Service | | | | | | B | |
| HCM 2000 Volume to Capacity ratio | | | 0.55 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 110.0 | | Sum of lost time (s) | | | | | | 13.5 | |
| Intersection Capacity Utilization | | | 78.8% | | ICU Level of Service | | | | | | D | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|-------|------|
| Lane Group Flow (vph) | 127 | 644 | 976 | 247 | 160 | 1015 |
| v/c Ratio | 0.18 | 1.06 | 0.99 | 0.44 | 0.93 | 0.65 |
| Control Delay | 21.8 | 80.3 | 63.9 | 17.7 | 102.6 | 19.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.8 | 80.3 | 63.9 | 17.7 | 102.6 | 19.1 |
| Queue Length 50th (ft) | 56 | ~456 | 358 | 66 | 117 | 214 |
| Queue Length 95th (ft) | 96 | #656 | #482 | 135 | #238 | 286 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 693 | 610 | 990 | 566 | 172 | 1559 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 1.06 | 0.99 | 0.44 | 0.93 | 0.65 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.





















Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 2: US 220 Business & US 58 EB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|--|---|---|--|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  | |  | | | | |   |  |  |   | | |
| Traffic Volume (vph) | 112 | 0 | 567 | 0 | 0 | 0 | 0 | 859 | 217 | 141 | 893 | 0 | |
| Future Volume (vph) | 112 | 0 | 567 | 0 | 0 | 0 | 0 | 859 | 217 | 141 | 893 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 127 | 0 | 644 | 0 | 0 | 0 | 0 | 976 | 247 | 160 | 1015 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 85 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 127 | 0 | 587 | 0 | 0 | 0 | 0 | 976 | 162 | 160 | 1015 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 19% | 2% | 2% | 2% | 0% | 12% | 3% | 2% | 8% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 44.8 | | 44.8 | | | | | 33.8 | 33.8 | 10.7 | 51.3 | | |
| Effective Green, g (s) | 44.8 | | 44.8 | | | | | 33.8 | 33.8 | 10.7 | 51.3 | | |
| Actuated g/C Ratio | 0.41 | | 0.41 | | | | | 0.31 | 0.31 | 0.10 | 0.47 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 693 | | 552 | | | | | 990 | 481 | 172 | 1559 | | |
| v/s Ratio Prot | | | | | | | | c0.30 | | 0.09 | c0.30 | | |
| v/s Ratio Perm | 0.07 | | c0.43 | | | | | | 0.10 | | | | |
| v/c Ratio | 0.18 | | 1.06 | | | | | 0.99 | 0.34 | 0.93 | 0.65 | | |
| Uniform Delay, d1 | 20.9 | | 32.6 | | | | | 37.9 | 29.4 | 49.3 | 22.5 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.07 | 0.75 | | |
| Incremental Delay, d2 | 0.1 | | 56.0 | | | | | 25.4 | 1.9 | 45.7 | 1.9 | | |
| Delay (s) | 21.0 | | 88.6 | | | | | 63.3 | 31.3 | 98.4 | 18.9 | | |
| Level of Service | C | | F | | | | | E | C | F | B | | |
| Approach Delay (s) | | 77.5 | | | 0.0 | | | 56.8 | | | 29.7 | | |
| Approach LOS | | E | | | A | | | E | | | C | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 51.8 | | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 1.02 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 110.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 71.4% | | | | | | | | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↕ | ↑↑ | ↕ | ↕ | ↑↑ | ↕ |
| Traffic Vol, veh/h | 23 | 0 | 6 | 2 | 0 | 17 | 5 | 1036 | 2 | 27 | 1414 | 19 |
| Future Vol, veh/h | 23 | 0 | 6 | 2 | 0 | 17 | 5 | 1036 | 2 | 27 | 1414 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 26 | 0 | 7 | 2 | 0 | 19 | 6 | 1177 | 2 | 31 | 1607 | 22 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 2270 | 2860 | 804 | 2055 | 2880 | 589 | 1629 | 0 | 0 | 1179 | 0 | 0 |
| Stage 1 | 1669 | 1669 | - | 1189 | 1189 | - | - | - | - | - | - | - |
| Stage 2 | 601 | 1191 | - | 866 | 1691 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 23 | 17 | 330 | 33 | 17 | 430 | 404 | - | - | 600 | - | - |
| Stage 1 | 102 | 155 | - | 203 | 264 | - | - | - | - | - | - | - |
| Stage 2 | 459 | 263 | - | 319 | 151 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | ~ 21 | 16 | 330 | 31 | 16 | 430 | 404 | - | - | 600 | - | - |
| Mov Cap-2 Maneuver | ~ 21 | 16 | - | 31 | 16 | - | - | - | - | - | - | - |
| Stage 1 | 100 | 147 | - | 200 | 260 | - | - | - | - | - | - | - |
| Stage 2 | 432 | 259 | - | 296 | 143 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|--------|------|-----|-----|
| HCM Control Delay, s | \$ 491 | 27.3 | 0.1 | 0.2 |
| HCM LOS | F | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 404 | - | - | 26 | 183 | 600 | - |
| HCM Lane V/C Ratio | 0.014 | - | - | 1.267 | 0.118 | 0.051 | - |
| HCM Control Delay (s) | 14 | - | - | \$ 491 | 27.3 | 11.3 | - |
| HCM Lane LOS | B | - | - | F | D | B | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4 | 0.4 | 0.2 | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 7 | 0 | 16 | 0 | 1027 | 10 | 23 | 1399 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 7 | 0 | 16 | 0 | 1027 | 10 | 23 | 1399 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 8 | 0 | 18 | 0 | 1167 | 11 | 26 | 1590 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 2226 | 2820 | 795 | 2014 | 2809 | 584 | - | 0 | 0 | 1178 | 0 | 0 |
| Stage 1 | 1642 | 1642 | - | 1167 | 1167 | - | - | - | - | - | - | - |
| Stage 2 | 584 | 1178 | - | 847 | 1642 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 24 | 18 | 335 | 35 | 18 | 443 | 0 | - | - | 600 | - | 0 |
| Stage 1 | 106 | 159 | - | 209 | 270 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 470 | 267 | - | 327 | 159 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 22 | 17 | 335 | 34 | 17 | 443 | - | - | - | 600 | - | - |
| Mov Cap-2 Maneuver | 22 | 17 | - | 34 | 17 | - | - | - | - | - | - | - |
| Stage 1 | 106 | 152 | - | 209 | 270 | - | - | - | - | - | - | - |
| Stage 2 | 451 | 267 | - | 313 | 152 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|-----|
| HCM Control Delay, s | 0 | 56.7 | 0 | 0.2 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|-------|-------|
| Capacity (veh/h) | - | - | - | 95 | 600 |
| HCM Lane V/C Ratio | - | - | - | 0.275 | 0.044 |
| HCM Control Delay (s) | - | - | 0 | 56.7 | 11.3 |
| HCM Lane LOS | - | - | A | F | B |
| HCM 95th %tile Q(veh) | - | - | - | 1 | 0.1 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 92.3 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | ↘↗ | | | ↑↑ | ↑↑ | ↗ |
| Traffic Vol, veh/h | 140 | 43 | 0 | 897 | 1374 | 32 |
| Future Vol, veh/h | 140 | 43 | 0 | 897 | 1374 | 32 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 12 | 16 | 0 |
| Mvmt Flow | 159 | 49 | 0 | 1019 | 1561 | 36 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 2071 | 781 | - | 0 | - | 0 |
| Stage 1 | 1561 | - | - | - | - | - |
| Stage 2 | 510 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 48 | 342 | 0 | - | - | - |
| Stage 1 | 162 | - | 0 | - | - | - |
| Stage 2 | 574 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 48 | 342 | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 48 | - | - | - | - | - |
| Stage 1 | 162 | - | - | - | - | - |
| Stage 2 | 574 | - | - | - | - | - |

| Approach | EB | NB | SB |
|-----------------------|--------|----|----|
| HCM Control Delay, \$ | 1253.4 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----------|-----|-----|
| Capacity (veh/h) | - | 60 | - | - |
| HCM Lane V/C Ratio | - | 3.466 | - | - |
| HCM Control Delay (s) | | \$ 1253.4 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 22 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↑ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 8 | 34 | 863 | 12 | 50 | 1367 |
| Future Vol, veh/h | 8 | 34 | 863 | 12 | 50 | 1367 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 12 | 0 | 0 | 17 |
| Mvmt Flow | 9 | 39 | 981 | 14 | 57 | 1553 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 1872 | 491 | 0 | 0 | 995 |
| Stage 1 | 981 | - | - | - | - |
| Stage 2 | 891 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 65 | 529 | - | - | 703 |
| Stage 1 | 329 | - | - | - | - |
| Stage 2 | 366 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 60 | 529 | - | - | 703 |
| Mov Cap-2 Maneuver | 60 | - | - | - | - |
| Stage 1 | 329 | - | - | - | - |
| Stage 2 | 336 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 26.7 | 0 | 0.4 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 213 | 703 |
| HCM Lane V/C Ratio | - | - | 0.224 | 0.081 |
| HCM Control Delay (s) | - | - | 26.7 | 10.6 |
| HCM Lane LOS | - | - | D | B |
| HCM 95th %tile Q(veh) | - | - | 0.8 | 0.3 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | | | ↔ | ↑↑ | ↔ | ↔ | ↑↑ | |
| Traffic Vol, veh/h | 22 | 0 | 6 | 0 | 0 | 0 | 10 | 853 | 16 | 35 | 1303 | 37 |
| Future Vol, veh/h | 22 | 0 | 6 | 0 | 0 | 0 | 10 | 853 | 16 | 35 | 1303 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 12 | 0 | 3 | 17 | 0 |
| Mvmt Flow | 25 | 0 | 7 | 0 | 0 | 0 | 11 | 969 | 18 | 40 | 1481 | 42 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 2089 | 2591 | 762 | | | | 1523 | 0 | 0 | 987 | 0 | 0 |
| Stage 1 | 1582 | 1582 | - | | | | - | - | - | - | - | - |
| Stage 2 | 507 | 1009 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 46 | 26 | 352 | | | | 444 | - | - | 690 | - | - |
| Stage 1 | 158 | 171 | - | | | | - | - | - | - | - | - |
| Stage 2 | 576 | 320 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 42 | 0 | 352 | | | | 444 | - | - | 690 | - | - |
| Mov Cap-2 Maneuver | 42 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 154 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 543 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|-------|-----|-----|
| HCM Control Delay, s | 150.3 | 0.2 | 0.3 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 444 | - | - | 52 | 690 | - | - |
| HCM Lane V/C Ratio | 0.026 | - | - | 0.612 | 0.058 | - | - |
| HCM Control Delay (s) | 13.3 | - | - | 150.3 | 10.5 | - | - |
| HCM Lane LOS | B | - | - | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 2.4 | 0.2 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019



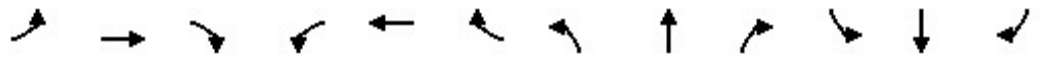
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 91 | 48 | 2 | 2 | 50 | 908 | 8 | 64 | 1251 | 173 |
| v/c Ratio | 0.54 | 0.23 | 0.01 | 0.01 | 0.39 | 0.48 | 0.01 | 0.35 | 0.63 | 0.16 |
| Control Delay | 48.4 | 16.2 | 36.5 | 36.5 | 45.5 | 15.0 | 0.0 | 39.7 | 15.6 | 0.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 48.4 | 16.2 | 36.5 | 36.5 | 45.5 | 15.0 | 0.0 | 39.7 | 15.6 | 0.9 |
| Queue Length 50th (ft) | 41 | 2 | 1 | 1 | 23 | 146 | 0 | 28 | 225 | 0 |
| Queue Length 95th (ft) | #112 | 34 | 8 | 8 | #65 | 275 | 0 | 73 | #461 | 8 |
| Internal Link Dist (ft) | | 711 | | 593 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 177 | 222 | 146 | 153 | 129 | 1879 | 832 | 211 | 1987 | 1097 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.51 | 0.22 | 0.01 | 0.01 | 0.39 | 0.48 | 0.01 | 0.30 | 0.63 | 0.16 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 Business & Water Plant Road

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | ↗ | ↖ | ↗↗ | ↗ | ↖ | ↗↗ | ↗ |
| Traffic Volume (veh/h) | 80 | 4 | 38 | 2 | 2 | 0 | 44 | 799 | 7 | 56 | 1101 | 152 |
| Future Volume (veh/h) | 80 | 4 | 38 | 2 | 2 | 0 | 44 | 799 | 7 | 56 | 1101 | 152 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1722 | 1470 | 1900 | 1648 | 1856 |
| Adj Flow Rate, veh/h | 91 | 5 | 43 | 2 | 2 | 0 | 50 | 908 | 8 | 64 | 1251 | 173 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 12 | 29 | 0 | 17 | 3 |
| Cap, veh/h | 124 | 13 | 114 | 12 | 12 | 10 | 82 | 1606 | 612 | 103 | 1573 | 790 |
| Arrive On Green | 0.08 | 0.08 | 0.08 | 0.01 | 0.01 | 0.00 | 0.05 | 0.49 | 0.49 | 0.06 | 0.50 | 0.50 |
| Sat Flow, veh/h | 1598 | 170 | 1466 | 1810 | 1900 | 1610 | 1626 | 3272 | 1246 | 1810 | 3131 | 1572 |
| Grp Volume(v), veh/h | 91 | 0 | 48 | 2 | 2 | 0 | 50 | 908 | 8 | 64 | 1251 | 173 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1636 | 1810 | 1900 | 1610 | 1626 | 1636 | 1246 | 1810 | 1566 | 1572 |
| Q Serve(g_s), s | 4.5 | 0.0 | 2.2 | 0.1 | 0.1 | 0.0 | 2.4 | 15.7 | 0.3 | 2.8 | 26.6 | 4.9 |
| Cycle Q Clear(g_c), s | 4.5 | 0.0 | 2.2 | 0.1 | 0.1 | 0.0 | 2.4 | 15.7 | 0.3 | 2.8 | 26.6 | 4.9 |
| Prop In Lane | 1.00 | | 0.90 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 124 | 0 | 127 | 12 | 12 | 10 | 82 | 1606 | 612 | 103 | 1573 | 790 |
| V/C Ratio(X) | 0.73 | 0.00 | 0.38 | 0.17 | 0.17 | 0.00 | 0.61 | 0.57 | 0.01 | 0.62 | 0.80 | 0.22 |
| Avail Cap(c_a), veh/h | 167 | 0 | 171 | 135 | 142 | 120 | 121 | 1606 | 612 | 196 | 1573 | 790 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.3 | 0.0 | 35.2 | 39.7 | 39.7 | 0.0 | 37.4 | 14.4 | 10.5 | 37.1 | 16.6 | 11.2 |
| Incr Delay (d2), s/veh | 10.4 | 0.0 | 1.8 | 6.9 | 6.2 | 0.0 | 7.2 | 1.4 | 0.0 | 6.0 | 4.2 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.0 | 0.9 | 0.1 | 0.1 | 0.0 | 1.1 | 5.0 | 0.1 | 1.3 | 8.8 | 1.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 46.6 | 0.0 | 37.1 | 46.7 | 46.0 | 0.0 | 44.7 | 15.9 | 10.5 | 43.1 | 20.8 | 11.8 |
| LnGrp LOS | D | A | D | D | D | A | D | B | B | D | C | B |
| Approach Vol, veh/h | | 139 | | | 4 | | | 966 | | | 1488 | |
| Approach Delay, s/veh | | 43.3 | | | 46.3 | | | 17.3 | | | 20.7 | |
| Approach LOS | | D | | | D | | | B | | | C | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.3 | 45.4 | | 8.9 | 11.3 | 46.3 | | 13.9 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 8.7 | 37.3 | | * 6 | * 6 | 40.4 | | 8.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.8 | 17.7 | | 2.1 | 4.4 | 28.6 | | 6.5 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.5 | | 0.0 | 0.0 | 6.7 | | 0.1 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 20.7 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 61 | 27 | 41 | 203 | 31 | 736 | 8 | 233 | 1016 | 48 |
| v/c Ratio | 0.36 | 0.07 | 0.26 | 0.59 | 0.27 | 0.63 | 0.01 | 0.72 | 0.61 | 0.05 |
| Control Delay | 49.6 | 0.4 | 48.2 | 11.5 | 52.7 | 30.2 | 0.0 | 51.5 | 19.6 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 49.6 | 0.4 | 48.2 | 11.5 | 52.7 | 30.2 | 0.0 | 51.5 | 19.6 | 0.1 |
| Queue Length 50th (ft) | 38 | 0 | 25 | 0 | 19 | 202 | 0 | 142 | 253 | 0 |
| Queue Length 95th (ft) | 79 | 0 | 59 | 43 | 51 | 298 | 0 | 227 | 357 | 0 |
| Internal Link Dist (ft) | 631 | | 525 | | | 3118 | | | 4723 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 100 | 225 | | 225 |
| Base Capacity (vph) | 354 | 505 | 366 | 494 | 116 | 1169 | 748 | 409 | 1679 | 970 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.17 | 0.05 | 0.11 | 0.41 | 0.27 | 0.63 | 0.01 | 0.57 | 0.61 | 0.05 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↑↑ | ↗ | ↖ | ↑↑ | ↗ |
| Traffic Volume (veh/h) | 23 | 31 | 24 | 4 | 32 | 179 | 27 | 648 | 7 | 205 | 894 | 42 |
| Future Volume (veh/h) | 23 | 31 | 24 | 4 | 32 | 179 | 27 | 648 | 7 | 205 | 894 | 42 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1722 | 1900 | 1885 | 1633 | 1900 |
| Adj Flow Rate, veh/h | 26 | 35 | 27 | 5 | 36 | 203 | 31 | 736 | 8 | 233 | 1016 | 48 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 12 | 0 | 1 | 18 | 0 |
| Cap, veh/h | 42 | 56 | 87 | 34 | 244 | 233 | 62 | 1176 | 579 | 268 | 1484 | 770 |
| Arrive On Green | 0.05 | 0.05 | 0.05 | 0.15 | 0.15 | 0.15 | 0.03 | 0.36 | 0.36 | 0.15 | 0.48 | 0.48 |
| Sat Flow, veh/h | 774 | 1042 | 1610 | 230 | 1658 | 1585 | 1810 | 3272 | 1610 | 1795 | 3103 | 1610 |
| Grp Volume(v), veh/h | 61 | 0 | 27 | 41 | 0 | 203 | 31 | 736 | 8 | 233 | 1016 | 48 |
| Grp Sat Flow(s),veh/h/ln | 1817 | 0 | 1610 | 1888 | 0 | 1585 | 1810 | 1636 | 1610 | 1795 | 1552 | 1610 |
| Q Serve(g_s), s | 3.4 | 0.0 | 1.6 | 1.9 | 0.0 | 12.8 | 1.7 | 19.0 | 0.3 | 12.9 | 25.9 | 1.6 |
| Cycle Q Clear(g_c), s | 3.4 | 0.0 | 1.6 | 1.9 | 0.0 | 12.8 | 1.7 | 19.0 | 0.3 | 12.9 | 25.9 | 1.6 |
| Prop In Lane | 0.43 | | 1.00 | 0.12 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 98 | 0 | 87 | 278 | 0 | 233 | 62 | 1176 | 579 | 268 | 1484 | 770 |
| V/C Ratio(X) | 0.62 | 0.00 | 0.31 | 0.15 | 0.00 | 0.87 | 0.50 | 0.63 | 0.01 | 0.87 | 0.68 | 0.06 |
| Avail Cap(c_a), veh/h | 320 | 0 | 284 | 333 | 0 | 280 | 106 | 1176 | 579 | 375 | 1484 | 770 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 47.3 | 0.0 | 46.4 | 37.9 | 0.0 | 42.5 | 48.4 | 27.0 | 21.0 | 42.4 | 20.7 | 14.3 |
| Incr Delay (d2), s/veh | 6.3 | 0.0 | 2.0 | 0.2 | 0.0 | 21.5 | 6.0 | 2.5 | 0.0 | 14.5 | 2.6 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.7 | 0.0 | 0.7 | 0.9 | 0.0 | 6.3 | 0.8 | 7.1 | 0.1 | 6.5 | 8.7 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.6 | 0.0 | 48.5 | 38.2 | 0.0 | 64.0 | 54.5 | 29.5 | 21.1 | 56.9 | 23.2 | 14.5 |
| LnGrp LOS | D | A | D | D | A | E | D | C | C | E | C | B |
| Approach Vol, veh/h | | 88 | | | 244 | | | 775 | | | 1297 | |
| Approach Delay, s/veh | | 52.0 | | | 59.7 | | | 30.5 | | | 29.0 | |
| Approach LOS | | D | | | E | | | C | | | C | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 22.9 | 42.6 | | 23.4 | 10.8 | 54.7 | | 13.1 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 21 | 33.1 | | * 18 | * 6 | 48.8 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 14.9 | 21.0 | | 14.8 | 3.7 | 27.9 | | 5.4 | | | | |
| Green Ext Time (p_c), s | 0.3 | 3.5 | | 0.3 | 0.0 | 6.6 | | 0.2 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 33.4 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 72 | 381 | 394 | 11 | 418 | 630 |
| v/c Ratio | 0.21 | 0.60 | 0.54 | 0.03 | 0.72 | 0.37 |
| Control Delay | 25.4 | 7.5 | 27.8 | 12.6 | 16.8 | 9.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 25.4 | 7.5 | 27.8 | 12.6 | 16.8 | 9.4 |
| Queue Length 50th (ft) | 27 | 0 | 82 | 0 | 98 | 74 |
| Queue Length 95th (ft) | 60 | 61 | 125 | 12 | 152 | 103 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 351 | 636 | 723 | 368 | 622 | 1821 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.21 | 0.60 | 0.54 | 0.03 | 0.67 | 0.35 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | ↶ | ↶↷ | ↶↷ | ↷ | ↷ | ↷↶ |
| Traffic Volume (veh/h) | 63 | 335 | 347 | 10 | 368 | 554 |
| Future Volume (veh/h) | 63 | 335 | 347 | 10 | 368 | 554 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1633 | 1781 | 1604 | 1781 | 1841 | 1618 |
| Adj Flow Rate, veh/h | 72 | 381 | 394 | 11 | 418 | 630 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 18 | 8 | 20 | 8 | 4 | 19 |
| Cap, veh/h | 359 | 348 | 736 | 365 | 575 | 1726 |
| Arrive On Green | 0.23 | 0.23 | 0.24 | 0.24 | 0.20 | 0.56 |
| Sat Flow, veh/h | 1555 | 1510 | 3127 | 1510 | 1753 | 3156 |
| Grp Volume(v), veh/h | 72 | 381 | 394 | 11 | 418 | 630 |
| Grp Sat Flow(s),veh/h/ln | 1555 | 1510 | 1523 | 1510 | 1753 | 1537 |
| Q Serve(g_s), s | 2.7 | 16.6 | 8.1 | 0.4 | 12.0 | 8.1 |
| Cycle Q Clear(g_c), s | 2.7 | 16.6 | 8.1 | 0.4 | 12.0 | 8.1 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 359 | 348 | 736 | 365 | 575 | 1726 |
| V/C Ratio(X) | 0.20 | 1.09 | 0.54 | 0.03 | 0.73 | 0.37 |
| Avail Cap(c_a), veh/h | 359 | 348 | 736 | 365 | 648 | 1853 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.4 | 27.7 | 23.8 | 20.9 | 14.6 | 8.7 |
| Incr Delay (d2), s/veh | 1.3 | 76.1 | 2.8 | 0.2 | 3.6 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 13.0 | 2.8 | 0.1 | 4.2 | 1.9 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 23.6 | 103.9 | 26.6 | 21.0 | 18.1 | 8.8 |
| LnGrp LOS | C | F | C | C | B | A |
| Approach Vol, veh/h | 453 | | 405 | | | 1048 |
| Approach Delay, s/veh | 91.1 | | 26.4 | | | 12.6 |
| Approach LOS | F | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 23.0 | 26.0 | | 23.0 | | 49.0 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 17 | * 17 | | 16.6 | | * 43 |
| Max Q Clear Time (g_c+l1), s | 14.0 | 10.1 | | 18.6 | | 10.1 |
| Green Ext Time (p_c), s | 0.5 | 1.3 | | 0.0 | | 4.0 |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 34.2 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 21 | 22 | 4 | 5 | 6 | 2 | 9 | 334 | 49 | 20 | 567 | 30 |
| Future Vol, veh/h | 21 | 22 | 4 | 5 | 6 | 2 | 9 | 334 | 49 | 20 | 567 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 19 | 2 | 2 | 20 | 2 |
| Mvmt Flow | 24 | 25 | 5 | 6 | 7 | 2 | 10 | 380 | 56 | 23 | 644 | 34 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 904 | 1146 | 322 | 781 | 1124 | 190 | 678 | 0 | 0 | 436 | 0 | 0 |
| Stage 1 | 690 | 690 | - | 400 | 400 | - | - | - | - | - | - | - |
| Stage 2 | 214 | 456 | - | 381 | 724 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 232 | 198 | 674 | 285 | 204 | 820 | 910 | - | - | 1120 | - | - |
| Stage 1 | 401 | 444 | - | 597 | 600 | - | - | - | - | - | - | - |
| Stage 2 | 768 | 567 | - | 613 | 429 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 220 | 192 | 674 | 249 | 197 | 820 | 910 | - | - | 1120 | - | - |
| Mov Cap-2 Maneuver | 220 | 192 | - | 249 | 197 | - | - | - | - | - | - | - |
| Stage 1 | 397 | 435 | - | 590 | 593 | - | - | - | - | - | - | - |
| Stage 2 | 749 | 561 | - | 562 | 420 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 26.8 | | 20.6 | | 0.2 | | 0.3 | |
| HCM LOS | D | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|------|-----|-----|
| Capacity (veh/h) | 910 | - | - | 218 | 245 | 1120 | - | - |
| HCM Lane V/C Ratio | 0.011 | - | - | 0.245 | 0.06 | 0.02 | - | - |
| HCM Control Delay (s) | 9 | - | - | 26.8 | 20.6 | 8.3 | - | - |
| HCM Lane LOS | A | - | - | D | C | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.9 | 0.2 | 0.1 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↘ | ↘ | ↗ | | | ↗ | ↗ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 4 | 0 | 77 | 31 | 315 | 0 | 0 | 153 | 423 |
| Future Vol, veh/h | 0 | 0 | 0 | 4 | 0 | 77 | 31 | 315 | 0 | 0 | 153 | 423 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 19 | 2 | 2 | 2 | 20 |
| Mvmt Flow | 0 | 0 | 0 | 5 | 0 | 88 | 35 | 358 | 0 | 0 | 174 | 481 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 843 | - 358 655 | 0 - - - 0 |
| Stage 1 | 428 | - - - | - - - - - |
| Stage 2 | 415 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 334 | 0 686 932 | - 0 0 - - |
| Stage 1 | 657 | 0 - - | - 0 0 - - |
| Stage 2 | 666 | 0 - - | - 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 321 | 0 686 932 | - - - - - |
| Mov Cap-2 Maneuver | 321 | 0 - - | - - - - - |
| Stage 1 | 632 | 0 - - | - - - - - |
| Stage 2 | 666 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 11.3 | 0.8 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 932 | - 321 686 | - - | - - |
| HCM Lane V/C Ratio | 0.038 | - 0.014 0.128 | - - | - - |
| HCM Control Delay (s) | 9 | - 16.4 11 | - - | - - |
| HCM Lane LOS | A | - C B | - - | - - |
| HCM 95th %tile Q(veh) | 0.1 | - 0 0.4 | - - | - - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 14.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 346 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 157 | 0 | 0 |
| Future Vol, veh/h | 346 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 157 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 19 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 393 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 178 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 356 | 356 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 356 | 356 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.59 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.59 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.59 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.671 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 609 | 570 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 673 | 629 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 609 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 609 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 673 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 21 | 0 | |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 609 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.646 | - | - | - |
| HCM Control Delay (s) | - | - | 21 | 0 | - | - |
| HCM Lane LOS | - | - | C | A | - | - |
| HCM 95th %tile Q(veh) | - | - | 4.7 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | ↑ | | ↑ |
| Traffic Vol, veh/h | 0 | 331 | 0 | 0 | 205 | 0 | 0 | 0 | 0 | 10 | 0 | 104 |
| Future Vol, veh/h | 0 | 331 | 0 | 0 | 205 | 0 | 0 | 0 | 0 | 10 | 0 | 104 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 376 | 0 | 0 | 233 | 0 | 0 | 0 | 0 | 11 | 0 | 118 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 376 | 0 | 0 | | | 609 | - | 233 |
| Stage 1 | - | - | - | - | - | - | | | 233 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 376 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1182 | - | 0 | | | 458 | 0 | 806 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 806 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 694 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1182 | - | - | | | 458 | 0 | 806 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 458 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 806 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 694 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|----|------|
| HCM Control Delay, s | 0 | 0 | 10.5 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1182 | - | 458 | 806 |
| HCM Lane V/C Ratio | - | - | - | - | 0.025 | 0.147 |
| HCM Control Delay (s) | - | - | 0 | - | 13.1 | 10.2 |
| HCM Lane LOS | - | - | A | - | B | B |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 | 0.5 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 3.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | ↘ | | ↘ | | | |
| Traffic Vol, veh/h | 245 | 96 | 0 | 0 | 205 | 78 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 245 | 96 | 0 | 0 | 205 | 78 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | 0 | 0 | - | 100 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 278 | 109 | 0 | 0 | 233 | 89 | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 322 | 0 | 0 |
| Stage 1 | - | - | 665 |
| Stage 2 | - | - | 278 |
| Critical Hdwy | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | 1238 | 0 | 0 |
| Stage 1 | - | 0 | 511 |
| Stage 2 | - | 0 | 769 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1238 | - | 0 |
| Mov Cap-2 Maneuver | - | - | 0 |
| Stage 1 | - | - | 396 |
| Stage 2 | - | - | 769 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 6.3 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1238 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.225 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 8.8 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.9 | - | - | - |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 220 Bypass WB Ram | 121 | 1.3 | 3.2 | 0.1 | 77 |
| | 74 | 0.2 | 5.7 | 0.1 | 44 |
| | 75 | 0.2 | 6.4 | 0.1 | 51 |
| | 79 | 0.1 | 4.3 | 0.1 | 52 |
| | 72 | 0.3 | 16.7 | 0.2 | 53 |
| | 80 | 0.3 | 14.8 | 0.2 | 53 |
| | 13 | 0.4 | 13.0 | 0.2 | 63 |
| | 38 | 1.4 | 47.0 | 0.7 | 54 |
| Church St | 11 | 1.2 | 28.9 | 0.5 | 62 |
| Morehead Ave | 10 | 21.2 | 65.9 | 0.7 | 38 |
| Main Street | 9 | 15.4 | 52.4 | 0.6 | 42 |
| Water Plant Road | 8 | 14.6 | 73.6 | 0.9 | 44 |
| Drewry Mason School | 7 | 3.9 | 33.0 | 0.4 | 41 |
| Covington Lane | 6 | 1.7 | 26.9 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.4 | 18.3 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.8 | 8.7 | 0.1 | 42 |
| Villa Road | 3 | 1.7 | 23.7 | 0.3 | 42 |
| | 20 | 0.8 | 7.8 | 0.1 | 40 |
| | 2 | 11.7 | 21.5 | 0.1 | 21 |
| | 12 | 3.0 | 11.6 | 0.1 | 34 |
| US 58 WB Ramp | 1 | 2.8 | 5.9 | 0.0 | 25 |
| Total | | 84.3 | 489.2 | 6.0 | 44 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 6.2 | 18.2 | 0.2 | 30 |
| | 12 | 1.2 | 3.4 | 0.0 | 44 |
| US 58 EB Ramp | 2 | 3.4 | 13.1 | 0.1 | 30 |
| | 20 | 1.7 | 11.8 | 0.1 | 38 |
| Kilarney Court | 3 | 0.4 | 7.1 | 0.1 | 44 |
| | 4 | 1.0 | 23.2 | 0.3 | 43 |
| Shamrock Drive | 5 | 0.5 | 8.5 | 0.1 | 42 |
| Covington Lane | 6 | 0.9 | 17.8 | 0.2 | 43 |
| Steve Drive | 7 | 1.6 | 26.5 | 0.3 | 43 |
| Water Plant Road | 8 | 7.7 | 36.2 | 0.4 | 37 |
| Soapstone Road | 9 | 11.3 | 70.1 | 0.9 | 47 |
| Morehead Ave | 10 | 10.9 | 48.7 | 0.6 | 45 |
| Lee Ford Camp Rd | 11 | 5.4 | 50.3 | 0.7 | 50 |
| | 38 | 1.4 | 34.0 | 0.5 | 53 |
| | 13 | 1.6 | 40.8 | 0.7 | 62 |
| | 80 | 0.6 | 15.3 | 0.2 | 53 |
| | 72 | 0.6 | 15.0 | 0.2 | 53 |
| | 79 | 0.8 | 17.0 | 0.2 | 52 |
| | 75 | 0.3 | 4.4 | 0.1 | 51 |
| | 74 | 1.4 | 6.3 | 0.1 | 53 |
| | 121 | 0.4 | 4.9 | 0.1 | 51 |
| US 220 Bypass EB Ram | 122 | 0.3 | 8.3 | 0.1 | 27 |
| Total | | 59.9 | 480.6 | 6.2 | 46 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| | 42 | 1.3 | 17.5 | 0.2 | 52 |
| US 220 Bypass EB Ram | 86 | 0.1 | 6.0 | 0.1 | 54 |
| | 85 | 0.2 | 18.4 | 0.3 | 59 |
| | 43 | 0.1 | 4.6 | 0.0 | 35 |
| | 14 | 0.8 | 50.7 | 0.8 | 54 |
| | 41 | 0.4 | 16.6 | 0.2 | 53 |
| | 44 | 0.5 | 17.3 | 0.3 | 53 |
| | 45 | 0.8 | 26.4 | 0.4 | 53 |
| | 46 | 1.2 | 35.7 | 0.5 | 53 |
| | 47 | 0.6 | 16.5 | 0.2 | 53 |
| | 48 | 0.8 | 19.8 | 0.3 | 53 |
| | 49 | 1.3 | 30.8 | 0.5 | 53 |
| | 50 | - | - | 0.1 | - |
| | 51 | - | - | 1.1 | - |
| | 52 | - | - | 0.2 | - |
| | 53 | - | - | 0.2 | - |
| | 54 | - | - | 0.2 | - |
| US 220 Bypass NB Ram | 63 | - | - | 0.1 | - |
| | 66 | - | - | 0.4 | - |
| | 55 | 0.2 | 20.9 | 0.1 | 20 |
| | 56 | 0.3 | 36.7 | 0.6 | 54 |
| | 57 | 0.1 | 7.4 | 0.1 | 54 |
| | 58 | 0.3 | 27.1 | 0.4 | 55 |
| US 220 EB Ramp | 141 | 0.1 | 13.9 | 0.2 | 55 |
| US 58 WB Ramp | 142 | 0.1 | 17.8 | 0.2 | 49 |
| Total | | 9.1 | 384.1 | 7.6 | 72 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 58 WB Ramp | 142 | 0.1 | 14.0 | 0.2 | 55 |
| US 58 EB Ramp | 141 | 0.8 | 15.6 | 0.2 | 56 |
| | 58 | 0.8 | 15.2 | 0.2 | 50 |
| | 57 | 0.5 | 27.4 | 0.4 | 54 |
| | 56 | 0.2 | 7.5 | 0.1 | 53 |
| | 55 | 1.3 | 37.2 | 0.6 | 53 |
| US 220 Bypass SB Ram | 66 | 0.2 | 7.9 | 0.1 | 53 |
| | 63 | 0.7 | 23.5 | 0.4 | 55 |
| | 54 | 0.3 | 9.2 | 0.1 | 48 |
| | 53 | 0.5 | 12.8 | 0.2 | 53 |
| | 52 | 0.6 | 13.6 | 0.2 | 53 |
| | 51 | 0.6 | 13.1 | 0.2 | 52 |
| | 50 | 3.6 | 71.3 | 1.1 | 53 |
| | 49 | 0.2 | 3.7 | 0.1 | 52 |
| | 48 | 1.1 | 30.6 | 0.5 | 53 |
| | 47 | 0.8 | 19.7 | 0.3 | 53 |
| | 46 | 0.6 | 16.5 | 0.2 | 53 |
| | 45 | - | - | 0.5 | - |
| | 44 | - | - | 0.4 | - |
| | 41 | - | - | 0.3 | - |
| | 14 | - | - | 0.2 | - |
| | 43 | - | - | 0.8 | - |
| US 220 Bypass WB Ram | 85 | - | - | 0.0 | - |
| | 86 | - | - | 0.3 | - |
| | 42 | - | - | 0.1 | - |
| Total | | 13.0 | 338.7 | 7.6 | 81 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 220 Bypass WB Ram | 121 | - | - | 0.1 | - |
| | 74 | 0.1 | 5.4 | 0.1 | 46 |
| | 75 | 0.0 | 6.1 | 0.1 | 53 |
| | 79 | 0.0 | 4.1 | 0.1 | 54 |
| | 72 | 0.1 | 16.4 | 0.2 | 54 |
| | 80 | 0.2 | 14.6 | 0.2 | 54 |
| | 13 | 0.2 | 15.0 | 0.2 | 54 |
| | 38 | 1.0 | 46.7 | 0.7 | 54 |
| Church St | 11 | 0.9 | 28.5 | 0.5 | 63 |
| Morehead Ave | 10 | 18.3 | 63.4 | 0.7 | 40 |
| Main Street | 9 | 23.7 | 60.3 | 0.6 | 36 |
| Water Plant Road | 8 | 15.5 | 72.3 | 0.9 | 45 |
| Drewry Mason School | 7 | 3.4 | 32.9 | 0.4 | 41 |
| Covington Lane | 6 | 1.6 | 26.8 | 0.3 | 43 |
| Shamrock Drive | 5 | 1.2 | 18.2 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.8 | 8.6 | 0.1 | 42 |
| Villa Road | 3 | 1.7 | 23.7 | 0.3 | 42 |
| | 20 | 0.7 | 7.7 | 0.1 | 40 |
| | 2 | 12.7 | 22.5 | 0.1 | 20 |
| | 12 | 2.9 | 11.5 | 0.1 | 34 |
| US 58 WB Ramp | 1 | 3.8 | 6.9 | 0.0 | 22 |
| Total | | 88.7 | 491.8 | 6.0 | 44 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 9.3 | 21.3 | 0.2 | 26 |
| | 12 | 1.5 | 3.7 | 0.0 | 40 |
| US 58 EB Ramp | 2 | 4.8 | 14.5 | 0.1 | 27 |
| | 20 | 3.0 | 13.1 | 0.1 | 34 |
| Kilarney Court | 3 | 0.7 | 7.4 | 0.1 | 42 |
| | 4 | 1.6 | 23.8 | 0.3 | 42 |
| Shamrock Drive | 5 | 0.8 | 8.7 | 0.1 | 41 |
| Covington Lane | 6 | 1.3 | 18.2 | 0.2 | 42 |
| Steve Drive | 7 | 2.4 | 27.5 | 0.3 | 42 |
| Water Plant Road | 8 | 9.5 | 38.1 | 0.4 | 35 |
| Soapstone Road | 9 | 20.6 | 79.3 | 0.9 | 41 |
| Morehead Ave | 10 | 13.9 | 51.2 | 0.6 | 43 |
| Lee Ford Camp Rd | 11 | 6.5 | 51.9 | 0.7 | 49 |
| | 38 | 1.6 | 34.0 | 0.5 | 53 |
| | 13 | 1.8 | 40.6 | 0.7 | 62 |
| | 80 | 0.7 | 15.3 | 0.2 | 53 |
| | 72 | 0.7 | 15.2 | 0.2 | 52 |
| | 79 | 1.0 | 17.2 | 0.2 | 52 |
| | 75 | 0.3 | 4.4 | 0.1 | 51 |
| | 74 | 1.4 | 7.1 | 0.1 | 46 |
| | 121 | 0.3 | 5.0 | 0.1 | 49 |
| US 220 Bypass EB Ram | 122 | 0.5 | 8.6 | 0.1 | 26 |
| Total | | 84.5 | 506.3 | 6.2 | 44 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| | 42 | 0.6 | 16.8 | 0.2 | 54 |
| US 220 Bypass EB Ram | 86 | 0.1 | 6.0 | 0.1 | 54 |
| | 85 | 0.3 | 18.5 | 0.3 | 58 |
| | 43 | 0.1 | 4.6 | 0.0 | 34 |
| | 14 | 1.2 | 51.2 | 0.8 | 54 |
| | 41 | 0.5 | 16.8 | 0.2 | 53 |
| | 44 | 0.6 | 17.4 | 0.3 | 53 |
| | 45 | 1.0 | 26.5 | 0.4 | 53 |
| | 46 | 1.5 | 35.8 | 0.5 | 53 |
| | 47 | 0.8 | 16.6 | 0.2 | 52 |
| | 48 | 0.9 | 19.9 | 0.3 | 52 |
| | 49 | 1.6 | 31.2 | 0.5 | 52 |
| | 50 | - | - | 0.1 | - |
| | 51 | - | - | 1.1 | - |
| | 52 | - | - | 0.2 | - |
| | 53 | - | - | 0.2 | - |
| | 54 | - | - | 0.2 | - |
| US 220 Bypass NB Ram | 63 | - | - | 0.1 | - |
| | 66 | - | - | 0.4 | - |
| | 55 | - | - | 0.1 | - |
| | 56 | 0.3 | 36.4 | 0.6 | 54 |
| | 57 | 0.1 | 7.3 | 0.1 | 55 |
| | 58 | 0.3 | 27.1 | 0.4 | 55 |
| US 58 EB Ramp | 141 | 0.2 | 14.1 | 0.2 | 54 |
| US 58 WB Ramp | 142 | 0.1 | 18.0 | 0.2 | 48 |
| Total | | 10.1 | 364.1 | 7.6 | 76 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 58 WB Ramp | 142 | 0.1 | 14.0 | 0.2 | 55 |
| US 58 EB Ramp | 141 | 0.3 | 15.2 | 0.2 | 57 |
| | 58 | 0.3 | 14.9 | 0.2 | 51 |
| | 57 | 0.2 | 27.3 | 0.4 | 54 |
| | 56 | 0.1 | 7.5 | 0.1 | 54 |
| | 55 | 0.7 | 36.8 | 0.6 | 54 |
| US 220 Bypass SB Ram | 66 | 0.1 | 7.8 | 0.1 | 54 |
| | 63 | 0.5 | 23.3 | 0.4 | 56 |
| | 54 | 0.2 | 9.1 | 0.1 | 48 |
| | 53 | 0.3 | 12.7 | 0.2 | 53 |
| | 52 | 0.4 | 13.5 | 0.2 | 53 |
| | 51 | 0.4 | 12.9 | 0.2 | 53 |
| | 50 | 2.6 | 70.8 | 1.1 | 54 |
| | 49 | 0.2 | 3.7 | 0.1 | 53 |
| | 48 | 1.0 | 30.6 | 0.5 | 53 |
| | 47 | 0.7 | 19.6 | 0.3 | 53 |
| | 46 | 0.6 | 16.5 | 0.2 | 53 |
| | 45 | - | - | 0.5 | - |
| | 44 | - | - | 0.4 | - |
| | 41 | - | - | 0.3 | - |
| | 14 | - | - | 0.2 | - |
| | 43 | - | - | 0.8 | - |
| US 220 Bypass WB Ram | 85 | - | - | 0.0 | - |
| | 86 | - | - | 0.3 | - |
| | 42 | - | - | 0.1 | - |
| Total | | 8.5 | 336.3 | 7.6 | 82 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|-----------|----------------|
| | 121 | 1.3 | 3.3 | 0.1 | 76 |
| | 74 | 0.3 | 5.7 | 0.1 | 44 |
| | 75 | 0.3 | 6.6 | 0.1 | 50 |
| | 79 | 0.1 | 4.3 | 0.1 | 52 |
| | 72 | 0.4 | 16.8 | 0.2 | 53 |
| | 80 | 0.4 | 14.8 | 0.2 | 53 |
| | 13 | 0.4 | 15.2 | 0.2 | 53 |
| | 38 | 1.8 | 47.5 | 0.7 | 53 |
| Church St | 11 | 1.8 | 33.7 | 0.5 | 53 |
| Morehead Ave | 10 | 23.9 | 68.9 | 0.7 | 37 |
| Main Street | 9 | 26.5 | 62.5 | 0.6 | 35 |
| Water Plant Road | 8 | 19.8 | 77.5 | 0.9 | 42 |
| Drewry Mason School | 7 | 4.7 | 34.0 | 0.4 | 40 |
| Covington Lane | 6 | 1.9 | 27.2 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.4 | 18.4 | 0.2 | 41 |
| Marrowbone Circle | 4 | 0.8 | 8.8 | 0.1 | 41 |
| Villa Road | 3 | 2.1 | 24.0 | 0.3 | 41 |
| | 20 | 1.0 | 8.1 | 0.1 | 39 |
| | 2 | 13.4 | 23.2 | 0.1 | 19 |
| | 12 | 3.4 | 12.1 | 0.1 | 33 |
| US 58 WB Ramp | 1 | 4.3 | 7.3 | 0.0 | 20 |
| Total | | 110.1 | 519.8 | 6.0 | 42 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|-----------|----------------|
| | 1 | 9.3 | 21.3 | 0.2 | 26 |
| | 12 | 1.6 | 3.7 | 0.0 | 41 |
| US 58 EB Ramp | 2 | 4.6 | 14.4 | 0.1 | 28 |
| | 20 | 2.3 | 12.5 | 0.1 | 36 |
| Kilarney Court | 3 | 0.5 | 7.2 | 0.1 | 43 |
| | 4 | 1.2 | 23.4 | 0.3 | 42 |
| Shamrock Drive | 5 | 0.5 | 8.5 | 0.1 | 42 |
| Covington Lane | 6 | 1.1 | 18.1 | 0.2 | 42 |
| Steve Drive | 7 | 2.0 | 27.1 | 0.3 | 42 |
| Water Plant Road | 8 | 9.4 | 38.0 | 0.4 | 36 |
| Soapstone Road | 9 | 19.7 | 78.6 | 0.9 | 42 |
| Morehead Ave | 10 | 15.0 | 52.6 | 0.6 | 41 |
| Lee Ford Camp Rd | 11 | 6.5 | 51.9 | 0.7 | 49 |
| | 38 | 1.6 | 34.0 | 0.5 | 53 |
| | 13 | 2.2 | 47.7 | 0.7 | 53 |
| | 80 | 0.9 | 15.5 | 0.2 | 52 |
| | 72 | 0.8 | 15.3 | 0.2 | 52 |
| | 79 | 1.3 | 17.5 | 0.2 | 51 |
| | 75 | 0.5 | 4.5 | 0.1 | 49 |
| | 74 | 1.8 | 7.5 | 0.1 | 43 |
| | 121 | 0.3 | 4.8 | 0.1 | 52 |
| | 122 | 0.4 | 8.5 | 0.1 | 26 |
| | 71 | 1.8 | 9.1 | 0.0 | 13 |
| Total | | 85.4 | 521.6 | 6.2 | 43 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|-----------|----------------|
| | 42 | 1.8 | 18.0 | 0.2 | 50 |
| | 86 | 0.1 | 6.0 | 0.1 | 54 |
| | 85 | 0.2 | 18.3 | 0.3 | 59 |
| | 43 | 0.1 | 4.6 | 0.0 | 35 |
| | 14 | 0.9 | 50.6 | 0.8 | 54 |
| | 41 | 0.4 | 16.7 | 0.2 | 53 |
| | 44 | 0.5 | 17.3 | 0.3 | 53 |
| | 45 | 0.8 | 26.3 | 0.4 | 53 |
| | 46 | 1.2 | 35.3 | 0.5 | 53 |
| | 47 | 0.6 | 16.5 | 0.2 | 53 |
| | 48 | 0.8 | 19.7 | 0.3 | 53 |
| | 49 | 1.3 | 30.7 | 0.5 | 53 |
| | 50 | - | - | 0.1 | - |
| | 51 | - | - | 1.1 | - |
| | 52 | - | - | 0.2 | - |
| | 53 | - | - | 0.2 | - |
| | 54 | - | - | 0.2 | - |
| | 63 | - | - | 0.1 | - |
| | 66 | - | - | 0.4 | - |
| | 55 | - | - | 0.1 | - |
| | 56 | 0.3 | 36.5 | 0.6 | 54 |
| | 57 | 0.1 | 7.4 | 0.1 | 54 |
| | 58 | 0.2 | 27.2 | 0.4 | 54 |
| | 141 | 0.1 | 14.1 | 0.2 | 54 |
| | 142 | 0.1 | 18.1 | 0.2 | 48 |
| Total | | 9.5 | 363.5 | 7.6 | 76 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|-----------|----------------|
| | 142 | 0.2 | 14.2 | 0.2 | 54 |
| | 141 | 1.3 | 16.2 | 0.2 | 53 |
| | 58 | 0.9 | 15.5 | 0.2 | 49 |
| | 57 | 0.6 | 27.7 | 0.4 | 53 |
| | 56 | 0.2 | 7.6 | 0.1 | 53 |
| | 55 | 1.6 | 37.7 | 0.6 | 53 |
| | 66 | 0.3 | 8.0 | 0.1 | 53 |
| | 63 | 1.0 | 23.7 | 0.4 | 55 |
| | 54 | 0.4 | 9.3 | 0.1 | 47 |
| | 53 | 0.6 | 13.0 | 0.2 | 52 |
| | 52 | 0.7 | 13.8 | 0.2 | 52 |
| | 51 | 0.7 | 13.3 | 0.2 | 52 |
| | 50 | 4.4 | 72.6 | 1.1 | 52 |
| | 49 | 0.2 | 3.7 | 0.1 | 51 |
| | 48 | 1.3 | 30.9 | 0.5 | 53 |
| | 47 | 0.8 | 19.8 | 0.3 | 52 |
| | 46 | 0.7 | 16.6 | 0.2 | 52 |
| | 45 | - | - | 0.5 | - |
| | 44 | - | - | 0.4 | - |
| | 41 | - | - | 0.3 | - |
| | 14 | - | - | 0.2 | - |
| | 43 | - | - | 0.8 | - |
| | 85 | - | - | 0.0 | - |
| | 86 | - | - | 0.3 | - |
| | 42 | - | - | 0.1 | - |
| Total | | 16.1 | 343.6 | 7.6 | 80 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|-----------|----------------|
| | 121 | 1.2 | 2.7 | 0.1 | 86 |
| | 74 | 0.2 | 5.6 | 0.1 | 44 |
| | 75 | 0.2 | 6.5 | 0.1 | 50 |
| | 79 | 0.1 | 4.3 | 0.1 | 52 |
| | 72 | 0.3 | 16.7 | 0.2 | 53 |
| | 80 | 0.2 | 14.7 | 0.2 | 54 |
| | 13 | 0.3 | 15.1 | 0.2 | 54 |
| | 38 | 1.2 | 46.8 | 0.7 | 54 |
| Church St | 11 | 1.3 | 32.7 | 0.5 | 55 |
| Morehead Ave | 10 | 25.5 | 70.6 | 0.7 | 36 |
| Main Street | 9 | 29.0 | 65.4 | 0.6 | 33 |
| Water Plant Road | 8 | 17.0 | 74.2 | 0.9 | 44 |
| Drewry Mason School | 7 | 3.9 | 33.5 | 0.4 | 40 |
| Covington Lane | 6 | 1.7 | 27.0 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.2 | 18.2 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.7 | 8.6 | 0.1 | 42 |
| Villa Road | 3 | 1.8 | 23.9 | 0.3 | 42 |
| | 20 | 0.8 | 7.9 | 0.1 | 40 |
| | 2 | 13.0 | 22.8 | 0.1 | 20 |
| | 12 | 3.5 | 12.1 | 0.1 | 33 |
| US 58 WB Ramp | 1 | 7.0 | 10.1 | 0.0 | 15 |
| Total | | 110.2 | 519.5 | 6.0 | 42 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 11.7 | 23.7 | 0.2 | 23 |
| | 12 | 1.5 | 3.6 | 0.0 | 41 |
| US 58 EB Ramp | 2 | 5.0 | 14.7 | 0.1 | 27 |
| | 20 | 3.3 | 13.4 | 0.1 | 34 |
| Kilarney Court | 3 | 0.8 | 7.5 | 0.1 | 42 |
| | 4 | 1.6 | 23.8 | 0.3 | 42 |
| Shamrock Drive | 5 | 0.8 | 8.7 | 0.1 | 41 |
| Covington Lane | 6 | 1.4 | 18.4 | 0.2 | 41 |
| Steve Drive | 7 | 2.5 | 27.7 | 0.3 | 41 |
| Water Plant Road | 8 | 10.2 | 38.7 | 0.4 | 35 |
| Soapstone Road | 9 | 22.8 | 81.5 | 0.9 | 40 |
| Morehead Ave | 10 | 16.2 | 53.3 | 0.6 | 41 |
| Lee Ford Camp Rd | 11 | 7.1 | 52.6 | 0.7 | 48 |
| | 38 | 1.7 | 34.2 | 0.5 | 52 |
| | 13 | 2.6 | 48.3 | 0.7 | 52 |
| | 80 | 1.0 | 15.6 | 0.2 | 52 |
| | 72 | 0.9 | 15.3 | 0.2 | 52 |
| | 79 | 1.0 | 17.2 | 0.2 | 52 |
| | 75 | 0.3 | 4.4 | 0.1 | 51 |
| | 74 | 1.2 | 6.9 | 0.1 | 48 |
| | 121 | 0.7 | 5.1 | 0.1 | 49 |
| | 122 | 1.0 | 9.3 | 0.1 | 24 |
| Total | | 95.3 | 523.9 | 6.2 | 43 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|-----------|----------------|
| | 42 | 1.0 | 17.2 | 0.2 | 53 |
| | 86 | 0.3 | 6.2 | 0.1 | 52 |
| | 85 | 1.3 | 19.4 | 0.3 | 55 |
| | 43 | 0.7 | 5.2 | 0.0 | 31 |
| | 14 | 3.4 | 53.2 | 0.8 | 51 |
| | 41 | 1.3 | 17.6 | 0.2 | 51 |
| | 44 | 1.4 | 18.3 | 0.3 | 51 |
| | 45 | 2.4 | 27.9 | 0.4 | 50 |
| | 46 | 3.4 | 37.7 | 0.5 | 50 |
| | 47 | 1.7 | 17.5 | 0.2 | 49 |
| | 48 | 2.0 | 20.9 | 0.3 | 50 |
| | 49 | 3.2 | 32.8 | 0.5 | 50 |
| | 50 | - | - | 0.1 | - |
| | 51 | - | - | 1.1 | - |
| | 52 | - | - | 0.2 | - |
| | 53 | - | - | 0.2 | - |
| | 54 | - | - | 0.2 | - |
| | 63 | - | - | 0.1 | - |
| | 66 | - | - | 0.4 | - |
| | 55 | - | - | 0.1 | - |
| | 56 | 0.6 | 36.9 | 0.6 | 54 |
| | 57 | 0.1 | 7.5 | 0.1 | 53 |
| | 58 | 0.6 | 27.5 | 0.4 | 54 |
| | 141 | 0.3 | 14.3 | 0.2 | 54 |
| | 142 | 0.5 | 20.0 | 0.2 | 43 |
| Total | | 24.2 | 380.1 | 7.6 | 72 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|-----------|----------------|
| | 142 | 0.4 | 14.4 | 0.2 | 54 |
| | 141 | 1.6 | 16.4 | 0.2 | 53 |
| | 58 | 1.3 | 15.9 | 0.2 | 48 |
| | 57 | 0.9 | 27.9 | 0.4 | 53 |
| | 56 | 0.3 | 7.7 | 0.1 | 52 |
| | 55 | 2.0 | 37.9 | 0.6 | 52 |
| | 66 | 0.4 | 8.1 | 0.1 | 52 |
| | 63 | 1.3 | 24.0 | 0.4 | 54 |
| | 54 | 0.6 | 9.4 | 0.1 | 46 |
| | 53 | 0.9 | 13.2 | 0.2 | 51 |
| | 52 | 0.9 | 14.0 | 0.2 | 51 |
| | 51 | 0.9 | 13.5 | 0.2 | 51 |
| | 50 | 5.8 | 74.1 | 1.1 | 51 |
| | 49 | 0.3 | 3.8 | 0.1 | 51 |
| | 48 | 1.8 | 31.3 | 0.5 | 52 |
| | 47 | 1.2 | 20.1 | 0.3 | 52 |
| | 46 | 1.0 | 16.9 | 0.2 | 52 |
| | 45 | - | - | 0.5 | - |
| | 44 | - | - | 0.4 | - |
| | 41 | - | - | 0.3 | - |
| | 14 | - | - | 0.2 | - |
| | 43 | - | - | 0.8 | - |
| | 85 | - | - | 0.0 | - |
| | 86 | - | - | 0.3 | - |
| | 42 | - | - | 0.1 | - |
| Total | | 21.6 | 348.4 | 7.6 | 79 |

APPENDIX I

FUTURE BUILD ALTERNATIVE B OPERATIONAL ANALYSIS
WORKSHEETS

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019




















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 231 | 97 | 730 | 553 | 53 |
| v/c Ratio | 0.66 | 0.23 | 0.39 | 0.28 | 0.06 |
| Control Delay | 33.2 | 6.0 | 2.6 | 8.7 | 1.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 33.2 | 6.0 | 2.6 | 8.7 | 1.8 |
| Queue Length 50th (ft) | 91 | 0 | 15 | 56 | 0 |
| Queue Length 95th (ft) | 136 | 28 | 20 | 102 | 10 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 537 | 590 | 1875 | 1945 | 943 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.43 | 0.16 | 0.39 | 0.28 | 0.06 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | |  |  | |  | | |  |  |
| Traffic Volume (vph) | 0 | 0 | 0 | 203 | 0 | 85 | 0 | 642 | 0 | 0 | 487 | 47 |
| Future Volume (vph) | 0 | 0 | 0 | 203 | 0 | 85 | 0 | 642 | 0 | 0 | 487 | 47 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 0 | 0 | 0 | 231 | 0 | 97 | 0 | 730 | 0 | 0 | 553 | 53 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 0 | 0 | 22 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 231 | 22 | 0 | 730 | 0 | 0 | 553 | 31 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 16% | 0% | 6% | 0% | 12% | 14% | 0% | 8% | 3% |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 |
| Actuated Green, G (s) | | | | | 15.8 | 15.8 | | 40.7 | | | 40.7 | 40.7 |
| Effective Green, g (s) | | | | | 15.8 | 15.8 | | 40.7 | | | 40.7 | 40.7 |
| Actuated g/C Ratio | | | | | 0.23 | 0.23 | | 0.58 | | | 0.58 | 0.58 |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 351 | 343 | | 1873 | | | 1943 | 911 |
| v/s Ratio Prot | | | | | | | | c0.23 | | | 0.17 | |
| v/s Ratio Perm | | | | | 0.15 | 0.01 | | | | | | 0.02 |
| v/c Ratio | | | | | 0.66 | 0.06 | | 0.39 | | | 0.28 | 0.03 |
| Uniform Delay, d1 | | | | | 24.6 | 21.3 | | 7.9 | | | 7.3 | 6.3 |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.24 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 4.4 | 0.1 | | 0.5 | | | 0.4 | 0.1 |
| Delay (s) | | | | | 29.1 | 21.4 | | 2.3 | | | 7.7 | 6.3 |
| Level of Service | | | | | C | C | | A | | | A | A |
| Approach Delay (s) | | 0.0 | | | 26.8 | | | 2.3 | | | 7.6 | |
| Approach LOS | | A | | | C | | | A | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 9.1 | | HCM 2000 Level of Service | | | | | | A | |
| HCM 2000 Volume to Capacity ratio | | | 0.46 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | Sum of lost time (s) | | | | | 13.5 | | |
| Intersection Capacity Utilization | | | 40.2% | | ICU Level of Service | | | | | A | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019





















| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 94 | 325 | 1053 | 300 | 97 | 688 |
| v/c Ratio | 0.37 | 0.78 | 0.67 | 0.34 | 0.50 | 0.32 |
| Control Delay | 30.6 | 21.4 | 18.0 | 4.7 | 43.5 | 4.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 30.6 | 21.4 | 18.0 | 4.7 | 43.5 | 4.2 |
| Queue Length 50th (ft) | 37 | 27 | 194 | 15 | 41 | 37 |
| Queue Length 95th (ft) | 73 | #123 | 263 | 56 | #88 | 62 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 311 | 457 | 1570 | 887 | 193 | 2184 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.30 | 0.71 | 0.67 | 0.34 | 0.50 | 0.32 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 2: US 220 Business & US 58 EB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  | |  | | | | |  |  |  |  | | |
| Traffic Volume (vph) | 83 | 0 | 286 | 0 | 0 | 0 | 0 | 927 | 264 | 85 | 605 | 0 | |
| Future Volume (vph) | 83 | 0 | 286 | 0 | 0 | 0 | 0 | 927 | 264 | 85 | 605 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 94 | 0 | 325 | 0 | 0 | 0 | 0 | 1053 | 300 | 97 | 688 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 218 | 0 | 0 | 0 | 0 | 0 | 128 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 94 | 0 | 107 | 0 | 0 | 0 | 0 | 1053 | 172 | 97 | 688 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 19% | 2% | 2% | 2% | 0% | 12% | 3% | 2% | 8% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 10.4 | | 10.4 | | | | | 32.7 | 32.7 | 6.2 | 45.7 | | |
| Effective Green, g (s) | 10.4 | | 10.4 | | | | | 32.7 | 32.7 | 6.2 | 45.7 | | |
| Actuated g/C Ratio | 0.15 | | 0.15 | | | | | 0.47 | 0.47 | 0.09 | 0.65 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 253 | | 201 | | | | | 1505 | 732 | 156 | 2182 | | |
| v/s Ratio Prot | | | | | | | | c0.33 | | c0.05 | 0.21 | | |
| v/s Ratio Perm | 0.06 | | c0.08 | | | | | | 0.11 | | | | |
| v/c Ratio | 0.37 | | 0.53 | | | | | 0.70 | 0.24 | 0.62 | 0.32 | | |
| Uniform Delay, d1 | 26.9 | | 27.6 | | | | | 14.8 | 11.2 | 30.8 | 5.3 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.14 | 0.67 | | |
| Incremental Delay, d2 | 0.9 | | 2.7 | | | | | 2.7 | 0.8 | 7.2 | 0.4 | | |
| Delay (s) | 27.8 | | 30.3 | | | | | 17.5 | 11.9 | 42.4 | 3.9 | | |
| Level of Service | C | | C | | | | | B | B | D | A | | |
| Approach Delay (s) | | 29.7 | | | 0.0 | | | 16.3 | | | 8.7 | | |
| Approach LOS | | C | | | A | | | B | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 16.1 | | | | | | | | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.65 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 49.8% | | | | | | | | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 18 | 2 | 16 | 6 | 0 | 7 | 2 | 1166 | 1 | 5 | 882 | 4 |
| Future Vol, veh/h | 18 | 2 | 16 | 6 | 0 | 7 | 2 | 1166 | 1 | 5 | 882 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 20 | 2 | 18 | 7 | 0 | 8 | 2 | 1325 | 1 | 6 | 1002 | 5 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1681 | 2344 | 501 | 1843 | 2348 | 663 | 1007 | 0 | 0 | 1326 | 0 | 0 |
| Stage 1 | 1014 | 1014 | - | 1329 | 1329 | - | - | - | - | - | - | - |
| Stage 2 | 667 | 1330 | - | 514 | 1019 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 63 | 37 | 521 | 48 | 37 | 383 | 696 | - | - | 527 | - | - |
| Stage 1 | 259 | 319 | - | 166 | 226 | - | - | - | - | - | - | - |
| Stage 2 | 419 | 226 | - | 517 | 317 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 61 | 36 | 521 | 44 | 36 | 383 | 696 | - | - | 527 | - | - |
| Mov Cap-2 Maneuver | 61 | 36 | - | 44 | 36 | - | - | - | - | - | - | - |
| Stage 1 | 258 | 315 | - | 166 | 225 | - | - | - | - | - | - | - |
| Stage 2 | 409 | 225 | - | 490 | 314 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | | |
|----------------------|----|--|------|--|----|--|-----|--|--|
| HCM Control Delay, s | 70 | | 56.8 | | 0 | | 0.1 | | |
| HCM LOS | F | | F | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 696 | - | - | 94 | 84 | 527 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | - | 0.435 | 0.176 | 0.011 | - | - |
| HCM Control Delay (s) | 10.2 | - | - | 70 | 56.8 | 11.9 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.8 | 0.6 | 0 | - | - |

HCM 6th TWSC
4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | ↔ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 20 | 0 | 40 | 0 | 1129 | 6 | 3 | 901 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 20 | 0 | 40 | 0 | 1129 | 6 | 3 | 901 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 23 | 0 | 45 | 0 | 1283 | 7 | 3 | 1024 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 1672 | 2320 | 512 | 1801 | 2313 | 642 | - | 0 | 0 | 1290 | 0 | 0 |
| Stage 1 | 1030 | 1030 | - | 1283 | 1283 | - | - | - | - | - | - | - |
| Stage 2 | 642 | 1290 | - | 518 | 1030 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 64 | 38 | 512 | 51 | 38 | 405 | 0 | - | - | 544 | - | 0 |
| Stage 1 | 254 | 313 | - | 178 | 238 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 434 | 236 | - | 514 | 313 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 57 | 38 | 512 | 51 | 38 | 405 | - | - | - | 544 | - | - |
| Mov Cap-2 Maneuver | 57 | 38 | - | 51 | 38 | - | - | - | - | - | - | - |
| Stage 1 | 254 | 311 | - | 178 | 238 | - | - | - | - | - | - | - |
| Stage 2 | 385 | 236 | - | 511 | 311 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|----|
| HCM Control Delay, s | 0 | 66.7 | 0 | 0 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-------|-----|
| Capacity (veh/h) | - | - | - | 122 | 544 | - |
| HCM Lane V/C Ratio | - | - | - | 0.559 | 0.006 | - |
| HCM Control Delay (s) | - | - | 0 | 66.7 | 11.7 | - |
| HCM Lane LOS | - | - | A | F | B | - |
| HCM 95th %tile Q(veh) | - | - | - | 2.7 | 0 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 33.9 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 144 | 23 | 0 | 991 | 909 | 12 |
| Future Vol, veh/h | 144 | 23 | 0 | 991 | 909 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 12 | 16 | 0 |
| Mvmt Flow | 164 | 26 | 0 | 1126 | 1033 | 14 |

| Major/Minor | Minor2 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | 1596 | 517 | - | 0 | - |
| Stage 1 | 1033 | - | - | - | - |
| Stage 2 | 563 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - |
| Pot Cap-1 Maneuver | ~ 99 | 509 | 0 | - | - |
| Stage 1 | 309 | - | 0 | - | - |
| Stage 2 | 539 | - | 0 | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | ~ 99 | 509 | - | - | - |
| Mov Cap-2 Maneuver | ~ 99 | - | - | - | - |
| Stage 1 | 309 | - | - | - | - |
| Stage 2 | 539 | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|----|----|
| HCM Control Delay, s | \$ 421.7 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT EBLn1 | SBT | SBR |
|-----------------------|-----------|-----|-----|
| Capacity (veh/h) | - 111 | - | - |
| HCM Lane V/C Ratio | - 1.71 | - | - |
| HCM Control Delay (s) | \$ 421.7 | - | - |
| HCM Lane LOS | - F | - | - |
| HCM 95th %tile Q(veh) | - 14.7 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | TT | | TT | T | T | TT |
| Traffic Vol, veh/h | 28 | 68 | 923 | 5 | 14 | 918 |
| Future Vol, veh/h | 28 | 68 | 923 | 5 | 14 | 918 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 12 | 0 | 0 | 17 |
| Mvmt Flow | 32 | 77 | 1049 | 6 | 16 | 1043 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 1603 | 525 | 0 | 0 | 1055 |
| Stage 1 | 1049 | - | - | - | - |
| Stage 2 | 554 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 98 | 502 | - | - | 668 |
| Stage 1 | 303 | - | - | - | - |
| Stage 2 | 545 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 96 | 502 | - | - | 668 |
| Mov Cap-2 Maneuver | 96 | - | - | - | - |
| Stage 1 | 303 | - | - | - | - |
| Stage 2 | 532 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 35.2 | 0 | 0.2 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 225 | 668 |
| HCM Lane V/C Ratio | - | - | 0.485 | 0.024 |
| HCM Control Delay (s) | - | - | 35.2 | 10.5 |
| HCM Lane LOS | - | - | E | B |
| HCM 95th %tile Q(veh) | - | - | 2.4 | 0.1 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | | | ↗ | ↑↑ | ↖ | ↗ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 928 | 114 | 116 | 817 | 13 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 928 | 114 | 116 | 817 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 12 | 0 | 3 | 17 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1055 | 130 | 132 | 928 | 15 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1732 | 2389 | 472 | | | | 943 | 0 | 0 | 1185 | 0 | 0 |
| Stage 1 | 1200 | 1200 | - | | | | - | - | - | - | - | - |
| Stage 2 | 532 | 1189 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 81 | 34 | 544 | | | | 736 | - | - | 579 | - | - |
| Stage 1 | 252 | 261 | - | | | | - | - | - | - | - | - |
| Stage 2 | 559 | 264 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 62 | 0 | 544 | | | | 736 | - | - | 579 | - | - |
| Mov Cap-2 Maneuver | 62 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 251 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 432 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 1.6 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 736 | - | - | - | 579 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | - | - | 0.228 | - | - |
| HCM Control Delay (s) | 9.9 | - | - | 0 | 13 | - | - |
| HCM Lane LOS | A | - | - | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.9 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019



| Lane Group | EBL | EBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 125 | 40 | 40 | 1061 | 1 | 40 | 774 | 115 |
| v/c Ratio | 0.57 | 0.16 | 0.24 | 0.59 | 0.00 | 0.22 | 0.46 | 0.12 |
| Control Delay | 37.4 | 13.0 | 29.4 | 12.2 | 0.0 | 29.3 | 10.7 | 0.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 37.4 | 13.0 | 29.4 | 12.2 | 0.0 | 29.3 | 10.7 | 0.2 |
| Queue Length 50th (ft) | 35 | 1 | 11 | 91 | 0 | 11 | 60 | 0 |
| Queue Length 95th (ft) | #111 | 25 | 41 | 228 | 0 | 41 | 156 | 0 |
| Internal Link Dist (ft) | | 711 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 222 | 261 | 177 | 1806 | 815 | 182 | 1694 | 988 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.56 | 0.15 | 0.23 | 0.59 | 0.00 | 0.22 | 0.46 | 0.12 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 Business & Water Plant Road

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 110 | 4 | 31 | 0 | 0 | 0 | 35 | 934 | 1 | 35 | 681 | 101 |
| Future Volume (veh/h) | 110 | 4 | 31 | 0 | 0 | 0 | 35 | 934 | 1 | 35 | 681 | 101 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1752 | 1470 | 1900 | 1648 | 1856 |
| Adj Flow Rate, veh/h | 125 | 5 | 35 | 0 | 0 | 0 | 40 | 1061 | 1 | 40 | 774 | 115 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 10 | 29 | 0 | 17 | 3 |
| Cap, veh/h | 166 | 21 | 149 | 3 | 3 | 3 | 79 | 1653 | 619 | 88 | 1576 | 791 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.05 | 0.50 | 0.50 | 0.05 | 0.50 | 0.50 |
| Sat Flow, veh/h | 1598 | 205 | 1436 | 1810 | 1900 | 1610 | 1626 | 3328 | 1246 | 1810 | 3131 | 1572 |
| Grp Volume(v), veh/h | 125 | 0 | 40 | 0 | 0 | 0 | 40 | 1061 | 1 | 40 | 774 | 115 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1641 | 1810 | 1900 | 1610 | 1626 | 1664 | 1246 | 1810 | 1566 | 1572 |
| Q Serve(g_s), s | 4.6 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 1.4 | 14.2 | 0.0 | 1.3 | 9.8 | 2.4 |
| Cycle Q Clear(g_c), s | 4.6 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 1.4 | 14.2 | 0.0 | 1.3 | 9.8 | 2.4 |
| Prop In Lane | 1.00 | | 0.88 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 166 | 0 | 170 | 3 | 3 | 3 | 79 | 1653 | 619 | 88 | 1576 | 791 |
| V/C Ratio(X) | 0.75 | 0.00 | 0.23 | 0.00 | 0.00 | 0.00 | 0.51 | 0.64 | 0.00 | 0.46 | 0.49 | 0.15 |
| Avail Cap(c_a), veh/h | 222 | 0 | 228 | 180 | 189 | 160 | 178 | 1653 | 619 | 180 | 1576 | 791 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 26.3 | 0.0 | 24.9 | 0.0 | 0.0 | 0.0 | 28.0 | 11.2 | 7.7 | 28.0 | 9.9 | 8.0 |
| Incr Delay (d2), s/veh | 9.6 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 4.9 | 1.9 | 0.0 | 3.6 | 1.1 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 3.9 | 0.0 | 0.6 | 2.7 | 0.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 35.9 | 0.0 | 25.6 | 0.0 | 0.0 | 0.0 | 33.0 | 13.2 | 7.7 | 31.6 | 11.0 | 8.4 |
| LnGrp LOS | D | A | C | A | A | A | C | B | A | C | B | A |
| Approach Vol, veh/h | | 165 | | | 0 | | | 1102 | | | 929 | |
| Approach Delay, s/veh | | 33.4 | | | 0.0 | | | 13.9 | | | 11.6 | |
| Approach LOS | | C | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 10.6 | 35.9 | | 0.0 | 10.2 | 36.3 | | 13.9 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 6 | 30.0 | | * 6 | * 6.6 | 29.8 | | 8.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 3.3 | 16.2 | | 0.0 | 3.4 | 11.8 | | 6.6 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.6 | | 0.0 | 0.0 | 5.1 | | 0.1 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 14.4 |
| HCM 6th LOS | B |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | NBL | NBT | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 67 | 48 | 31 | 1051 | 77 | 666 | 66 |
| v/c Ratio | 0.29 | 0.13 | 0.17 | 0.60 | 0.44 | 0.34 | 0.06 |
| Control Delay | 28.6 | 0.7 | 29.6 | 15.1 | 35.9 | 9.2 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 28.6 | 0.7 | 29.6 | 15.1 | 35.9 | 9.2 | 0.1 |
| Queue Length 50th (ft) | 24 | 0 | 11 | 166 | 29 | 47 | 0 |
| Queue Length 95th (ft) | 55 | 0 | 34 | 242 | 66 | 134 | 0 |
| Internal Link Dist (ft) | 631 | | | 3118 | | 4723 | |
| Turn Bay Length (ft) | | 25 | 100 | | 225 | | 225 |
| Base Capacity (vph) | 541 | 623 | 179 | 1760 | 177 | 1975 | 1121 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.12 | 0.08 | 0.17 | 0.60 | 0.44 | 0.34 | 0.06 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↗ | ↖ | ↗ | ↖ | ↗ |
| Traffic Volume (veh/h) | 45 | 14 | 42 | 0 | 0 | 0 | 27 | 925 | 0 | 68 | 586 | 58 |
| Future Volume (veh/h) | 45 | 14 | 42 | 0 | 0 | 0 | 27 | 925 | 0 | 68 | 586 | 58 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1693 | 1900 | 1885 | 1633 | 1900 |
| Adj Flow Rate, veh/h | 51 | 16 | 48 | 0 | 0 | 0 | 31 | 1051 | 0 | 77 | 666 | 66 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 14 | 0 | 1 | 18 | 0 |
| Cap, veh/h | 117 | 37 | 139 | 0 | 3 | 3 | 73 | 1548 | 775 | 131 | 1616 | 838 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.00 | 0.00 | 0.00 | 0.04 | 0.48 | 0.00 | 0.07 | 0.52 | 0.52 |
| Sat Flow, veh/h | 1361 | 427 | 1610 | 0 | 1900 | 1585 | 1810 | 3216 | 1610 | 1795 | 3103 | 1610 |
| Grp Volume(v), veh/h | 67 | 0 | 48 | 0 | 0 | 0 | 31 | 1051 | 0 | 77 | 666 | 66 |
| Grp Sat Flow(s),veh/h/ln | 1788 | 0 | 1610 | 0 | 1900 | 1585 | 1810 | 1608 | 1610 | 1795 | 1552 | 1610 |
| Q Serve(g_s), s | 2.1 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 1.0 | 14.9 | 0.0 | 2.5 | 7.7 | 1.2 |
| Cycle Q Clear(g_c), s | 2.1 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 1.0 | 14.9 | 0.0 | 2.5 | 7.7 | 1.2 |
| Prop In Lane | 0.76 | | 1.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 154 | 0 | 139 | 0 | 3 | 3 | 73 | 1548 | 775 | 131 | 1616 | 838 |
| V/C Ratio(X) | 0.43 | 0.00 | 0.35 | 0.00 | 0.00 | 0.00 | 0.42 | 0.68 | 0.00 | 0.59 | 0.41 | 0.08 |
| Avail Cap(c_a), veh/h | 545 | 0 | 491 | 0 | 580 | 484 | 184 | 1548 | 775 | 183 | 1616 | 838 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 25.6 | 0.0 | 25.4 | 0.0 | 0.0 | 0.0 | 27.6 | 11.8 | 0.0 | 26.5 | 8.6 | 7.1 |
| Incr Delay (d2), s/veh | 1.9 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 | 3.8 | 2.4 | 0.0 | 4.2 | 0.8 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.4 | 4.0 | 0.0 | 1.1 | 1.8 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 27.5 | 0.0 | 26.9 | 0.0 | 0.0 | 0.0 | 31.5 | 14.2 | 0.0 | 30.6 | 9.4 | 7.3 |
| LnGrp LOS | C | A | C | A | A | A | C | B | A | C | A | A |
| Approach Vol, veh/h | | 115 | | | 0 | | | 1082 | | | 809 | |
| Approach Delay, s/veh | | 27.2 | | | 0.0 | | | 14.7 | | | 11.3 | |
| Approach LOS | | C | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.0 | 34.3 | | 0.0 | 9.7 | 36.6 | | 12.7 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 6 | 28.4 | | * 18 | * 6 | 28.8 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.5 | 16.9 | | 0.0 | 3.0 | 9.7 | | 4.1 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.0 | | 0.0 | 0.0 | 4.0 | | 0.3 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 14.0 |
| HCM 6th LOS | B |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 66 | 557 | 525 | 6 | 252 | 461 |
| v/c Ratio | 0.20 | 0.87 | 0.64 | 0.02 | 0.56 | 0.28 |
| Control Delay | 21.4 | 23.2 | 23.7 | 10.8 | 12.6 | 8.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.4 | 23.2 | 23.7 | 10.8 | 12.6 | 8.1 |
| Queue Length 50th (ft) | 20 | 44 | 87 | 0 | 44 | 43 |
| Queue Length 95th (ft) | 48 | #203 | 130 | 7 | 78 | 65 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 329 | 643 | 826 | 398 | 451 | 1624 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.87 | 0.64 | 0.02 | 0.56 | 0.28 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | ↶ | ↶↷ | ↶↷ | ↶↷ | ↶↷ | ↶↷ |
| Traffic Volume (veh/h) | 58 | 490 | 462 | 5 | 222 | 406 |
| Future Volume (veh/h) | 58 | 490 | 462 | 5 | 222 | 406 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1678 | 1781 | 1678 | 1781 | 1841 | 1604 |
| Adj Flow Rate, veh/h | 66 | 557 | 525 | 6 | 252 | 461 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 8 | 15 | 8 | 4 | 20 |
| Cap, veh/h | 336 | 318 | 841 | 398 | 453 | 1642 |
| Arrive On Green | 0.21 | 0.21 | 0.26 | 0.26 | 0.13 | 0.54 |
| Sat Flow, veh/h | 1598 | 1510 | 3272 | 1510 | 1753 | 3127 |
| Grp Volume(v), veh/h | 66 | 557 | 525 | 6 | 252 | 461 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 1510 | 1594 | 1510 | 1753 | 1523 |
| Q Serve(g_s), s | 2.0 | 12.6 | 8.7 | 0.2 | 5.7 | 4.9 |
| Cycle Q Clear(g_c), s | 2.0 | 12.6 | 8.7 | 0.2 | 5.7 | 4.9 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 336 | 318 | 841 | 398 | 453 | 1642 |
| V/C Ratio(X) | 0.20 | 1.75 | 0.62 | 0.02 | 0.56 | 0.28 |
| Avail Cap(c_a), veh/h | 336 | 318 | 841 | 398 | 456 | 1649 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.5 | 23.6 | 19.4 | 16.3 | 12.8 | 7.5 |
| Incr Delay (d2), s/veh | 1.3 | 351.7 | 3.5 | 0.1 | 1.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 35.2 | 3.0 | 0.1 | 1.8 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 20.8 | 375.4 | 22.9 | 16.4 | 14.2 | 7.6 |
| LnGrp LOS | C | F | C | B | B | A |
| Approach Vol, veh/h | 623 | | 531 | | | 713 |
| Approach Delay, s/veh | 337.8 | | 22.8 | | | 9.9 |
| Approach LOS | F | | C | | | A |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 16.5 | 24.4 | | 19.0 | | 40.9 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 8 | * 16 | | 12.6 | | * 32 |
| Max Q Clear Time (g_c+I1), s | 7.7 | 10.7 | | 14.6 | | 6.9 |
| Green Ext Time (p_c), s | 0.0 | 1.4 | | 0.0 | | 2.7 |

Intersection Summary

| | |
|--------------------|-------|
| HCM 6th Ctrl Delay | 123.0 |
| HCM 6th LOS | F |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
 11: US 220 Business & Lee Ford Camp Rd/Church St

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 27 | 13 | 11 | 11 | 20 | 12 | 7 | 428 | 32 | 10 | 434 | 20 |
| Future Vol, veh/h | 27 | 13 | 11 | 11 | 20 | 12 | 7 | 428 | 32 | 10 | 434 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 20 | 2 |
| Mvmt Flow | 31 | 15 | 13 | 13 | 23 | 14 | 8 | 486 | 36 | 11 | 493 | 23 |

| Major/Minor | Minor2 | | Minor1 | | | Major1 | | | Major2 | | | |
|----------------------|--------|------|--------|------|------|--------|------|---|--------|------|---|---|
| Conflicting Flow All | 786 | 1053 | 247 | 778 | 1040 | 243 | 516 | 0 | 0 | 522 | 0 | 0 |
| Stage 1 | 515 | 515 | - | 502 | 502 | - | - | - | - | - | - | - |
| Stage 2 | 271 | 538 | - | 276 | 538 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 283 | 225 | 753 | 286 | 229 | 758 | 1046 | - | - | 1041 | - | - |
| Stage 1 | 511 | 533 | - | 520 | 540 | - | - | - | - | - | - | - |
| Stage 2 | 712 | 521 | - | 707 | 521 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 253 | 221 | 753 | 263 | 225 | 758 | 1046 | - | - | 1041 | - | - |
| Mov Cap-2 Maneuver | 253 | 221 | - | 263 | 225 | - | - | - | - | - | - | - |
| Stage 1 | 507 | 527 | - | 516 | 536 | - | - | - | - | - | - | - |
| Stage 2 | 664 | 517 | - | 669 | 515 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | | NB | | | SB | | |
|----------------------|----|--|------|--|--|-----|--|--|-----|--|--|
| HCM Control Delay, s | 21 | | 19.7 | | | 0.1 | | | 0.2 | | |
| HCM LOS | C | | C | | | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1046 | - | - | 283 | 293 | 1041 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.205 | 0.167 | 0.011 | - | - |
| HCM Control Delay (s) | 8.5 | - | - | 21 | 19.7 | 8.5 | - | - |
| HCM Lane LOS | A | - | - | C | C | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.8 | 0.6 | 0 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↗ | ↘ | ↗ | | | ↗ | ↘ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 46 | 32 | 421 | 0 | 0 | 33 | 423 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 46 | 32 | 421 | 0 | 0 | 33 | 423 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 2 | 20 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 52 | 36 | 478 | 0 | 0 | 38 | 481 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 829 | - 478 519 | 0 - - - 0 |
| Stage 1 | 550 | - - - | - - - - - |
| Stage 2 | 279 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 340 | 0 587 1047 | - 0 0 - - |
| Stage 1 | 578 | 0 - - | - 0 0 - - |
| Stage 2 | 768 | 0 - - | - 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 328 | 0 587 1047 | - - - - - |
| Mov Cap-2 Maneuver | 328 | 0 - - | - - - - - |
| Stage 1 | 558 | 0 - - | - - - - - |
| Stage 2 | 768 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 11.7 | 0.6 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 1047 | - - 587 | - - | |
| HCM Lane V/C Ratio | 0.035 | - - 0.089 | - - | |
| HCM Control Delay (s) | 8.6 | - 0 11.7 | - - | |
| HCM Lane LOS | A | - A B | - - | |
| HCM 95th %tile Q(veh) | 0.1 | - - 0.3 | - - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 453 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 |
| Future Vol, veh/h | 453 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 15 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 515 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 76 | 76 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 76 | 76 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.55 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.635 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 896 | 814 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 915 | 832 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 896 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 896 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 915 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | | 0 | |
| HCM LOS | - | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 896 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.575 | - | - | - |
| HCM Control Delay (s) | - | - | 14.3 | - | - | - |
| HCM Lane LOS | - | - | B | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 3.8 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 4.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | ↑ | | ↑ |
| Traffic Vol, veh/h | 0 | 138 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 99 |
| Future Vol, veh/h | 0 | 138 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 99 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 157 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 113 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 157 | 0 | 0 | | | 158 | - | 1 |
| Stage 1 | - | - | - | - | - | - | | | 1 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 157 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1423 | - | 0 | | | 833 | 0 | 1084 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 1022 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 871 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1423 | - | - | | | 833 | 0 | 1084 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 833 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 1022 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 871 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 8.9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1423 | - | 833 | 1084 |
| HCM Lane V/C Ratio | - | - | - | - | 0.045 | 0.104 |
| HCM Control Delay (s) | - | - | 0 | - | 9.5 | 8.7 |
| HCM Lane LOS | - | - | A | - | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 | 0.3 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | ↘ | | ↘ | | | |
| Traffic Vol, veh/h | 94 | 77 | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 94 | 77 | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | 0 | - | 100 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 107 | 88 | 0 | 0 | 0 | 68 | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 68 | 0 | 0 |
| Stage 1 | - | - | 302 |
| Stage 2 | - | - | 34 |
| Critical Hdwy | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | 1533 | 0 | 0 |
| Stage 1 | - | 0 | 750 |
| Stage 2 | - | 0 | 988 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1533 | - | 613 |
| Mov Cap-2 Maneuver | - | - | 613 |
| Stage 1 | - | - | 698 |
| Stage 2 | - | - | 988 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 4.1 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1533 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.07 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 7.5 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 15 | 22 | 263 | 0 | 24 | 12 | 100 | 29 | 55 |
| Future Vol, veh/h | 0 | 0 | 0 | 15 | 22 | 263 | 0 | 24 | 12 | 100 | 29 | 55 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 17 | 25 | 299 | 0 | 27 | 14 | 114 | 33 | 63 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|----------------------|--------|-------|--------|-------|--------|-------|
| Conflicting Flow All | 327 | 358 | 34 | 96 | 0 | 41 |
| Stage 1 | 34 | 34 | - | - | - | - |
| Stage 2 | 293 | 324 | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | 4.12 | - | 4.12 |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 2.218 | - | 2.218 |
| Pot Cap-1 Maneuver | 667 | 568 | 1039 | 1498 | - | 1568 |
| Stage 1 | 988 | 867 | - | - | - | - |
| Stage 2 | 757 | 650 | - | - | - | - |
| Platoon blocked, % | | | | | - | - |
| Mov Cap-1 Maneuver | 618 | 0 | 1039 | 1498 | - | 1568 |
| Mov Cap-2 Maneuver | 618 | 0 | - | - | - | - |
| Stage 1 | 988 | 0 | - | - | - | - |
| Stage 2 | 702 | 0 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.1 | 0 | 4.1 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1498 | - | - | 618 | 1039 | 1568 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.028 | 0.312 | 0.072 | - | - |
| HCM Control Delay (s) | 0 | - | - | 11 | 10 | 7.5 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 1.3 | 0.2 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.8 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 27 | 85 | 43 | 60 | 240 | 10 |
| Future Vol, veh/h | 27 | 85 | 43 | 60 | 240 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 31 | 97 | 49 | 68 | 273 | 11 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 128 | 0 | 246 |
| Stage 1 | - | - | - | - | 80 |
| Stage 2 | - | - | - | - | 166 |
| Critical Hdwy | - | - | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | - | - | 1458 | - | 742 |
| Stage 1 | - | - | - | - | 943 |
| Stage 2 | - | - | - | - | 863 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1458 | - | 716 |
| Mov Cap-2 Maneuver | - | - | - | - | 716 |
| Stage 1 | - | - | - | - | 943 |
| Stage 2 | - | - | - | - | 833 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 3.2 | 13.1 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 724 | - | - | 1458 | - |
| HCM Lane V/C Ratio | 0.392 | - | - | 0.034 | - |
| HCM Control Delay (s) | 13.1 | - | - | 7.6 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 1.9 | - | - | 0.1 | - |

HCM 6th TWSC
 145: Fisher Farm Rd & US 58 WB Ramp

04/02/2019

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 2 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↔ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 9 | 70 | 180 | 0 | 0 | 128 |
| Future Vol, veh/h | 9 | 70 | 180 | 0 | 0 | 128 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 80 | 205 | 0 | 0 | 145 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 350 | 205 | 0 | - | - | - |
| Stage 1 | 205 | - | - | - | - | - |
| Stage 2 | 145 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | - | - |
| Pot Cap-1 Maneuver | 647 | 836 | - | 0 | 0 | - |
| Stage 1 | 829 | - | - | 0 | 0 | - |
| Stage 2 | 882 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 647 | 836 | - | - | - | - |
| Mov Cap-2 Maneuver | 647 | - | - | - | - | - |
| Stage 1 | 829 | - | - | - | - | - |
| Stage 2 | 882 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 10 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 809 | - |
| HCM Lane V/C Ratio | - 0.111 | - |
| HCM Control Delay (s) | - 10 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.4 | - |

HCM 6th TWSC
146: Fisher Farm Rd & US 58 EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 90 | 0 | 25 | 0 | 0 | 0 | 0 | 90 | 24 | 68 | 69 | 0 |
| Future Vol, veh/h | 90 | 0 | 25 | 0 | 0 | 0 | 0 | 90 | 24 | 68 | 69 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 102 | 0 | 28 | 0 | 0 | 0 | 0 | 102 | 27 | 77 | 78 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 348 | 361 | 78 | - | 0 | 0 | 129 | 0 | 0 |
| Stage 1 | 232 | 232 | - | - | - | - | - | - | - |
| Stage 2 | 116 | 129 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 649 | 566 | 983 | 0 | - | - | 1457 | - | 0 |
| Stage 1 | 807 | 713 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 909 | 789 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 613 | 0 | 983 | - | - | - | 1457 | - | - |
| Mov Cap-2 Maneuver | 613 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 807 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 859 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 11.7 | 0 | 3.8 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|
| Capacity (veh/h) | - | - | 668 | 1457 | - |
| HCM Lane V/C Ratio | - | - | 0.196 | 0.053 | - |
| HCM Control Delay (s) | - | - | 11.7 | 7.6 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.7 | 0.2 | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019



| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 351 | 124 | 565 | 819 | 85 |
| v/c Ratio | 0.76 | 0.23 | 0.33 | 0.46 | 0.10 |
| Control Delay | 35.5 | 4.4 | 3.5 | 13.9 | 3.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 35.5 | 4.4 | 3.5 | 13.9 | 3.6 |
| Queue Length 50th (ft) | 158 | 0 | 18 | 123 | 0 |
| Queue Length 95th (ft) | 208 | 29 | m21 | 207 | 23 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 645 | 705 | 1718 | 1782 | 875 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.18 | 0.33 | 0.46 | 0.10 |



















Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 309 | 0 | 109 | 0 | 497 | 0 | 0 | 721 | 75 | |
| Future Volume (vph) | 0 | 0 | 0 | 309 | 0 | 109 | 0 | 497 | 0 | 0 | 721 | 75 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 351 | 0 | 124 | 0 | 565 | 0 | 0 | 819 | 85 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 87 | 0 | 0 | 0 | 0 | 0 | 40 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 351 | 37 | 0 | 565 | 0 | 0 | 819 | 45 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 16% | 0% | 6% | 0% | 12% | 14% | 0% | 8% | 3% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 23.8 | 23.8 | | 42.7 | | | 42.7 | 42.7 | |
| Effective Green, g (s) | | | | | 23.8 | 23.8 | | 42.7 | | | 42.7 | 42.7 | |
| Actuated g/C Ratio | | | | | 0.30 | 0.30 | | 0.53 | | | 0.53 | 0.53 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | | | | 462 | 453 | | 1720 | | | 1784 | 836 | |
| v/s Ratio Prot | | | | | | | | 0.18 | | | c0.25 | | |
| v/s Ratio Perm | | | | | 0.23 | 0.02 | | | | | | 0.03 | |
| v/c Ratio | | | | | 0.76 | 0.08 | | 0.33 | | | 0.46 | 0.05 | |
| Uniform Delay, d1 | | | | | 25.5 | 20.2 | | 10.5 | | | 11.5 | 9.0 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.27 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 7.1 | 0.1 | | 0.3 | | | 0.9 | 0.1 | |
| Delay (s) | | | | | 32.6 | 20.3 | | 3.1 | | | 12.4 | 9.1 | |
| Level of Service | | | | | C | C | | A | | | B | A | |
| Approach Delay (s) | | 0.0 | | | 29.4 | | | 3.1 | | | 12.1 | | |
| Approach LOS | | A | | | C | | | A | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 13.7 | | HCM 2000 Level of Service | | | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.57 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | Sum of lost time (s) | | | | | 13.5 | | | |
| Intersection Capacity Utilization | | | 75.8% | | ICU Level of Service | | | | | D | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 107 | 536 | 901 | 223 | 159 | 1011 |
| v/c Ratio | 0.19 | 1.00 | 0.91 | 0.37 | 0.85 | 0.61 |
| Control Delay | 20.4 | 61.8 | 42.0 | 8.5 | 71.1 | 14.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.4 | 61.8 | 42.0 | 8.5 | 71.1 | 14.1 |
| Queue Length 50th (ft) | 38 | 211 | 226 | 20 | 80 | 141 |
| Queue Length 95th (ft) | 73 | #407 | #328 | 67 | #180 | 244 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 559 | 536 | 987 | 596 | 188 | 1663 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.19 | 1.00 | 0.91 | 0.37 | 0.85 | 0.61 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
|-----------------------------------|------|------|-------|------|------|------|------|-------|------|------|-------|---------------------------|------|
| Lane Configurations | ↖ | | ↗ | | | | | ↑↑ | ↖ | ↗ | ↑↑ | | |
| Traffic Volume (vph) | 94 | 0 | 472 | 0 | 0 | 0 | 0 | 793 | 196 | 140 | 890 | 0 | |
| Future Volume (vph) | 94 | 0 | 472 | 0 | 0 | 0 | 0 | 793 | 196 | 140 | 890 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 107 | 0 | 536 | 0 | 0 | 0 | 0 | 901 | 223 | 159 | 1011 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 107 | 0 | 446 | 0 | 0 | 0 | 0 | 901 | 106 | 159 | 1011 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 19% | 2% | 2% | 2% | 0% | 12% | 3% | 2% | 8% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 26.3 | | 26.3 | | | | | 24.5 | 24.5 | 8.5 | 39.8 | | |
| Effective Green, g (s) | 26.3 | | 26.3 | | | | | 24.5 | 24.5 | 8.5 | 39.8 | | |
| Actuated g/C Ratio | 0.33 | | 0.33 | | | | | 0.31 | 0.31 | 0.11 | 0.50 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 559 | | 446 | | | | | 987 | 480 | 188 | 1663 | | |
| v/s Ratio Prot | | | | | | | | c0.28 | | 0.09 | c0.30 | | |
| v/s Ratio Perm | 0.06 | | c0.33 | | | | | | 0.07 | | | | |
| v/c Ratio | 0.19 | | 1.00 | | | | | 0.91 | 0.22 | 0.85 | 0.61 | | |
| Uniform Delay, d1 | 19.2 | | 26.9 | | | | | 26.7 | 20.7 | 35.1 | 14.5 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.04 | 0.85 | | |
| Incremental Delay, d2 | 0.2 | | 42.6 | | | | | 14.1 | 1.1 | 25.4 | 1.5 | | |
| Delay (s) | 19.4 | | 69.5 | | | | | 40.8 | 21.7 | 61.8 | 13.8 | | |
| Level of Service | B | | E | | | | | D | C | E | B | | |
| Approach Delay (s) | | 61.2 | | | 0.0 | | | 37.0 | | | 20.3 | | |
| Approach LOS | | E | | | A | | | D | | | C | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 35.7 | | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 0.95 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 65.4% | | | | | | | | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 21 | 0 | 6 | 2 | 0 | 18 | 4 | 950 | 2 | 26 | 1319 | 17 |
| Future Vol, veh/h | 21 | 0 | 6 | 2 | 0 | 18 | 4 | 950 | 2 | 26 | 1319 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 24 | 0 | 7 | 2 | 0 | 20 | 5 | 1080 | 2 | 30 | 1499 | 19 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 2109 | 2651 | 750 | 1900 | 2668 | 540 | 1518 | 0 | 0 | 1082 | 0 | 0 |
| Stage 1 | 1559 | 1559 | - | 1090 | 1090 | - | - | - | - | - | - | - |
| Stage 2 | 550 | 1092 | - | 810 | 1578 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 30 | 23 | 358 | 43 | 23 | 464 | 446 | - | - | 652 | - | - |
| Stage 1 | 120 | 175 | - | 233 | 294 | - | - | - | - | - | - | - |
| Stage 2 | 492 | 293 | - | 344 | 171 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 27 | 22 | 358 | 40 | 22 | 464 | 446 | - | - | 652 | - | - |
| Mov Cap-2 Maneuver | 27 | 22 | - | 40 | 22 | - | - | - | - | - | - | - |
| Stage 1 | 119 | 167 | - | 230 | 291 | - | - | - | - | - | - | - |
| Stage 2 | 465 | 290 | - | 322 | 163 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | | | |
|----------------------|-------|--|------|--|-----|--|-----|--|--|--|
| HCM Control Delay, s | 297.4 | | 22.8 | | 0.1 | | 0.2 | | | |
| HCM LOS | F | | C | | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 446 | - | - | 34 | 225 | 652 | - | - |
| HCM Lane V/C Ratio | 0.01 | - | - | 0.902 | 0.101 | 0.045 | - | - |
| HCM Control Delay (s) | 13.2 | - | - | 297.4 | 22.8 | 10.8 | - | - |
| HCM Lane LOS | B | - | - | F | C | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 3.2 | 0.3 | 0.1 | - | - |

HCM 6th TWSC
 4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 913 | 9 | 21 | 1306 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 913 | 9 | 21 | 1306 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 22 | 0 | 49 | 0 | 1038 | 10 | 24 | 1484 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 2051 | 2580 | 742 | 1828 | 2570 | 519 | - | 0 | 0 | 1048 | 0 | 0 |
| Stage 1 | 1532 | 1532 | - | 1038 | 1038 | - | - | - | - | - | - | - |
| Stage 2 | 519 | 1048 | - | 790 | 1532 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 33 | 26 | 363 | 49 | 26 | 489 | 0 | - | - | 672 | - | 0 |
| Stage 1 | 124 | 180 | - | 251 | 311 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 513 | 307 | - | 354 | 180 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | - | - | - | | |
| Mov Cap-1 Maneuver | 29 | 25 | 363 | 48 | 25 | 489 | - | - | - | 672 | - | - |
| Mov Cap-2 Maneuver | 29 | 25 | - | 48 | 25 | - | - | - | - | - | - | - |
| Stage 1 | 124 | 174 | - | 251 | 311 | - | - | - | - | - | - | - |
| Stage 2 | 462 | 307 | - | 341 | 174 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|-----|
| HCM Control Delay, s | 0 | 63.1 | 0 | 0.2 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|------|-------|
| Capacity (veh/h) | - | - | - | 128 | 672 |
| HCM Lane V/C Ratio | - | - | - | 0.55 | 0.036 |
| HCM Control Delay (s) | - | - | 0 | 63.1 | 10.6 |
| HCM Lane LOS | - | - | A | F | B |
| HCM 95th %tile Q(veh) | - | - | - | 2.7 | 0.1 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 67.2 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 136 | 40 | 0 | 786 | 1295 | 30 |
| Future Vol, veh/h | 136 | 40 | 0 | 786 | 1295 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 12 | 16 | 0 |
| Mvmt Flow | 155 | 45 | 0 | 893 | 1472 | 34 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 1919 | 736 | - | 0 | - | 0 |
| Stage 1 | 1472 | - | - | - | - | - |
| Stage 2 | 447 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 61 | 366 | 0 | - | - | - |
| Stage 1 | 181 | - | 0 | - | - | - |
| Stage 2 | 617 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 61 | 366 | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 61 | - | - | - | - | - |
| Stage 1 | 181 | - | - | - | - | - |
| Stage 2 | 617 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|----|----|
| HCM Control Delay, s | \$ 873.2 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|----------|-----|-----|
| Capacity (veh/h) | - | 75 | - | - |
| HCM Lane V/C Ratio | - | 2.667 | - | - |
| HCM Control Delay (s) | - | \$ 873.2 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 19.5 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 8 | 33 | 753 | 11 | 48 | 1287 |
| Future Vol, veh/h | 8 | 33 | 753 | 11 | 48 | 1287 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 12 | 0 | 0 | 17 |
| Mvmt Flow | 9 | 38 | 856 | 13 | 55 | 1463 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 1698 | 428 | 0 | 0 | 869 |
| Stage 1 | 856 | - | - | - | - |
| Stage 2 | 842 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 85 | 581 | - | - | 784 |
| Stage 1 | 382 | - | - | - | - |
| Stage 2 | 388 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 79 | 581 | - | - | 784 |
| Mov Cap-2 Maneuver | 79 | - | - | - | - |
| Stage 1 | 382 | - | - | - | - |
| Stage 2 | 361 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 21.9 | 0 | 0.4 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|------|------|
| Capacity (veh/h) | - | - | 259 | 784 |
| HCM Lane V/C Ratio | - | - | 0.18 | 0.07 |
| HCM Control Delay (s) | - | - | 21.9 | 9.9 |
| HCM Lane LOS | - | - | C | A |
| HCM 95th %tile Q(veh) | - | - | 0.6 | 0.2 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↕ | ↕ | ↕ | ↕ | ↕ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 764 | 14 | 43 | 1218 | 34 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 764 | 14 | 43 | 1218 | 34 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 12 | 0 | 3 | 17 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 868 | 16 | 49 | 1384 | 39 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1956 | 2406 | 712 | | | | 1423 | 0 | 0 | 884 | 0 | 0 |
| Stage 1 | 1502 | 1502 | - | | | | - | - | - | - | - | - |
| Stage 2 | 454 | 904 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 57 | 34 | 379 | | | | 484 | - | - | 755 | - | - |
| Stage 1 | 174 | 187 | - | | | | - | - | - | - | - | - |
| Stage 2 | 612 | 358 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 52 | 0 | 379 | | | | 484 | - | - | 755 | - | - |
| Mov Cap-2 Maneuver | 52 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 170 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 572 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 0.1 | 0.3 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 484 | - | - | - | 755 | - | - |
| HCM Lane V/C Ratio | 0.021 | - | - | - | 0.065 | - | - |
| HCM Control Delay (s) | 12.6 | - | - | 0 | 10.1 | - | - |
| HCM Lane LOS | B | - | - | A | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.2 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019



| Lane Group | EBL | EBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 90 | 47 | 44 | 805 | 7 | 60 | 1164 | 160 |
| v/c Ratio | 0.51 | 0.21 | 0.32 | 0.39 | 0.01 | 0.31 | 0.58 | 0.14 |
| Control Delay | 41.6 | 14.8 | 39.1 | 10.6 | 0.0 | 35.2 | 12.0 | 0.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 41.6 | 14.8 | 39.1 | 10.6 | 0.0 | 35.2 | 12.0 | 0.6 |
| Queue Length 50th (ft) | 41 | 2 | 20 | 122 | 0 | 27 | 200 | 0 |
| Queue Length 95th (ft) | 83 | 30 | 50 | 166 | 0 | 60 | 261 | 5 |
| Internal Link Dist (ft) | | 711 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 190 | 234 | 137 | 2064 | 878 | 220 | 2006 | 1105 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.47 | 0.20 | 0.32 | 0.39 | 0.01 | 0.27 | 0.58 | 0.14 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 8: US 220 Business & Water Plant Road

04/02/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 79 | 4 | 37 | 0 | 0 | 0 | 39 | 708 | 6 | 53 | 1024 | 141 |
| Future Volume (veh/h) | 79 | 4 | 37 | 0 | 0 | 0 | 39 | 708 | 6 | 53 | 1024 | 141 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1752 | 1470 | 1900 | 1648 | 1856 |
| Adj Flow Rate, veh/h | 90 | 5 | 42 | 0 | 0 | 0 | 44 | 805 | 7 | 60 | 1164 | 160 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 10 | 29 | 0 | 17 | 3 |
| Cap, veh/h | 127 | 14 | 116 | 3 | 3 | 2 | 80 | 1863 | 697 | 107 | 1801 | 904 |
| Arrive On Green | 0.08 | 0.08 | 0.08 | 0.00 | 0.00 | 0.00 | 0.05 | 0.56 | 0.56 | 0.06 | 0.58 | 0.58 |
| Sat Flow, veh/h | 1598 | 174 | 1463 | 1810 | 1900 | 1610 | 1626 | 3328 | 1246 | 1810 | 3131 | 1572 |
| Grp Volume(v), veh/h | 90 | 0 | 47 | 0 | 0 | 0 | 44 | 805 | 7 | 60 | 1164 | 160 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1637 | 1810 | 1900 | 1610 | 1626 | 1664 | 1246 | 1810 | 1566 | 1572 |
| Q Serve(g_s), s | 3.9 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 1.9 | 9.9 | 0.2 | 2.3 | 17.7 | 3.4 |
| Cycle Q Clear(g_c), s | 3.9 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 1.9 | 9.9 | 0.2 | 2.3 | 17.7 | 3.4 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 127 | 0 | 130 | 3 | 3 | 2 | 80 | 1863 | 697 | 107 | 1801 | 904 |
| V/C Ratio(X) | 0.71 | 0.00 | 0.36 | 0.00 | 0.00 | 0.00 | 0.55 | 0.43 | 0.01 | 0.56 | 0.65 | 0.18 |
| Avail Cap(c_a), veh/h | 191 | 0 | 196 | 155 | 162 | 138 | 139 | 1863 | 697 | 219 | 1801 | 904 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.5 | 0.0 | 30.6 | 0.0 | 0.0 | 0.0 | 32.6 | 9.0 | 6.8 | 32.2 | 10.1 | 7.1 |
| Incr Delay (d2), s/veh | 7.1 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 5.8 | 0.7 | 0.0 | 4.6 | 1.8 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.7 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.8 | 2.6 | 0.0 | 1.1 | 4.8 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.6 | 0.0 | 32.3 | 0.0 | 0.0 | 0.0 | 38.4 | 9.7 | 6.9 | 36.8 | 11.9 | 7.5 |
| LnGrp LOS | D | A | C | A | A | A | D | A | A | D | B | A |
| Approach Vol, veh/h | | 137 | | | 0 | | | 856 | | | 1384 | |
| Approach Delay, s/veh | | 36.4 | | | 0.0 | | | 11.2 | | | 12.5 | |
| Approach LOS | | D | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 11.8 | 45.2 | | 0.0 | 10.8 | 46.3 | | 13.2 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 8.5 | 37.5 | | * 6 | * 6 | 40.4 | | 8.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.3 | 11.9 | | 0.0 | 3.9 | 19.7 | | 5.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.1 | | 0.0 | 0.0 | 8.7 | | 0.1 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 13.4 | | | | | | | | |
| HCM 6th LOS | | | | B | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 58 | 26 | 38 | 189 | 27 | 642 | 8 | 216 | 945 | 44 |
| v/c Ratio | 0.35 | 0.07 | 0.25 | 0.55 | 0.23 | 0.55 | 0.01 | 0.70 | 0.56 | 0.05 |
| Control Delay | 48.9 | 0.4 | 48.0 | 9.3 | 51.1 | 27.9 | 0.0 | 50.2 | 18.5 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 48.9 | 0.4 | 48.0 | 9.3 | 51.1 | 27.9 | 0.0 | 50.2 | 18.5 | 0.1 |
| Queue Length 50th (ft) | 36 | 0 | 23 | 0 | 17 | 166 | 0 | 131 | 225 | 0 |
| Queue Length 95th (ft) | 75 | 0 | 55 | 32 | 46 | 254 | 0 | 204 | 314 | 0 |
| Internal Link Dist (ft) | 631 | | 525 | | | 3118 | | | 4723 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 100 | 225 | | 225 |
| Base Capacity (vph) | 360 | 510 | 372 | 498 | 118 | 1165 | 755 | 436 | 1675 | 968 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.16 | 0.05 | 0.10 | 0.38 | 0.23 | 0.55 | 0.01 | 0.50 | 0.56 | 0.05 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↑↑ | ↗ | ↖ | ↑↑ | ↗ |
| Traffic Volume (veh/h) | 22 | 29 | 23 | 4 | 29 | 166 | 24 | 565 | 7 | 190 | 832 | 39 |
| Future Volume (veh/h) | 22 | 29 | 23 | 4 | 29 | 166 | 24 | 565 | 7 | 190 | 832 | 39 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1693 | 1900 | 1885 | 1633 | 1900 |
| Adj Flow Rate, veh/h | 25 | 33 | 26 | 5 | 33 | 189 | 27 | 642 | 8 | 216 | 945 | 44 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 14 | 0 | 1 | 18 | 0 |
| Cap, veh/h | 42 | 56 | 87 | 35 | 228 | 221 | 57 | 1197 | 599 | 252 | 1505 | 781 |
| Arrive On Green | 0.05 | 0.05 | 0.05 | 0.14 | 0.14 | 0.14 | 0.03 | 0.37 | 0.37 | 0.14 | 0.49 | 0.49 |
| Sat Flow, veh/h | 783 | 1033 | 1610 | 248 | 1639 | 1585 | 1810 | 3216 | 1610 | 1795 | 3103 | 1610 |
| Grp Volume(v), veh/h | 58 | 0 | 26 | 38 | 0 | 189 | 27 | 642 | 8 | 216 | 945 | 44 |
| Grp Sat Flow(s),veh/h/ln | 1816 | 0 | 1610 | 1888 | 0 | 1585 | 1810 | 1608 | 1610 | 1795 | 1552 | 1610 |
| Q Serve(g_s), s | 3.1 | 0.0 | 1.6 | 1.8 | 0.0 | 11.7 | 1.5 | 15.8 | 0.3 | 11.8 | 22.7 | 1.5 |
| Cycle Q Clear(g_c), s | 3.1 | 0.0 | 1.6 | 1.8 | 0.0 | 11.7 | 1.5 | 15.8 | 0.3 | 11.8 | 22.7 | 1.5 |
| Prop In Lane | 0.43 | | 1.00 | 0.13 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 98 | 0 | 87 | 263 | 0 | 221 | 57 | 1197 | 599 | 252 | 1505 | 781 |
| V/C Ratio(X) | 0.59 | 0.00 | 0.30 | 0.14 | 0.00 | 0.86 | 0.47 | 0.54 | 0.01 | 0.86 | 0.63 | 0.06 |
| Avail Cap(c_a), veh/h | 325 | 0 | 288 | 338 | 0 | 284 | 108 | 1197 | 599 | 398 | 1505 | 781 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 46.5 | 0.0 | 45.8 | 38.0 | 0.0 | 42.3 | 47.9 | 24.8 | 19.9 | 42.2 | 19.2 | 13.7 |
| Incr Delay (d2), s/veh | 5.6 | 0.0 | 1.9 | 0.3 | 0.0 | 18.2 | 5.9 | 1.7 | 0.0 | 10.3 | 2.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.6 | 0.0 | 0.7 | 0.8 | 0.0 | 5.7 | 0.7 | 5.7 | 0.1 | 5.6 | 7.5 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 52.1 | 0.0 | 47.7 | 38.3 | 0.0 | 60.5 | 53.8 | 26.5 | 20.0 | 52.6 | 21.2 | 13.9 |
| LnGrp LOS | D | A | D | D | A | E | D | C | B | D | C | B |
| Approach Vol, veh/h | | 84 | | | 227 | | | 677 | | | 1205 | |
| Approach Delay, s/veh | | 50.7 | | | 56.8 | | | 27.5 | | | 26.5 | |
| Approach LOS | | D | | | E | | | C | | | C | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 21.8 | 43.3 | | 22.4 | 10.5 | 54.7 | | 13.0 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 22 | 32.1 | | * 18 | * 6 | 48.8 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 13.8 | 17.8 | | 13.7 | 3.5 | 24.7 | | 5.1 | | | | |
| Green Ext Time (p_c), s | 0.3 | 3.2 | | 0.3 | 0.0 | 6.3 | | 0.2 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 30.9 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 69 | 378 | 299 | 8 | 390 | 586 |
| v/c Ratio | 0.15 | 0.56 | 0.44 | 0.02 | 0.68 | 0.37 |
| Control Delay | 23.2 | 6.4 | 29.0 | 15.0 | 17.2 | 11.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 23.2 | 6.4 | 29.0 | 15.0 | 17.2 | 11.0 |
| Queue Length 50th (ft) | 25 | 0 | 65 | 0 | 104 | 78 |
| Queue Length 95th (ft) | 57 | 59 | 105 | 11 | 159 | 108 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 475 | 680 | 677 | 329 | 631 | 1757 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.15 | 0.56 | 0.44 | 0.02 | 0.62 | 0.33 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|--|-------|-------|------|------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 61 | 333 | 263 | 7 | 343 | 516 |
| Future Volume (veh/h) | 61 | 333 | 263 | 7 | 343 | 516 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1856 | 1781 | 1678 | 1781 | 1841 | 1604 |
| Adj Flow Rate, veh/h | 69 | 378 | 299 | 8 | 390 | 586 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 8 | 15 | 8 | 4 | 20 |
| Cap, veh/h | 484 | 413 | 695 | 329 | 582 | 1605 |
| Arrive On Green | 0.27 | 0.27 | 0.22 | 0.22 | 0.19 | 0.53 |
| Sat Flow, veh/h | 1767 | 1510 | 3272 | 1510 | 1753 | 3127 |
| Grp Volume(v), veh/h | 69 | 378 | 299 | 8 | 390 | 586 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 1510 | 1594 | 1510 | 1753 | 1523 |
| Q Serve(g_s), s | 2.2 | 18.3 | 6.1 | 0.3 | 12.1 | 8.5 |
| Cycle Q Clear(g_c), s | 2.2 | 18.3 | 6.1 | 0.3 | 12.1 | 8.5 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 484 | 413 | 695 | 329 | 582 | 1605 |
| V/C Ratio(X) | 0.14 | 0.91 | 0.43 | 0.02 | 0.67 | 0.37 |
| Avail Cap(c_a), veh/h | 484 | 413 | 695 | 329 | 692 | 1798 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.6 | 26.5 | 25.4 | 23.1 | 15.9 | 10.4 |
| Incr Delay (d2), s/veh | 0.6 | 27.3 | 1.9 | 0.1 | 2.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 9.3 | 2.2 | 0.1 | 4.2 | 2.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 21.3 | 53.7 | 27.3 | 23.3 | 17.9 | 10.6 |
| LnGrp LOS | C | D | C | C | B | B |
| Approach Vol, veh/h | 447 | | 307 | | | 976 |
| Approach Delay, s/veh | 48.7 | | 27.2 | | | 13.5 |
| Approach LOS | D | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 23.2 | 25.0 | | 27.0 | | 48.2 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 19 | * 16 | | 20.6 | | * 44 |
| Max Q Clear Time (g_c+I1), s | 14.1 | 8.1 | | 20.3 | | 10.5 |
| Green Ext Time (p_c), s | 0.6 | 1.0 | | 0.1 | | 3.7 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 25.0 | | | |
| HCM 6th LOS | | | C | | | |
| Notes | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | |

HCM 6th TWSC
 11: US 220 Business & Lee Ford Camp Rd/Church St

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 20 | 21 | 4 | 0 | 0 | 3 | 7 | 247 | 38 | 34 | 483 | 60 |
| Future Vol, veh/h | 20 | 21 | 4 | 0 | 0 | 3 | 7 | 247 | 38 | 34 | 483 | 60 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 20 | 2 |
| Mvmt Flow | 23 | 24 | 5 | 0 | 0 | 3 | 8 | 281 | 43 | 39 | 549 | 68 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 784 | 967 | 275 | 662 | 992 | 141 | 617 | 0 | 0 | 324 | 0 | 0 |
| Stage 1 | 627 | 627 | - | 297 | 297 | - | - | - | - | - | - | - |
| Stage 2 | 157 | 340 | - | 365 | 695 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 283 | 253 | 722 | 347 | 244 | 881 | 959 | - | - | 1233 | - | - |
| Stage 1 | 438 | 474 | - | 687 | 666 | - | - | - | - | - | - | - |
| Stage 2 | 829 | 638 | - | 627 | 442 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 273 | 243 | 722 | 310 | 234 | 881 | 959 | - | - | 1233 | - | - |
| Mov Cap-2 Maneuver | 273 | 243 | - | 310 | 234 | - | - | - | - | - | - | - |
| Stage 1 | 434 | 459 | - | 682 | 661 | - | - | - | - | - | - | - |
| Stage 2 | 819 | 633 | - | 572 | 428 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|-----|--|-----|--|-----|--|
| HCM Control Delay, s | 21.3 | | 9.1 | | 0.2 | | 0.5 | |
| HCM LOS | C | | A | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 959 | - | - | 272 | 881 | 1233 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.188 | 0.004 | 0.031 | - | - |
| HCM Control Delay (s) | 8.8 | - | - | 21.3 | 9.1 | 8 | - | - |
| HCM Lane LOS | A | - | - | C | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.7 | 0 | 0.1 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↗ | ↘ | ↗ | | | ↗ | ↘ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 1 | 0 | 19 | 32 | 273 | 0 | 0 | 130 | 357 |
| Future Vol, veh/h | 0 | 0 | 0 | 1 | 0 | 19 | 32 | 273 | 0 | 0 | 130 | 357 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 2 | 20 |
| Mvmt Flow | 0 | 0 | 0 | 1 | 0 | 22 | 36 | 310 | 0 | 0 | 148 | 406 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 733 | - 310 554 | 0 - - - 0 |
| Stage 1 | 382 | - - - | - - - - - |
| Stage 2 | 351 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 388 | 0 730 1016 | - 0 0 - - |
| Stage 1 | 690 | 0 - - | 0 0 - - |
| Stage 2 | 713 | 0 - - | 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 374 | 0 730 1016 | - - - - - |
| Mov Cap-2 Maneuver | 374 | 0 - - | - - - - - |
| Stage 1 | 666 | 0 - - | - - - - - |
| Stage 2 | 713 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 10.3 | 0.9 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 1016 | - 374 730 | - - | - - |
| HCM Lane V/C Ratio | 0.036 | - 0.003 0.03 | - - | - - |
| HCM Control Delay (s) | 8.7 | - 14.7 10.1 | - - | - - |
| HCM Lane LOS | A | - B B | - - | - - |
| HCM 95th %tile Q(veh) | 0.1 | - 0 0.1 | - - | - - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 11.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 305 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 0 | 0 |
| Future Vol, veh/h | 305 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 15 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 347 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 149 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 298 | 298 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 298 | 298 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.55 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.635 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 667 | 614 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 724 | 667 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 667 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 667 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 724 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 16.1 | 0 | |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 667 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.52 | - | - | - |
| HCM Control Delay (s) | - | - | 16.1 | 0 | - | - |
| HCM Lane LOS | - | - | C | A | - | - |
| HCM 95th %tile Q(veh) | - | - | 3 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | ↑ | | ↑ |
| Traffic Vol, veh/h | 0 | 136 | 0 | 0 | 86 | 0 | 0 | 0 | 0 | 6 | 0 | 42 |
| Future Vol, veh/h | 0 | 136 | 0 | 0 | 86 | 0 | 0 | 0 | 0 | 6 | 0 | 42 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 155 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 7 | 0 | 48 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 155 | 0 | 0 | | | 253 | - | 98 |
| Stage 1 | - | - | - | - | - | - | | | 98 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 155 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1425 | - | 0 | | | 736 | 0 | 958 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 926 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 873 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1425 | - | - | | | 736 | 0 | 958 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 736 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 926 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 873 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 9.1 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1425 | - | 736 | 958 |
| HCM Lane V/C Ratio | - | - | - | - | 0.009 | 0.05 |
| HCM Control Delay (s) | - | - | 0 | - | 9.9 | 9 |
| HCM Lane LOS | - | - | A | - | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0 | 0.2 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 2.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | ↘ | | ↘ | | | |
| Traffic Vol, veh/h | 77 | 65 | 0 | 0 | 86 | 58 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 77 | 65 | 0 | 0 | 86 | 58 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | 0 | - | 100 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 88 | 74 | 0 | 0 | 98 | 66 | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 164 | 0 | 0 |
| Stage 1 | - | - | 250 |
| Stage 2 | - | - | 131 |
| Critical Hdwy | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | 1414 | 0 | 0 |
| Stage 1 | - | 0 | 792 |
| Stage 2 | - | 0 | 895 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1414 | - | 582 |
| Mov Cap-2 Maneuver | - | - | 582 |
| Stage 1 | - | - | 743 |
| Stage 2 | - | - | 895 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 4.2 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1414 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.062 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 7.7 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 14 | 33 | 199 | 0 | 55 | 18 | 136 | 18 | 44 |
| Future Vol, veh/h | 0 | 0 | 0 | 14 | 33 | 199 | 0 | 55 | 18 | 136 | 18 | 44 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 16 | 38 | 226 | 0 | 63 | 20 | 155 | 20 | 50 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 428 | 453 | 73 |
| Stage 1 | 73 | 73 | - |
| Stage 2 | 355 | 380 | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 584 | 503 | 989 |
| Stage 1 | 950 | 834 | - |
| Stage 2 | 710 | 614 | - |
| Platoon blocked, % | | | |
| Mov Cap-1 Maneuver | 524 | 0 | 989 |
| Mov Cap-2 Maneuver | 524 | 0 | - |
| Stage 1 | 950 | 0 | - |
| Stage 2 | 638 | 0 | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.1 | 0 | 5.3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1531 | - | - | 524 | 989 | 1514 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.03 | 0.267 | 0.102 | - | - |
| HCM Control Delay (s) | 0 | - | - | 12.1 | 10 | 7.6 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 1.1 | 0.3 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.4 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 18 | 136 | 24 | 78 | 168 | 22 |
| Future Vol, veh/h | 18 | 136 | 24 | 78 | 168 | 22 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 155 | 27 | 89 | 191 | 25 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 175 | 0 | 241 |
| Stage 1 | - | - | - | - | 98 |
| Stage 2 | - | - | - | - | 143 |
| Critical Hdwy | - | - | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | - | - | 1401 | - | 747 |
| Stage 1 | - | - | - | - | 926 |
| Stage 2 | - | - | - | - | 884 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1401 | - | 732 |
| Mov Cap-2 Maneuver | - | - | - | - | 732 |
| Stage 1 | - | - | - | - | 926 |
| Stage 2 | - | - | - | - | 866 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 1.8 | 11.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 753 | - | - | 1401 | - |
| HCM Lane V/C Ratio | 0.287 | - | - | 0.019 | - |
| HCM Control Delay (s) | 11.7 | - | - | 7.6 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 1.2 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.9 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↔ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 17 | 15 | 175 | 0 | 0 | 160 |
| Future Vol, veh/h | 17 | 15 | 175 | 0 | 0 | 160 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 19 | 17 | 199 | 0 | 0 | 182 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 381 | 199 | 0 | - | - | - |
| Stage 1 | 199 | - | - | - | - | - |
| Stage 2 | 182 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | - | - |
| Pot Cap-1 Maneuver | 621 | 842 | - | 0 | 0 | - |
| Stage 1 | 835 | - | - | 0 | 0 | - |
| Stage 2 | 849 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 621 | 842 | - | - | - | - |
| Mov Cap-2 Maneuver | 621 | - | - | - | - | - |
| Stage 1 | 835 | - | - | - | - | - |
| Stage 2 | 849 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 10.4 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 708 | - |
| HCM Lane V/C Ratio | - 0.051 | - |
| HCM Control Delay (s) | - 10.4 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.2 | - |

HCM 6th TWSC
146: Fisher Farm Rd & US 58 EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 144 | 15 | 41 | 136 | 0 |
| Future Vol, veh/h | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 144 | 15 | 41 | 136 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 164 | 17 | 47 | 155 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 422 | 430 | 155 | - | 0 | 0 | 181 | 0 | 0 |
| Stage 1 | 249 | 249 | - | - | - | - | - | - | - |
| Stage 2 | 173 | 181 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 588 | 518 | 891 | 0 | - | - | 1394 | - | 0 |
| Stage 1 | 792 | 701 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 857 | 750 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 566 | 0 | 891 | - | - | - | 1394 | - | - |
| Mov Cap-2 Maneuver | 566 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 792 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 825 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.8 | 0 | 1.8 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|
| Capacity (veh/h) | - | - | 692 | 1394 | - |
| HCM Lane V/C Ratio | - | - | 0.102 | 0.033 | - |
| HCM Control Delay (s) | - | - | 10.8 | 7.7 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.3 | 0.1 | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019





















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 344 | 140 | 788 | 609 | 58 |
| v/c Ratio | 0.71 | 0.29 | 0.43 | 0.33 | 0.07 |
| Control Delay | 30.1 | 9.6 | 3.0 | 11.1 | 2.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 30.1 | 9.6 | 3.0 | 11.1 | 2.6 |
| Queue Length 50th (ft) | 133 | 19 | 17 | 72 | 0 |
| Queue Length 95th (ft) | 178 | 47 | 21 | 128 | 14 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 705 | 662 | 1835 | 1853 | 864 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.49 | 0.21 | 0.43 | 0.33 | 0.07 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 303 | 0 | 123 | 0 | 693 | 0 | 0 | 536 | 51 | |
| Future Volume (vph) | 0 | 0 | 0 | 303 | 0 | 123 | 0 | 693 | 0 | 0 | 536 | 51 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1752 | 1524 | | 3471 | | | 3505 | 1568 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1752 | 1524 | | 3471 | | | 3505 | 1568 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 344 | 0 | 140 | 0 | 788 | 0 | 0 | 609 | 58 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 59 | 0 | 0 | 0 | 0 | 0 | 27 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 344 | 81 | 0 | 788 | 0 | 0 | 609 | 31 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 0% | 6% | 0% | 4% | 14% | 0% | 3% | 3% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 19.5 | 19.5 | | 37.0 | | | 37.0 | 37.0 | |
| Effective Green, g (s) | | | | | 19.5 | 19.5 | | 37.0 | | | 37.0 | 37.0 | |
| Actuated g/C Ratio | | | | | 0.28 | 0.28 | | 0.53 | | | 0.53 | 0.53 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | | | | 488 | 424 | | 1834 | | | 1852 | 828 | |
| v/s Ratio Prot | | | | | | | | c0.23 | | | 0.17 | | |
| v/s Ratio Perm | | | | | 0.20 | 0.05 | | | | | | 0.02 | |
| v/c Ratio | | | | | 0.70 | 0.19 | | 0.43 | | | 0.33 | 0.04 | |
| Uniform Delay, d1 | | | | | 22.7 | 19.2 | | 10.1 | | | 9.4 | 7.9 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.22 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 4.6 | 0.2 | | 0.5 | | | 0.5 | 0.1 | |
| Delay (s) | | | | | 27.3 | 19.5 | | 2.7 | | | 9.9 | 8.0 | |
| Level of Service | | | | | C | B | | A | | | A | A | |
| Approach Delay (s) | | 0.0 | | | 25.0 | | | 2.7 | | | 9.7 | | |
| Approach LOS | | A | | | C | | | A | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 10.7 | | HCM 2000 Level of Service | | | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.52 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | Sum of lost time (s) | | | | | 13.5 | | | |
| Intersection Capacity Utilization | | | 72.7% | | ICU Level of Service | | | | | C | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 101 | 351 | 1139 | 327 | 118 | 835 |
| v/c Ratio | 0.35 | 0.90 | 0.72 | 0.38 | 0.66 | 0.38 |
| Control Delay | 28.9 | 42.7 | 19.7 | 5.5 | 52.8 | 5.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 28.9 | 42.7 | 19.7 | 5.5 | 52.8 | 5.9 |
| Queue Length 50th (ft) | 38 | 68 | 218 | 22 | 52 | 47 |
| Queue Length 95th (ft) | 78 | #205 | 287 | 66 | #116 | 115 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 311 | 404 | 1584 | 870 | 179 | 2194 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.32 | 0.87 | 0.72 | 0.38 | 0.66 | 0.38 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
|-----------------------------------|------|------|-------|------|------|------|------|-------|------|-------|------|---------------------------|------|
| Lane Configurations | ↖ | | ↗ | | | | | ↑↑ | ↗ | ↖ | ↑↑ | | |
| Traffic Volume (vph) | 89 | 0 | 309 | 0 | 0 | 0 | 0 | 1002 | 288 | 104 | 735 | 0 | |
| Future Volume (vph) | 89 | 0 | 309 | 0 | 0 | 0 | 0 | 1002 | 288 | 104 | 735 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1380 | | | | | 3343 | 1568 | 1770 | 3471 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1380 | | | | | 3343 | 1568 | 1770 | 3471 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 101 | 0 | 351 | 0 | 0 | 0 | 0 | 1139 | 327 | 118 | 835 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 154 | 0 | 0 | 0 | 0 | 0 | 132 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 101 | 0 | 197 | 0 | 0 | 0 | 0 | 1139 | 195 | 118 | 835 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 17% | 2% | 2% | 2% | 0% | 8% | 3% | 2% | 4% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 11.9 | | 11.9 | | | | | 31.7 | 31.7 | 5.7 | 44.2 | | |
| Effective Green, g (s) | 11.9 | | 11.9 | | | | | 31.7 | 31.7 | 5.7 | 44.2 | | |
| Actuated g/C Ratio | 0.17 | | 0.17 | | | | | 0.45 | 0.45 | 0.08 | 0.63 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 289 | | 234 | | | | | 1513 | 710 | 144 | 2191 | | |
| v/s Ratio Prot | | | | | | | | c0.34 | | c0.07 | 0.24 | | |
| v/s Ratio Perm | 0.06 | | c0.14 | | | | | | 0.12 | | | | |
| v/c Ratio | 0.35 | | 0.84 | | | | | 0.75 | 0.27 | 0.82 | 0.38 | | |
| Uniform Delay, d1 | 25.6 | | 28.1 | | | | | 15.9 | 12.0 | 31.6 | 6.3 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.12 | 0.82 | | |
| Incremental Delay, d2 | 0.7 | | 22.8 | | | | | 3.5 | 1.0 | 27.7 | 0.5 | | |
| Delay (s) | 26.4 | | 51.0 | | | | | 19.4 | 12.9 | 63.2 | 5.6 | | |
| Level of Service | C | | D | | | | | B | B | E | A | | |
| Approach Delay (s) | | 45.5 | | | 0.0 | | | 18.0 | | | 12.8 | | |
| Approach LOS | | D | | | A | | | B | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 20.6 | | | | | | | | | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | | | 0.78 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 52.2% | | | | | | | | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 18 | 2 | 16 | 7 | 0 | 8 | 2 | 1264 | 1 | 5 | 1036 | 3 |
| Future Vol, veh/h | 18 | 2 | 16 | 7 | 0 | 8 | 2 | 1264 | 1 | 5 | 1036 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 8 | 0 | 0 | 8 | 6 |
| Mvmt Flow | 20 | 2 | 18 | 8 | 0 | 9 | 2 | 1436 | 1 | 6 | 1177 | 3 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1911 | 2630 | 589 | 2042 | 2632 | 718 | 1180 | 0 | 0 | 1437 | 0 | 0 |
| Stage 1 | 1189 | 1189 | - | 1440 | 1440 | - | - | - | - | - | - | - |
| Stage 2 | 722 | 1441 | - | 602 | 1192 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 42 | 24 | 457 | 34 | 24 | 352 | 599 | - | - | 479 | - | - |
| Stage 1 | 203 | 264 | - | 142 | 200 | - | - | - | - | - | - | - |
| Stage 2 | 389 | 200 | - | 458 | 263 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 40 | 24 | 457 | 30 | 24 | 352 | 599 | - | - | 479 | - | - |
| Mov Cap-2 Maneuver | 40 | 24 | - | 30 | 24 | - | - | - | - | - | - | - |
| Stage 1 | 202 | 261 | - | 142 | 199 | - | - | - | - | - | - | - |
| Stage 2 | 378 | 199 | - | 430 | 260 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | | |
|----------------------|-------|--|------|--|----|--|-----|--|--|
| HCM Control Delay, s | 134.6 | | 89.1 | | 0 | | 0.1 | | |
| HCM LOS | F | | F | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 599 | - | - | 63 | 59 | 479 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.649 | 0.289 | 0.012 | - | - |
| HCM Control Delay (s) | 11 | - | - | 134.6 | 89.1 | 12.6 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 2.8 | 1 | 0 | - | - |

HCM 6th TWSC
4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 40 | 0 | 1227 | 6 | 5 | 1054 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 40 | 0 | 1227 | 6 | 5 | 1054 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 22 | 0 | 45 | 0 | 1394 | 7 | 6 | 1198 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 1907 | 2611 | 599 | 2005 | 2604 | 697 | - | 0 | 0 | 1401 | 0 | 0 |
| Stage 1 | 1210 | 1210 | - | 1394 | 1394 | - | - | - | - | - | - | - |
| Stage 2 | 697 | 1401 | - | 611 | 1210 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 43 | 25 | 450 | 36 | 25 | 372 | 0 | - | - | 494 | - | 0 |
| Stage 1 | 197 | 258 | - | 152 | 210 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 402 | 209 | - | 453 | 258 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 37 | 25 | 450 | 36 | 25 | 372 | - | - | - | 494 | - | - |
| Mov Cap-2 Maneuver | 37 | 25 | - | 36 | 25 | - | - | - | - | - | - | - |
| Stage 1 | 197 | 255 | - | 152 | 210 | - | - | - | - | - | - | - |
| Stage 2 | 353 | 209 | - | 447 | 255 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|-------|----|-----|
| HCM Control Delay, s | 0 | 109.4 | 0 | 0.1 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-------|-----|
| Capacity (veh/h) | - | - | - | 93 | 494 | - |
| HCM Lane V/C Ratio | - | - | - | 0.721 | 0.012 | - |
| HCM Control Delay (s) | - | - | 0 | 109.4 | 12.4 | - |
| HCM Lane LOS | - | - | A | F | B | - |
| HCM 95th %tile Q(veh) | - | - | - | 3.6 | 0 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 30 | 6 | 0 | 1203 | 1060 | 13 |
| Future Vol, veh/h | 30 | 6 | 0 | 1203 | 1060 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 10 | 16 | 0 |
| Mvmt Flow | 34 | 7 | 0 | 1367 | 1205 | 15 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 1889 | 603 | - | 0 | - | 0 |
| Stage 1 | 1205 | - | - | - | - | - |
| Stage 2 | 684 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | 63 | 447 | 0 | - | - | - |
| Stage 1 | 251 | - | 0 | - | - | - |
| Stage 2 | 468 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 63 | 447 | - | - | - | - |
| Mov Cap-2 Maneuver | 63 | - | - | - | - | - |
| Stage 1 | 251 | - | - | - | - | - |
| Stage 2 | 468 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|-------|----|----|
| HCM Control Delay, s | 102.1 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-------|-----|-----|
| Capacity (veh/h) | - | 74 | - | - |
| HCM Lane V/C Ratio | - | 0.553 | - | - |
| HCM Control Delay (s) | - | 102.1 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 2.4 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.9 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 30 | 76 | 1127 | 5 | 14 | 1052 |
| Future Vol, veh/h | 30 | 76 | 1127 | 5 | 14 | 1052 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 8 | 0 | 0 | 6 |
| Mvmt Flow | 34 | 86 | 1281 | 6 | 16 | 1195 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 1911 | 641 | 0 | 0 | 1287 |
| Stage 1 | 1281 | - | - | - | - |
| Stage 2 | 630 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 61 | 422 | - | - | 546 |
| Stage 1 | 228 | - | - | - | - |
| Stage 2 | 498 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 59 | 422 | - | - | 546 |
| Mov Cap-2 Maneuver | 59 | - | - | - | - |
| Stage 1 | 228 | - | - | - | - |
| Stage 2 | 484 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 82.5 | 0 | 0.2 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 154 | 546 |
| HCM Lane V/C Ratio | - | - | 0.782 | 0.029 |
| HCM Control Delay (s) | - | - | 82.5 | 11.8 |
| HCM Lane LOS | - | - | F | B |
| HCM 95th %tile Q(veh) | - | - | 4.9 | 0.1 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | | | ↗ | ↗↗ | ↗ | ↗ | ↗↗ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1132 | 126 | 100 | 968 | 14 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1132 | 126 | 100 | 968 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 9 | 0 | 3 | 7 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1286 | 143 | 114 | 1100 | 16 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1983 | 2769 | 558 | | | | 1116 | 0 | 0 | 1429 | 0 | 0 |
| Stage 1 | 1336 | 1336 | - | | | | - | - | - | - | - | - |
| Stage 2 | 647 | 1433 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 55 | 20 | 478 | | | | 633 | - | - | 467 | - | - |
| Stage 1 | 213 | 224 | - | | | | - | - | - | - | - | - |
| Stage 2 | 489 | 201 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 41 | 0 | 478 | | | | 633 | - | - | 467 | - | - |
| Mov Cap-2 Maneuver | 41 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 212 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 370 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 1.4 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 633 | - | - | - | 467 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | - | 0.243 | - | - |
| HCM Control Delay (s) | 10.7 | - | - | 0 | 15.2 | - | - |
| HCM Lane LOS | B | - | - | A | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.9 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019


























| Lane Group | EBL | EBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 155 | 45 | 43 | 1277 | 1 | 44 | 927 | 128 |
| v/c Ratio | 0.67 | 0.16 | 0.28 | 0.72 | 0.00 | 0.28 | 0.52 | 0.13 |
| Control Delay | 47.0 | 13.3 | 36.8 | 16.2 | 0.0 | 37.4 | 12.8 | 0.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 47.0 | 13.3 | 36.8 | 16.2 | 0.0 | 37.4 | 12.8 | 0.3 |
| Queue Length 50th (ft) | 71 | 2 | 19 | 244 | 0 | 20 | 153 | 0 |
| Queue Length 95th (ft) | #151 | 28 | 48 | 316 | 0 | 49 | 201 | 0 |
| Internal Link Dist (ft) | | 711 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 235 | 279 | 161 | 1770 | 801 | 156 | 1770 | 968 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.66 | 0.16 | 0.27 | 0.72 | 0.00 | 0.28 | 0.52 | 0.13 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 Business & Water Plant Road

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 136 | 4 | 35 | 0 | 0 | 0 | 38 | 1124 | 1 | 39 | 816 | 113 |
| Future Volume (veh/h) | 136 | 4 | 35 | 0 | 0 | 0 | 38 | 1124 | 1 | 39 | 816 | 113 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1722 | 1470 | 1900 | 1737 | 1856 |
| Adj Flow Rate, veh/h | 155 | 5 | 40 | 0 | 0 | 0 | 43 | 1277 | 1 | 44 | 927 | 128 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 12 | 29 | 0 | 11 | 3 |
| Cap, veh/h | 194 | 22 | 177 | 3 | 3 | 2 | 78 | 1742 | 663 | 89 | 1778 | 847 |
| Arrive On Green | 0.12 | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.05 | 0.53 | 0.53 | 0.05 | 0.54 | 0.54 |
| Sat Flow, veh/h | 1598 | 182 | 1456 | 1810 | 1900 | 1610 | 1626 | 3272 | 1246 | 1810 | 3300 | 1572 |
| Grp Volume(v), veh/h | 155 | 0 | 45 | 0 | 0 | 0 | 43 | 1277 | 1 | 44 | 927 | 128 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1638 | 1810 | 1900 | 1610 | 1626 | 1636 | 1246 | 1810 | 1650 | 1572 |
| Q Serve(g_s), s | 6.7 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 1.8 | 21.4 | 0.0 | 1.7 | 12.9 | 2.9 |
| Cycle Q Clear(g_c), s | 6.7 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 1.8 | 21.4 | 0.0 | 1.7 | 12.9 | 2.9 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 194 | 0 | 199 | 3 | 3 | 2 | 78 | 1742 | 663 | 89 | 1778 | 847 |
| V/C Ratio(X) | 0.80 | 0.00 | 0.23 | 0.00 | 0.00 | 0.00 | 0.55 | 0.73 | 0.00 | 0.50 | 0.52 | 0.15 |
| Avail Cap(c_a), veh/h | 233 | 0 | 239 | 152 | 160 | 135 | 159 | 1742 | 663 | 152 | 1778 | 847 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 30.5 | 0.0 | 28.3 | 0.0 | 0.0 | 0.0 | 33.2 | 12.8 | 7.8 | 33.1 | 10.6 | 8.3 |
| Incr Delay (d2), s/veh | 15.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 5.9 | 2.8 | 0.0 | 4.3 | 1.1 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.3 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.8 | 6.2 | 0.0 | 0.8 | 3.9 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.4 | 0.0 | 28.9 | 0.0 | 0.0 | 0.0 | 39.1 | 15.6 | 7.8 | 37.3 | 11.7 | 8.6 |
| LnGrp LOS | D | A | C | A | A | A | D | B | A | D | B | A |
| Approach Vol, veh/h | | 200 | | | 0 | | | 1321 | | | 1099 | |
| Approach Delay, s/veh | | 41.7 | | | 0.0 | | | 16.3 | | | 12.3 | |
| Approach LOS | | D | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 11.2 | 43.9 | | 0.0 | 10.7 | 44.4 | | 16.3 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 6 | 38.0 | | * 6 | * 7 | 37.4 | | 10.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 3.7 | 23.4 | | 0.0 | 3.8 | 14.9 | | 8.7 | | | | |
| Green Ext Time (p_c), s | 0.0 | 7.1 | | 0.0 | 0.0 | 6.8 | | 0.1 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 16.6 | | | | | | | | | |
| HCM 6th LOS | | | B | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 75 | 53 | 66 | 170 | 24 | 1094 | 89 | 803 | 75 |
| v/c Ratio | 0.43 | 0.17 | 0.39 | 0.57 | 0.22 | 0.73 | 0.62 | 0.42 | 0.07 |
| Control Delay | 52.4 | 1.2 | 51.8 | 15.3 | 53.2 | 26.8 | 66.4 | 15.7 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 52.4 | 1.2 | 51.8 | 15.3 | 53.2 | 26.8 | 66.4 | 15.7 | 0.1 |
| Queue Length 50th (ft) | 47 | 0 | 42 | 0 | 15 | 305 | 57 | 133 | 0 |
| Queue Length 95th (ft) | 94 | 0 | 85 | 59 | 44 | 423 | #132 | 265 | 0 |
| Internal Link Dist (ft) | 631 | | 525 | | | 3118 | | 4723 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 225 | | 225 |
| Base Capacity (vph) | 331 | 432 | 346 | 428 | 109 | 1506 | 150 | 1911 | 1010 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.23 | 0.12 | 0.19 | 0.40 | 0.22 | 0.73 | 0.59 | 0.42 | 0.07 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↕ | ↗ | ↖ | ↕ | ↗ |
| Traffic Volume (veh/h) | 50 | 16 | 47 | 1 | 57 | 150 | 21 | 963 | 0 | 78 | 707 | 66 |
| Future Volume (veh/h) | 50 | 16 | 47 | 1 | 57 | 150 | 21 | 963 | 0 | 78 | 707 | 66 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1722 | 1900 | 1885 | 1767 | 1900 |
| Adj Flow Rate, veh/h | 57 | 18 | 53 | 1 | 65 | 170 | 24 | 1094 | 0 | 89 | 803 | 75 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 12 | 0 | 1 | 9 | 0 |
| Cap, veh/h | 85 | 27 | 101 | 4 | 240 | 203 | 53 | 1487 | 732 | 113 | 1653 | 793 |
| Arrive On Green | 0.06 | 0.06 | 0.06 | 0.13 | 0.13 | 0.13 | 0.03 | 0.45 | 0.00 | 0.06 | 0.49 | 0.49 |
| Sat Flow, veh/h | 1359 | 429 | 1610 | 29 | 1870 | 1585 | 1810 | 3272 | 1610 | 1795 | 3357 | 1610 |
| Grp Volume(v), veh/h | 75 | 0 | 53 | 66 | 0 | 170 | 24 | 1094 | 0 | 89 | 803 | 75 |
| Grp Sat Flow(s),veh/h/ln | 1788 | 0 | 1610 | 1899 | 0 | 1585 | 1810 | 1636 | 1610 | 1795 | 1678 | 1610 |
| Q Serve(g_s), s | 4.2 | 0.0 | 3.2 | 3.2 | 0.0 | 10.6 | 1.3 | 27.8 | 0.0 | 5.0 | 16.2 | 2.5 |
| Cycle Q Clear(g_c), s | 4.2 | 0.0 | 3.2 | 3.2 | 0.0 | 10.6 | 1.3 | 27.8 | 0.0 | 5.0 | 16.2 | 2.5 |
| Prop In Lane | 0.76 | | 1.00 | 0.02 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 112 | 0 | 101 | 243 | 0 | 203 | 53 | 1487 | 732 | 113 | 1653 | 793 |
| V/C Ratio(X) | 0.67 | 0.00 | 0.53 | 0.27 | 0.00 | 0.84 | 0.46 | 0.74 | 0.00 | 0.78 | 0.49 | 0.09 |
| Avail Cap(c_a), veh/h | 317 | 0 | 286 | 337 | 0 | 281 | 107 | 1487 | 732 | 147 | 1653 | 793 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 46.5 | 0.0 | 46.1 | 39.9 | 0.0 | 43.2 | 48.5 | 22.7 | 0.0 | 46.8 | 17.2 | 13.7 |
| Incr Delay (d2), s/veh | 6.8 | 0.0 | 4.2 | 0.6 | 0.0 | 14.4 | 6.1 | 3.3 | 0.0 | 18.6 | 1.0 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.0 | 1.4 | 1.5 | 0.0 | 4.9 | 0.7 | 10.0 | 0.0 | 2.7 | 5.7 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.3 | 0.0 | 50.3 | 40.5 | 0.0 | 57.6 | 54.5 | 26.0 | 0.0 | 65.4 | 18.2 | 13.9 |
| LnGrp LOS | D | A | D | D | A | E | D | C | A | E | B | B |
| Approach Vol, veh/h | | 128 | | | 236 | | | 1118 | | | | 967 |
| Approach Delay, s/veh | | 52.1 | | | 52.8 | | | 26.6 | | | | 22.2 |
| Approach LOS | | D | | | D | | | C | | | | C |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 14.1 | 52.0 | | 21.4 | 10.2 | 55.9 | | 13.9 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 8.3 | 46.1 | | * 18 | * 6 | 48.8 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 7.0 | 29.8 | | 12.6 | 3.3 | 18.2 | | 6.2 | | | | |
| Green Ext Time (p_c), s | 0.0 | 6.3 | | 0.4 | 0.0 | 5.5 | | 0.4 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 28.7 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 45 | 422 | 697 | 7 | 303 | 555 |
| v/c Ratio | 0.11 | 0.64 | 0.67 | 0.01 | 0.70 | 0.30 |
| Control Delay | 25.1 | 9.1 | 27.3 | 11.5 | 18.7 | 9.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 25.1 | 9.1 | 27.3 | 11.5 | 18.7 | 9.2 |
| Queue Length 50th (ft) | 18 | 10 | 157 | 0 | 71 | 67 |
| Queue Length 95th (ft) | 43 | 82 | 211 | 9 | 116 | 93 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 412 | 655 | 1036 | 485 | 448 | 1877 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.11 | 0.64 | 0.67 | 0.01 | 0.68 | 0.30 |
| Intersection Summary | | | | | | |

HCM 6th Signalized Intersection Summary
 10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | ↶ | ↶ | ↕ | ↷ | ↶ | ↕ |
| Traffic Volume (veh/h) | 40 | 371 | 613 | 6 | 267 | 488 |
| Future Volume (veh/h) | 40 | 371 | 613 | 6 | 267 | 488 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1856 | 1781 | 1722 | 1781 | 1841 | 1707 |
| Adj Flow Rate, veh/h | 45 | 422 | 697 | 7 | 303 | 555 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 8 | 12 | 8 | 4 | 13 |
| Cap, veh/h | 420 | 359 | 1063 | 491 | 433 | 1850 |
| Arrive On Green | 0.24 | 0.24 | 0.32 | 0.32 | 0.14 | 0.57 |
| Sat Flow, veh/h | 1767 | 1510 | 3358 | 1510 | 1753 | 3329 |
| Grp Volume(v), veh/h | 45 | 422 | 697 | 7 | 303 | 555 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 1510 | 1636 | 1510 | 1753 | 1622 |
| Q Serve(g_s), s | 1.6 | 18.6 | 14.3 | 0.2 | 8.4 | 6.9 |
| Cycle Q Clear(g_c), s | 1.6 | 18.6 | 14.3 | 0.2 | 8.4 | 6.9 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 420 | 359 | 1063 | 491 | 433 | 1850 |
| V/C Ratio(X) | 0.11 | 1.17 | 0.66 | 0.01 | 0.70 | 0.30 |
| Avail Cap(c_a), veh/h | 420 | 359 | 1063 | 491 | 474 | 1926 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.3 | 29.8 | 22.6 | 17.9 | 15.4 | 8.7 |
| Incr Delay (d2), s/veh | 0.5 | 104.1 | 3.2 | 0.1 | 4.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 16.8 | 5.2 | 0.1 | 3.1 | 1.8 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 23.8 | 133.9 | 25.8 | 17.9 | 19.5 | 8.8 |
| LnGrp LOS | C | F | C | B | B | A |
| Approach Vol, veh/h | 467 | | 704 | | | 858 |
| Approach Delay, s/veh | 123.3 | | 25.7 | | | 12.6 |
| Approach LOS | F | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 19.2 | 34.0 | | 25.0 | | 53.2 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 12 | * 25 | | 18.6 | | * 46 |
| Max Q Clear Time (g_c+I1), s | 10.4 | 16.3 | | 20.6 | | 8.9 |
| Green Ext Time (p_c), s | 0.2 | 2.8 | | 0.0 | | 3.5 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 42.6 | | | |
| HCM 6th LOS | | | D | | | |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 22 | 13 | 11 | 14 | 25 | 10 | 8 | 587 | 38 | 10 | 488 | 30 |
| Future Vol, veh/h | 22 | 13 | 11 | 14 | 25 | 10 | 8 | 587 | 38 | 10 | 488 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 25 | 15 | 13 | 16 | 28 | 11 | 9 | 667 | 43 | 11 | 555 | 34 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 943 | 1305 | 278 | 992 | 1296 | 334 | 589 | 0 | 0 | 710 | 0 | 0 |
| Stage 1 | 577 | 577 | - | 685 | 685 | - | - | - | - | - | - | - |
| Stage 2 | 366 | 728 | - | 307 | 611 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 217 | 159 | 719 | 200 | 161 | 662 | 982 | - | - | 885 | - | - |
| Stage 1 | 469 | 500 | - | 404 | 447 | - | - | - | - | - | - | - |
| Stage 2 | 626 | 427 | - | 678 | 482 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 181 | 156 | 719 | 179 | 158 | 662 | 982 | - | - | 885 | - | - |
| Mov Cap-2 Maneuver | 181 | 156 | - | 179 | 158 | - | - | - | - | - | - | - |
| Stage 1 | 465 | 494 | - | 400 | 443 | - | - | - | - | - | - | - |
| Stage 2 | 571 | 423 | - | 638 | 476 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 27.9 | | 30.7 | | 0.1 | | 0.2 | |
| HCM LOS | D | | D | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 982 | - | - | 209 | 195 | 885 | - | - |
| HCM Lane V/C Ratio | 0.009 | - | - | 0.25 | 0.286 | 0.013 | - | - |
| HCM Control Delay (s) | 8.7 | - | - | 27.9 | 30.7 | 9.1 | - | - |
| HCM Lane LOS | A | - | - | D | D | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1 | 1.1 | 0 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↗ | ↘ | ↗ | | | ↗ | ↘ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 118 | 47 | 515 | 0 | 0 | 34 | 479 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 118 | 47 | 515 | 0 | 0 | 34 | 479 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 134 | 53 | 585 | 0 | 0 | 39 | 544 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 1002 | - 585 583 | 0 - - - 0 |
| Stage 1 | 691 | - - - | - - - - - |
| Stage 2 | 311 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 269 | 0 511 991 | - 0 0 - - |
| Stage 1 | 497 | 0 - - | - 0 0 - - |
| Stage 2 | 743 | 0 - - | - 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 255 | 0 511 991 | - - - - - |
| Mov Cap-2 Maneuver | 255 | 0 - - | - - - - - |
| Stage 1 | 471 | 0 - - | - - - - - |
| Stage 2 | 743 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 14.5 | 0.7 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 991 | - - 511 | - - | - - |
| HCM Lane V/C Ratio | 0.054 | - - 0.262 | - - | - - |
| HCM Control Delay (s) | 8.8 | - 0 14.5 | - - | - - |
| HCM Lane LOS | A | - A B | - - | - - |
| HCM 95th %tile Q(veh) | 0.2 | - - 1 | - - | - - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 562 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 |
| Future Vol, veh/h | 562 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 639 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 78 | 78 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 78 | 78 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 925 | 812 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 945 | 830 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 925 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 925 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 945 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0 | | |
| HCM LOS | - | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 925 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.69 | - | - | - |
| HCM Control Delay (s) | - | - | 17.1 | - | - | - |
| HCM Lane LOS | - | - | C | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 5.8 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 4.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↗ | ↘ | ↑ | | | | | ↘ | | ↗ |
| Traffic Vol, veh/h | 0 | 146 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 105 |
| Future Vol, veh/h | 0 | 146 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 105 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 166 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 119 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 166 | 0 | 0 | | | 167 | - | 1 |
| Stage 1 | - | - | - | - | - | - | | | 1 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 166 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1412 | - | 0 | | | 823 | 0 | 1084 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 1022 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 863 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1412 | - | - | | | 823 | 0 | 1084 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 823 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 1022 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 863 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 8.9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1412 | - | 823 | 1084 |
| HCM Lane V/C Ratio | - | - | - | - | 0.046 | 0.11 |
| HCM Control Delay (s) | - | - | 0 | - | 9.6 | 8.7 |
| HCM Lane LOS | - | - | A | - | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 | 0.4 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | ↘ | | ↘ | | | |
| Traffic Vol, veh/h | 96 | 83 | 0 | 0 | 0 | 63 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 96 | 83 | 0 | 0 | 0 | 63 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | 0 | - | 100 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 109 | 94 | 0 | 0 | 0 | 72 | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 72 | 0 | 0 |
| Stage 1 | - | - | 312 |
| Stage 2 | - | - | 36 |
| Critical Hdwy | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | 1528 | 0 | 0 |
| Stage 1 | - | 0 | 742 |
| Stage 2 | - | 0 | 986 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1528 | - | 603 |
| Mov Cap-2 Maneuver | - | - | 603 |
| Stage 1 | - | - | 689 |
| Stage 2 | - | - | 986 |

| Approach | EB | WB | NB |
|----------------------|----|----|----|
| HCM Control Delay, s | 4 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1528 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.071 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 7.5 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 16 | 23 | 277 | 0 | 28 | 12 | 113 | 33 | 62 |
| Future Vol, veh/h | 0 | 0 | 0 | 16 | 23 | 277 | 0 | 28 | 12 | 113 | 33 | 62 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 18 | 26 | 315 | 0 | 32 | 14 | 128 | 38 | 70 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|----------------------|--------|-------|--------|-------|--------|-------|
| Conflicting Flow All | 368 | 403 | 39 | 108 | 0 | 46 |
| Stage 1 | 39 | 39 | - | - | - | - |
| Stage 2 | 329 | 364 | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | 4.12 | - | 4.12 |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 2.218 | - | 2.218 |
| Pot Cap-1 Maneuver | 632 | 536 | 1033 | 1483 | - | 1562 |
| Stage 1 | 983 | 862 | - | - | - | - |
| Stage 2 | 729 | 624 | - | - | - | - |
| Platoon blocked, % | | | | | - | - |
| Mov Cap-1 Maneuver | 580 | 0 | 1033 | 1483 | - | 1562 |
| Mov Cap-2 Maneuver | 580 | 0 | - | - | - | - |
| Stage 1 | 983 | 0 | - | - | - | - |
| Stage 2 | 669 | 0 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.3 | 0 | 4.1 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1483 | - | - | 580 | 1033 | 1562 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.031 | 0.33 | 0.082 | - | - |
| HCM Control Delay (s) | 0 | - | - | 11.4 | 10.2 | 7.5 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 1.5 | 0.3 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 8 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 30 | 95 | 44 | 62 | 254 | 10 |
| Future Vol, veh/h | 30 | 95 | 44 | 62 | 254 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 34 | 108 | 50 | 70 | 289 | 11 |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 0 | 0 | 142 | 0 | 258 88 |
| Stage 1 | - | - | - | - | 88 - |
| Stage 2 | - | - | - | - | 170 - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | - | - | 1441 | - | 731 970 |
| Stage 1 | - | - | - | - | 935 - |
| Stage 2 | - | - | - | - | 860 - |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1441 | - | 705 970 |
| Mov Cap-2 Maneuver | - | - | - | - | 705 - |
| Stage 1 | - | - | - | - | 935 - |
| Stage 2 | - | - | - | - | 829 - |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 3.1 | 13.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 712 | - | - | 1441 | - |
| HCM Lane V/C Ratio | 0.421 | - | - | 0.035 | - |
| HCM Control Delay (s) | 13.7 | - | - | 7.6 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 2.1 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 2 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↔ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 9 | 71 | 193 | 0 | 0 | 139 |
| Future Vol, veh/h | 9 | 71 | 193 | 0 | 0 | 139 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 81 | 219 | 0 | 0 | 158 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 377 | 219 | 0 | - | - | - |
| Stage 1 | 219 | - | - | - | - | - |
| Stage 2 | 158 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | - | - |
| Pot Cap-1 Maneuver | 625 | 821 | - | 0 | 0 | - |
| Stage 1 | 817 | - | - | 0 | 0 | - |
| Stage 2 | 871 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 625 | 821 | - | - | - | - |
| Mov Cap-2 Maneuver | 625 | - | - | - | - | - |
| Stage 1 | 817 | - | - | - | - | - |
| Stage 2 | 871 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 10.1 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 793 | - |
| HCM Lane V/C Ratio | - 0.115 | - |
| HCM Control Delay (s) | - 10.1 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.4 | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 104 | 0 | 30 | 0 | 0 | 0 | 0 | 89 | 25 | 74 | 74 | 0 |
| Future Vol, veh/h | 104 | 0 | 30 | 0 | 0 | 0 | 0 | 89 | 25 | 74 | 74 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 118 | 0 | 34 | 0 | 0 | 0 | 0 | 101 | 28 | 84 | 84 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 367 | 381 | 84 | - | 0 | 0 | 129 | 0 | 0 |
| Stage 1 | 252 | 252 | - | - | - | - | - | - | - |
| Stage 2 | 115 | 129 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 633 | 552 | 975 | 0 | - | - | 1457 | - | 0 |
| Stage 1 | 790 | 698 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 910 | 789 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 595 | 0 | 975 | - | - | - | 1457 | - | - |
| Mov Cap-2 Maneuver | 595 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 790 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 855 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 12.2 | 0 | 3.8 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|
| Capacity (veh/h) | - | - | 652 | 1457 | - |
| HCM Lane V/C Ratio | - | - | 0.234 | 0.058 | - |
| HCM Control Delay (s) | - | - | 12.2 | 7.6 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.9 | 0.2 | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019




















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 375 | 136 | 618 | 800 | 86 |
| v/c Ratio | 0.78 | 0.26 | 0.30 | 0.38 | 0.09 |
| Control Delay | 47.2 | 5.6 | 1.9 | 13.1 | 3.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 47.2 | 5.6 | 1.9 | 13.1 | 3.1 |
| Queue Length 50th (ft) | 243 | 0 | 11 | 144 | 0 |
| Queue Length 95th (ft) | 301 | 37 | m19 | 224 | 23 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 783 | 756 | 2086 | 2106 | 976 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.48 | 0.18 | 0.30 | 0.38 | 0.09 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | |  |  | |  | | |  |  |
| Traffic Volume (vph) | 0 | 0 | 0 | 330 | 0 | 120 | 0 | 544 | 0 | 0 | 704 | 76 |
| Future Volume (vph) | 0 | 0 | 0 | 330 | 0 | 120 | 0 | 544 | 0 | 0 | 704 | 76 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1752 | 1524 | | 3471 | | | 3505 | 1568 |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1752 | 1524 | | 3471 | | | 3505 | 1568 |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 0 | 0 | 0 | 375 | 0 | 136 | 0 | 618 | 0 | 0 | 800 | 86 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 0 | 34 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 375 | 38 | 0 | 618 | 0 | 0 | 800 | 52 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 0% | 6% | 0% | 4% | 14% | 0% | 3% | 3% |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 |
| Actuated Green, G (s) | | | | | 30.4 | 30.4 | | 66.1 | | | 66.1 | 66.1 |
| Effective Green, g (s) | | | | | 30.4 | 30.4 | | 66.1 | | | 66.1 | 66.1 |
| Actuated g/C Ratio | | | | | 0.28 | 0.28 | | 0.60 | | | 0.60 | 0.60 |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 484 | 421 | | 2085 | | | 2106 | 942 |
| v/s Ratio Prot | | | | | | | | 0.18 | | | c0.23 | |
| v/s Ratio Perm | | | | | 0.21 | 0.02 | | | | | | 0.03 |
| v/c Ratio | | | | | 0.77 | 0.09 | | 0.30 | | | 0.38 | 0.05 |
| Uniform Delay, d1 | | | | | 36.6 | 29.5 | | 10.7 | | | 11.4 | 9.1 |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.15 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 7.6 | 0.1 | | 0.2 | | | 0.5 | 0.1 |
| Delay (s) | | | | | 44.2 | 29.6 | | 1.7 | | | 11.9 | 9.2 |
| Level of Service | | | | | D | C | | A | | | B | A |
| Approach Delay (s) | | 0.0 | | | 40.4 | | | 1.7 | | | 11.6 | |
| Approach LOS | | A | | | D | | | A | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 15.9 | | HCM 2000 Level of Service | | | | | | B | |
| HCM 2000 Volume to Capacity ratio | | | 0.50 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 110.0 | | Sum of lost time (s) | | | | | | 13.5 | |
| Intersection Capacity Utilization | | | 78.8% | | ICU Level of Service | | | | | | D | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|-------|------|
| Lane Group Flow (vph) | 127 | 644 | 976 | 247 | 160 | 1015 |
| v/c Ratio | 0.18 | 1.04 | 0.95 | 0.44 | 0.93 | 0.63 |
| Control Delay | 21.8 | 75.5 | 56.3 | 17.7 | 103.6 | 17.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.8 | 75.5 | 56.3 | 17.7 | 103.6 | 17.4 |
| Queue Length 50th (ft) | 56 | ~449 | 353 | 66 | 120 | 217 |
| Queue Length 95th (ft) | 96 | #649 | #468 | 135 | #238 | 240 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 693 | 619 | 1027 | 566 | 172 | 1618 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 1.04 | 0.95 | 0.44 | 0.93 | 0.63 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
|-----------------------------------|------|------|-------|------|------|------|------|-------|------|-------|------|---------------------------|------|
| Lane Configurations | ↖ | | ↖ | | | | | ↑↑ | ↖ | ↖ | ↑↑ | | |
| Traffic Volume (vph) | 112 | 0 | 567 | 0 | 0 | 0 | 0 | 859 | 217 | 141 | 893 | 0 | |
| Future Volume (vph) | 112 | 0 | 567 | 0 | 0 | 0 | 0 | 859 | 217 | 141 | 893 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1380 | | | | | 3343 | 1568 | 1770 | 3471 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1380 | | | | | 3343 | 1568 | 1770 | 3471 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 127 | 0 | 644 | 0 | 0 | 0 | 0 | 976 | 247 | 160 | 1015 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 85 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 127 | 0 | 587 | 0 | 0 | 0 | 0 | 976 | 162 | 160 | 1015 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 17% | 2% | 2% | 2% | 0% | 8% | 3% | 2% | 4% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 44.8 | | 44.8 | | | | | 33.8 | 33.8 | 10.7 | 51.3 | | |
| Effective Green, g (s) | 44.8 | | 44.8 | | | | | 33.8 | 33.8 | 10.7 | 51.3 | | |
| Actuated g/C Ratio | 0.41 | | 0.41 | | | | | 0.31 | 0.31 | 0.10 | 0.47 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 693 | | 562 | | | | | 1027 | 481 | 172 | 1618 | | |
| v/s Ratio Prot | | | | | | | | c0.29 | | c0.09 | 0.29 | | |
| v/s Ratio Perm | 0.07 | | c0.42 | | | | | | 0.10 | | | | |
| v/c Ratio | 0.18 | | 1.04 | | | | | 0.95 | 0.34 | 0.93 | 0.63 | | |
| Uniform Delay, d1 | 20.9 | | 32.6 | | | | | 37.3 | 29.4 | 49.3 | 22.1 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.07 | 0.70 | | |
| Incremental Delay, d2 | 0.1 | | 49.8 | | | | | 18.4 | 1.9 | 46.4 | 1.7 | | |
| Delay (s) | 21.0 | | 82.4 | | | | | 55.7 | 31.3 | 99.4 | 17.2 | | |
| Level of Service | C | | F | | | | | E | C | F | B | | |
| Approach Delay (s) | | 72.3 | | | 0.0 | | | 50.8 | | | 28.4 | | |
| Approach LOS | | E | | | A | | | D | | | C | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 47.7 | | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 0.99 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 110.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 71.4% | | | | | | | | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 23 | 0 | 6 | 2 | 0 | 17 | 5 | 1036 | 2 | 27 | 1414 | 19 |
| Future Vol, veh/h | 23 | 0 | 6 | 2 | 0 | 17 | 5 | 1036 | 2 | 27 | 1414 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 8 | 0 | 0 | 8 | 6 |
| Mvmt Flow | 26 | 0 | 7 | 2 | 0 | 19 | 6 | 1177 | 2 | 31 | 1607 | 22 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 2270 | 2860 | 804 | 2055 | 2880 | 589 | 1629 | 0 | 0 | 1179 | 0 | 0 |
| Stage 1 | 1669 | 1669 | - | 1189 | 1189 | - | - | - | - | - | - | - |
| Stage 2 | 601 | 1191 | - | 866 | 1691 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 23 | 17 | 330 | 33 | 17 | 430 | 404 | - | - | 600 | - | - |
| Stage 1 | 102 | 155 | - | 203 | 264 | - | - | - | - | - | - | - |
| Stage 2 | 459 | 263 | - | 319 | 151 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | ~ 21 | 16 | 330 | 31 | 16 | 430 | 404 | - | - | 600 | - | - |
| Mov Cap-2 Maneuver | ~ 21 | 16 | - | 31 | 16 | - | - | - | - | - | - | - |
| Stage 1 | 100 | 147 | - | 200 | 260 | - | - | - | - | - | - | - |
| Stage 2 | 432 | 259 | - | 296 | 143 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | | |
|----------------------|--------|--|------|--|-----|--|-----|--|--|
| HCM Control Delay, s | \$ 491 | | 27.3 | | 0.1 | | 0.2 | | |
| HCM LOS | F | | D | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|--------|-------|-------|-----|-----|
| Capacity (veh/h) | 404 | - | - | 26 | 183 | 600 | - | - |
| HCM Lane V/C Ratio | 0.014 | - | - | 1.267 | 0.118 | 0.051 | - | - |
| HCM Control Delay (s) | 14 | - | - | \$ 491 | 27.3 | 11.3 | - | - |
| HCM Lane LOS | B | - | - | F | D | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4 | 0.4 | 0.2 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
 4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 7 | 0 | 16 | 0 | 1027 | 10 | 23 | 1399 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 7 | 0 | 16 | 0 | 1027 | 10 | 23 | 1399 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 8 | 0 | 18 | 0 | 1167 | 11 | 26 | 1590 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 2226 | 2820 | 795 | 2014 | 2809 | 584 | - | 0 | 0 | 1178 | 0 | 0 |
| Stage 1 | 1642 | 1642 | - | 1167 | 1167 | - | - | - | - | - | - | - |
| Stage 2 | 584 | 1178 | - | 847 | 1642 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 24 | 18 | 335 | 35 | 18 | 443 | 0 | - | - | 600 | - | 0 |
| Stage 1 | 106 | 159 | - | 209 | 270 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 470 | 267 | - | 327 | 159 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 22 | 17 | 335 | 34 | 17 | 443 | - | - | - | 600 | - | - |
| Mov Cap-2 Maneuver | 22 | 17 | - | 34 | 17 | - | - | - | - | - | - | - |
| Stage 1 | 106 | 152 | - | 209 | 270 | - | - | - | - | - | - | - |
| Stage 2 | 451 | 267 | - | 313 | 152 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|-----|
| HCM Control Delay, s | 0 | 56.7 | 0 | 0.2 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|-------|-------|
| Capacity (veh/h) | - | - | - | 95 | 600 |
| HCM Lane V/C Ratio | - | - | - | 0.275 | 0.044 |
| HCM Control Delay (s) | - | - | 0 | 56.7 | 11.3 |
| HCM Lane LOS | - | - | A | F | B |
| HCM 95th %tile Q(veh) | - | - | - | 1 | 0.1 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 92.3 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 140 | 43 | 0 | 897 | 1374 | 32 |
| Future Vol, veh/h | 140 | 43 | 0 | 897 | 1374 | 32 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 10 | 16 | 0 |
| Mvmt Flow | 159 | 49 | 0 | 1019 | 1561 | 36 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 2071 | 781 | - | 0 | - | 0 |
| Stage 1 | 1561 | - | - | - | - | - |
| Stage 2 | 510 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 48 | 342 | 0 | - | - | - |
| Stage 1 | 162 | - | 0 | - | - | - |
| Stage 2 | 574 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 48 | 342 | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 48 | - | - | - | - | - |
| Stage 1 | 162 | - | - | - | - | - |
| Stage 2 | 574 | - | - | - | - | - |

| Approach | EB | NB | SB |
|-----------------------|--------|----|----|
| HCM Control Delay, \$ | 1253.4 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----------|-----|-----|
| Capacity (veh/h) | - | 60 | - | - |
| HCM Lane V/C Ratio | - | 3.466 | - | - |
| HCM Control Delay (s) | | \$ 1253.4 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 22 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 8 | 34 | 863 | 12 | 50 | 1367 |
| Future Vol, veh/h | 8 | 34 | 863 | 12 | 50 | 1367 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 8 | 0 | 0 | 6 |
| Mvmt Flow | 9 | 39 | 981 | 14 | 57 | 1553 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 1872 | 491 | 0 | 0 | 995 |
| Stage 1 | 981 | - | - | - | - |
| Stage 2 | 891 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 65 | 529 | - | - | 703 |
| Stage 1 | 329 | - | - | - | - |
| Stage 2 | 366 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 60 | 529 | - | - | 703 |
| Mov Cap-2 Maneuver | 60 | - | - | - | - |
| Stage 1 | 329 | - | - | - | - |
| Stage 2 | 336 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 26.7 | 0 | 0.4 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 213 | 703 |
| HCM Lane V/C Ratio | - | - | 0.224 | 0.081 |
| HCM Control Delay (s) | - | - | 26.7 | 10.6 |
| HCM Lane LOS | - | - | D | B |
| HCM 95th %tile Q(veh) | - | - | 0.8 | 0.3 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↕ | ↕ | ↕ | ↕ | ↕ |
| Traffic Vol, veh/h | 22 | 0 | 6 | 0 | 0 | 0 | 10 | 853 | 16 | 35 | 1303 | 37 |
| Future Vol, veh/h | 22 | 0 | 6 | 0 | 0 | 0 | 10 | 853 | 16 | 35 | 1303 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 9 | 0 | 3 | 7 | 0 |
| Mvmt Flow | 25 | 0 | 7 | 0 | 0 | 0 | 11 | 969 | 18 | 40 | 1481 | 42 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 2089 | 2591 | 762 | | | | 1523 | 0 | 0 | 987 | 0 | 0 |
| Stage 1 | 1582 | 1582 | - | | | | - | - | - | - | - | - |
| Stage 2 | 507 | 1009 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 46 | 26 | 352 | | | | 444 | - | - | 690 | - | - |
| Stage 1 | 158 | 171 | - | | | | - | - | - | - | - | - |
| Stage 2 | 576 | 320 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 42 | 0 | 352 | | | | 444 | - | - | 690 | - | - |
| Mov Cap-2 Maneuver | 42 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 154 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 543 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|-------|-----|-----|
| HCM Control Delay, s | 150.3 | 0.2 | 0.3 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 444 | - | - | 52 | 690 | - | - |
| HCM Lane V/C Ratio | 0.026 | - | - | 0.612 | 0.058 | - | - |
| HCM Control Delay (s) | 13.3 | - | - | 150.3 | 10.5 | - | - |
| HCM Lane LOS | B | - | - | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 2.4 | 0.2 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 91 | 48 | 2 | 2 | 50 | 908 | 8 | 64 | 1251 | 173 |
| v/c Ratio | 0.54 | 0.23 | 0.01 | 0.01 | 0.39 | 0.48 | 0.01 | 0.35 | 0.60 | 0.16 |
| Control Delay | 48.4 | 16.2 | 36.5 | 36.5 | 45.5 | 15.0 | 0.0 | 39.7 | 14.6 | 0.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 48.4 | 16.2 | 36.5 | 36.5 | 45.5 | 15.0 | 0.0 | 39.7 | 14.6 | 0.9 |
| Queue Length 50th (ft) | 41 | 2 | 1 | 1 | 23 | 146 | 0 | 28 | 217 | 0 |
| Queue Length 95th (ft) | #112 | 34 | 8 | 8 | #65 | 275 | 0 | 73 | 404 | 8 |
| Internal Link Dist (ft) | | 711 | | 593 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 177 | 222 | 146 | 153 | 129 | 1879 | 832 | 211 | 2094 | 1097 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.51 | 0.22 | 0.01 | 0.01 | 0.39 | 0.48 | 0.01 | 0.30 | 0.60 | 0.16 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 Business & Water Plant Road

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↖ | ↖ | ↖ | ↖↖ | ↖ | ↖ | ↖↖ | ↖ |
| Traffic Volume (veh/h) | 80 | 4 | 38 | 2 | 2 | 0 | 44 | 799 | 7 | 56 | 1101 | 152 |
| Future Volume (veh/h) | 80 | 4 | 38 | 2 | 2 | 0 | 44 | 799 | 7 | 56 | 1101 | 152 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1722 | 1470 | 1900 | 1737 | 1856 |
| Adj Flow Rate, veh/h | 91 | 5 | 43 | 2 | 2 | 0 | 50 | 908 | 8 | 64 | 1251 | 173 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 12 | 29 | 0 | 11 | 3 |
| Cap, veh/h | 124 | 13 | 114 | 12 | 12 | 10 | 82 | 1606 | 612 | 103 | 1658 | 790 |
| Arrive On Green | 0.08 | 0.08 | 0.08 | 0.01 | 0.01 | 0.00 | 0.05 | 0.49 | 0.49 | 0.06 | 0.50 | 0.50 |
| Sat Flow, veh/h | 1598 | 170 | 1466 | 1810 | 1900 | 1610 | 1626 | 3272 | 1246 | 1810 | 3300 | 1572 |
| Grp Volume(v), veh/h | 91 | 0 | 48 | 2 | 2 | 0 | 50 | 908 | 8 | 64 | 1251 | 173 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1636 | 1810 | 1900 | 1610 | 1626 | 1636 | 1246 | 1810 | 1650 | 1572 |
| Q Serve(g_s), s | 4.5 | 0.0 | 2.2 | 0.1 | 0.1 | 0.0 | 2.4 | 15.7 | 0.3 | 2.8 | 24.4 | 4.9 |
| Cycle Q Clear(g_c), s | 4.5 | 0.0 | 2.2 | 0.1 | 0.1 | 0.0 | 2.4 | 15.7 | 0.3 | 2.8 | 24.4 | 4.9 |
| Prop In Lane | 1.00 | | 0.90 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 124 | 0 | 127 | 12 | 12 | 10 | 82 | 1606 | 612 | 103 | 1658 | 790 |
| V/C Ratio(X) | 0.73 | 0.00 | 0.38 | 0.17 | 0.17 | 0.00 | 0.61 | 0.57 | 0.01 | 0.62 | 0.75 | 0.22 |
| Avail Cap(c_a), veh/h | 167 | 0 | 171 | 135 | 142 | 120 | 121 | 1606 | 612 | 196 | 1658 | 790 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.3 | 0.0 | 35.2 | 39.7 | 39.7 | 0.0 | 37.4 | 14.4 | 10.5 | 37.1 | 16.0 | 11.2 |
| Incr Delay (d2), s/veh | 10.4 | 0.0 | 1.8 | 6.9 | 6.2 | 0.0 | 7.2 | 1.4 | 0.0 | 6.0 | 3.2 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.0 | 0.9 | 0.1 | 0.1 | 0.0 | 1.1 | 5.0 | 0.1 | 1.3 | 8.4 | 1.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 46.6 | 0.0 | 37.1 | 46.7 | 46.0 | 0.0 | 44.7 | 15.9 | 10.5 | 43.1 | 19.3 | 11.8 |
| LnGrp LOS | D | A | D | D | D | A | D | B | B | D | B | B |
| Approach Vol, veh/h | | 139 | | | 4 | | | 966 | | | 1488 | |
| Approach Delay, s/veh | | 43.3 | | | 46.3 | | | 17.3 | | | 19.4 | |
| Approach LOS | | D | | | D | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.3 | 45.4 | | 8.9 | 11.3 | 46.3 | | 13.9 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 8.7 | 37.3 | | * 6 | * 6 | 40.4 | | 8.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.8 | 17.7 | | 2.1 | 4.4 | 26.4 | | 6.5 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.5 | | 0.0 | 0.0 | 7.5 | | 0.1 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 20.0 |
| HCM 6th LOS | B |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 61 | 27 | 41 | 203 | 31 | 736 | 8 | 233 | 1016 | 48 |
| v/c Ratio | 0.36 | 0.07 | 0.26 | 0.59 | 0.27 | 0.63 | 0.01 | 0.72 | 0.56 | 0.05 |
| Control Delay | 49.6 | 0.4 | 48.2 | 11.5 | 52.7 | 30.2 | 0.0 | 51.5 | 18.5 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 49.6 | 0.4 | 48.2 | 11.5 | 52.7 | 30.2 | 0.0 | 51.5 | 18.5 | 0.1 |
| Queue Length 50th (ft) | 38 | 0 | 25 | 0 | 19 | 202 | 0 | 142 | 243 | 0 |
| Queue Length 95th (ft) | 79 | 0 | 59 | 43 | 51 | 298 | 0 | 227 | 341 | 0 |
| Internal Link Dist (ft) | 631 | | 525 | | | 3118 | | | 4723 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 100 | 225 | | 225 |
| Base Capacity (vph) | 354 | 505 | 366 | 494 | 116 | 1169 | 748 | 409 | 1818 | 970 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.17 | 0.05 | 0.11 | 0.41 | 0.27 | 0.63 | 0.01 | 0.57 | 0.56 | 0.05 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↗ | ↗ | ↖ | ↗ | ↗ |
| Traffic Volume (veh/h) | 23 | 31 | 24 | 4 | 32 | 179 | 27 | 648 | 7 | 205 | 894 | 42 |
| Future Volume (veh/h) | 23 | 31 | 24 | 4 | 32 | 179 | 27 | 648 | 7 | 205 | 894 | 42 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1722 | 1900 | 1885 | 1767 | 1900 |
| Adj Flow Rate, veh/h | 26 | 35 | 27 | 5 | 36 | 203 | 31 | 736 | 8 | 233 | 1016 | 48 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 12 | 0 | 1 | 9 | 0 |
| Cap, veh/h | 42 | 56 | 87 | 34 | 244 | 233 | 62 | 1176 | 579 | 268 | 1605 | 770 |
| Arrive On Green | 0.05 | 0.05 | 0.05 | 0.15 | 0.15 | 0.15 | 0.03 | 0.36 | 0.36 | 0.15 | 0.48 | 0.48 |
| Sat Flow, veh/h | 774 | 1042 | 1610 | 230 | 1658 | 1585 | 1810 | 3272 | 1610 | 1795 | 3357 | 1610 |
| Grp Volume(v), veh/h | 61 | 0 | 27 | 41 | 0 | 203 | 31 | 736 | 8 | 233 | 1016 | 48 |
| Grp Sat Flow(s),veh/h/ln | 1817 | 0 | 1610 | 1888 | 0 | 1585 | 1810 | 1636 | 1610 | 1795 | 1678 | 1610 |
| Q Serve(g_s), s | 3.4 | 0.0 | 1.6 | 1.9 | 0.0 | 12.8 | 1.7 | 19.0 | 0.3 | 12.9 | 23.1 | 1.6 |
| Cycle Q Clear(g_c), s | 3.4 | 0.0 | 1.6 | 1.9 | 0.0 | 12.8 | 1.7 | 19.0 | 0.3 | 12.9 | 23.1 | 1.6 |
| Prop In Lane | 0.43 | | 1.00 | 0.12 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 98 | 0 | 87 | 278 | 0 | 233 | 62 | 1176 | 579 | 268 | 1605 | 770 |
| V/C Ratio(X) | 0.62 | 0.00 | 0.31 | 0.15 | 0.00 | 0.87 | 0.50 | 0.63 | 0.01 | 0.87 | 0.63 | 0.06 |
| Avail Cap(c_a), veh/h | 320 | 0 | 284 | 333 | 0 | 280 | 106 | 1176 | 579 | 375 | 1605 | 770 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 47.3 | 0.0 | 46.4 | 37.9 | 0.0 | 42.5 | 48.4 | 27.0 | 21.0 | 42.4 | 19.9 | 14.3 |
| Incr Delay (d2), s/veh | 6.3 | 0.0 | 2.0 | 0.2 | 0.0 | 21.5 | 6.0 | 2.5 | 0.0 | 14.5 | 1.9 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.7 | 0.0 | 0.7 | 0.9 | 0.0 | 6.3 | 0.8 | 7.1 | 0.1 | 6.5 | 8.3 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.6 | 0.0 | 48.5 | 38.2 | 0.0 | 64.0 | 54.5 | 29.5 | 21.1 | 56.9 | 21.8 | 14.5 |
| LnGrp LOS | D | A | D | D | A | E | D | C | C | E | C | B |
| Approach Vol, veh/h | | 88 | | | 244 | | | 775 | | | 1297 | |
| Approach Delay, s/veh | | 52.0 | | | 59.7 | | | 30.5 | | | 27.9 | |
| Approach LOS | | D | | | E | | | C | | | C | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 22.9 | 42.6 | | 23.4 | 10.8 | 54.7 | | 13.1 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 21 | 33.1 | | * 18 | * 6 | 48.8 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 14.9 | 21.0 | | 14.8 | 3.7 | 25.1 | | 5.4 | | | | |
| Green Ext Time (p_c), s | 0.3 | 3.5 | | 0.3 | 0.0 | 6.9 | | 0.2 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 32.8 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 72 | 381 | 394 | 11 | 418 | 630 |
| v/c Ratio | 0.16 | 0.57 | 0.54 | 0.03 | 0.73 | 0.36 |
| Control Delay | 24.4 | 6.8 | 29.8 | 13.9 | 18.3 | 10.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 24.4 | 6.8 | 29.8 | 13.9 | 18.3 | 10.4 |
| Queue Length 50th (ft) | 27 | 0 | 87 | 0 | 109 | 82 |
| Queue Length 95th (ft) | 60 | 60 | 133 | 12 | 167 | 111 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 448 | 666 | 733 | 348 | 627 | 1896 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.16 | 0.57 | 0.54 | 0.03 | 0.67 | 0.33 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | ↶ | ↶↷ | ↶↷ | ↶↷ | ↶↷ | ↶↷ |
| Traffic Volume (veh/h) | 63 | 335 | 347 | 10 | 368 | 554 |
| Future Volume (veh/h) | 63 | 335 | 347 | 10 | 368 | 554 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1856 | 1781 | 1722 | 1781 | 1841 | 1707 |
| Adj Flow Rate, veh/h | 72 | 381 | 394 | 11 | 418 | 630 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 8 | 12 | 8 | 4 | 13 |
| Cap, veh/h | 455 | 389 | 749 | 345 | 570 | 1768 |
| Arrive On Green | 0.26 | 0.26 | 0.23 | 0.23 | 0.20 | 0.55 |
| Sat Flow, veh/h | 1767 | 1510 | 3358 | 1510 | 1753 | 3329 |
| Grp Volume(v), veh/h | 72 | 381 | 394 | 11 | 418 | 630 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 1510 | 1636 | 1510 | 1753 | 1622 |
| Q Serve(g_s), s | 2.4 | 19.1 | 8.0 | 0.4 | 12.9 | 8.3 |
| Cycle Q Clear(g_c), s | 2.4 | 19.1 | 8.0 | 0.4 | 12.9 | 8.3 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 455 | 389 | 749 | 345 | 570 | 1768 |
| V/C Ratio(X) | 0.16 | 0.98 | 0.53 | 0.03 | 0.73 | 0.36 |
| Avail Cap(c_a), veh/h | 455 | 389 | 749 | 345 | 661 | 1936 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.8 | 28.0 | 25.7 | 22.8 | 15.8 | 9.8 |
| Incr Delay (d2), s/veh | 0.7 | 40.7 | 2.6 | 0.2 | 3.6 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 10.9 | 3.0 | 0.2 | 4.6 | 2.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 22.6 | 68.8 | 28.4 | 23.0 | 19.4 | 9.9 |
| LnGrp LOS | C | E | C | C | B | A |
| Approach Vol, veh/h | 453 | | 405 | | | 1048 |
| Approach Delay, s/veh | 61.4 | | 28.2 | | | 13.7 |
| Approach LOS | E | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 24.1 | 26.0 | | 26.0 | | 50.1 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 19 | * 17 | | 19.6 | | * 45 |
| Max Q Clear Time (g_c+I1), s | 14.9 | 10.0 | | 21.1 | | 10.3 |
| Green Ext Time (p_c), s | 0.6 | 1.3 | | 0.0 | | 4.0 |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 28.1 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
 11: US 220 Business & Lee Ford Camp Rd/Church St

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 103.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↕ | ↑↑ | ↕ | ↕ | ↑↑ | ↕ |
| Traffic Vol, veh/h | 11 | 277 | 49 | 5 | 6 | 2 | 9 | 344 | 49 | 20 | 567 | 30 |
| Future Vol, veh/h | 11 | 277 | 49 | 5 | 6 | 2 | 9 | 344 | 49 | 20 | 567 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 13 | 315 | 56 | 6 | 7 | 2 | 10 | 391 | 56 | 23 | 644 | 34 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|-------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 909 | 1157 | 322 | 937 | 1135 | 196 | 678 | 0 | 0 | 447 | 0 | 0 |
| Stage 1 | 690 | 690 | - | 411 | 411 | - | - | - | - | - | - | - |
| Stage 2 | 219 | 467 | - | 526 | 724 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 230 | ~ 195 | 674 | 219 | 201 | 812 | 910 | - | - | 1110 | - | - |
| Stage 1 | 401 | 444 | - | 589 | 593 | - | - | - | - | - | - | - |
| Stage 2 | 763 | 560 | - | 503 | 429 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 218 | ~ 189 | 674 | - | 195 | 812 | 910 | - | - | 1110 | - | - |
| Mov Cap-2 Maneuver | 218 | ~ 189 | - | - | 195 | - | - | - | - | - | - | - |
| Stage 1 | 397 | 435 | - | 583 | 586 | - | - | - | - | - | - | - |
| Stage 2 | 744 | 554 | - | 125 | 420 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|-------------------------|-------|----|-----|-----|
| HCM Control Delay, s/\$ | 419.6 | | 0.2 | 0.3 |
| HCM LOS | F | - | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|----------|-------|------|-----|-----|
| Capacity (veh/h) | 910 | - | - | 212 | - | 1110 | - | - |
| HCM Lane V/C Ratio | 0.011 | - | - | 1.806 | - | 0.02 | - | - |
| HCM Control Delay (s) | 9 | - | - | \$ 419.6 | - | 8.3 | - | - |
| HCM Lane LOS | A | - | - | F | - | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 26.7 | - | 0.1 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↗ | ↘ | ↗ | | | ↗ | ↘ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 4 | 0 | 79 | 31 | 323 | 0 | 0 | 166 | 455 |
| Future Vol, veh/h | 0 | 0 | 0 | 4 | 0 | 79 | 31 | 323 | 0 | 0 | 166 | 455 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 5 | 0 | 90 | 35 | 367 | 0 | 0 | 189 | 517 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 885 | - 367 706 | 0 - - - 0 |
| Stage 1 | 437 | - - - | - - - - - |
| Stage 2 | 448 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 315 | 0 678 892 | - 0 0 - - |
| Stage 1 | 651 | 0 - - | - 0 0 - - |
| Stage 2 | 644 | 0 - - | - 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 303 | 0 678 892 | - - - - - |
| Mov Cap-2 Maneuver | 303 | 0 - - | - - - - - |
| Stage 1 | 626 | 0 - - | - - - - - |
| Stage 2 | 644 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 11.4 | 0.8 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 892 | - 303 678 | - - | - - |
| HCM Lane V/C Ratio | 0.039 | - 0.015 0.132 | - - | - - |
| HCM Control Delay (s) | 9.2 | - 17.1 11.1 | - - | - - |
| HCM Lane LOS | A | - C B | - - | - - |
| HCM 95th %tile Q(veh) | 0.1 | - 0 0.5 | - - | - - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 14.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 354 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 | 0 | 0 |
| Future Vol, veh/h | 354 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 402 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 193 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 386 | 386 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 386 | 386 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 617 | 548 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 687 | 610 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 617 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 617 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 687 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 21.1 | 0 | |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 617 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.652 | - | - | - |
| HCM Control Delay (s) | - | - | 21.1 | 0 | - | - |
| HCM Lane LOS | - | - | C | A | - | - |
| HCM 95th %tile Q(veh) | - | - | 4.8 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | ↑ | | ↑ |
| Traffic Vol, veh/h | 0 | 150 | 0 | 0 | 94 | 0 | 0 | 0 | 0 | 8 | 0 | 43 |
| Future Vol, veh/h | 0 | 150 | 0 | 0 | 94 | 0 | 0 | 0 | 0 | 8 | 0 | 43 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 170 | 0 | 0 | 107 | 0 | 0 | 0 | 0 | 9 | 0 | 49 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 170 | 0 | 0 | | | 277 | - | 107 |
| Stage 1 | - | - | - | - | - | - | | | 107 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 170 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1407 | - | 0 | | | 713 | 0 | 947 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 917 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 860 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1407 | - | - | | | 713 | 0 | 947 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 713 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 917 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 860 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 9.2 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1407 | - | 713 | 947 |
| HCM Lane V/C Ratio | - | - | - | - | 0.013 | 0.052 |
| HCM Control Delay (s) | - | - | 0 | - | 10.1 | 9 |
| HCM Lane LOS | - | - | A | - | B | A |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0 | 0.2 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | ↘ | | ↘ | | | |
| Traffic Vol, veh/h | 86 | 72 | 0 | 0 | 94 | 75 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 86 | 72 | 0 | 0 | 94 | 75 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | 0 | - | 100 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 98 | 82 | 0 | 0 | 107 | 85 | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 192 | 0 | 428 |
| Stage 1 | - | - | 278 |
| Stage 2 | - | - | 150 |
| Critical Hdwy | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | 1381 | 0 | 978 |
| Stage 1 | - | 0 | 769 |
| Stage 2 | - | 0 | 878 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1381 | - | 978 |
| Mov Cap-2 Maneuver | - | - | 543 |
| Stage 1 | - | - | 714 |
| Stage 2 | - | - | 878 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 4.2 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1381 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.071 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 7.8 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 17 | 36 | 214 | 0 | 60 | 19 | 149 | 17 | 48 |
| Future Vol, veh/h | 0 | 0 | 0 | 17 | 36 | 214 | 0 | 60 | 19 | 149 | 17 | 48 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 19 | 41 | 243 | 0 | 68 | 22 | 169 | 19 | 55 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 464 | 491 | 79 |
| Stage 1 | 79 | 79 | - |
| Stage 2 | 385 | 412 | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 556 | 478 | 981 |
| Stage 1 | 944 | 829 | - |
| Stage 2 | 688 | 594 | - |
| Platoon blocked, % | | | |
| Mov Cap-1 Maneuver | 494 | 0 | 981 |
| Mov Cap-2 Maneuver | 494 | 0 | - |
| Stage 1 | 944 | 0 | - |
| Stage 2 | 611 | 0 | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.4 | 0 | 5.4 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1526 | - | - | 494 | 981 | 1505 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.039 | 0.29 | 0.113 | - | - |
| HCM Control Delay (s) | 0 | - | - | 12.6 | 10.2 | 7.7 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 1.2 | 0.4 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.4 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 20 | 148 | 32 | 95 | 172 | 23 |
| Future Vol, veh/h | 20 | 148 | 32 | 95 | 172 | 23 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 168 | 36 | 108 | 195 | 26 |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 0 | 0 | 191 | 0 | 287 |
| Stage 1 | - | - | - | - | 107 |
| Stage 2 | - | - | - | - | 180 |
| Critical Hdwy | - | - | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | - | - | 1383 | - | 703 |
| Stage 1 | - | - | - | - | 917 |
| Stage 2 | - | - | - | - | 851 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1383 | - | 683 |
| Mov Cap-2 Maneuver | - | - | - | - | 683 |
| Stage 1 | - | - | - | - | 917 |
| Stage 2 | - | - | - | - | 827 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 1.9 | 12.4 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 706 | - | - | 1383 | - |
| HCM Lane V/C Ratio | 0.314 | - | - | 0.026 | - |
| HCM Control Delay (s) | 12.4 | - | - | 7.7 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 1.3 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↑ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 22 | 15 | 180 | 0 | 0 | 180 |
| Future Vol, veh/h | 22 | 15 | 180 | 0 | 0 | 180 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 25 | 17 | 205 | 0 | 0 | 205 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 410 | 205 | 0 | - | - | - |
| Stage 1 | 205 | - | - | - | - | - |
| Stage 2 | 205 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | - | - |
| Pot Cap-1 Maneuver | 598 | 836 | - | 0 | 0 | - |
| Stage 1 | 829 | - | - | 0 | 0 | - |
| Stage 2 | 829 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 598 | 836 | - | - | - | - |
| Mov Cap-2 Maneuver | 598 | - | - | - | - | - |
| Stage 1 | 829 | - | - | - | - | - |
| Stage 2 | 829 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 10.7 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 676 | - |
| HCM Lane V/C Ratio | - 0.062 | - |
| HCM Control Delay (s) | - 10.7 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.2 | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 149 | 16 | 45 | 157 | 0 |
| Future Vol, veh/h | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 149 | 16 | 45 | 157 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 169 | 18 | 51 | 178 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 458 | 467 | 178 | - | 0 | 0 | 187 | 0 | 0 |
| Stage 1 | 280 | 280 | - | - | - | - | - | - | - |
| Stage 2 | 178 | 187 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 561 | 493 | 865 | 0 | - | - | 1387 | - | 0 |
| Stage 1 | 767 | 679 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 853 | 745 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 538 | 0 | 865 | - | - | - | 1387 | - | - |
| Mov Cap-2 Maneuver | 538 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 767 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 818 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 11.1 | 0 | 1.7 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|
| Capacity (veh/h) | - | - | 663 | 1387 | - |
| HCM Lane V/C Ratio | - | - | 0.106 | 0.037 | - |
| HCM Control Delay (s) | - | - | 11.1 | 7.7 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.4 | 0.1 | - |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 220 Bypass WB Ram | 121 | 1.1 | 2.6 | 0.1 | 90 |
| | 74 | 0.2 | 5.6 | 0.1 | 45 |
| | 75 | 0.1 | 6.4 | 0.1 | 51 |
| | 79 | 0.1 | 4.2 | 0.1 | 53 |
| | 72 | 0.2 | 16.6 | 0.2 | 53 |
| | 80 | 0.3 | 14.7 | 0.2 | 54 |
| | 13 | 0.3 | 15.2 | 0.2 | 53 |
| | 38 | 1.5 | 47.2 | 0.7 | 53 |
| Church St | 11 | 1.6 | 33.7 | 0.5 | 53 |
| Morehead Ave | 10 | 20.8 | 66.3 | 0.7 | 38 |
| Main Street | 9 | 14.6 | 51.7 | 0.6 | 42 |
| Water Plant Road | 8 | 14.1 | 71.7 | 0.9 | 46 |
| Drewry Mason School | 7 | 3.9 | 33.7 | 0.4 | 40 |
| Covington Lane | 6 | 1.6 | 26.9 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.3 | 18.3 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.8 | 8.6 | 0.1 | 42 |
| Villa Road | 3 | 1.7 | 23.7 | 0.3 | 42 |
| | 20 | 0.8 | 7.9 | 0.1 | 40 |
| | 2 | 10.8 | 20.5 | 0.1 | 22 |
| US 58 WB Ramp | 12 | 2.8 | 11.5 | 0.1 | 34 |
| US 58 WB Ramp | 1 | 2.9 | 6.0 | 0.0 | 25 |
| Total | | 81.5 | 493.0 | 6.0 | 44 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| | 1 | 6.6 | 18.6 | 0.2 | 30 |
| US 58 WB Ramp | 12 | 1.3 | 3.4 | 0.0 | 43 |
| US 58 EB Ramp | 2 | 3.4 | 13.1 | 0.1 | 30 |
| | 20 | 1.7 | 11.8 | 0.1 | 38 |
| Kilarney Court | 3 | 0.4 | 7.1 | 0.1 | 44 |
| | 4 | 1.1 | 23.3 | 0.3 | 43 |
| Shamrock Drive | 5 | 0.6 | 8.5 | 0.1 | 42 |
| Covington Lane | 6 | 1.0 | 17.9 | 0.2 | 42 |
| Steve Drive | 7 | 1.7 | 26.6 | 0.3 | 43 |
| Water Plant Road | 8 | 7.7 | 36.2 | 0.4 | 37 |
| Soapstone Road | 9 | 11.8 | 71.1 | 0.9 | 46 |
| Morehead Ave | 10 | 11.0 | 49.0 | 0.6 | 45 |
| Lee Ford Camp Rd | 11 | 5.7 | 51.3 | 0.7 | 50 |
| | 38 | 1.5 | 34.0 | 0.5 | 53 |
| | 13 | 2.1 | 47.7 | 0.7 | 53 |
| | 80 | 0.8 | 15.5 | 0.2 | 52 |
| | 72 | 0.7 | 15.2 | 0.2 | 52 |
| | 79 | 1.1 | 17.3 | 0.2 | 51 |
| | 75 | 0.4 | 4.4 | 0.1 | 50 |
| | 74 | 1.4 | 7.1 | 0.1 | 46 |
| | 121 | 0.3 | 4.6 | 0.1 | 54 |
| US 220 Bypass EB Ram | 122 | 0.4 | 8.4 | 0.1 | 26 |
| | 71 | 1.8 | 8.2 | 0.0 | 15 |
| Total | | 64.5 | 500.3 | 6.2 | 45 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 42 | 1.0 | 16.9 | 0.2 | 52 |
| US 220 Bypass EB Ram | 86 | 0.1 | 6.5 | 0.1 | 53 |
| | 85 | 0.3 | 19.3 | 0.3 | 56 |
| | 43 | 0.1 | 3.5 | 0.0 | 45 |
| | 14 | 1.0 | 50.8 | 0.8 | 54 |
| | 41 | 0.3 | 11.1 | 0.2 | 53 |
| | 91 | 0.9 | 31.5 | 0.5 | 53 |
| | 92 | 0.5 | 14.8 | 0.2 | 53 |
| | 93 | 1.3 | 34.1 | 0.5 | 53 |
| | 94 | 1.3 | 30.5 | 0.4 | 53 |
| | 95 | 0.9 | 20.0 | 0.3 | 52 |
| | 97 | 1.3 | 27.0 | 0.4 | 53 |
| | 98 | - | - | 0.5 | - |
| | 99 | - | - | 0.4 | - |
| US 220 Bypass NB Ram | 63 | - | - | 0.2 | - |
| | 66 | - | - | 0.5 | - |
| | 55 | - | - | 0.2 | - |
| | 100 | 0.1 | 9.8 | 0.1 | 54 |
| | 103 | 1.1 | 60.0 | 0.9 | 54 |
| | 108 | 1.0 | 24.1 | 0.4 | 53 |
| US 58 EB Ramp | 141 | 0.0 | 4.1 | 0.1 | 52 |
| | 107 | 0.1 | 7.0 | 0.1 | 57 |
| US 58 WB Ramp | 142 | 0.1 | 7.7 | 0.1 | 54 |
| Fisher Farm Rd | 143 | 1.9 | 6.6 | 0.1 | 41 |
| Total | | 13.2 | 385.3 | 7.4 | 69 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 58 WB Ramp | 142 | 0.7 | 7.1 | 0.1 | 38 |
| | 107 | 0.5 | 8.5 | 0.1 | 49 |
| US 58 EB Ramp | 141 | 0.2 | 7.5 | 0.1 | 53 |
| | 108 | 0.2 | 4.1 | 0.1 | 52 |
| | 103 | 0.3 | 24.3 | 0.4 | 52 |
| | 100 | 1.8 | 60.4 | 0.9 | 54 |
| | 55 | 0.4 | 10.1 | 0.1 | 52 |
| US 220 Bypass SB Ram | 66 | 0.5 | 15.8 | 0.2 | 53 |
| | 63 | 1.1 | 30.2 | 0.5 | 55 |
| | 99 | 0.5 | 12.5 | 0.2 | 47 |
| | 98 | 1.0 | 24.0 | 0.4 | 53 |
| | 97 | 1.6 | 33.1 | 0.5 | 52 |
| | 95 | 1.4 | 27.3 | 0.4 | 52 |
| | 94 | 1.1 | 20.2 | 0.3 | 52 |
| | 93 | 1.8 | 31.1 | 0.4 | 52 |
| | 92 | 2.2 | 35.0 | 0.5 | 52 |
| | 91 | 1.0 | 15.4 | 0.2 | 51 |
| | 41 | 2.2 | 32.4 | 0.5 | 52 |
| | 14 | - | - | 0.2 | - |
| | 43 | - | - | 0.8 | - |
| US 220 Bypass WB Ram | 85 | - | - | 0.0 | - |
| | 86 | - | - | 0.3 | - |
| | 42 | - | - | 0.1 | - |
| Total | | 18.5 | 399.2 | 7.1 | 64 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 220 Bypass WB Ram | 121 | 1.2 | 2.8 | 0.1 | 83 |
| | 74 | 0.1 | 5.6 | 0.1 | 45 |
| | 75 | 0.1 | 6.4 | 0.1 | 51 |
| | 79 | 0.1 | 4.2 | 0.1 | 53 |
| | 72 | 0.2 | 16.6 | 0.2 | 54 |
| | 80 | 0.2 | 14.7 | 0.2 | 54 |
| | 13 | 0.2 | 15.1 | 0.2 | 54 |
| | 38 | 1.0 | 46.8 | 0.7 | 54 |
| Church St | 11 | 1.1 | 32.8 | 0.5 | 55 |
| Morehead Ave | 10 | 25.2 | 70.5 | 0.7 | 36 |
| Main Street | 9 | 26.7 | 63.3 | 0.6 | 34 |
| Water Plant Road | 8 | 15.9 | 74.3 | 0.9 | 44 |
| Drewry Mason School | 7 | 3.4 | 32.8 | 0.4 | 41 |
| Covington Lane | 6 | 1.6 | 26.8 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.2 | 18.3 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.8 | 8.6 | 0.1 | 42 |
| Villa Road | 3 | 1.7 | 23.8 | 0.3 | 42 |
| | 20 | 0.7 | 7.8 | 0.1 | 40 |
| | 2 | 13.3 | 23.1 | 0.1 | 19 |
| | 12 | 3.1 | 11.8 | 0.1 | 34 |
| US 58 WB Ramp | 1 | 4.6 | 7.6 | 0.0 | 20 |
| Total | | 102.5 | 513.8 | 6.0 | 42 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 10.5 | 22.6 | 0.2 | 25 |
| | 12 | 1.6 | 3.7 | 0.0 | 40 |
| US 58 EB Ramp | 2 | 5.1 | 14.9 | 0.1 | 27 |
| | 20 | 3.1 | 13.2 | 0.1 | 34 |
| Kilarney Court | 3 | 0.7 | 7.4 | 0.1 | 42 |
| | 4 | 1.5 | 23.7 | 0.3 | 42 |
| Shamrock Drive | 5 | 0.8 | 8.7 | 0.1 | 41 |
| Covington Lane | 6 | 1.3 | 18.2 | 0.2 | 42 |
| Steve Drive | 7 | 2.3 | 27.4 | 0.3 | 42 |
| Water Plant Road | 8 | 8.6 | 37.2 | 0.4 | 36 |
| Soapstone Road | 9 | 19.4 | 78.1 | 0.9 | 42 |
| Morehead Ave | 10 | 16.5 | 54.1 | 0.6 | 40 |
| Lee Ford Camp Rd | 11 | 7.2 | 52.6 | 0.7 | 48 |
| | 38 | 1.5 | 34.1 | 0.5 | 53 |
| | 13 | 2.3 | 48.3 | 0.7 | 52 |
| | 80 | 0.8 | 15.6 | 0.2 | 52 |
| | 72 | 0.7 | 15.2 | 0.2 | 52 |
| | 79 | 0.8 | 17.1 | 0.2 | 52 |
| | 75 | 0.2 | 4.3 | 0.1 | 52 |
| | 74 | 1.0 | 6.7 | 0.1 | 49 |
| | 121 | 0.6 | 4.9 | 0.1 | 50 |
| US 220 Bypass EB Ram | 122 | 0.9 | 9.2 | 0.1 | 24 |
| Total | | 87.6 | 517.2 | 6.2 | 43 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 42 | 0.5 | 16.2 | 0.2 | 54 |
| US 220 Bypass EB Ram | 86 | 0.1 | 6.7 | 0.1 | 53 |
| | 85 | 0.4 | 19.4 | 0.3 | 55 |
| | 43 | 0.1 | 3.6 | 0.0 | 45 |
| | 14 | 1.1 | 51.3 | 0.8 | 53 |
| | 41 | 0.3 | 11.2 | 0.2 | 53 |
| | 91 | 1.1 | 31.8 | 0.5 | 53 |
| | 92 | 0.6 | 15.0 | 0.2 | 53 |
| | 93 | 1.6 | 34.4 | 0.5 | 53 |
| | 94 | 1.5 | 30.9 | 0.4 | 52 |
| | 95 | 1.1 | 20.3 | 0.3 | 52 |
| | 97 | 1.6 | 27.4 | 0.4 | 52 |
| | 98 | - | - | 0.5 | - |
| | 99 | - | - | 0.4 | - |
| US 220 Bypass NB Ram | 63 | - | - | 0.2 | - |
| | 66 | - | - | 0.5 | - |
| | 55 | - | - | 0.2 | - |
| | 100 | 0.1 | 9.8 | 0.1 | 54 |
| | 103 | 1.0 | 59.6 | 0.9 | 55 |
| | 108 | 0.7 | 23.9 | 0.4 | 53 |
| | 141 | 0.0 | 4.0 | 0.1 | 54 |
| | 107 | 0.0 | 7.2 | 0.1 | 55 |
| US 58 WB Ramp | 142 | 0.1 | 8.0 | 0.1 | 53 |
| Fisher Farm Rd | 143 | 1.6 | 6.7 | 0.1 | 41 |
| Total | | 13.7 | 387.1 | 7.4 | 69 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 58 WB Ramp | 142 | 0.9 | 6.8 | 0.1 | 40 |
| | 107 | 1.0 | 8.8 | 0.1 | 48 |
| US 58 EB Ramp | 141 | 0.2 | 7.6 | 0.1 | 52 |
| | 108 | 0.1 | 4.1 | 0.1 | 52 |
| | 103 | 0.3 | 24.0 | 0.4 | 53 |
| | 100 | 1.3 | 60.3 | 0.9 | 54 |
| US 220 Bypass SB Ram | 55 | 0.3 | 10.0 | 0.1 | 53 |
| | 66 | 0.5 | 15.9 | 0.2 | 53 |
| | 63 | 1.1 | 30.3 | 0.5 | 55 |
| | 99 | 0.5 | 12.5 | 0.2 | 47 |
| | 98 | 1.0 | 24.0 | 0.4 | 53 |
| | 97 | 1.6 | 33.2 | 0.5 | 52 |
| | 95 | 1.4 | 27.3 | 0.4 | 52 |
| | 94 | 1.1 | 20.3 | 0.3 | 52 |
| | 93 | 1.8 | 31.2 | 0.4 | 52 |
| | 92 | 2.1 | 35.0 | 0.5 | 52 |
| | 91 | 1.0 | 15.3 | 0.2 | 51 |
| | 41 | 2.1 | 32.7 | 0.5 | 51 |
| | 14 | - | - | 0.2 | - |
| | 43 | - | - | 0.8 | - |
| US 220 Bypass WB Ram | 85 | - | - | 0.0 | - |
| | 86 | - | - | 0.3 | - |
| | 42 | - | - | 0.1 | - |
| Total | | 18.3 | 399.4 | 7.1 | 64 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|-----------|----------------|
| | 121 | - | - | 0.1 | - |
| | 74 | 0.1 | 5.4 | 0.1 | 46 |
| | 75 | 0.1 | 6.2 | 0.1 | 53 |
| | 79 | 0.0 | 4.1 | 0.1 | 54 |
| | 72 | 0.2 | 16.5 | 0.2 | 54 |
| | 80 | 0.3 | 14.8 | 0.2 | 53 |
| | 13 | 0.4 | 15.2 | 0.2 | 53 |
| | 38 | 1.8 | 47.6 | 0.7 | 53 |
| Church St | 11 | 1.8 | 34.4 | 0.5 | 52 |
| Morehead Ave | 10 | 22.3 | 63.7 | 0.7 | 40 |
| Main Street | 9 | 26.9 | 64.8 | 0.6 | 34 |
| Water Plant Road | 8 | 19.9 | 77.3 | 0.9 | 42 |
| Drewry Mason School | 7 | 4.6 | 33.0 | 0.4 | 41 |
| Covington Lane | 6 | 1.8 | 26.9 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.3 | 18.0 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.9 | 8.1 | 0.1 | 44 |
| Villa Road | 3 | 1.7 | 22.2 | 0.3 | 45 |
| | 20 | 0.9 | 7.9 | 0.1 | 39 |
| | 2 | 12.8 | 22.7 | 0.1 | 20 |
| | 12 | 3.2 | 12.3 | 0.1 | 32 |
| US 58 WB Ramp | 1 | 3.2 | 6.4 | 0.0 | 23 |
| Total | | 104.2 | 507.3 | 6.0 | 43 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|-----------|----------------|
| | 1 | 8.7 | 20.7 | 0.2 | 27 |
| | 12 | 1.5 | 3.7 | 0.0 | 40 |
| US 58 EB Ramp | 2 | 4.0 | 14.1 | 0.1 | 28 |
| | 20 | 2.0 | 12.1 | 0.1 | 37 |
| Kilarney Court | 3 | 0.4 | 7.3 | 0.1 | 43 |
| | 4 | 1.2 | 23.2 | 0.3 | 43 |
| Shamrock Drive | 5 | 0.7 | 8.0 | 0.1 | 45 |
| Covington Lane | 6 | 1.0 | 16.6 | 0.2 | 46 |
| Steve Drive | 7 | 1.7 | 26.8 | 0.3 | 43 |
| Water Plant Road | 8 | 8.8 | 37.2 | 0.4 | 36 |
| Soapstone Road | 9 | 18.1 | 76.0 | 0.9 | 43 |
| Morehead Ave | 10 | 14.7 | 53.2 | 0.6 | 41 |
| Lee Ford Camp Rd | 11 | 5.2 | 46.3 | 0.7 | 55 |
| | 38 | 1.4 | 33.8 | 0.5 | 53 |
| | 13 | 2.2 | 48.2 | 0.7 | 52 |
| | 80 | 0.9 | 15.5 | 0.2 | 52 |
| | 72 | 0.8 | 15.2 | 0.2 | 52 |
| | 79 | 1.1 | 17.3 | 0.2 | 51 |
| | 75 | 0.4 | 4.4 | 0.1 | 50 |
| | 74 | 1.6 | 7.2 | 0.1 | 45 |
| | 121 | 0.3 | 4.9 | 0.1 | 51 |
| | 122 | 0.4 | 8.6 | 0.1 | 26 |
| | 71 | 2.7 | 9.0 | 0.0 | 13 |
| Total | | 79.8 | 509.6 | 6.2 | 44 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|------------|----------------|
| | 42 | 1.6 | 18.0 | 0.2 | 51 |
| | 86 | 0.1 | 6.2 | 0.1 | 52 |
| | 85 | 0.4 | 19.4 | 0.3 | 55 |
| | 43 | 0.1 | 3.5 | 0.0 | 45 |
| | 14 | 1.1 | 50.9 | 0.8 | 54 |
| | 41 | 0.3 | 11.2 | 0.2 | 53 |
| | 91 | 1.1 | 31.6 | 0.5 | 53 |
| | 92 | 0.6 | 15.0 | 0.2 | 53 |
| | 93 | 1.4 | 34.4 | 0.5 | 53 |
| | 94 | 1.4 | 30.8 | 0.4 | 52 |
| | 95 | 1.0 | 20.2 | 0.3 | 52 |
| | 97 | 1.4 | 27.2 | 0.4 | 52 |
| | 98 | - | - | 0.5 | - |
| | 99 | - | - | 0.4 | - |
| | 63 | - | - | 0.2 | - |
| | 66 | - | - | 0.5 | - |
| | 55 | - | - | 0.2 | - |
| | 100 | 0.1 | 9.7 | 0.1 | 54 |
| | 103 | 1.1 | 60.1 | 0.9 | 54 |
| | 108 | 0.9 | 24.2 | 0.4 | 52 |
| | 141 | 0.0 | 3.9 | 0.1 | 55 |
| | 107 | 0.0 | 7.2 | 0.1 | 55 |
| | 142 | 0.1 | 7.9 | 0.1 | 53 |
| | 143 | 1.6 | 6.7 | 0.1 | 41 |
| Total | | 14.5 | 388.3 | 7.4 | 69 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|-----------|----------------|
| | 143 | 0.9 | 10.4 | 0.1 | 52 |
| | 142 | 0.6 | 5.6 | 0.1 | 48 |
| | 107 | 0.4 | 8.3 | 0.1 | 51 |
| | 141 | 0.3 | 7.7 | 0.1 | 52 |
| | 108 | 0.3 | 4.2 | 0.1 | 50 |
| | 103 | 0.4 | 24.5 | 0.4 | 52 |
| | 100 | 2.2 | 61.0 | 0.9 | 53 |
| | 55 | 0.5 | 10.3 | 0.1 | 52 |
| | 66 | 0.6 | 16.0 | 0.2 | 53 |
| | 63 | 1.4 | 30.7 | 0.5 | 55 |
| | 99 | 0.6 | 12.7 | 0.2 | 46 |
| | 98 | 1.3 | 24.4 | 0.4 | 52 |
| | 97 | 1.9 | 33.5 | 0.5 | 52 |
| | 95 | 1.7 | 27.6 | 0.4 | 51 |
| | 94 | 1.3 | 20.5 | 0.3 | 51 |
| | 93 | 2.1 | 31.5 | 0.4 | 51 |
| | 92 | 2.5 | 35.4 | 0.5 | 51 |
| | 91 | 1.1 | 15.5 | 0.2 | 51 |
| | 41 | 2.5 | 33.0 | 0.5 | 51 |
| | 14 | - | - | 0.2 | - |
| | 43 | - | - | 0.8 | - |
| | 85 | - | - | 0.0 | - |
| | 86 | - | - | 0.3 | - |
| | 42 | - | - | 0.1 | - |
| Total | | 22.6 | 412.8 | 7.3 | 64 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|-----------|----------------|
| | 121 | - | - | 0.1 | - |
| | 74 | 0.1 | 5.4 | 0.1 | 46 |
| | 75 | 0.0 | 6.1 | 0.1 | 53 |
| | 79 | 0.0 | 4.1 | 0.1 | 54 |
| | 72 | 0.1 | 16.4 | 0.2 | 54 |
| | 80 | 0.2 | 14.6 | 0.2 | 54 |
| | 13 | 0.2 | 15.1 | 0.2 | 54 |
| | 38 | 1.1 | 46.7 | 0.7 | 54 |
| Church St | 11 | 1.9 | 34.2 | 0.5 | 52 |
| Morehead Ave | 10 | 23.6 | 64.7 | 0.7 | 39 |
| Main Street | 9 | 29.3 | 66.3 | 0.6 | 33 |
| Water Plant Road | 8 | 17.0 | 74.0 | 0.9 | 44 |
| Drewry Mason School | 7 | 3.5 | 32.1 | 0.4 | 42 |
| Covington Lane | 6 | 1.6 | 26.6 | 0.3 | 43 |
| Shamrock Drive | 5 | 1.2 | 17.8 | 0.2 | 43 |
| Marrowbone Circle | 4 | 0.7 | 8.0 | 0.1 | 45 |
| Villa Road | 3 | 1.5 | 21.8 | 0.3 | 46 |
| | 20 | 0.7 | 7.7 | 0.1 | 40 |
| | 2 | 13.5 | 23.4 | 0.1 | 19 |
| | 12 | 3.4 | 12.3 | 0.1 | 32 |
| US 58 WB Ramp | 1 | 6.1 | 9.3 | 0.0 | 16 |
| Total | | 105.6 | 506.8 | 6.0 | 43 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 10.2 | 22.3 | 0.2 | 25 |
| | 12 | 1.4 | 3.6 | 0.0 | 41 |
| US 58 EB Ramp | 2 | 4.4 | 14.4 | 0.1 | 27 |
| | 20 | 2.9 | 13.0 | 0.1 | 35 |
| Kilarney Court | 3 | 0.6 | 7.5 | 0.1 | 42 |
| | 4 | 1.5 | 23.6 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.0 | 8.3 | 0.1 | 43 |
| Covington Lane | 6 | 1.3 | 16.8 | 0.2 | 45 |
| Steve Drive | 7 | 2.1 | 27.2 | 0.3 | 42 |
| Water Plant Road | 8 | 9.8 | 38.2 | 0.4 | 35 |
| Soapstone Road | 9 | 20.9 | 78.4 | 0.9 | 42 |
| Morehead Ave | 10 | 17.2 | 55.9 | 0.6 | 39 |
| Lee Ford Camp Rd | 11 | 6.4 | 47.2 | 0.7 | 54 |
| | 38 | 1.6 | 34.0 | 0.5 | 53 |
| | 13 | 2.4 | 48.4 | 0.7 | 52 |
| | 80 | 1.0 | 15.6 | 0.2 | 52 |
| | 72 | 0.8 | 15.3 | 0.2 | 52 |
| | 79 | 1.0 | 17.1 | 0.2 | 52 |
| | 75 | 0.3 | 4.4 | 0.1 | 51 |
| | 74 | 1.1 | 6.8 | 0.1 | 48 |
| | 121 | 0.6 | 5.3 | 0.1 | 47 |
| | 122 | 1.0 | 9.3 | 0.1 | 24 |
| Total | | 89.4 | 512.4 | 6.2 | 44 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|-----------|----------------|
| | 42 | 0.8 | 17.2 | 0.3 | 53 |
| | 86 | 0.1 | 6.0 | 0.1 | 52 |
| | 85 | 0.6 | 19.7 | 0.3 | 55 |
| | 43 | 0.2 | 3.6 | 0.0 | 44 |
| | 14 | 1.5 | 51.7 | 0.8 | 53 |
| | 41 | 0.4 | 11.4 | 0.2 | 52 |
| | 91 | 1.4 | 32.0 | 0.5 | 52 |
| | 92 | 0.8 | 15.1 | 0.2 | 52 |
| | 93 | 1.9 | 34.7 | 0.5 | 52 |
| | 94 | 1.9 | 31.3 | 0.4 | 51 |
| | 95 | 1.3 | 20.5 | 0.3 | 51 |
| | 97 | 1.9 | 27.7 | 0.4 | 51 |
| | 98 | - | - | 0.5 | - |
| | 99 | - | - | 0.4 | - |
| | 63 | - | - | 0.2 | - |
| | 66 | - | - | 0.5 | - |
| | 55 | - | - | 0.2 | - |
| | 100 | 0.1 | 9.7 | 0.1 | 55 |
| | 103 | 1.1 | 59.4 | 0.9 | 55 |
| | 108 | 0.9 | 23.8 | 0.4 | 53 |
| | 141 | 0.0 | 4.1 | 0.1 | 52 |
| | 107 | 0.0 | 7.2 | 0.1 | 56 |
| | 142 | 0.1 | 7.9 | 0.1 | 53 |
| | 143 | 1.3 | 5.9 | 0.1 | 46 |
| Total | | 16.4 | 388.9 | 7.4 | 68 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|--------------|------|---------------|-----------------|-----------|----------------|
| | 143 | 0.9 | 10.3 | 0.1 | 52 |
| | 142 | 1.3 | 6.3 | 0.1 | 43 |
| | 107 | 1.0 | 8.7 | 0.1 | 48 |
| | 141 | 0.2 | 7.7 | 0.1 | 52 |
| | 108 | 0.2 | 4.1 | 0.1 | 52 |
| | 103 | 0.4 | 24.0 | 0.4 | 53 |
| | 100 | 1.7 | 60.2 | 0.9 | 54 |
| | 55 | 0.4 | 10.1 | 0.1 | 53 |
| | 66 | 0.6 | 16.0 | 0.2 | 53 |
| | 63 | 1.3 | 30.6 | 0.5 | 55 |
| | 99 | 0.6 | 12.6 | 0.2 | 47 |
| | 98 | 1.3 | 24.3 | 0.4 | 52 |
| | 97 | 1.9 | 33.3 | 0.5 | 52 |
| | 95 | 1.7 | 27.5 | 0.4 | 51 |
| | 94 | 1.3 | 20.4 | 0.3 | 51 |
| | 93 | 2.1 | 31.4 | 0.4 | 51 |
| | 92 | 2.5 | 35.5 | 0.5 | 51 |
| | 91 | 1.1 | 15.5 | 0.2 | 51 |
| | 41 | 2.5 | 32.9 | 0.5 | 51 |
| | 14 | - | - | 0.2 | - |
| | 43 | - | - | 0.8 | - |
| | 85 | - | - | 0.0 | - |
| | 86 | - | - | 0.3 | - |
| | 42 | - | - | 0.1 | - |
| Total | | 23.1 | 411.4 | 7.3 | 64 |

APPENDIX J

FUTURE BUILD ALTERNATIVE C OPERATIONAL ANALYSIS
WORKSHEETS

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019





















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 231 | 97 | 730 | 553 | 53 |
| v/c Ratio | 0.66 | 0.23 | 0.39 | 0.28 | 0.06 |
| Control Delay | 33.2 | 6.0 | 2.6 | 8.7 | 1.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 33.2 | 6.0 | 2.6 | 8.7 | 1.8 |
| Queue Length 50th (ft) | 91 | 0 | 15 | 56 | 0 |
| Queue Length 95th (ft) | 136 | 28 | 20 | 102 | 10 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 537 | 590 | 1875 | 1945 | 943 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.43 | 0.16 | 0.39 | 0.28 | 0.06 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 0 | 0 | 0 | 203 | 0 | 85 | 0 | 642 | 0 | 0 | 487 | 47 |
| Future Volume (vph) | 0 | 0 | 0 | 203 | 0 | 85 | 0 | 642 | 0 | 0 | 487 | 47 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 0 | 0 | 0 | 231 | 0 | 97 | 0 | 730 | 0 | 0 | 553 | 53 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 0 | 0 | 22 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 231 | 22 | 0 | 730 | 0 | 0 | 553 | 31 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 16% | 0% | 6% | 0% | 12% | 14% | 0% | 8% | 3% |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 |
| Actuated Green, G (s) | | | | | 15.8 | 15.8 | | 40.7 | | | 40.7 | 40.7 |
| Effective Green, g (s) | | | | | 15.8 | 15.8 | | 40.7 | | | 40.7 | 40.7 |
| Actuated g/C Ratio | | | | | 0.23 | 0.23 | | 0.58 | | | 0.58 | 0.58 |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 351 | 343 | | 1873 | | | 1943 | 911 |
| v/s Ratio Prot | | | | | | | | c0.23 | | | 0.17 | |
| v/s Ratio Perm | | | | | 0.15 | 0.01 | | | | | | 0.02 |
| v/c Ratio | | | | | 0.66 | 0.06 | | 0.39 | | | 0.28 | 0.03 |
| Uniform Delay, d1 | | | | | 24.6 | 21.3 | | 7.9 | | | 7.3 | 6.3 |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.24 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 4.4 | 0.1 | | 0.5 | | | 0.4 | 0.1 |
| Delay (s) | | | | | 29.1 | 21.4 | | 2.3 | | | 7.7 | 6.3 |
| Level of Service | | | | | C | C | | A | | | A | A |
| Approach Delay (s) | | 0.0 | | | 26.8 | | | 2.3 | | | 7.6 | |
| Approach LOS | | A | | | C | | | A | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 9.1 | | HCM 2000 Level of Service | | | | | | A | |
| HCM 2000 Volume to Capacity ratio | | | 0.46 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | Sum of lost time (s) | | | | | | 13.5 | |
| Intersection Capacity Utilization | | | 40.2% | | ICU Level of Service | | | | | | A | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 94 | 325 | 1053 | 300 | 97 | 688 |
| v/c Ratio | 0.37 | 0.78 | 0.67 | 0.34 | 0.50 | 0.32 |
| Control Delay | 30.6 | 21.4 | 18.0 | 4.7 | 43.5 | 4.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 30.6 | 21.4 | 18.0 | 4.7 | 43.5 | 4.2 |
| Queue Length 50th (ft) | 37 | 27 | 194 | 15 | 41 | 37 |
| Queue Length 95th (ft) | 73 | #123 | 263 | 56 | #88 | 62 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 311 | 457 | 1570 | 887 | 193 | 2184 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.30 | 0.71 | 0.67 | 0.34 | 0.50 | 0.32 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
|-----------------------------------|------|------|-------|------|------|------|------|-------|------|-------|------|---------------------------|------|
| Lane Configurations | ↖ | | ↖ | | | | | ↑↑ | ↖ | ↖ | ↑↑ | | |
| Traffic Volume (vph) | 83 | 0 | 286 | 0 | 0 | 0 | 0 | 927 | 264 | 85 | 605 | 0 | |
| Future Volume (vph) | 83 | 0 | 286 | 0 | 0 | 0 | 0 | 927 | 264 | 85 | 605 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 94 | 0 | 325 | 0 | 0 | 0 | 0 | 1053 | 300 | 97 | 688 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 218 | 0 | 0 | 0 | 0 | 0 | 128 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 94 | 0 | 107 | 0 | 0 | 0 | 0 | 1053 | 172 | 97 | 688 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 19% | 2% | 2% | 2% | 0% | 12% | 3% | 2% | 8% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 10.4 | | 10.4 | | | | | 32.7 | 32.7 | 6.2 | 45.7 | | |
| Effective Green, g (s) | 10.4 | | 10.4 | | | | | 32.7 | 32.7 | 6.2 | 45.7 | | |
| Actuated g/C Ratio | 0.15 | | 0.15 | | | | | 0.47 | 0.47 | 0.09 | 0.65 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 253 | | 201 | | | | | 1505 | 732 | 156 | 2182 | | |
| v/s Ratio Prot | | | | | | | | c0.33 | | c0.05 | 0.21 | | |
| v/s Ratio Perm | 0.06 | | c0.08 | | | | | | 0.11 | | | | |
| v/c Ratio | 0.37 | | 0.53 | | | | | 0.70 | 0.24 | 0.62 | 0.32 | | |
| Uniform Delay, d1 | 26.9 | | 27.6 | | | | | 14.8 | 11.2 | 30.8 | 5.3 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.14 | 0.67 | | |
| Incremental Delay, d2 | 0.9 | | 2.7 | | | | | 2.7 | 0.8 | 7.2 | 0.4 | | |
| Delay (s) | 27.8 | | 30.3 | | | | | 17.5 | 11.9 | 42.4 | 3.9 | | |
| Level of Service | C | | C | | | | | B | B | D | A | | |
| Approach Delay (s) | | 29.7 | | | 0.0 | | | 16.3 | | | 8.7 | | |
| Approach LOS | | C | | | A | | | B | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 16.1 | | | | | | | | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.65 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 49.8% | | | | | | | | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business/US 220 & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 18 | 2 | 16 | 6 | 0 | 7 | 2 | 1166 | 1 | 5 | 882 | 4 |
| Future Vol, veh/h | 18 | 2 | 16 | 6 | 0 | 7 | 2 | 1166 | 1 | 5 | 882 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 20 | 2 | 18 | 7 | 0 | 8 | 2 | 1325 | 1 | 6 | 1002 | 5 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1681 | 2344 | 501 | 1843 | 2348 | 663 | 1007 | 0 | 0 | 1326 | 0 | 0 |
| Stage 1 | 1014 | 1014 | - | 1329 | 1329 | - | - | - | - | - | - | - |
| Stage 2 | 667 | 1330 | - | 514 | 1019 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 63 | 37 | 521 | 48 | 37 | 383 | 696 | - | - | 527 | - | - |
| Stage 1 | 259 | 319 | - | 166 | 226 | - | - | - | - | - | - | - |
| Stage 2 | 419 | 226 | - | 517 | 317 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 61 | 36 | 521 | 44 | 36 | 383 | 696 | - | - | 527 | - | - |
| Mov Cap-2 Maneuver | 61 | 36 | - | 44 | 36 | - | - | - | - | - | - | - |
| Stage 1 | 258 | 315 | - | 166 | 225 | - | - | - | - | - | - | - |
| Stage 2 | 409 | 225 | - | 490 | 314 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|----|--|------|--|----|--|-----|--|
| HCM Control Delay, s | 70 | | 56.8 | | 0 | | 0.1 | |
| HCM LOS | F | | F | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 696 | - | - | 94 | 84 | 527 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | - | 0.435 | 0.176 | 0.011 | - | - |
| HCM Control Delay (s) | 10.2 | - | - | 70 | 56.8 | 11.9 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.8 | 0.6 | 0 | - | - |

HCM 6th TWSC
 4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | ↔ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 20 | 0 | 40 | 0 | 1129 | 6 | 3 | 901 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 20 | 0 | 40 | 0 | 1129 | 6 | 3 | 901 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 23 | 0 | 45 | 0 | 1283 | 7 | 3 | 1024 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 1672 | 2320 | 512 | 1801 | 2313 | 642 | - | 0 | 0 | 1290 | 0 | 0 |
| Stage 1 | 1030 | 1030 | - | 1283 | 1283 | - | - | - | - | - | - | - |
| Stage 2 | 642 | 1290 | - | 518 | 1030 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 64 | 38 | 512 | 51 | 38 | 405 | 0 | - | - | 544 | - | 0 |
| Stage 1 | 254 | 313 | - | 178 | 238 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 434 | 236 | - | 514 | 313 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 57 | 38 | 512 | 51 | 38 | 405 | - | - | - | 544 | - | - |
| Mov Cap-2 Maneuver | 57 | 38 | - | 51 | 38 | - | - | - | - | - | - | - |
| Stage 1 | 254 | 311 | - | 178 | 238 | - | - | - | - | - | - | - |
| Stage 2 | 385 | 236 | - | 511 | 311 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|----|
| HCM Control Delay, s | 0 | 66.7 | 0 | 0 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-------|-----|
| Capacity (veh/h) | - | - | - | 122 | 544 | - |
| HCM Lane V/C Ratio | - | - | - | 0.559 | 0.006 | - |
| HCM Control Delay (s) | - | - | 0 | 66.7 | 11.7 | - |
| HCM Lane LOS | - | - | A | F | B | - |
| HCM 95th %tile Q(veh) | - | - | - | 2.7 | 0 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 33.9 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | ↘↗ | | | ↑↑ | ↑↑ | ↗ |
| Traffic Vol, veh/h | 144 | 23 | 0 | 991 | 909 | 12 |
| Future Vol, veh/h | 144 | 23 | 0 | 991 | 909 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 12 | 16 | 0 |
| Mvmt Flow | 164 | 26 | 0 | 1126 | 1033 | 14 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 1596 | 517 | - | 0 | - | 0 |
| Stage 1 | 1033 | - | - | - | - | - |
| Stage 2 | 563 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 99 | 509 | 0 | - | - | - |
| Stage 1 | 309 | - | 0 | - | - | - |
| Stage 2 | 539 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 99 | 509 | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 99 | - | - | - | - | - |
| Stage 1 | 309 | - | - | - | - | - |
| Stage 2 | 539 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|----|----|
| HCM Control Delay, s | \$ 421.7 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT EBLn1 | SBT | SBR |
|-----------------------|-----------|-----|-----|
| Capacity (veh/h) | - 111 | - | - |
| HCM Lane V/C Ratio | - 1.71 | - | - |
| HCM Control Delay (s) | \$ 421.7 | - | - |
| HCM Lane LOS | - F | - | - |
| HCM 95th %tile Q(veh) | - 14.7 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | TT | | TT | T | T | TT |
| Traffic Vol, veh/h | 28 | 68 | 923 | 5 | 14 | 918 |
| Future Vol, veh/h | 28 | 68 | 923 | 5 | 14 | 918 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 12 | 0 | 0 | 17 |
| Mvmt Flow | 32 | 77 | 1049 | 6 | 16 | 1043 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 1603 | 525 | 0 | 0 | 1055 |
| Stage 1 | 1049 | - | - | - | - |
| Stage 2 | 554 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 98 | 502 | - | - | 668 |
| Stage 1 | 303 | - | - | - | - |
| Stage 2 | 545 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 96 | 502 | - | - | 668 |
| Mov Cap-2 Maneuver | 96 | - | - | - | - |
| Stage 1 | 303 | - | - | - | - |
| Stage 2 | 532 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 35.2 | 0 | 0.2 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 225 | 668 |
| HCM Lane V/C Ratio | - | - | 0.485 | 0.024 |
| HCM Control Delay (s) | - | - | 35.2 | 10.5 |
| HCM Lane LOS | - | - | E | B |
| HCM 95th %tile Q(veh) | - | - | 2.4 | 0.1 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | | | ↖ | ↑↑ | ↗ | ↖ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 928 | 114 | 116 | 817 | 13 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 928 | 114 | 116 | 817 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 12 | 0 | 3 | 17 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1055 | 130 | 132 | 928 | 15 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1732 | 2389 | 472 | | | | 943 | 0 | 0 | 1185 | 0 | 0 |
| Stage 1 | 1200 | 1200 | - | | | | - | - | - | - | - | - |
| Stage 2 | 532 | 1189 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 81 | 34 | 544 | | | | 736 | - | - | 579 | - | - |
| Stage 1 | 252 | 261 | - | | | | - | - | - | - | - | - |
| Stage 2 | 559 | 264 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 62 | 0 | 544 | | | | 736 | - | - | 579 | - | - |
| Mov Cap-2 Maneuver | 62 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 251 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 432 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 1.6 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 736 | - | - | - | 579 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | - | - | 0.228 | - | - |
| HCM Control Delay (s) | 9.9 | - | - | 0 | 13 | - | - |
| HCM Lane LOS | A | - | - | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.9 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019


























| Lane Group | EBL | EBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 125 | 40 | 40 | 1061 | 1 | 40 | 774 | 115 |
| v/c Ratio | 0.57 | 0.16 | 0.24 | 0.59 | 0.00 | 0.22 | 0.46 | 0.12 |
| Control Delay | 37.4 | 13.0 | 29.4 | 12.2 | 0.0 | 29.3 | 10.7 | 0.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 37.4 | 13.0 | 29.4 | 12.2 | 0.0 | 29.3 | 10.7 | 0.2 |
| Queue Length 50th (ft) | 35 | 1 | 11 | 91 | 0 | 11 | 60 | 0 |
| Queue Length 95th (ft) | #111 | 25 | 41 | 228 | 0 | 41 | 156 | 0 |
| Internal Link Dist (ft) | | 711 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 222 | 261 | 177 | 1806 | 815 | 182 | 1694 | 988 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.56 | 0.15 | 0.23 | 0.59 | 0.00 | 0.22 | 0.46 | 0.12 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 Business & Water Plant Road

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 110 | 4 | 31 | 0 | 0 | 0 | 35 | 934 | 1 | 35 | 681 | 101 |
| Future Volume (veh/h) | 110 | 4 | 31 | 0 | 0 | 0 | 35 | 934 | 1 | 35 | 681 | 101 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1752 | 1470 | 1900 | 1648 | 1856 |
| Adj Flow Rate, veh/h | 125 | 5 | 35 | 0 | 0 | 0 | 40 | 1061 | 1 | 40 | 774 | 115 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 10 | 29 | 0 | 17 | 3 |
| Cap, veh/h | 166 | 21 | 149 | 3 | 3 | 3 | 79 | 1653 | 619 | 88 | 1576 | 791 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.05 | 0.50 | 0.50 | 0.05 | 0.50 | 0.50 |
| Sat Flow, veh/h | 1598 | 205 | 1436 | 1810 | 1900 | 1610 | 1626 | 3328 | 1246 | 1810 | 3131 | 1572 |
| Grp Volume(v), veh/h | 125 | 0 | 40 | 0 | 0 | 0 | 40 | 1061 | 1 | 40 | 774 | 115 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1641 | 1810 | 1900 | 1610 | 1626 | 1664 | 1246 | 1810 | 1566 | 1572 |
| Q Serve(g_s), s | 4.6 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 1.4 | 14.2 | 0.0 | 1.3 | 9.8 | 2.4 |
| Cycle Q Clear(g_c), s | 4.6 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 1.4 | 14.2 | 0.0 | 1.3 | 9.8 | 2.4 |
| Prop In Lane | 1.00 | | 0.88 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 166 | 0 | 170 | 3 | 3 | 3 | 79 | 1653 | 619 | 88 | 1576 | 791 |
| V/C Ratio(X) | 0.75 | 0.00 | 0.23 | 0.00 | 0.00 | 0.00 | 0.51 | 0.64 | 0.00 | 0.46 | 0.49 | 0.15 |
| Avail Cap(c_a), veh/h | 222 | 0 | 228 | 180 | 189 | 160 | 178 | 1653 | 619 | 180 | 1576 | 791 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 26.3 | 0.0 | 24.9 | 0.0 | 0.0 | 0.0 | 28.0 | 11.2 | 7.7 | 28.0 | 9.9 | 8.0 |
| Incr Delay (d2), s/veh | 9.6 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 4.9 | 1.9 | 0.0 | 3.6 | 1.1 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 3.9 | 0.0 | 0.6 | 2.7 | 0.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 35.9 | 0.0 | 25.6 | 0.0 | 0.0 | 0.0 | 33.0 | 13.2 | 7.7 | 31.6 | 11.0 | 8.4 |
| LnGrp LOS | D | A | C | A | A | A | C | B | A | C | B | A |
| Approach Vol, veh/h | | 165 | | | 0 | | | 1102 | | | 929 | |
| Approach Delay, s/veh | | 33.4 | | | 0.0 | | | 13.9 | | | 11.6 | |
| Approach LOS | | C | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 10.6 | 35.9 | | 0.0 | 10.2 | 36.3 | | 13.9 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 6 | 30.0 | | * 6 | * 6.6 | 29.8 | | 8.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 3.3 | 16.2 | | 0.0 | 3.4 | 11.8 | | 6.6 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.6 | | 0.0 | 0.0 | 5.1 | | 0.1 | | | | |

| Intersection Summary | | | | | | | | | | | | |
|----------------------|--|--|--|------|--|--|--|--|--|--|--|--|
| HCM 6th Ctrl Delay | | | | 14.4 | | | | | | | | |
| HCM 6th LOS | | | | B | | | | | | | | |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | NBL | NBT | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 67 | 48 | 31 | 1051 | 77 | 666 | 66 |
| v/c Ratio | 0.29 | 0.13 | 0.17 | 0.60 | 0.44 | 0.34 | 0.06 |
| Control Delay | 28.6 | 0.7 | 29.6 | 15.1 | 35.9 | 9.2 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 28.6 | 0.7 | 29.6 | 15.1 | 35.9 | 9.2 | 0.1 |
| Queue Length 50th (ft) | 24 | 0 | 11 | 166 | 29 | 47 | 0 |
| Queue Length 95th (ft) | 55 | 0 | 34 | 242 | 66 | 134 | 0 |
| Internal Link Dist (ft) | 631 | | | 3118 | | 4723 | |
| Turn Bay Length (ft) | | 25 | 100 | | 225 | | 225 |
| Base Capacity (vph) | 541 | 623 | 179 | 1760 | 177 | 1975 | 1121 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.12 | 0.08 | 0.17 | 0.60 | 0.44 | 0.34 | 0.06 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↗ | ↗ | ↖ | ↗ | ↗ |
| Traffic Volume (veh/h) | 45 | 14 | 42 | 0 | 0 | 0 | 27 | 925 | 0 | 68 | 586 | 58 |
| Future Volume (veh/h) | 45 | 14 | 42 | 0 | 0 | 0 | 27 | 925 | 0 | 68 | 586 | 58 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1693 | 1900 | 1885 | 1633 | 1900 |
| Adj Flow Rate, veh/h | 51 | 16 | 48 | 0 | 0 | 0 | 31 | 1051 | 0 | 77 | 666 | 66 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 14 | 0 | 1 | 18 | 0 |
| Cap, veh/h | 117 | 37 | 139 | 0 | 3 | 3 | 73 | 1548 | 775 | 131 | 1616 | 838 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.00 | 0.00 | 0.00 | 0.04 | 0.48 | 0.00 | 0.07 | 0.52 | 0.52 |
| Sat Flow, veh/h | 1361 | 427 | 1610 | 0 | 1900 | 1585 | 1810 | 3216 | 1610 | 1795 | 3103 | 1610 |
| Grp Volume(v), veh/h | 67 | 0 | 48 | 0 | 0 | 0 | 31 | 1051 | 0 | 77 | 666 | 66 |
| Grp Sat Flow(s),veh/h/ln | 1788 | 0 | 1610 | 0 | 1900 | 1585 | 1810 | 1608 | 1610 | 1795 | 1552 | 1610 |
| Q Serve(g_s), s | 2.1 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 1.0 | 14.9 | 0.0 | 2.5 | 7.7 | 1.2 |
| Cycle Q Clear(g_c), s | 2.1 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 1.0 | 14.9 | 0.0 | 2.5 | 7.7 | 1.2 |
| Prop In Lane | 0.76 | | 1.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 154 | 0 | 139 | 0 | 3 | 3 | 73 | 1548 | 775 | 131 | 1616 | 838 |
| V/C Ratio(X) | 0.43 | 0.00 | 0.35 | 0.00 | 0.00 | 0.00 | 0.42 | 0.68 | 0.00 | 0.59 | 0.41 | 0.08 |
| Avail Cap(c_a), veh/h | 545 | 0 | 491 | 0 | 580 | 484 | 184 | 1548 | 775 | 183 | 1616 | 838 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 25.6 | 0.0 | 25.4 | 0.0 | 0.0 | 0.0 | 27.6 | 11.8 | 0.0 | 26.5 | 8.6 | 7.1 |
| Incr Delay (d2), s/veh | 1.9 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 | 3.8 | 2.4 | 0.0 | 4.2 | 0.8 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.4 | 4.0 | 0.0 | 1.1 | 1.8 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 27.5 | 0.0 | 26.9 | 0.0 | 0.0 | 0.0 | 31.5 | 14.2 | 0.0 | 30.6 | 9.4 | 7.3 |
| LnGrp LOS | C | A | C | A | A | A | C | B | A | C | A | A |
| Approach Vol, veh/h | | 115 | | | 0 | | | 1082 | | | 809 | |
| Approach Delay, s/veh | | 27.2 | | | 0.0 | | | 14.7 | | | 11.3 | |
| Approach LOS | | C | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.0 | 34.3 | | 0.0 | 9.7 | 36.6 | | 12.7 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 6 | 28.4 | | * 18 | * 6 | 28.8 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.5 | 16.9 | | 0.0 | 3.0 | 9.7 | | 4.1 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.0 | | 0.0 | 0.0 | 4.0 | | 0.3 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 14.0 |
| HCM 6th LOS | B |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 66 | 557 | 525 | 6 | 252 | 461 |
| v/c Ratio | 0.20 | 0.87 | 0.64 | 0.02 | 0.56 | 0.28 |
| Control Delay | 21.4 | 23.2 | 23.7 | 10.8 | 12.6 | 8.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.4 | 23.2 | 23.7 | 10.8 | 12.6 | 8.1 |
| Queue Length 50th (ft) | 20 | 44 | 87 | 0 | 44 | 43 |
| Queue Length 95th (ft) | 48 | #203 | 130 | 7 | 78 | 65 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 329 | 643 | 826 | 398 | 451 | 1624 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.87 | 0.64 | 0.02 | 0.56 | 0.28 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | ↶ | ↶ | ↕ | ↷ | ↶ | ↕ |
| Traffic Volume (veh/h) | 58 | 490 | 462 | 5 | 222 | 406 |
| Future Volume (veh/h) | 58 | 490 | 462 | 5 | 222 | 406 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1678 | 1781 | 1678 | 1781 | 1841 | 1604 |
| Adj Flow Rate, veh/h | 66 | 557 | 525 | 6 | 252 | 461 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 8 | 15 | 8 | 4 | 20 |
| Cap, veh/h | 336 | 318 | 841 | 398 | 453 | 1642 |
| Arrive On Green | 0.21 | 0.21 | 0.26 | 0.26 | 0.13 | 0.54 |
| Sat Flow, veh/h | 1598 | 1510 | 3272 | 1510 | 1753 | 3127 |
| Grp Volume(v), veh/h | 66 | 557 | 525 | 6 | 252 | 461 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 1510 | 1594 | 1510 | 1753 | 1523 |
| Q Serve(g_s), s | 2.0 | 12.6 | 8.7 | 0.2 | 5.7 | 4.9 |
| Cycle Q Clear(g_c), s | 2.0 | 12.6 | 8.7 | 0.2 | 5.7 | 4.9 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 336 | 318 | 841 | 398 | 453 | 1642 |
| V/C Ratio(X) | 0.20 | 1.75 | 0.62 | 0.02 | 0.56 | 0.28 |
| Avail Cap(c_a), veh/h | 336 | 318 | 841 | 398 | 456 | 1649 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.5 | 23.6 | 19.4 | 16.3 | 12.8 | 7.5 |
| Incr Delay (d2), s/veh | 1.3 | 351.7 | 3.5 | 0.1 | 1.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 35.2 | 3.0 | 0.1 | 1.8 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 20.8 | 375.4 | 22.9 | 16.4 | 14.2 | 7.6 |
| LnGrp LOS | C | F | C | B | B | A |
| Approach Vol, veh/h | 623 | | 531 | | | 713 |
| Approach Delay, s/veh | 337.8 | | 22.8 | | | 9.9 |
| Approach LOS | F | | C | | | A |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 16.5 | 24.4 | | 19.0 | | 40.9 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 8 | * 16 | | 12.6 | | * 32 |
| Max Q Clear Time (g_c+I1), s | 7.7 | 10.7 | | 14.6 | | 6.9 |
| Green Ext Time (p_c), s | 0.0 | 1.4 | | 0.0 | | 2.7 |

Intersection Summary

| | |
|--------------------|-------|
| HCM 6th Ctrl Delay | 123.0 |
| HCM 6th LOS | F |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 27 | 13 | 11 | 11 | 20 | 12 | 7 | 428 | 32 | 10 | 434 | 20 |
| Future Vol, veh/h | 27 | 13 | 11 | 11 | 20 | 12 | 7 | 428 | 32 | 10 | 434 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 20 | 2 |
| Mvmt Flow | 31 | 15 | 13 | 13 | 23 | 14 | 8 | 486 | 36 | 11 | 493 | 23 |

| Major/Minor | Minor2 | | Minor1 | | | Major1 | | | Major2 | | | |
|----------------------|--------|------|--------|------|------|--------|------|---|--------|------|---|---|
| Conflicting Flow All | 786 | 1053 | 247 | 778 | 1040 | 243 | 516 | 0 | 0 | 522 | 0 | 0 |
| Stage 1 | 515 | 515 | - | 502 | 502 | - | - | - | - | - | - | - |
| Stage 2 | 271 | 538 | - | 276 | 538 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 283 | 225 | 753 | 286 | 229 | 758 | 1046 | - | - | 1041 | - | - |
| Stage 1 | 511 | 533 | - | 520 | 540 | - | - | - | - | - | - | - |
| Stage 2 | 712 | 521 | - | 707 | 521 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 253 | 221 | 753 | 263 | 225 | 758 | 1046 | - | - | 1041 | - | - |
| Mov Cap-2 Maneuver | 253 | 221 | - | 263 | 225 | - | - | - | - | - | - | - |
| Stage 1 | 507 | 527 | - | 516 | 536 | - | - | - | - | - | - | - |
| Stage 2 | 664 | 517 | - | 669 | 515 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | | NB | | | SB | | |
|----------------------|----|--|------|--|--|-----|--|--|-----|--|--|
| HCM Control Delay, s | 21 | | 19.7 | | | 0.1 | | | 0.2 | | |
| HCM LOS | C | | C | | | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1046 | - | - | 283 | 293 | 1041 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.205 | 0.167 | 0.011 | - | - |
| HCM Control Delay (s) | 8.5 | - | - | 21 | 19.7 | 8.5 | - | - |
| HCM Lane LOS | A | - | - | C | C | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.8 | 0.6 | 0 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↗ | ↘ | ↗ | | | ↗ | ↘ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 46 | 32 | 421 | 0 | 0 | 33 | 423 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 46 | 32 | 421 | 0 | 0 | 33 | 423 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 2 | 20 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 52 | 36 | 478 | 0 | 0 | 38 | 481 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 829 | - 478 519 | 0 - - - 0 |
| Stage 1 | 550 | - - - | - - - - - |
| Stage 2 | 279 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 340 | 0 587 1047 | - 0 0 - - |
| Stage 1 | 578 | 0 - - | - 0 0 - - |
| Stage 2 | 768 | 0 - - | - 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 328 | 0 587 1047 | - - - - - |
| Mov Cap-2 Maneuver | 328 | 0 - - | - - - - - |
| Stage 1 | 558 | 0 - - | - - - - - |
| Stage 2 | 768 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 11.7 | 0.6 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 1047 | - - 587 | - - | |
| HCM Lane V/C Ratio | 0.035 | - - 0.089 | - - | |
| HCM Control Delay (s) | 8.6 | - 0 11.7 | - - | |
| HCM Lane LOS | A | - A B | - - | |
| HCM 95th %tile Q(veh) | 0.1 | - - 0.3 | - - | |

HCM 6th TWSC
 122: Reservoir Rd & US 220 Bypass EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 453 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 |
| Future Vol, veh/h | 453 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 15 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 515 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 76 | 76 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 76 | 76 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.55 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.635 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 896 | 814 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 915 | 832 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 896 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 896 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 915 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | | 0 | |
| HCM LOS | - | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 896 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.575 | - | - | - |
| HCM Control Delay (s) | - | - | 14.3 | - | - | - |
| HCM Lane LOS | - | - | B | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 3.8 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 4.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↗ | ↘ | ↑ | | | | | ↘ | | ↗ |
| Traffic Vol, veh/h | 0 | 138 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 99 |
| Future Vol, veh/h | 0 | 138 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 99 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 157 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 113 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 157 | 0 | 0 | | | 158 | - | 1 |
| Stage 1 | - | - | - | - | - | - | | | 1 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 157 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1423 | - | 0 | | | 833 | 0 | 1084 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 1022 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 871 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1423 | - | - | | | 833 | 0 | 1084 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 833 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 1022 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 871 | 0 | - |

| Approach | EB | | WB | | SB | |
|----------------------|----|--|----|--|-----|--|
| HCM Control Delay, s | 0 | | 0 | | 8.9 | |
| HCM LOS | | | | | A | |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1423 | - | 833 | 1084 |
| HCM Lane V/C Ratio | - | - | - | - | 0.045 | 0.104 |
| HCM Control Delay (s) | - | - | 0 | - | 9.5 | 8.7 |
| HCM Lane LOS | - | - | A | - | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 | 0.3 |

| Intersection | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|--|
| Int Delay, s/veh | 3 | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBR | SWL | SWR | |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | ↘ | | | | |
| Traffic Vol, veh/h | 94 | 77 | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 0 | |
| Future Vol, veh/h | 94 | 77 | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 0 | |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | |
| Storage Length | 100 | - | - | - | - | - | 0 | 100 | - | - | |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | 0 | - | 16965 | - | |
| Grade, % | - | 0 | - | - | 0 | - | 0 | - | 0 | - | |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| Mvmt Flow | 107 | 88 | 0 | 0 | 0 | 68 | 0 | 0 | 0 | 0 | |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 68 | 0 | - | - | 0 336 88 |
| Stage 1 | - | - | - | - | 302 - |
| Stage 2 | - | - | - | - | 34 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1533 | - | 0 | 0 | 659 970 |
| Stage 1 | - | - | 0 | 0 | 750 - |
| Stage 2 | - | - | 0 | 0 | 988 - |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | 1533 | - | - | - | 613 970 |
| Mov Cap-2 Maneuver | - | - | - | - | 613 - |
| Stage 1 | - | - | - | - | 698 - |
| Stage 2 | - | - | - | - | 988 - |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 4.1 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1533 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.07 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 7.5 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 15 | 22 | 263 | 0 | 24 | 12 | 100 | 29 | 55 |
| Future Vol, veh/h | 0 | 0 | 0 | 15 | 22 | 263 | 0 | 24 | 12 | 100 | 29 | 55 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 17 | 25 | 299 | 0 | 27 | 14 | 114 | 33 | 63 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|----------------------|--------|-------|--------|-------|--------|-------|
| Conflicting Flow All | 327 | 358 | 34 | 96 | 0 | 41 |
| Stage 1 | 34 | 34 | - | - | - | - |
| Stage 2 | 293 | 324 | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | 4.12 | - | 4.12 |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 2.218 | - | 2.218 |
| Pot Cap-1 Maneuver | 667 | 568 | 1039 | 1498 | - | 1568 |
| Stage 1 | 988 | 867 | - | - | - | - |
| Stage 2 | 757 | 650 | - | - | - | - |
| Platoon blocked, % | | | | | - | - |
| Mov Cap-1 Maneuver | 618 | 0 | 1039 | 1498 | - | 1568 |
| Mov Cap-2 Maneuver | 618 | 0 | - | - | - | - |
| Stage 1 | 988 | 0 | - | - | - | - |
| Stage 2 | 702 | 0 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.1 | 0 | 4.1 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1498 | - | - | 618 | 1039 | 1568 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.028 | 0.312 | 0.072 | - | - |
| HCM Control Delay (s) | 0 | - | - | 11 | 10 | 7.5 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 1.3 | 0.2 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.8 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 27 | 85 | 43 | 60 | 240 | 10 |
| Future Vol, veh/h | 27 | 85 | 43 | 60 | 240 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 31 | 97 | 49 | 68 | 273 | 11 |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 0 | 0 | 128 | 0 | 246 |
| Stage 1 | - | - | - | - | 80 |
| Stage 2 | - | - | - | - | 166 |
| Critical Hdwy | - | - | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | - | - | 1458 | - | 742 |
| Stage 1 | - | - | - | - | 943 |
| Stage 2 | - | - | - | - | 863 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1458 | - | 716 |
| Mov Cap-2 Maneuver | - | - | - | - | 716 |
| Stage 1 | - | - | - | - | 943 |
| Stage 2 | - | - | - | - | 833 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 3.2 | 13.1 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 724 | - | - | 1458 | - |
| HCM Lane V/C Ratio | 0.392 | - | - | 0.034 | - |
| HCM Control Delay (s) | 13.1 | - | - | 7.6 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 1.9 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 2 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↔ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 9 | 70 | 180 | 0 | 0 | 128 |
| Future Vol, veh/h | 9 | 70 | 180 | 0 | 0 | 128 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 80 | 205 | 0 | 0 | 145 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 350 | 205 | 0 | - | - | - |
| Stage 1 | 205 | - | - | - | - | - |
| Stage 2 | 145 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | - | - |
| Pot Cap-1 Maneuver | 647 | 836 | - | 0 | 0 | - |
| Stage 1 | 829 | - | - | 0 | 0 | - |
| Stage 2 | 882 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 647 | 836 | - | - | - | - |
| Mov Cap-2 Maneuver | 647 | - | - | - | - | - |
| Stage 1 | 829 | - | - | - | - | - |
| Stage 2 | 882 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 10 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 809 | - |
| HCM Lane V/C Ratio | - 0.111 | - |
| HCM Control Delay (s) | - 10 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.4 | - |

HCM 6th TWSC
146: Fisher Farm Rd & US 58 EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 90 | 0 | 25 | 0 | 0 | 0 | 0 | 90 | 24 | 68 | 69 | 0 |
| Future Vol, veh/h | 90 | 0 | 25 | 0 | 0 | 0 | 0 | 90 | 24 | 68 | 69 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 102 | 0 | 28 | 0 | 0 | 0 | 0 | 102 | 27 | 77 | 78 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 348 | 361 | 78 | - | 0 | 0 | 129 | 0 | 0 |
| Stage 1 | 232 | 232 | - | - | - | - | - | - | - |
| Stage 2 | 116 | 129 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 649 | 566 | 983 | 0 | - | - | 1457 | - | 0 |
| Stage 1 | 807 | 713 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 909 | 789 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 613 | 0 | 983 | - | - | - | 1457 | - | - |
| Mov Cap-2 Maneuver | 613 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 807 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 859 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 11.7 | 0 | 3.8 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|
| Capacity (veh/h) | - | - | 668 | 1457 | - |
| HCM Lane V/C Ratio | - | - | 0.196 | 0.053 | - |
| HCM Control Delay (s) | - | - | 11.7 | 7.6 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.7 | 0.2 | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019



| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 351 | 124 | 565 | 819 | 85 |
| v/c Ratio | 0.76 | 0.23 | 0.33 | 0.46 | 0.10 |
| Control Delay | 35.5 | 4.4 | 3.5 | 13.9 | 3.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 35.5 | 4.4 | 3.5 | 13.9 | 3.6 |
| Queue Length 50th (ft) | 158 | 0 | 18 | 123 | 0 |
| Queue Length 95th (ft) | 208 | 29 | m21 | 207 | 23 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 645 | 705 | 1718 | 1782 | 875 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.18 | 0.33 | 0.46 | 0.10 |



















Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 309 | 0 | 109 | 0 | 497 | 0 | 0 | 721 | 75 | |
| Future Volume (vph) | 0 | 0 | 0 | 309 | 0 | 109 | 0 | 497 | 0 | 0 | 721 | 75 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 351 | 0 | 124 | 0 | 565 | 0 | 0 | 819 | 85 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 87 | 0 | 0 | 0 | 0 | 0 | 40 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 351 | 37 | 0 | 565 | 0 | 0 | 819 | 45 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 16% | 0% | 6% | 0% | 12% | 14% | 0% | 8% | 3% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 23.8 | 23.8 | | 42.7 | | | 42.7 | 42.7 | |
| Effective Green, g (s) | | | | | 23.8 | 23.8 | | 42.7 | | | 42.7 | 42.7 | |
| Actuated g/C Ratio | | | | | 0.30 | 0.30 | | 0.53 | | | 0.53 | 0.53 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | | | | 462 | 453 | | 1720 | | | 1784 | 836 | |
| v/s Ratio Prot | | | | | | | | 0.18 | | | c0.25 | | |
| v/s Ratio Perm | | | | | 0.23 | 0.02 | | | | | | 0.03 | |
| v/c Ratio | | | | | 0.76 | 0.08 | | 0.33 | | | 0.46 | 0.05 | |
| Uniform Delay, d1 | | | | | 25.5 | 20.2 | | 10.5 | | | 11.5 | 9.0 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.27 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 7.1 | 0.1 | | 0.3 | | | 0.9 | 0.1 | |
| Delay (s) | | | | | 32.6 | 20.3 | | 3.1 | | | 12.4 | 9.1 | |
| Level of Service | | | | | C | C | | A | | | B | A | |
| Approach Delay (s) | | 0.0 | | | 29.4 | | | 3.1 | | | 12.1 | | |
| Approach LOS | | A | | | C | | | A | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 13.7 | | HCM 2000 Level of Service | | | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.57 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | Sum of lost time (s) | | | | | 13.5 | | | |
| Intersection Capacity Utilization | | | 75.8% | | ICU Level of Service | | | | | D | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 107 | 536 | 901 | 223 | 159 | 1011 |
| v/c Ratio | 0.19 | 1.00 | 0.91 | 0.37 | 0.85 | 0.61 |
| Control Delay | 20.4 | 61.8 | 42.0 | 8.5 | 71.1 | 14.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.4 | 61.8 | 42.0 | 8.5 | 71.1 | 14.1 |
| Queue Length 50th (ft) | 38 | 211 | 226 | 20 | 80 | 141 |
| Queue Length 95th (ft) | 73 | #407 | #328 | 67 | #180 | 244 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 559 | 536 | 987 | 596 | 188 | 1663 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.19 | 1.00 | 0.91 | 0.37 | 0.85 | 0.61 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 2: US 220 Business & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|------|-------|------|------|------|------|-------|------|------|---------------------------|------|
| Lane Configurations | ↖ | | ↗ | | | | | ↑↑ | ↖ | ↗ | ↑↑ | |
| Traffic Volume (vph) | 94 | 0 | 472 | 0 | 0 | 0 | 0 | 793 | 196 | 140 | 890 | 0 |
| Future Volume (vph) | 94 | 0 | 472 | 0 | 0 | 0 | 0 | 793 | 196 | 140 | 890 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 107 | 0 | 536 | 0 | 0 | 0 | 0 | 901 | 223 | 159 | 1011 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 107 | 0 | 446 | 0 | 0 | 0 | 0 | 901 | 106 | 159 | 1011 | 0 |
| Heavy Vehicles (%) | 6% | 0% | 19% | 2% | 2% | 2% | 0% | 12% | 3% | 2% | 8% | 0% |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | |
| Actuated Green, G (s) | 26.3 | | 26.3 | | | | | 24.5 | 24.5 | 8.5 | 39.8 | |
| Effective Green, g (s) | 26.3 | | 26.3 | | | | | 24.5 | 24.5 | 8.5 | 39.8 | |
| Actuated g/C Ratio | 0.33 | | 0.33 | | | | | 0.31 | 0.31 | 0.11 | 0.50 | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 559 | | 446 | | | | | 987 | 480 | 188 | 1663 | |
| v/s Ratio Prot | | | | | | | | c0.28 | | 0.09 | c0.30 | |
| v/s Ratio Perm | 0.06 | | c0.33 | | | | | | 0.07 | | | |
| v/c Ratio | 0.19 | | 1.00 | | | | | 0.91 | 0.22 | 0.85 | 0.61 | |
| Uniform Delay, d1 | 19.2 | | 26.9 | | | | | 26.7 | 20.7 | 35.1 | 14.5 | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.04 | 0.85 | |
| Incremental Delay, d2 | 0.2 | | 42.6 | | | | | 14.1 | 1.1 | 25.4 | 1.5 | |
| Delay (s) | 19.4 | | 69.5 | | | | | 40.8 | 21.7 | 61.8 | 13.8 | |
| Level of Service | B | | E | | | | | D | C | E | B | |
| Approach Delay (s) | | 61.2 | | | 0.0 | | | 37.0 | | | 20.3 | |
| Approach LOS | | E | | | A | | | D | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 35.7 | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 0.95 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 80.0 | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 65.4% | | | | | | | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 21 | 0 | 6 | 2 | 0 | 18 | 4 | 950 | 2 | 26 | 1319 | 17 |
| Future Vol, veh/h | 21 | 0 | 6 | 2 | 0 | 18 | 4 | 950 | 2 | 26 | 1319 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 24 | 0 | 7 | 2 | 0 | 20 | 5 | 1080 | 2 | 30 | 1499 | 19 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 2109 | 2651 | 750 | 1900 | 2668 | 540 | 1518 | 0 | 0 | 1082 | 0 | 0 |
| Stage 1 | 1559 | 1559 | - | 1090 | 1090 | - | - | - | - | - | - | - |
| Stage 2 | 550 | 1092 | - | 810 | 1578 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 30 | 23 | 358 | 43 | 23 | 464 | 446 | - | - | 652 | - | - |
| Stage 1 | 120 | 175 | - | 233 | 294 | - | - | - | - | - | - | - |
| Stage 2 | 492 | 293 | - | 344 | 171 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 27 | 22 | 358 | 40 | 22 | 464 | 446 | - | - | 652 | - | - |
| Mov Cap-2 Maneuver | 27 | 22 | - | 40 | 22 | - | - | - | - | - | - | - |
| Stage 1 | 119 | 167 | - | 230 | 291 | - | - | - | - | - | - | - |
| Stage 2 | 465 | 290 | - | 322 | 163 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | | |
|----------------------|-------|--|------|--|-----|--|-----|--|--|
| HCM Control Delay, s | 297.4 | | 22.8 | | 0.1 | | 0.2 | | |
| HCM LOS | F | | C | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 446 | - | - | 34 | 225 | 652 | - | - |
| HCM Lane V/C Ratio | 0.01 | - | - | 0.902 | 0.101 | 0.045 | - | - |
| HCM Control Delay (s) | 13.2 | - | - | 297.4 | 22.8 | 10.8 | - | - |
| HCM Lane LOS | B | - | - | F | C | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 3.2 | 0.3 | 0.1 | - | - |

HCM 6th TWSC
 4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 913 | 9 | 21 | 1306 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 913 | 9 | 21 | 1306 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 22 | 0 | 49 | 0 | 1038 | 10 | 24 | 1484 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 2051 | 2580 | 742 | 1828 | 2570 | 519 | - | 0 | 0 | 1048 | 0 | 0 |
| Stage 1 | 1532 | 1532 | - | 1038 | 1038 | - | - | - | - | - | - | - |
| Stage 2 | 519 | 1048 | - | 790 | 1532 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 33 | 26 | 363 | 49 | 26 | 489 | 0 | - | - | 672 | - | 0 |
| Stage 1 | 124 | 180 | - | 251 | 311 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 513 | 307 | - | 354 | 180 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | - | - | - | | |
| Mov Cap-1 Maneuver | 29 | 25 | 363 | 48 | 25 | 489 | - | - | - | 672 | - | - |
| Mov Cap-2 Maneuver | 29 | 25 | - | 48 | 25 | - | - | - | - | - | - | - |
| Stage 1 | 124 | 174 | - | 251 | 311 | - | - | - | - | - | - | - |
| Stage 2 | 462 | 307 | - | 341 | 174 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|-----|
| HCM Control Delay, s | 0 | 63.1 | 0 | 0.2 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|------|-------|
| Capacity (veh/h) | - | - | - | 128 | 672 |
| HCM Lane V/C Ratio | - | - | - | 0.55 | 0.036 |
| HCM Control Delay (s) | - | - | 0 | 63.1 | 10.6 |
| HCM Lane LOS | - | - | A | F | B |
| HCM 95th %tile Q(veh) | - | - | - | 2.7 | 0.1 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 67.2 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 136 | 40 | 0 | 786 | 1295 | 30 |
| Future Vol, veh/h | 136 | 40 | 0 | 786 | 1295 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 12 | 16 | 0 |
| Mvmt Flow | 155 | 45 | 0 | 893 | 1472 | 34 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 1919 | 736 | - | 0 | - | 0 |
| Stage 1 | 1472 | - | - | - | - | - |
| Stage 2 | 447 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 61 | 366 | 0 | - | - | - |
| Stage 1 | 181 | - | 0 | - | - | - |
| Stage 2 | 617 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 61 | 366 | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 61 | - | - | - | - | - |
| Stage 1 | 181 | - | - | - | - | - |
| Stage 2 | 617 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|----|----|
| HCM Control Delay, s | \$ 873.2 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|----------|-----|-----|
| Capacity (veh/h) | - | 75 | - | - |
| HCM Lane V/C Ratio | - | 2.667 | - | - |
| HCM Control Delay (s) | - | \$ 873.2 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 19.5 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 8 | 33 | 753 | 11 | 48 | 1287 |
| Future Vol, veh/h | 8 | 33 | 753 | 11 | 48 | 1287 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 12 | 0 | 0 | 17 |
| Mvmt Flow | 9 | 38 | 856 | 13 | 55 | 1463 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 1698 | 428 | 0 | 0 | 869 |
| Stage 1 | 856 | - | - | - | - |
| Stage 2 | 842 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 85 | 581 | - | - | 784 |
| Stage 1 | 382 | - | - | - | - |
| Stage 2 | 388 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 79 | 581 | - | - | 784 |
| Mov Cap-2 Maneuver | 79 | - | - | - | - |
| Stage 1 | 382 | - | - | - | - |
| Stage 2 | 361 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 21.9 | 0 | 0.4 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|------|------|
| Capacity (veh/h) | - | - | 259 | 784 |
| HCM Lane V/C Ratio | - | - | 0.18 | 0.07 |
| HCM Control Delay (s) | - | - | 21.9 | 9.9 |
| HCM Lane LOS | - | - | C | A |
| HCM 95th %tile Q(veh) | - | - | 0.6 | 0.2 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↑↑ | ↕ | ↕ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 764 | 14 | 43 | 1218 | 34 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 764 | 14 | 43 | 1218 | 34 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 12 | 0 | 3 | 17 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 868 | 16 | 49 | 1384 | 39 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1956 | 2406 | 712 | | | | 1423 | 0 | 0 | 884 | 0 | 0 |
| Stage 1 | 1502 | 1502 | - | | | | - | - | - | - | - | - |
| Stage 2 | 454 | 904 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 57 | 34 | 379 | | | | 484 | - | - | 755 | - | - |
| Stage 1 | 174 | 187 | - | | | | - | - | - | - | - | - |
| Stage 2 | 612 | 358 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 52 | 0 | 379 | | | | 484 | - | - | 755 | - | - |
| Mov Cap-2 Maneuver | 52 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 170 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 572 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 0.1 | 0.3 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 484 | - | - | - | 755 | - | - |
| HCM Lane V/C Ratio | 0.021 | - | - | - | 0.065 | - | - |
| HCM Control Delay (s) | 12.6 | - | - | 0 | 10.1 | - | - |
| HCM Lane LOS | B | - | - | A | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.2 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019



| Lane Group | EBL | EBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 90 | 47 | 44 | 805 | 7 | 60 | 1164 | 160 |
| v/c Ratio | 0.51 | 0.21 | 0.32 | 0.39 | 0.01 | 0.31 | 0.58 | 0.14 |
| Control Delay | 41.6 | 14.8 | 39.1 | 10.6 | 0.0 | 35.2 | 12.0 | 0.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 41.6 | 14.8 | 39.1 | 10.6 | 0.0 | 35.2 | 12.0 | 0.6 |
| Queue Length 50th (ft) | 41 | 2 | 20 | 122 | 0 | 27 | 200 | 0 |
| Queue Length 95th (ft) | 83 | 30 | 50 | 166 | 0 | 60 | 261 | 5 |
| Internal Link Dist (ft) | | 711 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 190 | 234 | 137 | 2064 | 878 | 220 | 2006 | 1105 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.47 | 0.20 | 0.32 | 0.39 | 0.01 | 0.27 | 0.58 | 0.14 |

Intersection Summary

HCM 6th Signalized Intersection Summary
8: US 220 Business & Water Plant Road

04/02/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 79 | 4 | 37 | 0 | 0 | 0 | 39 | 708 | 6 | 53 | 1024 | 141 |
| Future Volume (veh/h) | 79 | 4 | 37 | 0 | 0 | 0 | 39 | 708 | 6 | 53 | 1024 | 141 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1752 | 1470 | 1900 | 1648 | 1856 |
| Adj Flow Rate, veh/h | 90 | 5 | 42 | 0 | 0 | 0 | 44 | 805 | 7 | 60 | 1164 | 160 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 10 | 29 | 0 | 17 | 3 |
| Cap, veh/h | 127 | 14 | 116 | 3 | 3 | 2 | 80 | 1863 | 697 | 107 | 1801 | 904 |
| Arrive On Green | 0.08 | 0.08 | 0.08 | 0.00 | 0.00 | 0.00 | 0.05 | 0.56 | 0.56 | 0.06 | 0.58 | 0.58 |
| Sat Flow, veh/h | 1598 | 174 | 1463 | 1810 | 1900 | 1610 | 1626 | 3328 | 1246 | 1810 | 3131 | 1572 |
| Grp Volume(v), veh/h | 90 | 0 | 47 | 0 | 0 | 0 | 44 | 805 | 7 | 60 | 1164 | 160 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1637 | 1810 | 1900 | 1610 | 1626 | 1664 | 1246 | 1810 | 1566 | 1572 |
| Q Serve(g_s), s | 3.9 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 1.9 | 9.9 | 0.2 | 2.3 | 17.7 | 3.4 |
| Cycle Q Clear(g_c), s | 3.9 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 1.9 | 9.9 | 0.2 | 2.3 | 17.7 | 3.4 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 127 | 0 | 130 | 3 | 3 | 2 | 80 | 1863 | 697 | 107 | 1801 | 904 |
| V/C Ratio(X) | 0.71 | 0.00 | 0.36 | 0.00 | 0.00 | 0.00 | 0.55 | 0.43 | 0.01 | 0.56 | 0.65 | 0.18 |
| Avail Cap(c_a), veh/h | 191 | 0 | 196 | 155 | 162 | 138 | 139 | 1863 | 697 | 219 | 1801 | 904 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.5 | 0.0 | 30.6 | 0.0 | 0.0 | 0.0 | 32.6 | 9.0 | 6.8 | 32.2 | 10.1 | 7.1 |
| Incr Delay (d2), s/veh | 7.1 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 5.8 | 0.7 | 0.0 | 4.6 | 1.8 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.7 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.8 | 2.6 | 0.0 | 1.1 | 4.8 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.6 | 0.0 | 32.3 | 0.0 | 0.0 | 0.0 | 38.4 | 9.7 | 6.9 | 36.8 | 11.9 | 7.5 |
| LnGrp LOS | D | A | C | A | A | A | D | A | A | D | B | A |
| Approach Vol, veh/h | | 137 | | | 0 | | | 856 | | | 1384 | |
| Approach Delay, s/veh | | 36.4 | | | 0.0 | | | 11.2 | | | 12.5 | |
| Approach LOS | | D | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 11.8 | 45.2 | | 0.0 | 10.8 | 46.3 | | 13.2 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 8.5 | 37.5 | | * 6 | * 6 | 40.4 | | 8.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.3 | 11.9 | | 0.0 | 3.9 | 19.7 | | 5.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.1 | | 0.0 | 0.0 | 8.7 | | 0.1 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 13.4 | | | | | | | | |
| HCM 6th LOS | | | | B | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 58 | 26 | 38 | 189 | 27 | 642 | 8 | 216 | 945 | 44 |
| v/c Ratio | 0.37 | 0.08 | 0.26 | 0.59 | 0.25 | 0.50 | 0.01 | 0.71 | 0.53 | 0.04 |
| Control Delay | 54.4 | 0.4 | 52.8 | 12.6 | 56.9 | 27.0 | 0.0 | 54.3 | 17.2 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.4 | 0.4 | 52.8 | 12.6 | 56.9 | 27.0 | 0.0 | 54.3 | 17.2 | 0.1 |
| Queue Length 50th (ft) | 39 | 0 | 26 | 0 | 19 | 171 | 0 | 145 | 228 | 0 |
| Queue Length 95th (ft) | 82 | 0 | 60 | 45 | 50 | 268 | 0 | 221 | 321 | 0 |
| Internal Link Dist (ft) | 631 | | 525 | | | 3118 | | | 4723 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 100 | 225 | | 225 |
| Base Capacity (vph) | 336 | 477 | 350 | 468 | 110 | 1279 | 792 | 470 | 1775 | 1008 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.17 | 0.05 | 0.11 | 0.40 | 0.25 | 0.50 | 0.01 | 0.46 | 0.53 | 0.04 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↑↑ | ↗ | ↖ | ↑↑ | ↗ |
| Traffic Volume (veh/h) | 22 | 29 | 23 | 4 | 29 | 166 | 24 | 565 | 7 | 190 | 832 | 39 |
| Future Volume (veh/h) | 22 | 29 | 23 | 4 | 29 | 166 | 24 | 565 | 7 | 190 | 832 | 39 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1693 | 1900 | 1885 | 1633 | 1900 |
| Adj Flow Rate, veh/h | 25 | 33 | 26 | 5 | 33 | 189 | 27 | 642 | 8 | 216 | 945 | 44 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 14 | 0 | 1 | 18 | 0 |
| Cap, veh/h | 39 | 52 | 80 | 34 | 225 | 217 | 55 | 1309 | 656 | 250 | 1612 | 836 |
| Arrive On Green | 0.05 | 0.05 | 0.05 | 0.14 | 0.14 | 0.14 | 0.03 | 0.41 | 0.41 | 0.14 | 0.52 | 0.52 |
| Sat Flow, veh/h | 783 | 1033 | 1610 | 248 | 1639 | 1585 | 1810 | 3216 | 1610 | 1795 | 3103 | 1610 |
| Grp Volume(v), veh/h | 58 | 0 | 26 | 38 | 0 | 189 | 27 | 642 | 8 | 216 | 945 | 44 |
| Grp Sat Flow(s),veh/h/ln | 1816 | 0 | 1610 | 1888 | 0 | 1585 | 1810 | 1608 | 1610 | 1795 | 1552 | 1610 |
| Q Serve(g_s), s | 3.5 | 0.0 | 1.7 | 2.0 | 0.0 | 13.0 | 1.6 | 16.4 | 0.3 | 13.1 | 23.4 | 1.5 |
| Cycle Q Clear(g_c), s | 3.5 | 0.0 | 1.7 | 2.0 | 0.0 | 13.0 | 1.6 | 16.4 | 0.3 | 13.1 | 23.4 | 1.5 |
| Prop In Lane | 0.43 | | 1.00 | 0.13 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 91 | 0 | 80 | 259 | 0 | 217 | 55 | 1309 | 656 | 250 | 1612 | 836 |
| V/C Ratio(X) | 0.64 | 0.00 | 0.32 | 0.15 | 0.00 | 0.87 | 0.49 | 0.49 | 0.01 | 0.86 | 0.59 | 0.05 |
| Avail Cap(c_a), veh/h | 301 | 0 | 267 | 316 | 0 | 265 | 99 | 1309 | 656 | 425 | 1612 | 836 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 51.8 | 0.0 | 50.9 | 42.2 | 0.0 | 46.9 | 53.0 | 24.4 | 19.6 | 46.8 | 18.4 | 13.2 |
| Incr Delay (d2), s/veh | 7.3 | 0.0 | 2.3 | 0.3 | 0.0 | 22.1 | 6.5 | 1.3 | 0.0 | 9.1 | 1.6 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.8 | 0.0 | 0.7 | 0.9 | 0.0 | 6.4 | 0.8 | 6.0 | 0.1 | 6.2 | 7.7 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 59.0 | 0.0 | 53.2 | 42.5 | 0.0 | 69.0 | 59.5 | 25.7 | 19.6 | 55.9 | 20.0 | 13.3 |
| LnGrp LOS | E | A | D | D | A | E | E | C | B | E | C | B |
| Approach Vol, veh/h | | 84 | | | 227 | | | 677 | | | 1205 | |
| Approach Delay, s/veh | | 57.2 | | | 64.6 | | | 27.0 | | | 26.2 | |
| Approach LOS | | E | | | E | | | C | | | C | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 23.2 | 51.1 | | 23.6 | 10.7 | 63.6 | | 13.2 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 26 | 37.1 | | * 19 | * 6.1 | 57.7 | | 18.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 15.1 | 18.4 | | 15.0 | 3.6 | 25.4 | | 5.5 | | | | |
| Green Ext Time (p_c), s | 0.4 | 3.6 | | 0.3 | 0.0 | 6.8 | | 0.2 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 31.6 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 69 | 378 | 299 | 8 | 390 | 586 |
| v/c Ratio | 0.16 | 0.56 | 0.44 | 0.02 | 0.68 | 0.37 |
| Control Delay | 23.6 | 6.4 | 29.0 | 15.0 | 17.2 | 11.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 23.6 | 6.4 | 29.0 | 15.0 | 17.2 | 11.0 |
| Queue Length 50th (ft) | 25 | 0 | 65 | 0 | 104 | 78 |
| Queue Length 95th (ft) | 58 | 59 | 105 | 11 | 159 | 108 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 425 | 680 | 677 | 329 | 631 | 1757 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.16 | 0.56 | 0.44 | 0.02 | 0.62 | 0.33 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|--|-------|-------|------|------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 61 | 333 | 263 | 7 | 343 | 516 |
| Future Volume (veh/h) | 61 | 333 | 263 | 7 | 343 | 516 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1678 | 1781 | 1678 | 1781 | 1841 | 1604 |
| Adj Flow Rate, veh/h | 69 | 378 | 299 | 8 | 390 | 586 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 8 | 15 | 8 | 4 | 20 |
| Cap, veh/h | 437 | 413 | 695 | 329 | 582 | 1605 |
| Arrive On Green | 0.27 | 0.27 | 0.22 | 0.22 | 0.19 | 0.53 |
| Sat Flow, veh/h | 1598 | 1510 | 3272 | 1510 | 1753 | 3127 |
| Grp Volume(v), veh/h | 69 | 378 | 299 | 8 | 390 | 586 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 1510 | 1594 | 1510 | 1753 | 1523 |
| Q Serve(g_s), s | 2.5 | 18.3 | 6.1 | 0.3 | 12.1 | 8.5 |
| Cycle Q Clear(g_c), s | 2.5 | 18.3 | 6.1 | 0.3 | 12.1 | 8.5 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 437 | 413 | 695 | 329 | 582 | 1605 |
| V/C Ratio(X) | 0.16 | 0.91 | 0.43 | 0.02 | 0.67 | 0.37 |
| Avail Cap(c_a), veh/h | 437 | 413 | 695 | 329 | 692 | 1798 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.7 | 26.5 | 25.4 | 23.1 | 15.9 | 10.4 |
| Incr Delay (d2), s/veh | 0.8 | 27.3 | 1.9 | 0.1 | 2.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 9.3 | 2.2 | 0.1 | 4.2 | 2.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 21.5 | 53.7 | 27.3 | 23.3 | 17.9 | 10.6 |
| LnGrp LOS | C | D | C | C | B | B |
| Approach Vol, veh/h | 447 | | 307 | | | 976 |
| Approach Delay, s/veh | 48.8 | | 27.2 | | | 13.5 |
| Approach LOS | D | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 23.2 | 25.0 | | 27.0 | | 48.2 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 19 | * 16 | | 20.6 | | * 44 |
| Max Q Clear Time (g_c+I1), s | 14.1 | 8.1 | | 20.3 | | 10.5 |
| Green Ext Time (p_c), s | 0.6 | 1.0 | | 0.1 | | 3.7 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 25.0 | | | |
| HCM 6th LOS | | | C | | | |
| Notes | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | |

HCM 6th TWSC
 11: US 220 Business & Lee Ford Camp Rd/Church St

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 20 | 21 | 4 | 0 | 0 | 3 | 7 | 247 | 38 | 34 | 483 | 60 |
| Future Vol, veh/h | 20 | 21 | 4 | 0 | 0 | 3 | 7 | 247 | 38 | 34 | 483 | 60 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 20 | 2 |
| Mvmt Flow | 23 | 24 | 5 | 0 | 0 | 3 | 8 | 281 | 43 | 39 | 549 | 68 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 784 | 967 | 275 | 662 | 992 | 141 | 617 | 0 | 0 | 324 | 0 | 0 |
| Stage 1 | 627 | 627 | - | 297 | 297 | - | - | - | - | - | - | - |
| Stage 2 | 157 | 340 | - | 365 | 695 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 283 | 253 | 722 | 347 | 244 | 881 | 959 | - | - | 1233 | - | - |
| Stage 1 | 438 | 474 | - | 687 | 666 | - | - | - | - | - | - | - |
| Stage 2 | 829 | 638 | - | 627 | 442 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 273 | 243 | 722 | 310 | 234 | 881 | 959 | - | - | 1233 | - | - |
| Mov Cap-2 Maneuver | 273 | 243 | - | 310 | 234 | - | - | - | - | - | - | - |
| Stage 1 | 434 | 459 | - | 682 | 661 | - | - | - | - | - | - | - |
| Stage 2 | 819 | 633 | - | 572 | 428 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|-----|--|-----|--|-----|--|
| HCM Control Delay, s | 21.3 | | 9.1 | | 0.2 | | 0.5 | |
| HCM LOS | C | | A | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 959 | - | - | 272 | 881 | 1233 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.188 | 0.004 | 0.031 | - | - |
| HCM Control Delay (s) | 8.8 | - | - | 21.3 | 9.1 | 8 | - | - |
| HCM Lane LOS | A | - | - | C | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.7 | 0 | 0.1 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↗ | ↘ | ↗ | | | ↗ | ↗ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 1 | 0 | 19 | 32 | 273 | 0 | 0 | 130 | 357 |
| Future Vol, veh/h | 0 | 0 | 0 | 1 | 0 | 19 | 32 | 273 | 0 | 0 | 130 | 357 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 2 | 20 |
| Mvmt Flow | 0 | 0 | 0 | 1 | 0 | 22 | 36 | 310 | 0 | 0 | 148 | 406 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 733 | - 310 554 | 0 - - - 0 |
| Stage 1 | 382 | - - - | - - - - - |
| Stage 2 | 351 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 388 | 0 730 1016 | - 0 0 - - |
| Stage 1 | 690 | 0 - - | 0 0 - - |
| Stage 2 | 713 | 0 - - | 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 374 | 0 730 1016 | - - - - - |
| Mov Cap-2 Maneuver | 374 | 0 - - | - - - - - |
| Stage 1 | 666 | 0 - - | - - - - - |
| Stage 2 | 713 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 10.3 | 0.9 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 1016 | - 374 730 | - - | - - |
| HCM Lane V/C Ratio | 0.036 | - 0.003 0.03 | - - | - - |
| HCM Control Delay (s) | 8.7 | - 14.7 10.1 | - - | - - |
| HCM Lane LOS | A | - B B | - - | - - |
| HCM 95th %tile Q(veh) | 0.1 | - 0 0.1 | - - | - - |

HCM 6th TWSC
122: Reservoir Rd & US 220 Bypass EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 11.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 305 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 0 | 0 |
| Future Vol, veh/h | 305 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 15 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 347 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 149 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 298 | 298 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 298 | 298 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.55 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.635 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 667 | 614 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 724 | 667 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 667 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 667 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 724 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 16.1 | 0 | |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 667 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.52 | - | - | - |
| HCM Control Delay (s) | - | - | 16.1 | 0 | - | - |
| HCM Lane LOS | - | - | C | A | - | - |
| HCM 95th %tile Q(veh) | - | - | 3 | - | - | - |

HCM 6th TWSC
131: Soapstone Rd & US 220 Bypass SB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | ↑ | | ↑ |
| Traffic Vol, veh/h | 0 | 136 | 0 | 0 | 86 | 0 | 0 | 0 | 0 | 6 | 0 | 42 |
| Future Vol, veh/h | 0 | 136 | 0 | 0 | 86 | 0 | 0 | 0 | 0 | 6 | 0 | 42 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 155 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 7 | 0 | 48 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 155 | 0 | 0 | | | 253 | - | 98 |
| Stage 1 | - | - | - | - | - | - | | | 98 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 155 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1425 | - | 0 | | | 736 | 0 | 958 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 926 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 873 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1425 | - | - | | | 736 | 0 | 958 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 736 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 926 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 873 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 9.1 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1425 | - | 736 | 958 |
| HCM Lane V/C Ratio | - | - | - | - | 0.009 | 0.05 |
| HCM Control Delay (s) | - | - | 0 | - | 9.9 | 9 |
| HCM Lane LOS | - | - | A | - | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0 | 0.2 |

| Intersection | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|--|
| Int Delay, s/veh | 2.1 | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBR | SWL | SWR | |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | ↘ | | | | |
| Traffic Vol, veh/h | 77 | 65 | 0 | 0 | 86 | 58 | 0 | 0 | 0 | 0 | |
| Future Vol, veh/h | 77 | 65 | 0 | 0 | 86 | 58 | 0 | 0 | 0 | 0 | |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | |
| Storage Length | 100 | - | - | - | - | - | 0 | 100 | - | - | |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | 0 | - | 16965 | - | |
| Grade, % | - | 0 | - | - | 0 | - | 0 | - | 0 | - | |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| Mvmt Flow | 88 | 74 | 0 | 0 | 98 | 66 | 0 | 0 | 0 | 0 | |

| Major/Minor | Major1 | Major2 | Minor1 | | | | |
|----------------------|--------|--------|--------|---|---|---|-------------|
| Conflicting Flow All | 164 | 0 | - | - | - | 0 | 381 74 |
| Stage 1 | - | - | - | - | - | - | 250 - |
| Stage 2 | - | - | - | - | - | - | 131 - |
| Critical Hdwy | 4.12 | - | - | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1414 | - | 0 | 0 | - | - | 621 988 |
| Stage 1 | - | - | 0 | 0 | - | - | 792 - |
| Stage 2 | - | - | 0 | 0 | - | - | 895 - |
| Platoon blocked, % | | - | | | - | - | |
| Mov Cap-1 Maneuver | 1414 | - | - | - | - | - | 582 988 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 582 - |
| Stage 1 | - | - | - | - | - | - | 743 - |
| Stage 2 | - | - | - | - | - | - | 895 - |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 4.2 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1414 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.062 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 7.7 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 14 | 33 | 199 | 0 | 55 | 18 | 136 | 18 | 44 |
| Future Vol, veh/h | 0 | 0 | 0 | 14 | 33 | 199 | 0 | 55 | 18 | 136 | 18 | 44 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 16 | 38 | 226 | 0 | 63 | 20 | 155 | 20 | 50 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 428 | 453 | 73 |
| Stage 1 | 73 | 73 | - |
| Stage 2 | 355 | 380 | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 584 | 503 | 989 |
| Stage 1 | 950 | 834 | - |
| Stage 2 | 710 | 614 | - |
| Platoon blocked, % | | | |
| Mov Cap-1 Maneuver | 524 | 0 | 989 |
| Mov Cap-2 Maneuver | 524 | 0 | - |
| Stage 1 | 950 | 0 | - |
| Stage 2 | 638 | 0 | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.1 | 0 | 5.3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1531 | - | - | 524 | 989 | 1514 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.03 | 0.267 | 0.102 | - | - |
| HCM Control Delay (s) | 0 | - | - | 12.1 | 10 | 7.6 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 1.1 | 0.3 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.4 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 18 | 136 | 24 | 78 | 168 | 22 |
| Future Vol, veh/h | 18 | 136 | 24 | 78 | 168 | 22 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 155 | 27 | 89 | 191 | 25 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 175 | 0 | 241 |
| Stage 1 | - | - | - | - | 98 |
| Stage 2 | - | - | - | - | 143 |
| Critical Hdwy | - | - | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | - | - | 1401 | - | 747 |
| Stage 1 | - | - | - | - | 926 |
| Stage 2 | - | - | - | - | 884 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1401 | - | 732 |
| Mov Cap-2 Maneuver | - | - | - | - | 732 |
| Stage 1 | - | - | - | - | 926 |
| Stage 2 | - | - | - | - | 866 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 1.8 | 11.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 753 | - | - | 1401 | - |
| HCM Lane V/C Ratio | 0.287 | - | - | 0.019 | - |
| HCM Control Delay (s) | 11.7 | - | - | 7.6 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 1.2 | - | - | 0.1 | - |

HCM 6th TWSC
 145: Fisher Farm Rd & US 58 WB Ramp

04/02/2019

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.9 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↔ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 17 | 15 | 175 | 0 | 0 | 160 |
| Future Vol, veh/h | 17 | 15 | 175 | 0 | 0 | 160 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 19 | 17 | 199 | 0 | 0 | 182 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 381 | 199 | 0 | - | - | - |
| Stage 1 | 199 | - | - | - | - | - |
| Stage 2 | 182 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | - | - |
| Pot Cap-1 Maneuver | 621 | 842 | - | 0 | 0 | - |
| Stage 1 | 835 | - | - | 0 | 0 | - |
| Stage 2 | 849 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 621 | 842 | - | - | - | - |
| Mov Cap-2 Maneuver | 621 | - | - | - | - | - |
| Stage 1 | 835 | - | - | - | - | - |
| Stage 2 | 849 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 10.4 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 708 | - |
| HCM Lane V/C Ratio | - 0.051 | - |
| HCM Control Delay (s) | - 10.4 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.2 | - |

HCM 6th TWSC
146: Fisher Farm Rd & US 58 EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 144 | 15 | 41 | 136 | 0 |
| Future Vol, veh/h | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 144 | 15 | 41 | 136 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 164 | 17 | 47 | 155 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 422 | 430 | 155 | - | 0 | 0 | 181 | 0 | 0 |
| Stage 1 | 249 | 249 | - | - | - | - | - | - | - |
| Stage 2 | 173 | 181 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 588 | 518 | 891 | 0 | - | - | 1394 | - | 0 |
| Stage 1 | 792 | 701 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 857 | 750 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 566 | 0 | 891 | - | - | - | 1394 | - | - |
| Mov Cap-2 Maneuver | 566 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 792 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 825 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.8 | 0 | 1.8 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|
| Capacity (veh/h) | - | - | 692 | 1394 | - |
| HCM Lane V/C Ratio | - | - | 0.102 | 0.033 | - |
| HCM Control Delay (s) | - | - | 10.8 | 7.7 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.3 | 0.1 | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019




















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 344 | 140 | 788 | 609 | 58 |
| v/c Ratio | 0.74 | 0.27 | 0.48 | 0.36 | 0.07 |
| Control Delay | 31.4 | 8.9 | 3.5 | 12.3 | 2.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 31.4 | 8.9 | 3.5 | 12.3 | 2.8 |
| Queue Length 50th (ft) | 132 | 18 | 17 | 77 | 0 |
| Queue Length 95th (ft) | 181 | 46 | 22 | 135 | 14 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 626 | 662 | 1638 | 1699 | 833 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.55 | 0.21 | 0.48 | 0.36 | 0.07 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  | | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 303 | 0 | 123 | 0 | 693 | 0 | 0 | 536 | 51 | |
| Future Volume (vph) | 0 | 0 | 0 | 303 | 0 | 123 | 0 | 693 | 0 | 0 | 536 | 51 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 344 | 0 | 140 | 0 | 788 | 0 | 0 | 609 | 58 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 58 | 0 | 0 | 0 | 0 | 0 | 29 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 344 | 82 | 0 | 788 | 0 | 0 | 609 | 29 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 16% | 0% | 6% | 0% | 12% | 14% | 0% | 8% | 3% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 20.9 | 20.9 | | 35.6 | | | 35.6 | 35.6 | |
| Effective Green, g (s) | | | | | 20.9 | 20.9 | | 35.6 | | | 35.6 | 35.6 | |
| Actuated g/C Ratio | | | | | 0.30 | 0.30 | | 0.51 | | | 0.51 | 0.51 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | | | | 464 | 455 | | 1639 | | | 1700 | 797 | |
| v/s Ratio Prot | | | | | | | | c0.24 | | | 0.18 | | |
| v/s Ratio Perm | | | | | 0.22 | 0.05 | | | | | | 0.02 | |
| v/c Ratio | | | | | 0.74 | 0.18 | | 0.48 | | | 0.36 | 0.04 | |
| Uniform Delay, d1 | | | | | 22.1 | 18.2 | | 11.2 | | | 10.3 | 8.6 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.22 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 6.3 | 0.2 | | 0.7 | | | 0.6 | 0.1 | |
| Delay (s) | | | | | 28.4 | 18.4 | | 3.1 | | | 10.9 | 8.7 | |
| Level of Service | | | | | C | B | | A | | | B | A | |
| Approach Delay (s) | | 0.0 | | | 25.5 | | | 3.1 | | | 10.7 | | |
| Approach LOS | | A | | | C | | | A | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | | 11.3 | HCM 2000 Level of Service | | | | | | | B | |
| HCM 2000 Volume to Capacity ratio | | | | 0.58 | | | | | | | | | |
| Actuated Cycle Length (s) | | | | 70.0 | Sum of lost time (s) | | | | | | 13.5 | | |
| Intersection Capacity Utilization | | | | 72.7% | ICU Level of Service | | | | | | C | | |
| Analysis Period (min) | | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|-------|------|
| Lane Group Flow (vph) | 101 | 351 | 1139 | 327 | 118 | 835 |
| v/c Ratio | 0.35 | 0.91 | 0.75 | 0.38 | 0.66 | 0.40 |
| Control Delay | 28.9 | 44.1 | 20.9 | 5.5 | 52.0 | 7.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 28.9 | 44.1 | 20.9 | 5.5 | 52.0 | 7.0 |
| Queue Length 50th (ft) | 38 | 69 | 223 | 22 | 52 | 47 |
| Queue Length 95th (ft) | 78 | #207 | 295 | 66 | m#117 | 139 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 311 | 400 | 1525 | 869 | 179 | 2110 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.32 | 0.88 | 0.75 | 0.38 | 0.66 | 0.40 |

Intersection Summary



















95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 2: US 220 Business & US 58 EB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  | |  | | | | |  |  |  |  | | |
| Traffic Volume (vph) | 89 | 0 | 309 | 0 | 0 | 0 | 0 | 1002 | 288 | 104 | 735 | 0 | |
| Future Volume (vph) | 89 | 0 | 309 | 0 | 0 | 0 | 0 | 1002 | 288 | 104 | 735 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 101 | 0 | 351 | 0 | 0 | 0 | 0 | 1139 | 327 | 118 | 835 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 154 | 0 | 0 | 0 | 0 | 0 | 132 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 101 | 0 | 197 | 0 | 0 | 0 | 0 | 1139 | 195 | 118 | 835 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 19% | 2% | 2% | 2% | 0% | 12% | 3% | 2% | 8% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 11.9 | | 11.9 | | | | | 31.7 | 31.7 | 5.7 | 44.2 | | |
| Effective Green, g (s) | 11.9 | | 11.9 | | | | | 31.7 | 31.7 | 5.7 | 44.2 | | |
| Actuated g/C Ratio | 0.17 | | 0.17 | | | | | 0.45 | 0.45 | 0.08 | 0.63 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 289 | | 230 | | | | | 1459 | 710 | 144 | 2110 | | |
| v/s Ratio Prot | | | | | | | | c0.35 | | c0.07 | 0.25 | | |
| v/s Ratio Perm | 0.06 | | c0.14 | | | | | | 0.12 | | | | |
| v/c Ratio | 0.35 | | 0.85 | | | | | 0.78 | 0.27 | 0.82 | 0.40 | | |
| Uniform Delay, d1 | 25.6 | | 28.2 | | | | | 16.2 | 12.0 | 31.6 | 6.3 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.11 | 0.98 | | |
| Incremental Delay, d2 | 0.7 | | 25.3 | | | | | 4.2 | 1.0 | 27.2 | 0.5 | | |
| Delay (s) | 26.4 | | 53.5 | | | | | 20.4 | 12.9 | 62.3 | 6.7 | | |
| Level of Service | C | | D | | | | | C | B | E | A | | |
| Approach Delay (s) | | 47.4 | | | 0.0 | | | 18.7 | | | 13.6 | | |
| Approach LOS | | D | | | A | | | B | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 21.6 | | | | | | | | | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | | | 0.80 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 52.2% | | | | | | | | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 18 | 2 | 16 | 7 | 0 | 8 | 2 | 1264 | 1 | 5 | 1036 | 3 |
| Future Vol, veh/h | 18 | 2 | 16 | 7 | 0 | 8 | 2 | 1264 | 1 | 5 | 1036 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 20 | 2 | 18 | 8 | 0 | 9 | 2 | 1436 | 1 | 6 | 1177 | 3 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1911 | 2630 | 589 | 2042 | 2632 | 718 | 1180 | 0 | 0 | 1437 | 0 | 0 |
| Stage 1 | 1189 | 1189 | - | 1440 | 1440 | - | - | - | - | - | - | - |
| Stage 2 | 722 | 1441 | - | 602 | 1192 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 42 | 24 | 457 | 34 | 24 | 352 | 599 | - | - | 479 | - | - |
| Stage 1 | 203 | 264 | - | 142 | 200 | - | - | - | - | - | - | - |
| Stage 2 | 389 | 200 | - | 458 | 263 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 40 | 24 | 457 | 30 | 24 | 352 | 599 | - | - | 479 | - | - |
| Mov Cap-2 Maneuver | 40 | 24 | - | 30 | 24 | - | - | - | - | - | - | - |
| Stage 1 | 202 | 261 | - | 142 | 199 | - | - | - | - | - | - | - |
| Stage 2 | 378 | 199 | - | 430 | 260 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|-------|--|------|--|----|--|-----|--|
| HCM Control Delay, s | 134.6 | | 89.1 | | 0 | | 0.1 | |
| HCM LOS | F | | F | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 599 | - | - | 63 | 59 | 479 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.649 | 0.289 | 0.012 | - | - |
| HCM Control Delay (s) | 11 | - | - | 134.6 | 89.1 | 12.6 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 2.8 | 1 | 0 | - | - |

HCM 6th TWSC
 4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 40 | 0 | 1227 | 6 | 5 | 1054 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 40 | 0 | 1227 | 6 | 5 | 1054 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 22 | 0 | 45 | 0 | 1394 | 7 | 6 | 1198 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 1907 | 2611 | 599 | 2005 | 2604 | 697 | - | 0 | 0 | 1401 | 0 | 0 |
| Stage 1 | 1210 | 1210 | - | 1394 | 1394 | - | - | - | - | - | - | - |
| Stage 2 | 697 | 1401 | - | 611 | 1210 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 43 | 25 | 450 | 36 | 25 | 372 | 0 | - | - | 494 | - | 0 |
| Stage 1 | 197 | 258 | - | 152 | 210 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 402 | 209 | - | 453 | 258 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 37 | 25 | 450 | 36 | 25 | 372 | - | - | - | 494 | - | - |
| Mov Cap-2 Maneuver | 37 | 25 | - | 36 | 25 | - | - | - | - | - | - | - |
| Stage 1 | 197 | 255 | - | 152 | 210 | - | - | - | - | - | - | - |
| Stage 2 | 353 | 209 | - | 447 | 255 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|-------|----|-----|
| HCM Control Delay, s | 0 | 109.4 | 0 | 0.1 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|-------|-------|
| Capacity (veh/h) | - | - | - | 93 | 494 |
| HCM Lane V/C Ratio | - | - | - | 0.721 | 0.012 |
| HCM Control Delay (s) | - | - | 0 | 109.4 | 12.4 |
| HCM Lane LOS | - | - | A | F | B |
| HCM 95th %tile Q(veh) | - | - | - | 3.6 | 0 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 30 | 6 | 0 | 1203 | 1060 | 13 |
| Future Vol, veh/h | 30 | 6 | 0 | 1203 | 1060 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 12 | 16 | 0 |
| Mvmt Flow | 34 | 7 | 0 | 1367 | 1205 | 15 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 1889 | 603 | - | 0 | - | 0 |
| Stage 1 | 1205 | - | - | - | - | - |
| Stage 2 | 684 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | 63 | 447 | 0 | - | - | - |
| Stage 1 | 251 | - | 0 | - | - | - |
| Stage 2 | 468 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 63 | 447 | - | - | - | - |
| Mov Cap-2 Maneuver | 63 | - | - | - | - | - |
| Stage 1 | 251 | - | - | - | - | - |
| Stage 2 | 468 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|-------|----|----|
| HCM Control Delay, s | 102.1 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-------|-----|-----|
| Capacity (veh/h) | - | 74 | - | - |
| HCM Lane V/C Ratio | - | 0.553 | - | - |
| HCM Control Delay (s) | - | 102.1 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 2.4 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.9 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 30 | 76 | 1127 | 5 | 14 | 1052 |
| Future Vol, veh/h | 30 | 76 | 1127 | 5 | 14 | 1052 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 12 | 0 | 0 | 17 |
| Mvmt Flow | 34 | 86 | 1281 | 6 | 16 | 1195 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 1911 | 641 | 0 | 0 | 1287 |
| Stage 1 | 1281 | - | - | - | - |
| Stage 2 | 630 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 61 | 422 | - | - | 546 |
| Stage 1 | 228 | - | - | - | - |
| Stage 2 | 498 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 59 | 422 | - | - | 546 |
| Mov Cap-2 Maneuver | 59 | - | - | - | - |
| Stage 1 | 228 | - | - | - | - |
| Stage 2 | 484 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 82.5 | 0 | 0.2 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 154 | 546 |
| HCM Lane V/C Ratio | - | - | 0.782 | 0.029 |
| HCM Control Delay (s) | - | - | 82.5 | 11.8 |
| HCM Lane LOS | - | - | F | B |
| HCM 95th %tile Q(veh) | - | - | 4.9 | 0.1 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | | | ↖ | ↑↑ | ↗ | ↖ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1132 | 126 | 100 | 968 | 14 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1132 | 126 | 100 | 968 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 12 | 0 | 3 | 17 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1286 | 143 | 114 | 1100 | 16 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1983 | 2769 | 558 | | | | 1116 | 0 | 0 | 1429 | 0 | 0 |
| Stage 1 | 1336 | 1336 | - | | | | - | - | - | - | - | - |
| Stage 2 | 647 | 1433 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 55 | 20 | 478 | | | | 633 | - | - | 467 | - | - |
| Stage 1 | 213 | 224 | - | | | | - | - | - | - | - | - |
| Stage 2 | 489 | 201 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 41 | 0 | 478 | | | | 633 | - | - | 467 | - | - |
| Mov Cap-2 Maneuver | 41 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 212 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 370 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 1.4 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 633 | - | - | - | 467 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | - | 0.243 | - | - |
| HCM Control Delay (s) | 10.7 | - | - | 0 | 15.2 | - | - |
| HCM Lane LOS | B | - | - | A | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.9 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019


























| Lane Group | EBL | EBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 155 | 45 | 43 | 1277 | 1 | 44 | 927 | 128 |
| v/c Ratio | 0.67 | 0.16 | 0.28 | 0.71 | 0.00 | 0.28 | 0.55 | 0.13 |
| Control Delay | 47.0 | 13.3 | 36.8 | 15.8 | 0.0 | 37.4 | 13.3 | 0.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 47.0 | 13.3 | 36.8 | 15.8 | 0.0 | 37.4 | 13.3 | 0.3 |
| Queue Length 50th (ft) | 71 | 2 | 19 | 241 | 0 | 20 | 156 | 0 |
| Queue Length 95th (ft) | #151 | 28 | 48 | 312 | 0 | 49 | 206 | 0 |
| Internal Link Dist (ft) | | 711 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 235 | 279 | 161 | 1802 | 801 | 156 | 1680 | 968 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.66 | 0.16 | 0.27 | 0.71 | 0.00 | 0.28 | 0.55 | 0.13 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 Business & Water Plant Road

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 136 | 4 | 35 | 0 | 0 | 0 | 38 | 1124 | 1 | 39 | 816 | 113 |
| Future Volume (veh/h) | 136 | 4 | 35 | 0 | 0 | 0 | 38 | 1124 | 1 | 39 | 816 | 113 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1752 | 1470 | 1900 | 1648 | 1856 |
| Adj Flow Rate, veh/h | 155 | 5 | 40 | 0 | 0 | 0 | 43 | 1277 | 1 | 44 | 927 | 128 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 10 | 29 | 0 | 17 | 3 |
| Cap, veh/h | 194 | 22 | 177 | 3 | 3 | 2 | 78 | 1772 | 663 | 89 | 1687 | 847 |
| Arrive On Green | 0.12 | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.05 | 0.53 | 0.53 | 0.05 | 0.54 | 0.54 |
| Sat Flow, veh/h | 1598 | 182 | 1456 | 1810 | 1900 | 1610 | 1626 | 3328 | 1246 | 1810 | 3131 | 1572 |
| Grp Volume(v), veh/h | 155 | 0 | 45 | 0 | 0 | 0 | 43 | 1277 | 1 | 44 | 927 | 128 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1638 | 1810 | 1900 | 1610 | 1626 | 1664 | 1246 | 1810 | 1566 | 1572 |
| Q Serve(g_s), s | 6.7 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 1.8 | 20.8 | 0.0 | 1.7 | 13.8 | 2.9 |
| Cycle Q Clear(g_c), s | 6.7 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 1.8 | 20.8 | 0.0 | 1.7 | 13.8 | 2.9 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 194 | 0 | 199 | 3 | 3 | 2 | 78 | 1772 | 663 | 89 | 1687 | 847 |
| V/C Ratio(X) | 0.80 | 0.00 | 0.23 | 0.00 | 0.00 | 0.00 | 0.55 | 0.72 | 0.00 | 0.50 | 0.55 | 0.15 |
| Avail Cap(c_a), veh/h | 233 | 0 | 239 | 152 | 160 | 135 | 159 | 1772 | 663 | 152 | 1687 | 847 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 30.5 | 0.0 | 28.3 | 0.0 | 0.0 | 0.0 | 33.2 | 12.7 | 7.8 | 33.1 | 10.8 | 8.3 |
| Incr Delay (d2), s/veh | 15.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 5.9 | 2.6 | 0.0 | 4.3 | 1.3 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.3 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.8 | 6.1 | 0.0 | 0.8 | 4.0 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.4 | 0.0 | 28.9 | 0.0 | 0.0 | 0.0 | 39.1 | 15.2 | 7.8 | 37.3 | 12.1 | 8.6 |
| LnGrp LOS | D | A | C | A | A | A | D | B | A | D | B | A |
| Approach Vol, veh/h | | 200 | | | 0 | | | 1321 | | | 1099 | |
| Approach Delay, s/veh | | 41.7 | | | 0.0 | | | 16.0 | | | 12.7 | |
| Approach LOS | | D | | | | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 11.2 | 43.9 | | 0.0 | 10.7 | 44.4 | | 16.3 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 6 | 38.0 | | * 6 | * 7 | 37.4 | | 10.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 3.7 | 22.8 | | 0.0 | 3.8 | 15.8 | | 8.7 | | | | |
| Green Ext Time (p_c), s | 0.0 | 7.2 | | 0.0 | 0.0 | 6.7 | | 0.1 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 16.6 | | | | | | | | |
| HCM 6th LOS | | | | B | | | | | | | | |
| Notes | | | | | | | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | | | | | | | |

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 75 | 53 | 66 | 170 | 24 | 1094 | 89 | 803 | 75 |
| v/c Ratio | 0.45 | 0.18 | 0.41 | 0.58 | 0.24 | 0.66 | 0.57 | 0.45 | 0.07 |
| Control Delay | 58.3 | 1.4 | 57.7 | 16.3 | 59.5 | 24.8 | 65.9 | 16.9 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 58.3 | 1.4 | 57.7 | 16.3 | 59.5 | 24.8 | 65.9 | 16.9 | 0.1 |
| Queue Length 50th (ft) | 53 | 0 | 47 | 0 | 17 | 324 | 63 | 193 | 0 |
| Queue Length 95th (ft) | 102 | 0 | 92 | 62 | 47 | 445 | #123 | 275 | 0 |
| Internal Link Dist (ft) | 631 | | 525 | | | 3118 | | 4723 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 225 | | 225 |
| Base Capacity (vph) | 310 | 405 | 324 | 411 | 102 | 1663 | 174 | 1776 | 1009 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.24 | 0.13 | 0.20 | 0.41 | 0.24 | 0.66 | 0.51 | 0.45 | 0.07 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↗ | ↗ | ↖ | ↗ | ↗ |
| Traffic Volume (veh/h) | 50 | 16 | 47 | 1 | 57 | 150 | 21 | 963 | 0 | 78 | 707 | 66 |
| Future Volume (veh/h) | 50 | 16 | 47 | 1 | 57 | 150 | 21 | 963 | 0 | 78 | 707 | 66 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1693 | 1900 | 1885 | 1633 | 1900 |
| Adj Flow Rate, veh/h | 57 | 18 | 53 | 1 | 65 | 170 | 24 | 1094 | 0 | 89 | 803 | 75 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 14 | 0 | 1 | 18 | 0 |
| Cap, veh/h | 83 | 26 | 98 | 4 | 235 | 199 | 51 | 1564 | 783 | 113 | 1628 | 845 |
| Arrive On Green | 0.06 | 0.06 | 0.06 | 0.13 | 0.13 | 0.13 | 0.03 | 0.49 | 0.00 | 0.06 | 0.52 | 0.52 |
| Sat Flow, veh/h | 1359 | 429 | 1610 | 29 | 1870 | 1585 | 1810 | 3216 | 1610 | 1795 | 3103 | 1610 |
| Grp Volume(v), veh/h | 75 | 0 | 53 | 66 | 0 | 170 | 24 | 1094 | 0 | 89 | 803 | 75 |
| Grp Sat Flow(s),veh/h/ln | 1788 | 0 | 1610 | 1899 | 0 | 1585 | 1810 | 1608 | 1610 | 1795 | 1552 | 1610 |
| Q Serve(g_s), s | 4.6 | 0.0 | 3.6 | 3.5 | 0.0 | 11.8 | 1.5 | 29.7 | 0.0 | 5.5 | 18.6 | 2.6 |
| Cycle Q Clear(g_c), s | 4.6 | 0.0 | 3.6 | 3.5 | 0.0 | 11.8 | 1.5 | 29.7 | 0.0 | 5.5 | 18.6 | 2.6 |
| Prop In Lane | 0.76 | | 1.00 | 0.02 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 109 | 0 | 98 | 239 | 0 | 199 | 51 | 1564 | 783 | 113 | 1628 | 845 |
| V/C Ratio(X) | 0.69 | 0.00 | 0.54 | 0.28 | 0.00 | 0.85 | 0.47 | 0.70 | 0.00 | 0.79 | 0.49 | 0.09 |
| Avail Cap(c_a), veh/h | 287 | 0 | 259 | 305 | 0 | 255 | 97 | 1564 | 783 | 165 | 1628 | 845 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 51.6 | 0.0 | 51.1 | 44.4 | 0.0 | 48.0 | 53.6 | 22.4 | 0.0 | 51.8 | 17.1 | 13.3 |
| Incr Delay (d2), s/veh | 7.5 | 0.0 | 4.6 | 0.6 | 0.0 | 19.4 | 6.6 | 2.6 | 0.0 | 14.4 | 1.1 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.3 | 0.0 | 1.6 | 1.7 | 0.0 | 5.7 | 0.7 | 10.5 | 0.0 | 2.8 | 6.1 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 59.1 | 0.0 | 55.7 | 45.0 | 0.0 | 67.4 | 60.2 | 25.0 | 0.0 | 66.1 | 18.2 | 13.5 |
| LnGrp LOS | E | A | E | D | A | E | E | C | A | E | B | B |
| Approach Vol, veh/h | | 128 | | | 236 | | | 1118 | | | | 967 |
| Approach Delay, s/veh | | 57.7 | | | 61.1 | | | 25.8 | | | | 22.2 |
| Approach LOS | | E | | | E | | | C | | | | C |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 14.7 | 60.4 | | 22.5 | 10.5 | 64.7 | | 14.4 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 10 | 54.1 | | * 18 | * 6 | 58.8 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 7.5 | 31.7 | | 13.8 | 3.5 | 20.6 | | 6.6 | | | | |
| Green Ext Time (p_c), s | 0.0 | 7.2 | | 0.3 | 0.0 | 5.8 | | 0.4 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 29.4 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 45 | 422 | 697 | 7 | 303 | 555 |
| v/c Ratio | 0.12 | 0.64 | 0.69 | 0.01 | 0.70 | 0.32 |
| Control Delay | 25.4 | 9.1 | 27.9 | 11.5 | 18.7 | 9.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 25.4 | 9.1 | 27.9 | 11.5 | 18.7 | 9.4 |
| Queue Length 50th (ft) | 18 | 10 | 158 | 0 | 71 | 68 |
| Queue Length 95th (ft) | 43 | 82 | 213 | 9 | 116 | 95 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 370 | 655 | 1009 | 485 | 448 | 1767 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.12 | 0.64 | 0.69 | 0.01 | 0.68 | 0.31 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | ↶ | ↶↷ | ↶↷ | ↷ | ↷ | ↶↷ |
| Traffic Volume (veh/h) | 40 | 371 | 613 | 6 | 267 | 488 |
| Future Volume (veh/h) | 40 | 371 | 613 | 6 | 267 | 488 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1678 | 1781 | 1678 | 1781 | 1841 | 1604 |
| Adj Flow Rate, veh/h | 45 | 422 | 697 | 7 | 303 | 555 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 8 | 15 | 8 | 4 | 20 |
| Cap, veh/h | 380 | 359 | 1036 | 491 | 429 | 1737 |
| Arrive On Green | 0.24 | 0.24 | 0.32 | 0.32 | 0.14 | 0.57 |
| Sat Flow, veh/h | 1598 | 1510 | 3272 | 1510 | 1753 | 3127 |
| Grp Volume(v), veh/h | 45 | 422 | 697 | 7 | 303 | 555 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 1510 | 1594 | 1510 | 1753 | 1523 |
| Q Serve(g_s), s | 1.7 | 18.6 | 14.8 | 0.2 | 8.4 | 7.5 |
| Cycle Q Clear(g_c), s | 1.7 | 18.6 | 14.8 | 0.2 | 8.4 | 7.5 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 380 | 359 | 1036 | 491 | 429 | 1737 |
| V/C Ratio(X) | 0.12 | 1.17 | 0.67 | 0.01 | 0.71 | 0.32 |
| Avail Cap(c_a), veh/h | 380 | 359 | 1036 | 491 | 470 | 1809 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.4 | 29.8 | 22.8 | 17.9 | 15.6 | 8.8 |
| Incr Delay (d2), s/veh | 0.6 | 104.1 | 3.5 | 0.1 | 4.3 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 16.8 | 5.2 | 0.1 | 3.1 | 1.8 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 24.0 | 133.9 | 26.3 | 17.9 | 19.9 | 8.9 |
| LnGrp LOS | C | F | C | B | B | A |
| Approach Vol, veh/h | 467 | | 704 | | | 858 |
| Approach Delay, s/veh | 123.3 | | 26.2 | | | 12.8 |
| Approach LOS | F | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 19.2 | 34.0 | | 25.0 | | 53.2 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 12 | * 25 | | 18.6 | | * 46 |
| Max Q Clear Time (g_c+I1), s | 10.4 | 16.8 | | 20.6 | | 9.5 |
| Green Ext Time (p_c), s | 0.2 | 2.7 | | 0.0 | | 3.5 |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 42.9 |
| HCM 6th LOS | D |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 22 | 13 | 11 | 14 | 25 | 10 | 8 | 587 | 38 | 10 | 488 | 30 |
| Future Vol, veh/h | 22 | 13 | 11 | 14 | 25 | 10 | 8 | 587 | 38 | 10 | 488 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 20 | 2 |
| Mvmt Flow | 25 | 15 | 13 | 16 | 28 | 11 | 9 | 667 | 43 | 11 | 555 | 34 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 943 | 1305 | 278 | 992 | 1296 | 334 | 589 | 0 | 0 | 710 | 0 | 0 |
| Stage 1 | 577 | 577 | - | 685 | 685 | - | - | - | - | - | - | - |
| Stage 2 | 366 | 728 | - | 307 | 611 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 217 | 159 | 719 | 200 | 161 | 662 | 982 | - | - | 885 | - | - |
| Stage 1 | 469 | 500 | - | 404 | 447 | - | - | - | - | - | - | - |
| Stage 2 | 626 | 427 | - | 678 | 482 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 181 | 156 | 719 | 179 | 158 | 662 | 982 | - | - | 885 | - | - |
| Mov Cap-2 Maneuver | 181 | 156 | - | 179 | 158 | - | - | - | - | - | - | - |
| Stage 1 | 465 | 494 | - | 400 | 443 | - | - | - | - | - | - | - |
| Stage 2 | 571 | 423 | - | 638 | 476 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 27.9 | | 30.7 | | 0.1 | | 0.2 | |
| HCM LOS | D | | D | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 982 | - | - | 209 | 195 | 885 | - | - |
| HCM Lane V/C Ratio | 0.009 | - | - | 0.25 | 0.286 | 0.013 | - | - |
| HCM Control Delay (s) | 8.7 | - | - | 27.9 | 30.7 | 9.1 | - | - |
| HCM Lane LOS | A | - | - | D | D | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1 | 1.1 | 0 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↗ | ↘ | ↗ | | | ↗ | ↘ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 118 | 47 | 515 | 0 | 0 | 34 | 479 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 118 | 47 | 515 | 0 | 0 | 34 | 479 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 2 | 20 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 134 | 53 | 585 | 0 | 0 | 39 | 544 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 1002 | - 585 583 | 0 - - - 0 |
| Stage 1 | 691 | - - - | - - - - - |
| Stage 2 | 311 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 269 | 0 511 991 | - 0 0 - - |
| Stage 1 | 497 | 0 - - | - 0 0 - - |
| Stage 2 | 743 | 0 - - | - 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 255 | 0 511 991 | - - - - - |
| Mov Cap-2 Maneuver | 255 | 0 - - | - - - - - |
| Stage 1 | 471 | 0 - - | - - - - - |
| Stage 2 | 743 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 14.5 | 0.7 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 991 | - - 511 | - - | |
| HCM Lane V/C Ratio | 0.054 | - - 0.262 | - - | |
| HCM Control Delay (s) | 8.8 | - 0 14.5 | - - | |
| HCM Lane LOS | A | - A B | - - | |
| HCM 95th %tile Q(veh) | 0.2 | - - 1 | - - | |

HCM 6th TWSC
 122: Reservoir Rd & US 220 Bypass NB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 562 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 |
| Future Vol, veh/h | 562 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 15 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 639 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 78 | 78 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 78 | 78 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.55 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.635 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 894 | 812 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 913 | 830 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 894 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 894 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 913 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | | 0 | |
| HCM LOS | - | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 894 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.714 | - | - | - |
| HCM Control Delay (s) | - | - | 18.4 | - | - | - |
| HCM Lane LOS | - | - | C | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 6.3 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 4.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↗ | ↘ | ↑ | | | | | ↘ | | ↗ |
| Traffic Vol, veh/h | 0 | 146 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 105 |
| Future Vol, veh/h | 0 | 146 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 105 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 166 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 119 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 166 | 0 | 0 | | | 167 | - | 1 |
| Stage 1 | - | - | - | - | - | - | | | 1 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 166 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1412 | - | 0 | | | 823 | 0 | 1084 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 1022 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 863 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1412 | - | - | | | 823 | 0 | 1084 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 823 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 1022 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 863 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 8.9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1412 | - | 823 | 1084 |
| HCM Lane V/C Ratio | - | - | - | - | 0.046 | 0.11 |
| HCM Control Delay (s) | - | - | 0 | - | 9.6 | 8.7 |
| HCM Lane LOS | - | - | A | - | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 | 0.4 |

| Intersection | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|--|
| Int Delay, s/veh | 3 | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBR | SWL | SWR | |
| Lane Configurations | ↘ | ↑ | | | ↑ | ↗ | ↘ | | | | |
| Traffic Vol, veh/h | 96 | 83 | 0 | 0 | 0 | 63 | 0 | 0 | 0 | 0 | |
| Future Vol, veh/h | 96 | 83 | 0 | 0 | 0 | 63 | 0 | 0 | 0 | 0 | |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | |
| Storage Length | 100 | - | - | - | - | - | 0 | 100 | - | - | |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | 0 | - | 16965 | - | |
| Grade, % | - | 0 | - | - | 0 | - | 0 | - | 0 | - | |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| Mvmt Flow | 109 | 94 | 0 | 0 | 0 | 72 | 0 | 0 | 0 | 0 | |

| Major/Minor | Major1 | Major2 | Minor1 | | | | |
|----------------------|--------|--------|--------|---|---|---|-------------|
| Conflicting Flow All | 72 | 0 | - | - | - | 0 | 348 94 |
| Stage 1 | - | - | - | - | - | - | 312 - |
| Stage 2 | - | - | - | - | - | - | 36 - |
| Critical Hdwy | 4.12 | - | - | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1528 | - | 0 | 0 | - | - | 649 963 |
| Stage 1 | - | - | 0 | 0 | - | - | 742 - |
| Stage 2 | - | - | 0 | 0 | - | - | 986 - |
| Platoon blocked, % | | - | | | - | - | |
| Mov Cap-1 Maneuver | 1528 | - | - | - | - | - | 603 963 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 603 - |
| Stage 1 | - | - | - | - | - | - | 689 - |
| Stage 2 | - | - | - | - | - | - | 986 - |

| Approach | EB | WB | NB |
|----------------------|----|----|----|
| HCM Control Delay, s | 4 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1528 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.071 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 7.5 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 16 | 23 | 277 | 0 | 28 | 12 | 113 | 33 | 62 |
| Future Vol, veh/h | 0 | 0 | 0 | 16 | 23 | 277 | 0 | 28 | 12 | 113 | 33 | 62 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 18 | 26 | 315 | 0 | 32 | 14 | 128 | 38 | 70 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 368 | 403 | 39 |
| Stage 1 | 39 | 39 | - |
| Stage 2 | 329 | 364 | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 632 | 536 | 1033 |
| Stage 1 | 983 | 862 | - |
| Stage 2 | 729 | 624 | - |
| Platoon blocked, % | | | |
| Mov Cap-1 Maneuver | 580 | 0 | 1033 |
| Mov Cap-2 Maneuver | 580 | 0 | - |
| Stage 1 | 983 | 0 | - |
| Stage 2 | 669 | 0 | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.3 | 0 | 4.1 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1483 | - | - | 580 | 1033 | 1562 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.031 | 0.33 | 0.082 | - | - |
| HCM Control Delay (s) | 0 | - | - | 11.4 | 10.2 | 7.5 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 1.5 | 0.3 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 8 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 30 | 95 | 44 | 62 | 254 | 10 |
| Future Vol, veh/h | 30 | 95 | 44 | 62 | 254 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 34 | 108 | 50 | 70 | 289 | 11 |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 0 | 0 | 142 | 0 | 258 88 |
| Stage 1 | - | - | - | - | 88 - |
| Stage 2 | - | - | - | - | 170 - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | - | - | 1441 | - | 731 970 |
| Stage 1 | - | - | - | - | 935 - |
| Stage 2 | - | - | - | - | 860 - |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1441 | - | 705 970 |
| Mov Cap-2 Maneuver | - | - | - | - | 705 - |
| Stage 1 | - | - | - | - | 935 - |
| Stage 2 | - | - | - | - | 829 - |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 3.1 | 13.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 712 | - | - | 1441 | - |
| HCM Lane V/C Ratio | 0.421 | - | - | 0.035 | - |
| HCM Control Delay (s) | 13.7 | - | - | 7.6 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 2.1 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 2 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↔ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 9 | 71 | 193 | 0 | 0 | 139 |
| Future Vol, veh/h | 9 | 71 | 193 | 0 | 0 | 139 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 81 | 219 | 0 | 0 | 158 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 377 | 219 | 0 | - | - | - |
| Stage 1 | 219 | - | - | - | - | - |
| Stage 2 | 158 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | - | - |
| Pot Cap-1 Maneuver | 625 | 821 | - | 0 | 0 | - |
| Stage 1 | 817 | - | - | 0 | 0 | - |
| Stage 2 | 871 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 625 | 821 | - | - | - | - |
| Mov Cap-2 Maneuver | 625 | - | - | - | - | - |
| Stage 1 | 817 | - | - | - | - | - |
| Stage 2 | 871 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 10.1 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 793 | - |
| HCM Lane V/C Ratio | - 0.115 | - |
| HCM Control Delay (s) | - 10.1 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.4 | - |

HCM 6th TWSC
146: Fisher Farm Rd & US 58 EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 104 | 0 | 30 | 0 | 0 | 0 | 0 | 89 | 25 | 74 | 74 | 0 |
| Future Vol, veh/h | 104 | 0 | 30 | 0 | 0 | 0 | 0 | 89 | 25 | 74 | 74 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 118 | 0 | 34 | 0 | 0 | 0 | 0 | 101 | 28 | 84 | 84 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 367 | 381 | 84 | - | 0 | 0 | 129 | 0 | 0 |
| Stage 1 | 252 | 252 | - | - | - | - | - | - | - |
| Stage 2 | 115 | 129 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 633 | 552 | 975 | 0 | - | - | 1457 | - | 0 |
| Stage 1 | 790 | 698 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 910 | 789 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 595 | 0 | 975 | - | - | - | 1457 | - | - |
| Mov Cap-2 Maneuver | 595 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 790 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 855 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 12.2 | 0 | 3.8 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|
| Capacity (veh/h) | - | - | 652 | 1457 | - |
| HCM Lane V/C Ratio | - | - | 0.234 | 0.058 | - |
| HCM Control Delay (s) | - | - | 12.2 | 7.6 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.9 | 0.2 | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019



| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 375 | 136 | 618 | 800 | 86 |
| v/c Ratio | 0.80 | 0.24 | 0.33 | 0.42 | 0.09 |
| Control Delay | 47.1 | 5.0 | 2.1 | 15.3 | 3.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 47.1 | 5.0 | 2.1 | 15.3 | 3.5 |
| Queue Length 50th (ft) | 241 | 0 | 11 | 158 | 0 |
| Queue Length 95th (ft) | 298 | 35 | m18 | 245 | 25 |
| Internal Link Dist (ft) | 1390 | | 137 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 695 | 756 | 1850 | 1918 | 936 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.18 | 0.33 | 0.42 | 0.09 |


















Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | |  |  | |  | | |  |  |
| Traffic Volume (vph) | 0 | 0 | 0 | 330 | 0 | 120 | 0 | 544 | 0 | 0 | 704 | 76 |
| Future Volume (vph) | 0 | 0 | 0 | 330 | 0 | 120 | 0 | 544 | 0 | 0 | 704 | 76 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1556 | 1524 | | 3223 | | | 3343 | 1568 |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 0 | 0 | 0 | 375 | 0 | 136 | 0 | 618 | 0 | 0 | 800 | 86 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 95 | 0 | 0 | 0 | 0 | 0 | 37 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 375 | 41 | 0 | 618 | 0 | 0 | 800 | 49 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 16% | 0% | 6% | 0% | 12% | 14% | 0% | 8% | 3% |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 |
| Actuated Green, G (s) | | | | | 33.4 | 33.4 | | 63.1 | | | 63.1 | 63.1 |
| Effective Green, g (s) | | | | | 33.4 | 33.4 | | 63.1 | | | 63.1 | 63.1 |
| Actuated g/C Ratio | | | | | 0.30 | 0.30 | | 0.57 | | | 0.57 | 0.57 |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 472 | 462 | | 1848 | | | 1917 | 899 |
| v/s Ratio Prot | | | | | | | | 0.19 | | | c0.24 | |
| v/s Ratio Perm | | | | | 0.24 | 0.03 | | | | | | 0.03 |
| v/c Ratio | | | | | 0.79 | 0.09 | | 0.33 | | | 0.42 | 0.05 |
| Uniform Delay, d1 | | | | | 35.2 | 27.4 | | 12.4 | | | 13.1 | 10.3 |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.14 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 9.0 | 0.1 | | 0.2 | | | 0.7 | 0.1 |
| Delay (s) | | | | | 44.1 | 27.5 | | 1.9 | | | 13.8 | 10.4 |
| Level of Service | | | | | D | C | | A | | | B | B |
| Approach Delay (s) | | 0.0 | | | 39.7 | | | 1.9 | | | 13.5 | |
| Approach LOS | | A | | | D | | | A | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 16.6 | | HCM 2000 Level of Service | | | | | | B | |
| HCM 2000 Volume to Capacity ratio | | | 0.55 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 110.0 | | Sum of lost time (s) | | | | | | 13.5 | |
| Intersection Capacity Utilization | | | 78.8% | | ICU Level of Service | | | | | | D | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|-------|------|
| Lane Group Flow (vph) | 127 | 644 | 976 | 247 | 160 | 1015 |
| v/c Ratio | 0.18 | 1.06 | 0.99 | 0.44 | 0.93 | 0.65 |
| Control Delay | 21.8 | 80.3 | 63.9 | 17.7 | 102.6 | 19.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.8 | 80.3 | 63.9 | 17.7 | 102.6 | 19.1 |
| Queue Length 50th (ft) | 56 | ~456 | 358 | 66 | 117 | 214 |
| Queue Length 95th (ft) | 96 | #656 | #482 | 135 | #238 | 286 |
| Internal Link Dist (ft) | | | 580 | | | 501 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 693 | 610 | 990 | 566 | 172 | 1559 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 1.06 | 0.99 | 0.44 | 0.93 | 0.65 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.






















Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 2: US 220 Business & US 58 EB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|--|---|---|--|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  | |  | | | | |   |  |  |   |  | |
| Traffic Volume (vph) | 112 | 0 | 567 | 0 | 0 | 0 | 0 | 859 | 217 | 141 | 893 | 0 | |
| Future Volume (vph) | 112 | 0 | 567 | 0 | 0 | 0 | 0 | 859 | 217 | 141 | 893 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1357 | | | | | 3223 | 1568 | 1770 | 3343 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 127 | 0 | 644 | 0 | 0 | 0 | 0 | 976 | 247 | 160 | 1015 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 85 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 127 | 0 | 587 | 0 | 0 | 0 | 0 | 976 | 162 | 160 | 1015 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 19% | 2% | 2% | 2% | 0% | 12% | 3% | 2% | 8% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 44.8 | | 44.8 | | | | | 33.8 | 33.8 | 10.7 | 51.3 | | |
| Effective Green, g (s) | 44.8 | | 44.8 | | | | | 33.8 | 33.8 | 10.7 | 51.3 | | |
| Actuated g/C Ratio | 0.41 | | 0.41 | | | | | 0.31 | 0.31 | 0.10 | 0.47 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 693 | | 552 | | | | | 990 | 481 | 172 | 1559 | | |
| v/s Ratio Prot | | | | | | | | c0.30 | | 0.09 | c0.30 | | |
| v/s Ratio Perm | 0.07 | | c0.43 | | | | | | 0.10 | | | | |
| v/c Ratio | 0.18 | | 1.06 | | | | | 0.99 | 0.34 | 0.93 | 0.65 | | |
| Uniform Delay, d1 | 20.9 | | 32.6 | | | | | 37.9 | 29.4 | 49.3 | 22.5 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.07 | 0.75 | | |
| Incremental Delay, d2 | 0.1 | | 56.0 | | | | | 25.4 | 1.9 | 45.7 | 1.9 | | |
| Delay (s) | 21.0 | | 88.6 | | | | | 63.3 | 31.3 | 98.4 | 18.9 | | |
| Level of Service | C | | F | | | | | E | C | F | B | | |
| Approach Delay (s) | | 77.5 | | | 0.0 | | | 56.8 | | | 29.7 | | |
| Approach LOS | | E | | | A | | | E | | | C | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 51.8 | | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 1.02 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 110.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 71.4% | | | | | | | | | ICU Level of Service | C |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 23 | 0 | 6 | 2 | 0 | 17 | 5 | 1036 | 2 | 27 | 1414 | 19 |
| Future Vol, veh/h | 23 | 0 | 6 | 2 | 0 | 17 | 5 | 1036 | 2 | 27 | 1414 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 26 | 0 | 7 | 2 | 0 | 19 | 6 | 1177 | 2 | 31 | 1607 | 22 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 2270 | 2860 | 804 | 2055 | 2880 | 589 | 1629 | 0 | 0 | 1179 | 0 | 0 |
| Stage 1 | 1669 | 1669 | - | 1189 | 1189 | - | - | - | - | - | - | - |
| Stage 2 | 601 | 1191 | - | 866 | 1691 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 23 | 17 | 330 | 33 | 17 | 430 | 404 | - | - | 600 | - | - |
| Stage 1 | 102 | 155 | - | 203 | 264 | - | - | - | - | - | - | - |
| Stage 2 | 459 | 263 | - | 319 | 151 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | ~ 21 | 16 | 330 | 31 | 16 | 430 | 404 | - | - | 600 | - | - |
| Mov Cap-2 Maneuver | ~ 21 | 16 | - | 31 | 16 | - | - | - | - | - | - | - |
| Stage 1 | 100 | 147 | - | 200 | 260 | - | - | - | - | - | - | - |
| Stage 2 | 432 | 259 | - | 296 | 143 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | | |
|----------------------|--------|--|------|--|-----|--|-----|--|--|
| HCM Control Delay, s | \$ 491 | | 27.3 | | 0.1 | | 0.2 | | |
| HCM LOS | F | | D | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|--------|-------|-------|-----|-----|
| Capacity (veh/h) | 404 | - | - | 26 | 183 | 600 | - | - |
| HCM Lane V/C Ratio | 0.014 | - | - | 1.267 | 0.118 | 0.051 | - | - |
| HCM Control Delay (s) | 14 | - | - | \$ 491 | 27.3 | 11.3 | - | - |
| HCM Lane LOS | B | - | - | F | D | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4 | 0.4 | 0.2 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 7 | 0 | 16 | 0 | 1027 | 10 | 23 | 1399 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 7 | 0 | 16 | 0 | 1027 | 10 | 23 | 1399 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | 0 | 16 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 8 | 0 | 18 | 0 | 1167 | 11 | 26 | 1590 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 2226 | 2820 | 795 | 2014 | 2809 | 584 | - | 0 | 0 | 1178 | 0 | 0 |
| Stage 1 | 1642 | 1642 | - | 1167 | 1167 | - | - | - | - | - | - | - |
| Stage 2 | 584 | 1178 | - | 847 | 1642 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 24 | 18 | 335 | 35 | 18 | 443 | 0 | - | - | 600 | - | 0 |
| Stage 1 | 106 | 159 | - | 209 | 270 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 470 | 267 | - | 327 | 159 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 22 | 17 | 335 | 34 | 17 | 443 | - | - | - | 600 | - | - |
| Mov Cap-2 Maneuver | 22 | 17 | - | 34 | 17 | - | - | - | - | - | - | - |
| Stage 1 | 106 | 152 | - | 209 | 270 | - | - | - | - | - | - | - |
| Stage 2 | 451 | 267 | - | 313 | 152 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|-----|
| HCM Control Delay, s | 0 | 56.7 | 0 | 0.2 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|-------|-------|
| Capacity (veh/h) | - | - | - | 95 | 600 |
| HCM Lane V/C Ratio | - | - | - | 0.275 | 0.044 |
| HCM Control Delay (s) | - | - | 0 | 56.7 | 11.3 |
| HCM Lane LOS | - | - | A | F | B |
| HCM 95th %tile Q(veh) | - | - | - | 1 | 0.1 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 92.3 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | ↘↗ | | | ↑↑ | ↑↑ | ↗ |
| Traffic Vol, veh/h | 140 | 43 | 0 | 897 | 1374 | 32 |
| Future Vol, veh/h | 140 | 43 | 0 | 897 | 1374 | 32 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 12 | 16 | 0 |
| Mvmt Flow | 159 | 49 | 0 | 1019 | 1561 | 36 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 2071 | 781 | - | 0 | - | 0 |
| Stage 1 | 1561 | - | - | - | - | - |
| Stage 2 | 510 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 48 | 342 | 0 | - | - | - |
| Stage 1 | 162 | - | 0 | - | - | - |
| Stage 2 | 574 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 48 | 342 | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 48 | - | - | - | - | - |
| Stage 1 | 162 | - | - | - | - | - |
| Stage 2 | 574 | - | - | - | - | - |

| Approach | EB | NB | SB |
|-----------------------|--------|----|----|
| HCM Control Delay, \$ | 1253.4 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----------|-----|-----|
| Capacity (veh/h) | - | 60 | - | - |
| HCM Lane V/C Ratio | - | 3.466 | - | - |
| HCM Control Delay (s) | | \$ 1253.4 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 22 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 8 | 34 | 863 | 12 | 50 | 1367 |
| Future Vol, veh/h | 8 | 34 | 863 | 12 | 50 | 1367 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 12 | 0 | 0 | 17 |
| Mvmt Flow | 9 | 39 | 981 | 14 | 57 | 1553 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 1872 | 491 | 0 | 0 | 995 |
| Stage 1 | 981 | - | - | - | - |
| Stage 2 | 891 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 65 | 529 | - | - | 703 |
| Stage 1 | 329 | - | - | - | - |
| Stage 2 | 366 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 60 | 529 | - | - | 703 |
| Mov Cap-2 Maneuver | 60 | - | - | - | - |
| Stage 1 | 329 | - | - | - | - |
| Stage 2 | 336 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 26.7 | 0 | 0.4 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 213 | 703 |
| HCM Lane V/C Ratio | - | - | 0.224 | 0.081 |
| HCM Control Delay (s) | - | - | 26.7 | 10.6 |
| HCM Lane LOS | - | - | D | B |
| HCM 95th %tile Q(veh) | - | - | 0.8 | 0.3 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↑↑ | ↕ | ↕ | ↑↑ | |
| Traffic Vol, veh/h | 22 | 0 | 6 | 0 | 0 | 0 | 10 | 853 | 16 | 35 | 1303 | 37 |
| Future Vol, veh/h | 22 | 0 | 6 | 0 | 0 | 0 | 10 | 853 | 16 | 35 | 1303 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 12 | 0 | 3 | 17 | 0 |
| Mvmt Flow | 25 | 0 | 7 | 0 | 0 | 0 | 11 | 969 | 18 | 40 | 1481 | 42 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 2089 | 2591 | 762 | | | | 1523 | 0 | 0 | 987 | 0 | 0 |
| Stage 1 | 1582 | 1582 | - | | | | - | - | - | - | - | - |
| Stage 2 | 507 | 1009 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 46 | 26 | 352 | | | | 444 | - | - | 690 | - | - |
| Stage 1 | 158 | 171 | - | | | | - | - | - | - | - | - |
| Stage 2 | 576 | 320 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 42 | 0 | 352 | | | | 444 | - | - | 690 | - | - |
| Mov Cap-2 Maneuver | 42 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 154 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 543 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|-------|-----|-----|
| HCM Control Delay, s | 150.3 | 0.2 | 0.3 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 444 | - | - | 52 | 690 | - | - |
| HCM Lane V/C Ratio | 0.026 | - | - | 0.612 | 0.058 | - | - |
| HCM Control Delay (s) | 13.3 | - | - | 150.3 | 10.5 | - | - |
| HCM Lane LOS | B | - | - | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 2.4 | 0.2 | - | - |

Queues

8: US 220 Business & Water Plant Road

04/02/2019



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 91 | 48 | 2 | 2 | 50 | 908 | 8 | 64 | 1251 | 173 |
| v/c Ratio | 0.54 | 0.23 | 0.01 | 0.01 | 0.39 | 0.47 | 0.01 | 0.35 | 0.63 | 0.16 |
| Control Delay | 48.4 | 16.2 | 36.5 | 36.5 | 45.5 | 14.9 | 0.0 | 39.7 | 15.6 | 0.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 48.4 | 16.2 | 36.5 | 36.5 | 45.5 | 14.9 | 0.0 | 39.7 | 15.6 | 0.9 |
| Queue Length 50th (ft) | 41 | 2 | 1 | 1 | 23 | 144 | 0 | 28 | 225 | 0 |
| Queue Length 95th (ft) | #112 | 34 | 8 | 8 | #65 | 272 | 0 | 73 | #461 | 8 |
| Internal Link Dist (ft) | | 711 | | 593 | | 4723 | | | 1902 | |
| Turn Bay Length (ft) | 100 | | 100 | | 500 | | 175 | 250 | | 200 |
| Base Capacity (vph) | 177 | 222 | 146 | 153 | 129 | 1914 | 832 | 211 | 1987 | 1097 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.51 | 0.22 | 0.01 | 0.01 | 0.39 | 0.47 | 0.01 | 0.30 | 0.63 | 0.16 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 8: US 220 Business & Water Plant Road

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | ↖ | ↖ | ↗ | ↗ | ↖ | ↗ | ↖ |
| Traffic Volume (veh/h) | 80 | 4 | 38 | 2 | 2 | 0 | 44 | 799 | 7 | 56 | 1101 | 152 |
| Future Volume (veh/h) | 80 | 4 | 38 | 2 | 2 | 0 | 44 | 799 | 7 | 56 | 1101 | 152 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1678 | 1900 | 1900 | 1900 | 1900 | 1900 | 1707 | 1752 | 1470 | 1900 | 1648 | 1856 |
| Adj Flow Rate, veh/h | 91 | 5 | 43 | 2 | 2 | 0 | 50 | 908 | 8 | 64 | 1251 | 173 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 10 | 29 | 0 | 17 | 3 |
| Cap, veh/h | 124 | 13 | 114 | 12 | 12 | 10 | 82 | 1634 | 612 | 103 | 1573 | 790 |
| Arrive On Green | 0.08 | 0.08 | 0.08 | 0.01 | 0.01 | 0.00 | 0.05 | 0.49 | 0.49 | 0.06 | 0.50 | 0.50 |
| Sat Flow, veh/h | 1598 | 170 | 1466 | 1810 | 1900 | 1610 | 1626 | 3328 | 1246 | 1810 | 3131 | 1572 |
| Grp Volume(v), veh/h | 91 | 0 | 48 | 2 | 2 | 0 | 50 | 908 | 8 | 64 | 1251 | 173 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 0 | 1636 | 1810 | 1900 | 1610 | 1626 | 1664 | 1246 | 1810 | 1566 | 1572 |
| Q Serve(g_s), s | 4.5 | 0.0 | 2.2 | 0.1 | 0.1 | 0.0 | 2.4 | 15.4 | 0.3 | 2.8 | 26.6 | 4.9 |
| Cycle Q Clear(g_c), s | 4.5 | 0.0 | 2.2 | 0.1 | 0.1 | 0.0 | 2.4 | 15.4 | 0.3 | 2.8 | 26.6 | 4.9 |
| Prop In Lane | 1.00 | | 0.90 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 124 | 0 | 127 | 12 | 12 | 10 | 82 | 1634 | 612 | 103 | 1573 | 790 |
| V/C Ratio(X) | 0.73 | 0.00 | 0.38 | 0.17 | 0.17 | 0.00 | 0.61 | 0.56 | 0.01 | 0.62 | 0.80 | 0.22 |
| Avail Cap(c_a), veh/h | 167 | 0 | 171 | 135 | 142 | 120 | 121 | 1634 | 612 | 196 | 1573 | 790 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.3 | 0.0 | 35.2 | 39.7 | 39.7 | 0.0 | 37.4 | 14.3 | 10.5 | 37.1 | 16.6 | 11.2 |
| Incr Delay (d2), s/veh | 10.4 | 0.0 | 1.8 | 6.9 | 6.2 | 0.0 | 7.2 | 1.4 | 0.0 | 6.0 | 4.2 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.0 | 0.9 | 0.1 | 0.1 | 0.0 | 1.1 | 4.9 | 0.1 | 1.3 | 8.8 | 1.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 46.6 | 0.0 | 37.1 | 46.7 | 46.0 | 0.0 | 44.7 | 15.7 | 10.5 | 43.1 | 20.8 | 11.8 |
| LnGrp LOS | D | A | D | D | D | A | D | B | B | D | C | B |
| Approach Vol, veh/h | | 139 | | | 4 | | | 966 | | | 1488 | |
| Approach Delay, s/veh | | 43.3 | | | 46.3 | | | 17.2 | | | 20.7 | |
| Approach LOS | | D | | | D | | | B | | | C | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.3 | 45.4 | | 8.9 | 11.3 | 46.3 | | 13.9 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 8.7 | 37.3 | | * 6 | * 6 | 40.4 | | 8.4 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.8 | 17.4 | | 2.1 | 4.4 | 28.6 | | 6.5 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.5 | | 0.0 | 0.0 | 6.7 | | 0.1 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 20.7 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Lane Group | EBT | EBR | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 61 | 27 | 41 | 203 | 31 | 736 | 8 | 233 | 1016 | 48 |
| v/c Ratio | 0.39 | 0.08 | 0.27 | 0.63 | 0.28 | 0.58 | 0.01 | 0.74 | 0.57 | 0.05 |
| Control Delay | 55.8 | 0.5 | 53.4 | 15.1 | 58.7 | 29.2 | 0.0 | 57.1 | 18.4 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 55.8 | 0.5 | 53.4 | 15.1 | 58.7 | 29.2 | 0.0 | 57.1 | 18.4 | 0.1 |
| Queue Length 50th (ft) | 42 | 0 | 28 | 0 | 22 | 209 | 0 | 159 | 258 | 0 |
| Queue Length 95th (ft) | 87 | 0 | 64 | 57 | 55 | 322 | 0 | 244 | 370 | 0 |
| Internal Link Dist (ft) | 631 | | 525 | | | 3118 | | | 4723 | |
| Turn Bay Length (ft) | | 25 | | 75 | 100 | | 100 | 225 | | 225 |
| Base Capacity (vph) | 322 | 467 | 333 | 455 | 113 | 1272 | 789 | 443 | 1777 | 1009 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.19 | 0.06 | 0.12 | 0.45 | 0.27 | 0.58 | 0.01 | 0.53 | 0.57 | 0.05 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 9: US 220 Business & Soapstone Road/Main Street

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|------|------|-------|-------|------|------|------|------|------|------|------|
| Lane Configurations | | ↖ | ↗ | | ↖ | ↗ | ↖ | ↗ | ↗ | ↖ | ↗ | ↗ |
| Traffic Volume (veh/h) | 23 | 31 | 24 | 4 | 32 | 179 | 27 | 648 | 7 | 205 | 894 | 42 |
| Future Volume (veh/h) | 23 | 31 | 24 | 4 | 32 | 179 | 27 | 648 | 7 | 205 | 894 | 42 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1856 | 1856 | 1900 | 1900 | 1900 | 1870 | 1900 | 1693 | 1900 | 1885 | 1633 | 1900 |
| Adj Flow Rate, veh/h | 26 | 35 | 27 | 5 | 36 | 203 | 31 | 736 | 8 | 233 | 1016 | 48 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 14 | 0 | 1 | 18 | 0 |
| Cap, veh/h | 38 | 52 | 80 | 33 | 240 | 229 | 60 | 1275 | 639 | 266 | 1599 | 830 |
| Arrive On Green | 0.05 | 0.05 | 0.05 | 0.14 | 0.14 | 0.14 | 0.03 | 0.40 | 0.40 | 0.15 | 0.52 | 0.52 |
| Sat Flow, veh/h | 774 | 1042 | 1610 | 230 | 1658 | 1585 | 1810 | 3216 | 1610 | 1795 | 3103 | 1610 |
| Grp Volume(v), veh/h | 61 | 0 | 27 | 41 | 0 | 203 | 31 | 736 | 8 | 233 | 1016 | 48 |
| Grp Sat Flow(s),veh/h/ln | 1817 | 0 | 1610 | 1888 | 0 | 1585 | 1810 | 1608 | 1610 | 1795 | 1552 | 1610 |
| Q Serve(g_s), s | 3.7 | 0.0 | 1.8 | 2.2 | 0.0 | 14.2 | 1.9 | 20.3 | 0.3 | 14.4 | 26.8 | 1.7 |
| Cycle Q Clear(g_c), s | 3.7 | 0.0 | 1.8 | 2.2 | 0.0 | 14.2 | 1.9 | 20.3 | 0.3 | 14.4 | 26.8 | 1.7 |
| Prop In Lane | 0.43 | | 1.00 | 0.12 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 90 | 0 | 80 | 273 | 0 | 229 | 60 | 1275 | 639 | 266 | 1599 | 830 |
| V/C Ratio(X) | 0.68 | 0.00 | 0.34 | 0.15 | 0.00 | 0.89 | 0.52 | 0.58 | 0.01 | 0.88 | 0.64 | 0.06 |
| Avail Cap(c_a), veh/h | 289 | 0 | 256 | 300 | 0 | 252 | 102 | 1275 | 639 | 401 | 1599 | 830 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.0 | 0.0 | 52.1 | 42.4 | 0.0 | 47.6 | 53.9 | 26.8 | 20.7 | 47.3 | 19.8 | 13.7 |
| Incr Delay (d2), s/veh | 8.5 | 0.0 | 2.5 | 0.3 | 0.0 | 27.6 | 6.8 | 1.9 | 0.0 | 13.3 | 1.9 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.9 | 0.0 | 0.8 | 1.0 | 0.0 | 7.4 | 0.9 | 7.5 | 0.1 | 7.1 | 8.9 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.5 | 0.0 | 54.5 | 42.6 | 0.0 | 75.2 | 60.7 | 28.7 | 20.8 | 60.6 | 21.7 | 13.9 |
| LnGrp LOS | E | A | D | D | A | E | E | C | C | E | C | B |
| Approach Vol, veh/h | | 88 | | | 244 | | | 775 | | | 1297 | |
| Approach Delay, s/veh | | 59.4 | | | 69.7 | | | 29.9 | | | 28.4 | |
| Approach LOS | | E | | | E | | | C | | | C | |
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 24.5 | 50.9 | | 24.8 | 11.0 | 64.3 | | 13.2 | | | | |
| Change Period (Y+Rc), s | * 7.7 | 5.9 | | * 8.4 | * 7.3 | 5.9 | | 7.6 | | | | |
| Max Green Setting (Gmax), s | * 25 | 39.1 | | * 18 | * 6.4 | 58.4 | | 18.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 16.4 | 22.3 | | 16.2 | 3.9 | 28.8 | | 5.7 | | | | |
| Green Ext Time (p_c), s | 0.4 | 4.1 | | 0.2 | 0.0 | 7.4 | | 0.2 | | | | |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 34.2 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

10: US 220 Business & Morehead Ave

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 72 | 381 | 394 | 11 | 418 | 630 |
| v/c Ratio | 0.18 | 0.57 | 0.55 | 0.03 | 0.73 | 0.38 |
| Control Delay | 24.8 | 6.8 | 30.2 | 13.9 | 18.3 | 10.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 24.8 | 6.8 | 30.2 | 13.9 | 18.3 | 10.6 |
| Queue Length 50th (ft) | 27 | 0 | 88 | 0 | 109 | 83 |
| Queue Length 95th (ft) | 61 | 60 | 134 | 12 | 167 | 113 |
| Internal Link Dist (ft) | 1680 | | 3641 | | | 3118 |
| Turn Bay Length (ft) | | 50 | | 175 | 375 | |
| Base Capacity (vph) | 402 | 666 | 714 | 348 | 627 | 1785 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 0.57 | 0.55 | 0.03 | 0.67 | 0.35 |

Intersection Summary

HCM 6th Signalized Intersection Summary

10: US 220 Business & Morehead Ave

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 63 | 335 | 347 | 10 | 368 | 554 |
| Future Volume (veh/h) | 63 | 335 | 347 | 10 | 368 | 554 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1678 | 1781 | 1678 | 1781 | 1841 | 1604 |
| Adj Flow Rate, veh/h | 72 | 381 | 394 | 11 | 418 | 630 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 15 | 8 | 15 | 8 | 4 | 20 |
| Cap, veh/h | 412 | 389 | 729 | 345 | 567 | 1661 |
| Arrive On Green | 0.26 | 0.26 | 0.23 | 0.23 | 0.20 | 0.55 |
| Sat Flow, veh/h | 1598 | 1510 | 3272 | 1510 | 1753 | 3127 |
| Grp Volume(v), veh/h | 72 | 381 | 394 | 11 | 418 | 630 |
| Grp Sat Flow(s),veh/h/ln | 1598 | 1510 | 1594 | 1510 | 1753 | 1523 |
| Q Serve(g_s), s | 2.7 | 19.1 | 8.3 | 0.4 | 12.9 | 9.0 |
| Cycle Q Clear(g_c), s | 2.7 | 19.1 | 8.3 | 0.4 | 12.9 | 9.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 412 | 389 | 729 | 345 | 567 | 1661 |
| V/C Ratio(X) | 0.17 | 0.98 | 0.54 | 0.03 | 0.74 | 0.38 |
| Avail Cap(c_a), veh/h | 412 | 389 | 729 | 345 | 658 | 1819 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.9 | 28.0 | 25.8 | 22.8 | 15.9 | 9.9 |
| Incr Delay (d2), s/veh | 0.9 | 40.7 | 2.9 | 0.2 | 3.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 10.9 | 3.0 | 0.2 | 4.7 | 2.3 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 22.9 | 68.8 | 28.7 | 23.0 | 19.6 | 10.1 |
| LnGrp LOS | C | E | C | C | B | B |
| Approach Vol, veh/h | 453 | | 405 | | | 1048 |
| Approach Delay, s/veh | 61.5 | | 28.5 | | | 13.9 |
| Approach LOS | E | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 24.1 | 26.0 | | 26.0 | | 50.1 |
| Change Period (Y+Rc), s | * 8.6 | * 8.6 | | 6.4 | | * 8.6 |
| Max Green Setting (Gmax), s | * 19 | * 17 | | 19.6 | | * 45 |
| Max Q Clear Time (g_c+l1), s | 14.9 | 10.3 | | 21.1 | | 11.0 |
| Green Ext Time (p_c), s | 0.6 | 1.3 | | 0.0 | | 4.0 |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 28.3 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
 11: US 220 Business & Lee Ford Camp Rd/Church St

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 103.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↕ | ↑↑ | ↕ | ↕ | ↑↑ | ↕ |
| Traffic Vol, veh/h | 11 | 277 | 49 | 5 | 6 | 2 | 9 | 344 | 49 | 20 | 567 | 30 |
| Future Vol, veh/h | 11 | 277 | 49 | 5 | 6 | 2 | 9 | 344 | 49 | 20 | 567 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 350 | - | 350 | 250 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 20 | 2 |
| Mvmt Flow | 13 | 315 | 56 | 6 | 7 | 2 | 10 | 391 | 56 | 23 | 644 | 34 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|-------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 909 | 1157 | 322 | 937 | 1135 | 196 | 678 | 0 | 0 | 447 | 0 | 0 |
| Stage 1 | 690 | 690 | - | 411 | 411 | - | - | - | - | - | - | - |
| Stage 2 | 219 | 467 | - | 526 | 724 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 230 | ~ 195 | 674 | 219 | 201 | 812 | 910 | - | - | 1110 | - | - |
| Stage 1 | 401 | 444 | - | 589 | 593 | - | - | - | - | - | - | - |
| Stage 2 | 763 | 560 | - | 503 | 429 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 218 | ~ 189 | 674 | - | 195 | 812 | 910 | - | - | 1110 | - | - |
| Mov Cap-2 Maneuver | 218 | ~ 189 | - | - | 195 | - | - | - | - | - | - | - |
| Stage 1 | 397 | 435 | - | 583 | 586 | - | - | - | - | - | - | - |
| Stage 2 | 744 | 554 | - | 125 | 420 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|-------|----|-----|-----|
| HCM Control Delay, s | 419.6 | | 0.2 | 0.3 |
| HCM LOS | F | - | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|------|-----|-----|
| Capacity (veh/h) | 910 | - | - | 212 | - | 1110 | - | - |
| HCM Lane V/C Ratio | 0.011 | - | - | 1.806 | - | 0.02 | - | - |
| HCM Control Delay (s) | 9 | - | - | 419.6 | - | 8.3 | - | - |
| HCM Lane LOS | A | - | - | F | - | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 26.7 | - | 0.1 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↘ | | ↗ | ↘ | ↗ | | | ↗ | ↘ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 4 | 0 | 79 | 31 | 323 | 0 | 0 | 166 | 455 |
| Future Vol, veh/h | 0 | 0 | 0 | 4 | 0 | 79 | 31 | 323 | 0 | 0 | 166 | 455 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 100 | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 15 | 2 | 2 | 2 | 20 |
| Mvmt Flow | 0 | 0 | 0 | 5 | 0 | 90 | 35 | 367 | 0 | 0 | 189 | 517 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|---------------|-----------|
| Conflicting Flow All | 885 | - 367 706 | 0 - - - 0 |
| Stage 1 | 437 | - - - | - - - - - |
| Stage 2 | 448 | - - - | - - - - - |
| Critical Hdwy | 6.42 | - 6.22 4.12 | - - - - - |
| Critical Hdwy Stg 1 | 5.42 | - - - | - - - - - |
| Critical Hdwy Stg 2 | 5.42 | - - - | - - - - - |
| Follow-up Hdwy | 3.518 | - 3.318 2.218 | - - - - - |
| Pot Cap-1 Maneuver | 315 | 0 678 892 | - 0 0 - - |
| Stage 1 | 651 | 0 - - | - 0 0 - - |
| Stage 2 | 644 | 0 - - | - 0 0 - - |
| Platoon blocked, % | | | - - - |
| Mov Cap-1 Maneuver | 303 | 0 678 892 | - - - - - |
| Mov Cap-2 Maneuver | 303 | 0 - - | - - - - - |
| Stage 1 | 626 | 0 - - | - - - - - |
| Stage 2 | 644 | 0 - - | - - - - - |

| Approach | WB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 11.4 | 0.8 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBTWBLn1WBLn2 | SBT | SBR |
|-----------------------|-------|---------------|-----|-----|
| Capacity (veh/h) | 892 | - 303 678 | - - | - - |
| HCM Lane V/C Ratio | 0.039 | - 0.015 0.132 | - - | - - |
| HCM Control Delay (s) | 9.2 | - 17.1 11.1 | - - | - - |
| HCM Lane LOS | A | - C B | - - | - - |
| HCM 95th %tile Q(veh) | 0.1 | - 0 0.5 | - - | - - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 15.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↗ | | | | | | ↖ | | ↖ | ↗ | |
| Traffic Vol, veh/h | 354 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 | 0 | 0 |
| Future Vol, veh/h | 354 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 15 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 402 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 193 | 0 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 386 | 386 | 0 | - | 0 | 0 | 0 | 0 | 0 |
| Stage 1 | 386 | 386 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.55 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.55 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.635 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 592 | 548 | - | 0 | - | - | - | - | 0 |
| Stage 1 | 660 | 610 | - | 0 | - | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 592 | 0 | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | 592 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 660 | 0 | - | - | - | - | - | - | - |
| Stage 2 | - | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 23 | 0 | |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | - | - | 592 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.68 | - | - | - |
| HCM Control Delay (s) | - | - | 23 | 0 | - | - |
| HCM Lane LOS | - | - | C | A | - | - |
| HCM 95th %tile Q(veh) | - | - | 5.2 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | ↑ | | ↑ |
| Traffic Vol, veh/h | 0 | 150 | 0 | 0 | 94 | 0 | 0 | 0 | 0 | 8 | 0 | 43 |
| Future Vol, veh/h | 0 | 150 | 0 | 0 | 94 | 0 | 0 | 0 | 0 | 8 | 0 | 43 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | 100 | - | - | - | - | - | 0 | - | 100 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 170 | 0 | 0 | 107 | 0 | 0 | 0 | 0 | 9 | 0 | 49 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | | |
|----------------------|--------|---|---|--------|---|---|--------|--|-------|---|-------|
| Conflicting Flow All | - | 0 | 0 | 170 | 0 | 0 | | | 277 | - | 107 |
| Stage 1 | - | - | - | - | - | - | | | 107 | - | - |
| Stage 2 | - | - | - | - | - | - | | | 170 | - | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | | 6.42 | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | | 5.42 | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | | 5.42 | - | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | | 3.518 | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1407 | - | 0 | | | 713 | 0 | 947 |
| Stage 1 | 0 | - | - | - | - | 0 | | | 917 | 0 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | | 860 | 0 | - |
| Platoon blocked, % | - | - | - | - | - | - | | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1407 | - | - | | | 713 | 0 | 947 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | | 713 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | | 917 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | | 860 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 9.2 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1407 | - | 713 | 947 |
| HCM Lane V/C Ratio | - | - | - | - | 0.013 | 0.052 |
| HCM Control Delay (s) | - | - | 0 | - | 10.1 | 9 |
| HCM Lane LOS | - | - | A | - | B | A |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0 | 0.2 |

| Intersection | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|--|
| Int Delay, s/veh | 2 | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBR | SWL | SWR | |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | ↘ | | | | |
| Traffic Vol, veh/h | 86 | 72 | 0 | 0 | 94 | 75 | 0 | 0 | 0 | 0 | |
| Future Vol, veh/h | 86 | 72 | 0 | 0 | 94 | 75 | 0 | 0 | 0 | 0 | |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | |
| Storage Length | 100 | - | - | - | - | - | 0 | 100 | - | - | |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | 0 | - | 16965 | - | |
| Grade, % | - | 0 | - | - | 0 | - | 0 | - | 0 | - | |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| Mvmt Flow | 98 | 82 | 0 | 0 | 107 | 85 | 0 | 0 | 0 | 0 | |

| Major/Minor | Major1 | Major2 | Minor1 | | | | |
|----------------------|--------|--------|--------|---|---|---|-------------|
| Conflicting Flow All | 192 | 0 | - | - | - | 0 | 428 82 |
| Stage 1 | - | - | - | - | - | - | 278 - |
| Stage 2 | - | - | - | - | - | - | 150 - |
| Critical Hdwy | 4.12 | - | - | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1381 | - | 0 | 0 | - | - | 584 978 |
| Stage 1 | - | - | 0 | 0 | - | - | 769 - |
| Stage 2 | - | - | 0 | 0 | - | - | 878 - |
| Platoon blocked, % | | - | | | - | - | |
| Mov Cap-1 Maneuver | 1381 | - | - | - | - | - | 543 978 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 543 - |
| Stage 1 | - | - | - | - | - | - | 714 - |
| Stage 2 | - | - | - | - | - | - | 878 - |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 4.2 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | - | 1381 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.071 | - | - | - |
| HCM Control Delay (s) | 0 | 0 | 7.8 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 17 | 36 | 214 | 0 | 60 | 19 | 149 | 17 | 48 |
| Future Vol, veh/h | 0 | 0 | 0 | 17 | 36 | 214 | 0 | 60 | 19 | 149 | 17 | 48 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 19 | 41 | 243 | 0 | 68 | 22 | 169 | 19 | 55 |

| Major/Minor | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 464 | 491 | 79 |
| Stage 1 | 79 | 79 | - |
| Stage 2 | 385 | 412 | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 556 | 478 | 981 |
| Stage 1 | 944 | 829 | - |
| Stage 2 | 688 | 594 | - |
| Platoon blocked, % | | | |
| Mov Cap-1 Maneuver | 494 | 0 | 981 |
| Mov Cap-2 Maneuver | 494 | 0 | - |
| Stage 1 | 944 | 0 | - |
| Stage 2 | 611 | 0 | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.4 | 0 | 5.4 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1526 | - | - | 494 | 981 | 1505 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.039 | 0.29 | 0.113 | - | - |
| HCM Control Delay (s) | 0 | - | - | 12.6 | 10.2 | 7.7 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 1.2 | 0.4 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.4 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 20 | 148 | 32 | 95 | 172 | 23 |
| Future Vol, veh/h | 20 | 148 | 32 | 95 | 172 | 23 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 168 | 36 | 108 | 195 | 26 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 191 | 0 | 287 |
| Stage 1 | - | - | - | - | 107 |
| Stage 2 | - | - | - | - | 180 |
| Critical Hdwy | - | - | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | - | - | 1383 | - | 703 |
| Stage 1 | - | - | - | - | 917 |
| Stage 2 | - | - | - | - | 851 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1383 | - | 683 |
| Mov Cap-2 Maneuver | - | - | - | - | 683 |
| Stage 1 | - | - | - | - | 917 |
| Stage 2 | - | - | - | - | 827 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 1.9 | 12.4 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 706 | - | - | 1383 | - |
| HCM Lane V/C Ratio | 0.314 | - | - | 0.026 | - |
| HCM Control Delay (s) | 12.4 | - | - | 7.7 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 1.3 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↑ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 22 | 15 | 180 | 0 | 0 | 180 |
| Future Vol, veh/h | 22 | 15 | 180 | 0 | 0 | 180 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 25 | 17 | 205 | 0 | 0 | 205 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 410 | 205 | 0 | - | - | - |
| Stage 1 | 205 | - | - | - | - | - |
| Stage 2 | 205 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | - | - |
| Pot Cap-1 Maneuver | 598 | 836 | - | 0 | 0 | - |
| Stage 1 | 829 | - | - | 0 | 0 | - |
| Stage 2 | 829 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 598 | 836 | - | - | - | - |
| Mov Cap-2 Maneuver | 598 | - | - | - | - | - |
| Stage 1 | 829 | - | - | - | - | - |
| Stage 2 | 829 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 10.7 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 676 | - |
| HCM Lane V/C Ratio | - 0.062 | - |
| HCM Control Delay (s) | - 10.7 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.2 | - |

HCM 6th TWSC
146: Fisher Farm Rd & US 58 EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 149 | 16 | 45 | 157 | 0 |
| Future Vol, veh/h | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 149 | 16 | 45 | 157 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 35 | 0 | 35 | 0 | 0 | 0 | 0 | 169 | 18 | 51 | 178 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 458 | 467 | 178 | - | 0 | 0 | 187 | 0 | 0 |
| Stage 1 | 280 | 280 | - | - | - | - | - | - | - |
| Stage 2 | 178 | 187 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.52 | 6.22 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 561 | 493 | 865 | 0 | - | - | 1387 | - | 0 |
| Stage 1 | 767 | 679 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 853 | 745 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 538 | 0 | 865 | - | - | - | 1387 | - | - |
| Mov Cap-2 Maneuver | 538 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 767 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 818 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 11.1 | 0 | 1.7 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|
| Capacity (veh/h) | - | - | 663 | 1387 | - |
| HCM Lane V/C Ratio | - | - | 0.106 | 0.037 | - |
| HCM Control Delay (s) | - | - | 11.1 | 7.7 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.4 | 0.1 | - |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|------------|----------------|
| | 74 | 0.2 | 5.6 | 0.1 | 44 |
| | 75 | 0.1 | 6.4 | 0.1 | 51 |
| | 79 | 0.1 | 4.2 | 0.1 | 53 |
| | 72 | 0.3 | 16.6 | 0.2 | 53 |
| | 80 | 0.3 | 14.7 | 0.2 | 53 |
| | 13 | 0.4 | 15.2 | 0.2 | 53 |
| | 38 | 1.6 | 47.5 | 0.7 | 53 |
| Church St | 11 | 1.6 | 33.7 | 0.5 | 53 |
| Morehead Ave | 10 | 21.5 | 67.0 | 0.7 | 38 |
| Main Street | 9 | 15.9 | 53.1 | 0.6 | 41 |
| Water Plant Road | 8 | 14.6 | 71.9 | 0.9 | 46 |
| Drewry Mason School | 7 | 4.0 | 33.8 | 0.4 | 40 |
| Covington Lane | 6 | 1.7 | 27.0 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.4 | 18.3 | 0.2 | 41 |
| Marrowbone Circle | 4 | 0.8 | 8.7 | 0.1 | 42 |
| Villa Road | 3 | 1.8 | 23.8 | 0.3 | 42 |
| Total | | 66.3 | 447.6 | 5.6 | 45 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|------------|----------------|
| | 4 | 1.0 | 23.2 | 0.3 | 43 |
| Shamrock Drive | 5 | 0.5 | 8.5 | 0.1 | 42 |
| Covington Lane | 6 | 1.0 | 17.9 | 0.2 | 42 |
| Steve Drive | 7 | 1.7 | 26.5 | 0.3 | 43 |
| Water Plant Road | 8 | 7.8 | 36.3 | 0.4 | 37 |
| Soapstone Road | 9 | 11.7 | 70.6 | 0.9 | 46 |
| Morehead Ave | 10 | 10.9 | 49.0 | 0.6 | 44 |
| Lee Ford Camp Rd | 11 | 5.5 | 51.0 | 0.7 | 50 |
| | 38 | 1.5 | 34.1 | 0.5 | 53 |
| | 13 | 2.3 | 48.0 | 0.7 | 53 |
| | 80 | 0.8 | 15.5 | 0.2 | 52 |
| | 72 | 0.8 | 15.3 | 0.2 | 52 |
| | 79 | 1.1 | 17.3 | 0.2 | 51 |
| | 75 | 0.4 | 4.4 | 0.1 | 50 |
| | 74 | 1.4 | 7.1 | 0.1 | 46 |
| | 121 | 0.3 | 4.7 | 0.1 | 53 |
| Total | | 48.8 | 429.4 | 5.6 | 47 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|-----------|----------------|
| Kilarney Court | 3 | 0.4 | 7.1 | 0.1 | 44 |
| Total | | 0.4 | 7.1 | 0.1 | 44 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| | 42 | 1.2 | 17.6 | 0.3 | 52 |
| US 220 Bypass EB Ram | 86 | 0.1 | 6.0 | 0.1 | 52 |
| | 85 | 0.3 | 19.4 | 0.3 | 55 |
| | 43 | 0.1 | 3.5 | 0.0 | 46 |
| | 14 | 1.1 | 50.9 | 0.8 | 54 |
| | 40 | 0.3 | 10.7 | 0.2 | 53 |
| | 41 | 0.4 | 14.2 | 0.2 | 53 |
| | 53 | 0.4 | 11.6 | 0.2 | 53 |
| | 61 | 0.9 | 24.8 | 0.4 | 53 |
| | 60 | 0.6 | 14.6 | 0.2 | 53 |
| | 59 | 0.2 | 4.3 | 0.1 | 52 |
| | 55 | 0.9 | 21.3 | 0.3 | 52 |
| | 54 | - | - | 0.2 | - |
| | 99 | - | - | 0.5 | - |
| US 220 Bypass NB Ram | 63 | - | - | 0.2 | - |
| | 66 | - | - | 0.4 | - |
| | 58 | - | - | 0.5 | - |
| | 57 | 0.2 | 29.9 | 0.5 | 55 |
| | 62 | 0.2 | 20.9 | 0.3 | 55 |
| | 100 | 0.5 | 31.3 | 0.5 | 54 |
| | 103 | 0.4 | 26.1 | 0.4 | 54 |
| | 108 | 0.8 | 23.9 | 0.4 | 53 |
| US 58 EB Ramp | 141 | 0.0 | 4.0 | 0.1 | 53 |
| | 107 | 0.0 | 7.3 | 0.1 | 55 |
| US 58 WB Ramp | 142 | 0.1 | 8.0 | 0.1 | 53 |
| Fisher Farm Rd | 143 | 1.7 | 6.4 | 0.1 | 43 |
| Total | | 10.5 | 356.7 | 7.1 | 71 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 58 WB Ramp | 142 | 0.6 | 7.2 | 0.1 | 38 |
| | 107 | 0.4 | 8.4 | 0.1 | 50 |
| US 58 EB Ramp | 141 | 0.2 | 7.5 | 0.1 | 53 |
| | 108 | 0.2 | 4.1 | 0.1 | 52 |
| | 103 | 0.3 | 24.2 | 0.4 | 52 |
| | 100 | 0.5 | 26.3 | 0.4 | 54 |
| | 62 | 1.1 | 31.9 | 0.5 | 53 |
| | 57 | 1.0 | 21.7 | 0.3 | 53 |
| US 220 Bypass SB Ram | 58 | 1.6 | 31.4 | 0.5 | 52 |
| | 66 | 2.8 | 35.1 | 0.5 | 51 |
| | 63 | 1.5 | 27.7 | 0.4 | 56 |
| | 99 | 0.5 | 13.7 | 0.2 | 46 |
| | 54 | 1.3 | 31.1 | 0.5 | 53 |
| | 55 | 0.7 | 16.3 | 0.2 | 52 |
| | 59 | 1.0 | 21.4 | 0.3 | 52 |
| | 60 | 0.2 | 4.3 | 0.1 | 52 |
| | 61 | 0.8 | 14.7 | 0.2 | 52 |
| | 53 | 1.4 | 25.4 | 0.4 | 52 |
| | 41 | 0.7 | 11.8 | 0.2 | 52 |
| | 40 | 0.8 | 14.5 | 0.2 | 52 |
| US 220 Bypass WB Ram | 14 | - | - | 0.2 | - |
| | 43 | - | - | 0.8 | - |
| | 85 | - | - | 0.0 | - |
| US 220 Bypass WB Ram | 86 | - | - | 0.3 | - |
| | 42 | - | - | 0.1 | - |
| Total | | 17.6 | 378.8 | 6.8 | 65 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|------------|----------------|
| | 74 | 0.1 | 5.6 | 0.1 | 45 |
| | 75 | 0.1 | 6.4 | 0.1 | 51 |
| | 79 | 0.0 | 4.2 | 0.1 | 53 |
| | 72 | 0.2 | 16.5 | 0.2 | 54 |
| | 80 | 0.2 | 14.6 | 0.2 | 54 |
| | 13 | 0.2 | 15.1 | 0.2 | 54 |
| | 38 | 1.0 | 46.7 | 0.7 | 54 |
| Church St | 11 | 1.0 | 32.7 | 0.5 | 55 |
| Morehead Ave | 10 | 25.3 | 70.7 | 0.7 | 36 |
| Main Street | 9 | 25.8 | 62.4 | 0.6 | 35 |
| Water Plant Road | 8 | 15.7 | 74.1 | 0.9 | 44 |
| Drewry Mason School | 7 | 3.6 | 32.9 | 0.4 | 41 |
| Covington Lane | 6 | 1.6 | 26.9 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.2 | 18.2 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.8 | 8.6 | 0.1 | 42 |
| Villa Road | 3 | 1.7 | 23.8 | 0.3 | 42 |
| | 20 | 0.7 | 7.8 | 0.1 | 40 |
| | 2 | 12.6 | 22.5 | 0.1 | 20 |
| US 58 WB Ramp | 12 | 3.0 | 11.6 | 0.1 | 34 |
| US 58 WB Ramp | 1 | 4.3 | 7.3 | 0.0 | 20 |
| Total | | 99.1 | 508.5 | 6.0 | 42 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|-----------|----------------|
| | 1 | 10.5 | 22.6 | 0.2 | 25 |
| US 58 WB Ramp | 12 | 1.6 | 3.7 | 0.0 | 40 |
| US 58 EB Ramp | 2 | 5.1 | 14.8 | 0.1 | 27 |
| | 20 | 3.2 | 13.3 | 0.1 | 34 |
| Kilarney Court | 3 | 0.7 | 7.4 | 0.1 | 42 |
| | 4 | 1.5 | 23.8 | 0.3 | 42 |
| Shamrock Drive | 5 | 0.8 | 8.8 | 0.1 | 41 |
| Covington Lane | 6 | 1.3 | 18.3 | 0.2 | 42 |
| Steve Drive | 7 | 2.3 | 27.4 | 0.3 | 42 |
| Water Plant Road | 8 | 8.5 | 37.1 | 0.4 | 36 |
| Soapstone Road | 9 | 19.0 | 77.5 | 0.9 | 42 |
| Morehead Ave | 10 | 16.4 | 53.6 | 0.6 | 41 |
| Lee Ford Camp Rd | 11 | 7.3 | 51.9 | 0.7 | 49 |
| | 38 | 1.4 | 34.0 | 0.5 | 53 |
| | 13 | 2.1 | 48.0 | 0.7 | 53 |
| | 80 | 0.8 | 15.4 | 0.2 | 53 |
| | 72 | 0.7 | 15.1 | 0.2 | 52 |
| | 79 | 0.8 | 17.0 | 0.2 | 52 |
| | 75 | 0.2 | 4.3 | 0.1 | 52 |
| | 74 | 1.0 | 6.6 | 0.1 | 49 |
| | 121 | 0.5 | 4.9 | 0.1 | 50 |
| Total | | 85.6 | 505.7 | 6.1 | 44 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 85 | 0.4 | 19.5 | 0.3 | 55 |
| | 43 | 0.1 | 3.6 | 0.0 | 45 |
| | 14 | 1.1 | 51.3 | 0.8 | 53 |
| | 40 | 0.3 | 10.7 | 0.2 | 53 |
| | 41 | 0.5 | 14.3 | 0.2 | 53 |
| | 53 | 0.4 | 11.7 | 0.2 | 52 |
| | 61 | 1.0 | 25.1 | 0.4 | 52 |
| | 60 | 0.7 | 14.7 | 0.2 | 52 |
| | 59 | 0.1 | 2.8 | 0.0 | 51 |
| | 55 | 1.1 | 22.9 | 0.3 | 52 |
| | 54 | - | - | 0.2 | - |
| | 99 | - | - | 0.5 | - |
| US 220 Bypass NB Ram | 63 | - | - | 0.2 | - |
| | 66 | - | - | 0.4 | - |
| | 58 | - | - | 0.5 | - |
| | 57 | 0.1 | 29.8 | 0.5 | 55 |
| | 62 | 0.2 | 20.8 | 0.3 | 55 |
| | 100 | 0.4 | 31.4 | 0.5 | 54 |
| | 103 | 0.4 | 26.0 | 0.4 | 54 |
| | 108 | 0.6 | 23.6 | 0.4 | 54 |
| US 58 EB Ramp | 141 | 0.0 | 4.0 | 0.1 | 53 |
| | 107 | 0.0 | 7.1 | 0.1 | 56 |
| US 58 WB Ramp | 142 | 0.1 | 7.8 | 0.1 | 54 |
| Fisher Farm Rd | 143 | 1.7 | 6.9 | 0.1 | 39 |
| Total | | 9.3 | 333.9 | 6.7 | 73 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| US 58 WB Ramp | 142 | 0.8 | 7.0 | 0.1 | 39 |
| | 107 | 0.8 | 8.5 | 0.1 | 49 |
| US 58 EB Ramp | 141 | 0.2 | 7.6 | 0.1 | 52 |
| | 108 | 0.1 | 4.0 | 0.1 | 52 |
| | 103 | 0.2 | 24.0 | 0.4 | 53 |
| | 100 | 0.4 | 26.2 | 0.4 | 54 |
| | 62 | 0.8 | 31.8 | 0.5 | 54 |
| | 57 | 0.7 | 21.5 | 0.3 | 53 |
| | 58 | 1.2 | 31.1 | 0.5 | 53 |
| US 220 Bypass SB Ram | 66 | 1.8 | 34.3 | 0.5 | 52 |
| | 63 | 1.3 | 27.5 | 0.4 | 56 |
| | 99 | 0.6 | 13.8 | 0.2 | 46 |
| | 54 | 1.5 | 31.4 | 0.5 | 52 |
| | 55 | 0.8 | 16.4 | 0.2 | 52 |
| | 59 | 1.2 | 23.1 | 0.3 | 52 |
| | 60 | 0.2 | 2.8 | 0.0 | 51 |
| | 61 | 0.8 | 14.9 | 0.2 | 52 |
| | 53 | 1.5 | 25.5 | 0.4 | 52 |
| | 41 | 0.7 | 11.9 | 0.2 | 51 |
| | 40 | 0.9 | 14.6 | 0.2 | 52 |
| | 14 | - | - | 0.2 | - |
| | 43 | - | - | 0.8 | - |
| US 220 Bypass WB Ram | 85 | - | - | 0.0 | - |
| | 86 | - | - | 0.3 | - |
| Total | | 16.3 | 378.1 | 6.7 | 64 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|------------|----------------|
| | 74 | 0.2 | 5.5 | 0.1 | 45 |
| | 75 | 0.2 | 6.4 | 0.1 | 51 |
| | 79 | 0.1 | 4.3 | 0.1 | 52 |
| | 72 | 0.3 | 16.7 | 0.2 | 53 |
| | 80 | 0.4 | 14.8 | 0.2 | 53 |
| | 13 | 0.4 | 15.2 | 0.2 | 53 |
| | 38 | 1.9 | 47.6 | 0.7 | 53 |
| Church St | 11 | 1.9 | 34.0 | 0.5 | 53 |
| Morehead Ave | 10 | 23.8 | 69.5 | 0.7 | 37 |
| Main Street | 9 | 26.4 | 64.0 | 0.6 | 34 |
| Water Plant Road | 8 | 20.5 | 78.5 | 0.9 | 42 |
| Drewry Mason School | 7 | 5.0 | 34.8 | 0.4 | 39 |
| Covington Lane | 6 | 1.9 | 27.2 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.5 | 18.4 | 0.2 | 41 |
| Marrowbone Circle | 4 | 0.9 | 8.8 | 0.1 | 41 |
| Villa Road | 3 | 2.1 | 24.1 | 0.3 | 41 |
| | 20 | 1.0 | 8.1 | 0.1 | 39 |
| | 2 | 12.9 | 22.6 | 0.1 | 20 |
| | 12 | 3.3 | 11.9 | 0.1 | 33 |
| US 58 WB Ramp | 1 | 3.9 | 7.0 | 0.0 | 21 |
| Total | | 108.7 | 519.6 | 6.0 | 41 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|-----------|----------------|
| | 1 | 9.1 | 21.0 | 0.2 | 26 |
| | 12 | 1.5 | 3.6 | 0.0 | 41 |
| US 58 EB Ramp | 2 | 4.3 | 14.0 | 0.1 | 28 |
| | 20 | 2.1 | 12.3 | 0.1 | 37 |
| Kilarney Court | 3 | 0.5 | 7.2 | 0.1 | 44 |
| | 4 | 1.3 | 23.4 | 0.3 | 42 |
| Shamrock Drive | 5 | 0.5 | 8.5 | 0.1 | 42 |
| Covington Lane | 6 | 1.1 | 18.1 | 0.2 | 42 |
| Steve Drive | 7 | 2.0 | 27.1 | 0.3 | 42 |
| Water Plant Road | 8 | 9.7 | 38.3 | 0.4 | 35 |
| Soapstone Road | 9 | 19.2 | 78.5 | 0.9 | 42 |
| Morehead Ave | 10 | 15.4 | 53.5 | 0.6 | 41 |
| Lee Ford Camp Rd | 11 | 6.8 | 52.3 | 0.7 | 49 |
| | 38 | 1.7 | 34.2 | 0.5 | 53 |
| | 13 | 2.4 | 48.1 | 0.7 | 53 |
| | 80 | 0.9 | 15.6 | 0.2 | 52 |
| | 72 | 0.8 | 15.3 | 0.2 | 52 |
| | 79 | 1.3 | 17.6 | 0.2 | 51 |
| | 75 | 0.5 | 4.6 | 0.1 | 49 |
| | 74 | 1.9 | 7.5 | 0.1 | 43 |
| | 121 | 0.3 | 4.6 | 0.1 | 53 |
| Total | | 83.4 | 505.2 | 6.1 | 44 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 42 | 1.4 | 17.1 | 0.2 | 51 |
| US 220 Bypass NB Ram | 86 | 0.1 | 6.9 | 0.1 | 52 |
| | 85 | 0.3 | 19.3 | 0.3 | 56 |
| | 43 | 0.1 | 3.5 | 0.0 | 46 |
| | 14 | 1.0 | 50.8 | 0.8 | 54 |
| | 40 | 0.3 | 10.7 | 0.2 | 53 |
| | 41 | 0.4 | 14.2 | 0.2 | 53 |
| | 53 | 0.4 | 11.6 | 0.2 | 53 |
| | 61 | 0.9 | 24.8 | 0.4 | 53 |
| | 60 | 0.6 | 14.6 | 0.2 | 53 |
| | 59 | 0.2 | 4.0 | 0.1 | 52 |
| | 55 | 0.9 | 21.6 | 0.3 | 53 |
| | 54 | - | - | 0.2 | - |
| | 99 | - | - | 0.5 | - |
| | 63 | - | - | 0.2 | - |
| | 66 | - | - | 0.4 | - |
| | 58 | - | - | 0.5 | - |
| | 57 | 0.5 | 30.4 | 0.5 | 54 |
| | 62 | 0.5 | 21.2 | 0.3 | 54 |
| | 100 | 1.0 | 31.8 | 0.5 | 53 |
| | 103 | 0.9 | 26.8 | 0.4 | 53 |
| | 108 | 1.2 | 24.3 | 0.4 | 52 |
| | 141 | 0.0 | 4.2 | 0.1 | 50 |
| | 107 | 0.0 | 7.2 | 0.1 | 55 |
| US 58 WB Ramp | 142 | 0.1 | 8.0 | 0.1 | 52 |
| Fisher Farm Rd | 143 | 1.5 | 6.7 | 0.1 | 40 |
| Total | | 12.4 | 359.7 | 7.1 | 71 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 58 WB Ramp | 142 | 0.7 | 7.1 | 0.1 | 38 |
| | 107 | 0.4 | 8.3 | 0.1 | 50 |
| US 58 EB Ramp | 141 | 0.2 | 7.6 | 0.1 | 52 |
| | 108 | 0.2 | 4.1 | 0.1 | 52 |
| | 103 | 0.3 | 24.4 | 0.4 | 52 |
| | 100 | 0.6 | 26.5 | 0.4 | 53 |
| | 62 | 1.3 | 32.2 | 0.5 | 53 |
| | 57 | 1.1 | 21.9 | 0.3 | 52 |
| | 58 | 1.8 | 31.7 | 0.5 | 52 |
| | 66 | 3.1 | 35.4 | 0.5 | 50 |
| | 63 | 1.6 | 27.9 | 0.4 | 55 |
| | 99 | 0.6 | 13.8 | 0.2 | 46 |
| | 54 | 1.5 | 31.4 | 0.5 | 52 |
| | 55 | 0.8 | 16.4 | 0.2 | 52 |
| | 59 | 1.2 | 21.9 | 0.3 | 52 |
| | 60 | 0.2 | 4.0 | 0.1 | 51 |
| | 61 | 0.8 | 14.9 | 0.2 | 52 |
| | 53 | 1.5 | 25.6 | 0.4 | 51 |
| 41 | 0.7 | 11.9 | 0.2 | 51 | |
| 40 | 0.9 | 14.6 | 0.2 | 52 | |
| 14 | - | - | 0.2 | - | |
| 43 | - | - | 0.8 | - | |
| US 220 Bypass SB Ram | 85 | - | - | 0.0 | - |
| | 86 | - | - | 0.3 | - |
| | 42 | - | - | 0.1 | - |
| Total | | 19.7 | 381.5 | 6.8 | 64 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|---------------------|------|---------------|-----------------|------------|----------------|
| | 74 | 0.2 | 5.5 | 0.1 | 45 |
| | 75 | 0.2 | 6.4 | 0.1 | 51 |
| | 79 | 0.1 | 4.2 | 0.1 | 53 |
| | 72 | 0.2 | 16.6 | 0.2 | 53 |
| | 80 | 0.2 | 14.7 | 0.2 | 54 |
| | 13 | 0.3 | 15.1 | 0.2 | 54 |
| | 38 | 1.2 | 47.0 | 0.7 | 54 |
| Church St | 11 | 1.9 | 33.7 | 0.5 | 53 |
| Morehead Ave | 10 | 25.9 | 71.5 | 0.7 | 35 |
| Main Street | 9 | 29.4 | 66.5 | 0.6 | 33 |
| Water Plant Road | 8 | 17.4 | 75.5 | 0.9 | 43 |
| Drewry Mason School | 7 | 3.8 | 33.1 | 0.4 | 41 |
| Covington Lane | 6 | 1.7 | 26.9 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.3 | 18.3 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.7 | 8.6 | 0.1 | 42 |
| Villa Road | 3 | 1.8 | 23.8 | 0.3 | 42 |
| | 20 | 0.8 | 7.8 | 0.1 | 40 |
| | 2 | 13.2 | 23.0 | 0.1 | 20 |
| | 12 | 3.5 | 12.1 | 0.1 | 33 |
| US 58 WB Ramp | 1 | 6.6 | 9.7 | 0.0 | 15 |
| Total | | 110.3 | 520.2 | 6.0 | 41 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|------------------|------|---------------|-----------------|-----------|----------------|
| | 1 | 11.1 | 23.1 | 0.2 | 24 |
| | 12 | 1.5 | 3.6 | 0.0 | 42 |
| US 58 EB Ramp | 2 | 4.6 | 14.3 | 0.1 | 28 |
| | 20 | 3.2 | 13.3 | 0.1 | 34 |
| Kilarney Court | 3 | 0.7 | 7.4 | 0.1 | 42 |
| | 4 | 1.6 | 23.8 | 0.3 | 42 |
| Shamrock Drive | 5 | 0.8 | 8.8 | 0.1 | 41 |
| Covington Lane | 6 | 1.4 | 18.4 | 0.2 | 41 |
| Steve Drive | 7 | 2.4 | 27.5 | 0.3 | 41 |
| Water Plant Road | 8 | 9.7 | 38.3 | 0.4 | 35 |
| Soapstone Road | 9 | 20.6 | 79.4 | 0.9 | 41 |
| Morehead Ave | 10 | 16.3 | 53.5 | 0.6 | 41 |
| Lee Ford Camp Rd | 11 | 7.7 | 53.2 | 0.7 | 48 |
| | 38 | 1.9 | 34.3 | 0.5 | 52 |
| | 13 | 2.4 | 47.6 | 0.7 | 53 |
| | 80 | 0.9 | 15.6 | 0.2 | 52 |
| | 72 | 0.8 | 15.3 | 0.2 | 52 |
| | 79 | 1.0 | 17.2 | 0.2 | 52 |
| | 75 | 0.3 | 4.4 | 0.1 | 51 |
| | 74 | 1.3 | 6.9 | 0.1 | 47 |
| | 121 | 0.6 | 5.0 | 0.1 | 49 |
| Total | | 90.8 | 510.9 | 6.1 | 43 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 42 | 0.7 | 16.8 | 0.2 | 53 |
| US 220 Bypass NB Ram | 86 | 0.1 | 6.3 | 0.1 | 52 |
| | 85 | 0.6 | 19.6 | 0.3 | 55 |
| | 43 | 0.2 | 3.6 | 0.0 | 44 |
| | 14 | 1.4 | 51.4 | 0.8 | 53 |
| | 40 | 0.4 | 10.8 | 0.2 | 53 |
| | 41 | 0.6 | 14.4 | 0.2 | 52 |
| | 53 | 0.5 | 11.7 | 0.2 | 52 |
| | 61 | 1.3 | 25.3 | 0.4 | 52 |
| | 60 | 0.8 | 14.8 | 0.2 | 52 |
| | 59 | 0.2 | 3.7 | 0.1 | 51 |
| | 55 | 1.3 | 22.3 | 0.3 | 52 |
| | 54 | - | - | 0.2 | - |
| | 99 | - | - | 0.5 | - |
| | 63 | - | - | 0.2 | - |
| | 66 | - | - | 0.4 | - |
| | 58 | - | - | 0.5 | - |
| | 57 | 0.5 | 30.2 | 0.5 | 54 |
| | 62 | 0.5 | 21.2 | 0.3 | 54 |
| | 100 | 1.0 | 31.9 | 0.5 | 53 |
| | 103 | 0.9 | 26.6 | 0.4 | 53 |
| | 108 | 1.1 | 24.3 | 0.4 | 52 |
| | 141 | 0.1 | 4.0 | 0.1 | 53 |
| | 107 | 0.1 | 7.4 | 0.1 | 54 |
| US 58 WB Ramp | 142 | 0.2 | 8.0 | 0.1 | 53 |
| Fisher Farm Rd | 143 | 1.1 | 5.7 | 0.1 | 47 |
| Total | | 13.8 | 359.8 | 7.1 | 71 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 58 WB Ramp | 142 | 1.4 | 7.5 | 0.1 | 36 |
| | 107 | 1.4 | 9.2 | 0.1 | 45 |
| US 58 EB Ramp | 141 | 0.3 | 7.7 | 0.1 | 52 |
| | 108 | 0.2 | 4.1 | 0.1 | 52 |
| | 103 | 0.4 | 24.0 | 0.4 | 53 |
| | 100 | 0.6 | 26.4 | 0.4 | 54 |
| | 62 | 1.1 | 32.1 | 0.5 | 53 |
| | 57 | 0.9 | 21.7 | 0.3 | 53 |
| | 58 | 1.6 | 31.3 | 0.5 | 52 |
| | 66 | 2.2 | 34.5 | 0.5 | 51 |
| | 63 | 1.6 | 27.7 | 0.4 | 56 |
| | 99 | 0.7 | 13.9 | 0.2 | 46 |
| | 54 | 1.8 | 31.5 | 0.5 | 52 |
| | 55 | 1.0 | 16.5 | 0.2 | 52 |
| | 59 | 1.4 | 22.4 | 0.3 | 52 |
| | 60 | 0.2 | 3.7 | 0.1 | 51 |
| | 61 | 1.0 | 14.9 | 0.2 | 51 |
| | 53 | 1.7 | 25.7 | 0.4 | 51 |
| 41 | 0.8 | 12.0 | 0.2 | 51 | |
| 40 | 1.0 | 14.7 | 0.2 | 51 | |
| 14 | - | - | 0.2 | - | |
| 43 | - | - | 0.8 | - | |
| US 220 Bypass SB Ram | 85 | - | - | 0.0 | - |
| | 86 | - | - | 0.3 | - |
| | 42 | - | - | 0.1 | - |
| Total | | 21.2 | 381.6 | 6.8 | 64 |

APPENDIX K

FUTURE BUILD ALTERNATIVE D OPERATIONAL ANALYSIS
WORKSHEETS

Queues

1: US 220/US 220 Business & US 58 WB Ramp

04/02/2019



| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 211 | 85 | 510 | 515 | 48 |
| v/c Ratio | 0.60 | 0.21 | 0.26 | 0.27 | 0.05 |
| Control Delay | 27.8 | 6.0 | 3.4 | 8.2 | 1.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 27.8 | 6.0 | 3.4 | 8.2 | 1.1 |
| Queue Length 50th (ft) | 69 | 0 | 15 | 45 | 0 |
| Queue Length 95th (ft) | 111 | 25 | 20 | 84 | 6 |
| Internal Link Dist (ft) | 1343 | | 142 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 542 | 569 | 1933 | 1914 | 911 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.39 | 0.15 | 0.26 | 0.27 | 0.05 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 1: US 220/US 220 Business & US 58 WB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
|-----------------------------------|------|------|-------|------|---------------------------|------|------|------|------|------|-------|------|--|
| Lane Configurations | | | | | ↕ | ↗ | | ↑↑ | | | ↑↑ | ↗ | |
| Traffic Volume (vph) | 0 | 0 | 0 | 186 | 0 | 75 | 0 | 449 | 0 | 0 | 453 | 42 | |
| Future Volume (vph) | 0 | 0 | 0 | 186 | 0 | 75 | 0 | 449 | 0 | 0 | 453 | 42 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1612 | 1524 | | 3471 | | | 3438 | 1568 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1612 | 1524 | | 3471 | | | 3438 | 1568 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 211 | 0 | 85 | 0 | 510 | 0 | 0 | 515 | 48 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 66 | 0 | 0 | 0 | 0 | 0 | 21 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 211 | 19 | 0 | 510 | 0 | 0 | 515 | 27 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 12% | 0% | 6% | 0% | 4% | 14% | 0% | 5% | 3% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 13.1 | 13.1 | | 33.4 | | | 33.4 | 33.4 | |
| Effective Green, g (s) | | | | | 13.1 | 13.1 | | 33.4 | | | 33.4 | 33.4 | |
| Actuated g/C Ratio | | | | | 0.22 | 0.22 | | 0.56 | | | 0.56 | 0.56 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | | | | 351 | 332 | | 1932 | | | 1913 | 872 | |
| v/s Ratio Prot | | | | | | | | 0.15 | | | c0.15 | | |
| v/s Ratio Perm | | | | | 0.13 | 0.01 | | | | | | 0.02 | |
| v/c Ratio | | | | | 0.60 | 0.06 | | 0.26 | | | 0.27 | 0.03 | |
| Uniform Delay, d1 | | | | | 21.1 | 18.6 | | 6.9 | | | 6.9 | 6.0 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.40 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 2.9 | 0.1 | | 0.3 | | | 0.3 | 0.1 | |
| Delay (s) | | | | | 24.0 | 18.6 | | 3.1 | | | 7.3 | 6.1 | |
| Level of Service | | | | | C | B | | A | | | A | A | |
| Approach Delay (s) | | 0.0 | | | 22.4 | | | 3.1 | | | 7.2 | | |
| Approach LOS | | A | | | C | | | A | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 9.0 | | HCM 2000 Level of Service | | | | | | A | | |
| HCM 2000 Volume to Capacity ratio | | | 0.36 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 60.0 | | Sum of lost time (s) | | | | | 13.5 | | | |
| Intersection Capacity Utilization | | | 38.2% | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019























| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 57 | 176 | 745 | 190 | 90 | 636 |
| v/c Ratio | 0.24 | 0.51 | 0.45 | 0.21 | 0.39 | 0.28 |
| Control Delay | 25.4 | 10.1 | 14.8 | 2.3 | 30.5 | 3.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 25.4 | 10.1 | 14.8 | 2.3 | 30.5 | 3.5 |
| Queue Length 50th (ft) | 19 | 0 | 109 | 0 | 31 | 31 |
| Queue Length 95th (ft) | 45 | 43 | 161 | 24 | 68 | 50 |
| Internal Link Dist (ft) | | | 585 | | | 516 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 278 | 374 | 1644 | 897 | 241 | 2238 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.21 | 0.47 | 0.45 | 0.21 | 0.37 | 0.28 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 2: US 220 Business & US 58 EB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|--|---|---|--|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  | |  | | | | |   |  |  |   | |
| Traffic Volume (vph) | 50 | 0 | 155 | 0 | 0 | 0 | 0 | 656 | 167 | 79 | 560 | 0 |
| Future Volume (vph) | 50 | 0 | 155 | 0 | 0 | 0 | 0 | 656 | 167 | 79 | 560 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1703 | | 1380 | | | | | 3282 | 1568 | 1752 | 3195 | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1703 | | 1380 | | | | | 3282 | 1568 | 1752 | 3195 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 57 | 0 | 176 | 0 | 0 | 0 | 0 | 745 | 190 | 90 | 636 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 156 | 0 | 0 | 0 | 0 | 0 | 108 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 57 | 0 | 20 | 0 | 0 | 0 | 0 | 745 | 82 | 90 | 636 | 0 |
| Heavy Vehicles (%) | 6% | 0% | 17% | 2% | 2% | 2% | 0% | 10% | 3% | 3% | 13% | 0% |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | |
| Actuated Green, G (s) | 6.8 | | 6.8 | | | | | 26.0 | 26.0 | 6.5 | 39.3 | |
| Effective Green, g (s) | 6.8 | | 6.8 | | | | | 26.0 | 26.0 | 6.5 | 39.3 | |
| Actuated g/C Ratio | 0.11 | | 0.11 | | | | | 0.43 | 0.43 | 0.11 | 0.65 | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 193 | | 156 | | | | | 1422 | 679 | 189 | 2092 | |
| v/s Ratio Prot | | | | | | | | c0.23 | | 0.05 | c0.20 | |
| v/s Ratio Perm | c0.03 | | 0.01 | | | | | | 0.05 | | | |
| v/c Ratio | 0.30 | | 0.13 | | | | | 0.52 | 0.12 | 0.48 | 0.30 | |
| Uniform Delay, d1 | 24.4 | | 23.9 | | | | | 12.5 | 10.2 | 25.1 | 4.5 | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.07 | 0.67 | |
| Incremental Delay, d2 | 0.9 | | 0.4 | | | | | 1.4 | 0.4 | 1.8 | 0.4 | |
| Delay (s) | 25.3 | | 24.3 | | | | | 13.8 | 10.5 | 28.8 | 3.3 | |
| Level of Service | C | | C | | | | | B | B | C | A | |
| Approach Delay (s) | | 24.5 | | | 0.0 | | | 13.2 | | | 6.5 | |
| Approach LOS | | C | | | A | | | B | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 12.0 | | | | | HCM 2000 Level of Service | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.48 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 60.0 | | | | | Sum of lost time (s) | | 20.7 | | |
| Intersection Capacity Utilization | | | 41.1% | | | | | ICU Level of Service | | A | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business/US 220 & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↕ | ↗ | ↗ | ↕ | ↗ |
| Traffic Vol, veh/h | 9 | 1 | 7 | 8 | 0 | 12 | 1 | 802 | 1 | 4 | 708 | 3 |
| Future Vol, veh/h | 9 | 1 | 7 | 8 | 0 | 12 | 1 | 802 | 1 | 4 | 708 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 13 | 0 | 0 | 13 | 6 |
| Mvmt Flow | 10 | 1 | 8 | 9 | 0 | 14 | 1 | 911 | 1 | 5 | 805 | 3 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|-----|--------|---|-----|---|---|
| Conflicting Flow All | 1273 | 1729 | 403 | 1326 | 1731 | 456 | 808 | 0 | 0 | 912 | 0 | 0 |
| Stage 1 | 815 | 815 | - | 913 | 913 | - | - | - | - | - | - | - |
| Stage 2 | 458 | 914 | - | 413 | 818 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 126 | 89 | 603 | 116 | 89 | 528 | 826 | - | - | 755 | - | - |
| Stage 1 | 342 | 394 | - | 298 | 355 | - | - | - | - | - | - | - |
| Stage 2 | 557 | 355 | - | 592 | 393 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 122 | 88 | 603 | 113 | 88 | 528 | 826 | - | - | 755 | - | - |
| Mov Cap-2 Maneuver | 122 | 88 | - | 113 | 88 | - | - | - | - | - | - | - |
| Stage 1 | 342 | 391 | - | 298 | 355 | - | - | - | - | - | - | - |
| Stage 2 | 542 | 355 | - | 579 | 390 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|-----|
| HCM Control Delay, s | 28 | 23.8 | 0 | 0.1 |
| HCM LOS | D | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 826 | - | - | 176 | 214 | 755 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.11 | 0.106 | 0.006 | - | - |
| HCM Control Delay (s) | 9.4 | - | - | 28 | 23.8 | 9.8 | - | - |
| HCM Lane LOS | A | - | - | D | C | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.4 | 0.4 | 0 | - | - |

HCM 6th TWSC
4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | ↔ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 16 | 0 | 39 | 0 | 765 | 4 | 2 | 721 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 16 | 0 | 39 | 0 | 765 | 4 | 2 | 721 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 13 | 0 | 0 | 13 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 18 | 0 | 44 | 0 | 869 | 5 | 2 | 819 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|-----|---|---|
| Conflicting Flow All | 1258 | 1697 | 410 | 1283 | 1692 | 435 | - | 0 | 0 | 874 | 0 | 0 |
| Stage 1 | 823 | 823 | - | 869 | 869 | - | - | - | - | - | - | - |
| Stage 2 | 435 | 874 | - | 414 | 823 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 130 | 93 | 596 | 124 | 94 | 555 | 0 | - | - | 781 | - | 0 |
| Stage 1 | 338 | 391 | - | 317 | 372 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 575 | 370 | - | 592 | 391 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 119 | 93 | 596 | 124 | 94 | 555 | - | - | - | 781 | - | - |
| Mov Cap-2 Maneuver | 119 | 93 | - | 124 | 94 | - | - | - | - | - | - | - |
| Stage 1 | 338 | 390 | - | 317 | 372 | - | - | - | - | - | - | - |
| Stage 2 | 529 | 370 | - | 590 | 390 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|----|--|------|--|----|--|----|--|
| HCM Control Delay, s | 0 | | 21.8 | | 0 | | 0 | |
| HCM LOS | A | | C | | | | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-------|-----|
| Capacity (veh/h) | - | - | - | 276 | 781 | - |
| HCM Lane V/C Ratio | - | - | - | 0.226 | 0.003 | - |
| HCM Control Delay (s) | - | - | 0 | 21.8 | 9.6 | - |
| HCM Lane LOS | - | - | A | C | A | - |
| HCM 95th %tile Q(veh) | - | - | - | 0.9 | 0 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.4 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | TT | | | ↑↑ | ↑↑ | T |
| Traffic Vol, veh/h | 121 | 21 | 0 | 648 | 727 | 10 |
| Future Vol, veh/h | 121 | 21 | 0 | 648 | 727 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 13 | 13 | 0 |
| Mvmt Flow | 138 | 24 | 0 | 736 | 826 | 11 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 1194 | 413 | - | 0 | - | 0 |
| Stage 1 | 826 | - | - | - | - | - |
| Stage 2 | 368 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | 182 | 594 | 0 | - | - | - |
| Stage 1 | 395 | - | 0 | - | - | - |
| Stage 2 | 676 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 182 | 594 | - | - | - | - |
| Mov Cap-2 Maneuver | 182 | - | - | - | - | - |
| Stage 1 | 395 | - | - | - | - | - |
| Stage 2 | 676 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 68.6 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-------|-----|-----|
| Capacity (veh/h) | - | 203 | - | - |
| HCM Lane V/C Ratio | - | 0.795 | - | - |
| HCM Control Delay (s) | - | 68.6 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 5.6 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 14 | 39 | 609 | 3 | 12 | 736 |
| Future Vol, veh/h | 14 | 39 | 609 | 3 | 12 | 736 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 13 | 0 | 0 | 13 |
| Mvmt Flow | 16 | 44 | 692 | 3 | 14 | 836 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 1138 | 346 | 0 | 0 | 695 |
| Stage 1 | 692 | - | - | - | - |
| Stage 2 | 446 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 198 | 656 | - | - | 910 |
| Stage 1 | 463 | - | - | - | - |
| Stage 2 | 618 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 195 | 656 | - | - | 910 |
| Mov Cap-2 Maneuver | 195 | - | - | - | - |
| Stage 1 | 463 | - | - | - | - |
| Stage 2 | 609 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 15.5 | 0 | 0.1 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 404 | 910 |
| HCM Lane V/C Ratio | - | - | 0.149 | 0.015 |
| HCM Control Delay (s) | - | - | 15.5 | 9 |
| HCM Lane LOS | - | - | C | A |
| HCM 95th %tile Q(veh) | - | - | 0.5 | 0 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | | | ↔ | ↑↑ | ↔ | ↔ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 612 | 67 | 91 | 649 | 10 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 612 | 67 | 91 | 649 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 13 | 0 | 3 | 13 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 695 | 76 | 103 | 738 | 11 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1300 | 1723 | 375 | | | | 749 | 0 | 0 | 771 | 0 | 0 |
| Stage 1 | 950 | 950 | - | | | | - | - | - | - | - | - |
| Stage 2 | 350 | 773 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 155 | 90 | 628 | | | | 869 | - | - | 833 | - | - |
| Stage 1 | 341 | 341 | - | | | | - | - | - | - | - | - |
| Stage 2 | 690 | 412 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 136 | 0 | 628 | | | | 869 | - | - | 833 | - | - |
| Mov Cap-2 Maneuver | 136 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 341 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 604 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 1.2 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 869 | - | - | - | 833 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | - | 0.124 | - | - |
| HCM Control Delay (s) | 9.1 | - | - | 0 | 9.9 | - | - |
| HCM Lane LOS | A | - | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.4 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.3 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 108 | 0 | 4 | 101 | 114 | 50 |
| Future Vol, veh/h | 108 | 0 | 4 | 101 | 114 | 50 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 123 | 0 | 5 | 115 | 130 | 57 |

| Major/Minor | Minor2 | Major1 | | Major2 | |
|----------------------|--------|--------|-------|--------|---|
| Conflicting Flow All | 284 | 159 | 187 | 0 | 0 |
| Stage 1 | 159 | - | - | - | - |
| Stage 2 | 125 | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - |
| Pot Cap-1 Maneuver | 706 | 886 | 1387 | - | - |
| Stage 1 | 870 | - | - | - | - |
| Stage 2 | 901 | - | - | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | 703 | 886 | 1387 | - | - |
| Mov Cap-2 Maneuver | 703 | - | - | - | - |
| Stage 1 | 867 | - | - | - | - |
| Stage 2 | 901 | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 11.2 | 0.3 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | 1387 | - | 703 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | 0.175 | - | - |
| HCM Control Delay (s) | 7.6 | 0 | 11.2 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.6 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|-------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 5.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | ↑ | ↑ | |
| Traffic Vol, veh/h | 0 | 181 | 28 | 386 | 147 | 0 | 0 | 0 | 0 | 23 | 0 | 17 |
| Future Vol, veh/h | 0 | 181 | 28 | 386 | 147 | 0 | 0 | 0 | 0 | 23 | 0 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | Yield | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 100 | 0 | - | - | - | - | - | 200 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 9 | 1 | 2 | 2 | 2 | 2 | 10 | 0 | 0 |
| Mvmt Flow | 0 | 206 | 32 | 439 | 167 | 0 | 0 | 0 | 0 | 26 | 0 | 19 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|-----|
| Conflicting Flow All | - | 0 | 0 | 206 | 0 | 0 | | 1251 | 1251 | 167 |
| Stage 1 | - | - | - | - | - | - | | 1045 | 1045 | - |
| Stage 2 | - | - | - | - | - | - | | 206 | 206 | - |
| Critical Hdwy | - | - | - | 4.19 | - | - | | 6.5 | 6.5 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | 5.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | 5.5 | 5.5 | - |
| Follow-up Hdwy | - | - | - | 2.281 | - | - | | 3.59 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | - | 1325 | - | 0 | | 183 | 174 | 882 |
| Stage 1 | 0 | - | - | - | - | 0 | | 327 | 308 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | 810 | 735 | - |
| Platoon blocked, % | - | - | - | - | - | - | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1325 | - | - | | 122 | 0 | 882 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | 122 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | 327 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | 542 | 0 | - |

| Approach | EB | | WB | | SB | |
|----------------------|----|--|-----|--|------|--|
| HCM Control Delay, s | 0 | | 6.6 | | 28.3 | |
| HCM LOS | | | | | D | |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|-------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1325 | - | 122 | 882 |
| HCM Lane V/C Ratio | - | - | 0.331 | - | 0.214 | 0.022 |
| HCM Control Delay (s) | - | - | 9.1 | - | 42.4 | 9.2 |
| HCM Lane LOS | - | - | A | - | E | A |
| HCM 95th %tile Q(veh) | - | - | 1.5 | - | 0.8 | 0.1 |

HCM 6th TWSC
 83: US 220 Bypass NB Ramp & US 220 Business

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 7.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↑ | | | ↑↑ | | ↖ | ↗ | | | | |
| Traffic Vol, veh/h | 61 | 143 | 0 | 0 | 510 | 61 | 23 | 0 | 525 | 0 | 0 | 0 |
| Future Vol, veh/h | 61 | 143 | 0 | 0 | 510 | 61 | 23 | 0 | 525 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | - | 200 | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 10 | 2 | 2 | 9 | 4 | 0 | 0 | 10 | 2 | 2 | 2 |
| Mvmt Flow | 69 | 163 | 0 | 0 | 580 | 69 | 26 | 0 | 597 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|---------------------|
| Conflicting Flow All | 649 | 0 | - - - 0 591 950 163 |
| Stage 1 | - | - | - - - 301 301 - |
| Stage 2 | - | - | - - - 290 649 - |
| Critical Hdwy | 4.13 | - | - - - 6.6 6.5 6.35 |
| Critical Hdwy Stg 1 | - | - | - - - 5.4 5.5 - |
| Critical Hdwy Stg 2 | - | - | - - - 5.8 5.5 - |
| Follow-up Hdwy | 2.219 | - | - - - 3.5 4 3.395 |
| Pot Cap-1 Maneuver | 935 | - 0 0 | - - 458 262 858 |
| Stage 1 | - | - 0 0 | - - 755 669 - |
| Stage 2 | - | - 0 0 | - - 740 469 - |
| Platoon blocked, % | - | - | - - |
| Mov Cap-1 Maneuver | 935 | - - - | - - 424 0 858 |
| Mov Cap-2 Maneuver | - | - - - | - - 424 0 - |
| Stage 1 | - | - - - | - - 699 0 - |
| Stage 2 | - | - - - | - - 740 0 - |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 2.7 | 0 | 18 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | 424 | 858 | 935 | - | - | - |
| HCM Lane V/C Ratio | 0.062 | 0.695 | 0.074 | - | - | - |
| HCM Control Delay (s) | 14 | 18.2 | 9.2 | - | - | - |
| HCM Lane LOS | B | C | A | - | - | - |
| HCM 95th %tile Q(veh) | 0.2 | 5.8 | 0.2 | - | - | - |

Queues

84: US 220 Business & Water Plant Road

04/02/2019



| Lane Group | WBL | WBR | NBT | SBL | SBT |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 2 | 14 | 759 | 91 | 647 |
| v/c Ratio | 0.01 | 0.07 | 0.35 | 0.40 | 0.22 |
| Control Delay | 19.0 | 12.1 | 8.5 | 24.9 | 1.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.0 | 12.1 | 8.5 | 24.9 | 1.6 |
| Queue Length 50th (ft) | 0 | 0 | 56 | 19 | 0 |
| Queue Length 95th (ft) | 5 | 13 | 155 | 64 | 62 |
| Internal Link Dist (ft) | 1185 | | 294 | | 1333 |
| Turn Bay Length (ft) | 100 | 75 | | 250 | |
| Base Capacity (vph) | 224 | 212 | 2173 | 230 | 2985 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.01 | 0.07 | 0.35 | 0.40 | 0.22 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 84: US 220 Business & Water Plant Road

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|-------|------|-------|
| Lane Configurations | ↶ | ↶↷ | ↶↷ | ↷ | ↷ | ↶↷ |
| Traffic Volume (veh/h) | 2 | 12 | 668 | 0 | 80 | 569 |
| Future Volume (veh/h) | 2 | 12 | 668 | 0 | 80 | 569 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1900 | 1900 | 1767 | 1870 | 1870 | 1722 |
| Adj Flow Rate, veh/h | 2 | 14 | 759 | 0 | 91 | 647 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 0 | 0 | 9 | 2 | 2 | 12 |
| Cap, veh/h | 43 | 38 | 1462 | 690 | 150 | 2186 |
| Arrive On Green | 0.02 | 0.02 | 0.44 | 0.00 | 0.08 | 0.67 |
| Sat Flow, veh/h | 1810 | 1610 | 3445 | 1585 | 1781 | 3358 |
| Grp Volume(v), veh/h | 2 | 14 | 759 | 0 | 91 | 647 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 1610 | 1678 | 1585 | 1781 | 1636 |
| Q Serve(g_s), s | 0.1 | 0.4 | 8.6 | 0.0 | 2.6 | 4.2 |
| Cycle Q Clear(g_c), s | 0.1 | 0.4 | 8.6 | 0.0 | 2.6 | 4.2 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 43 | 38 | 1462 | 690 | 150 | 2186 |
| V/C Ratio(X) | 0.05 | 0.37 | 0.52 | 0.00 | 0.60 | 0.30 |
| Avail Cap(c_a), veh/h | 209 | 186 | 1462 | 690 | 216 | 2186 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.8 | 25.0 | 10.7 | 0.0 | 22.9 | 3.6 |
| Incr Delay (d2), s/veh | 0.5 | 6.9 | 0.4 | 0.0 | 4.7 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.2 | 2.3 | 0.0 | 1.1 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 25.3 | 31.8 | 11.1 | 0.0 | 27.6 | 3.9 |
| LnGrp LOS | C | C | B | A | C | A |
| Approach Vol, veh/h | 16 | | 759 | | | 738 |
| Approach Delay, s/veh | 31.0 | | 11.1 | | | 6.8 |
| Approach LOS | C | | B | | | A |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 12.1 | 30.2 | | 9.6 | | 42.3 |
| Change Period (Y+Rc), s | * 7.7 | * 7.6 | | * 8.4 | | * 7.6 |
| Max Green Setting (Gmax), s | * 6.3 | * 19 | | * 6 | | * 35 |
| Max Q Clear Time (g_c+I1), s | 4.6 | 10.6 | | 2.4 | | 6.2 |
| Green Ext Time (p_c), s | 0.0 | 3.5 | | 0.0 | | 7.2 |

Intersection Summary

| | |
|--------------------|-----|
| HCM 6th Ctrl Delay | 9.2 |
| HCM 6th LOS | A |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.7 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↶ | ↷ | | ↶ | ↷ |
| Traffic Vol, veh/h | 83 | 28 | 0 | 22 | 16 | 98 |
| Future Vol, veh/h | 83 | 28 | 0 | 22 | 16 | 98 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 94 | 32 | 0 | 25 | 18 | 111 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 25 | 0 | - | 0 | 233 13 |
| Stage 1 | - | - | - | - | 13 - |
| Stage 2 | - | - | - | - | 220 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1589 | - | - | - | 755 1067 |
| Stage 1 | - | - | - | - | 1010 - |
| Stage 2 | - | - | - | - | 817 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1589 | - | - | - | 710 1067 |
| Mov Cap-2 Maneuver | - | - | - | - | 710 - |
| Stage 1 | - | - | - | - | 949 - |
| Stage 2 | - | - | - | - | 817 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 5.5 | 0 | 9.1 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1589 | - | - | - | 997 |
| HCM Lane V/C Ratio | 0.059 | - | - | - | 0.13 |
| HCM Control Delay (s) | 7.4 | 0 | - | - | 9.1 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 0.4 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↶ | ↷ | | ↶ | |
| Traffic Vol, veh/h | 0 | 44 | 22 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 44 | 22 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 50 | 25 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 25 | 0 | - | 0 | 75 25 |
| Stage 1 | - | - | - | - | 25 - |
| Stage 2 | - | - | - | - | 50 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1589 | - | - | - | 928 1051 |
| Stage 1 | - | - | - | - | 998 - |
| Stage 2 | - | - | - | - | 972 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1589 | - | - | - | 928 1051 |
| Mov Cap-2 Maneuver | - | - | - | - | 928 - |
| Stage 1 | - | - | - | - | 998 - |
| Stage 2 | - | - | - | - | 972 - |

| Approach | EB | WB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|------|-----|-----|-----|-------|
| Capacity (veh/h) | 1589 | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - | - |
| HCM Control Delay (s) | 0 | - | - | - | 0 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - |

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 11.1 |
| Intersection LOS | B |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|------|------|------|------|------|------|
| Lane Configurations | ↘ | | | | ↘ | ↗ |
| Traffic Vol, veh/h | 181 | 0 | 0 | 0 | 217 | 0 |
| Future Vol, veh/h | 181 | 0 | 0 | 0 | 217 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles, % | 9 | 2 | 2 | 2 | 10 | 2 |
| Mvmt Flow | 206 | 0 | 0 | 0 | 247 | 0 |
| Number of Lanes | 1 | 0 | 0 | 0 | 1 | 1 |

| Approach | WB | SB |
|----------------------------|----|------|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | WB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | SB | |
| Conflicting Lanes Right | 2 | 0 |
| HCM Control Delay | 10 | 12.1 |
| HCM LOS | A | B |

| Lane | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|
| Vol Left, % | 100% | 100% | 0% |
| Vol Thru, % | 0% | 0% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 181 | 217 | 0 |
| LT Vol | 181 | 217 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 206 | 247 | 0 |
| Geometry Grp | 2 | 7 | 7 |
| Degree of Util (X) | 0.286 | 0.391 | 0 |
| Departure Headway (Hd) | 5 | 5.703 | 5.064 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 720 | 631 | 0 |
| Service Time | 3.024 | 3.439 | 2.799 |
| HCM Lane V/C Ratio | 0.286 | 0.391 | 0 |
| HCM Control Delay | 10 | 12.1 | 7.8 |
| HCM Lane LOS | A | B | N |
| HCM 95th-tile Q | 1.2 | 1.9 | 0 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 1.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | | ↗ | ↘ | | | |
| Traffic Vol, veh/h | 0 | 217 | 0 | 0 | 181 | 282 | 0 | 0 | 87 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 217 | 0 | 0 | 181 | 282 | 0 | 0 | 87 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | 50 | - | - | 175 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16979 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 9 | 9 | 11 | 2 | 12 | 8 | 13 | 21 | 2 |
| Mvmt Flow | 0 | 247 | 0 | 0 | 206 | 320 | 0 | 0 | 99 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|-------------|
| Conflicting Flow All | 526 | 0 | 773 247 |
| Stage 1 | - | - | 247 - |
| Stage 2 | - | - | 526 - |
| Critical Hdwy | 4.12 | - | 6.62 6.28 |
| Critical Hdwy Stg 1 | - | - | 5.62 - |
| Critical Hdwy Stg 2 | - | - | 5.62 - |
| Follow-up Hdwy | 2.218 | - | 4.108 3.372 |
| Pot Cap-1 Maneuver | 1041 | 0 0 | 318 777 |
| Stage 1 | - | 0 0 | 684 - |
| Stage 2 | - | 0 0 | 513 - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1041 | - | 0 777 |
| Mov Cap-2 Maneuver | - | - | 0 - |
| Stage 1 | - | - | 0 - |
| Stage 2 | - | - | 0 - |

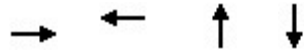
| Approach | EB | WB | NB |
|----------------------|----|----|------|
| HCM Control Delay, s | 0 | 0 | 10.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|------|-----|-----|-----|
| Capacity (veh/h) | - | 777 | 1041 | - | - | - |
| HCM Lane V/C Ratio | - | 0.127 | - | - | - | - |
| HCM Control Delay (s) | 0 | 10.3 | 0 | - | - | - |
| HCM Lane LOS | A | B | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0.4 | 0 | - | - | - |

Queues

103: Church St/Main St & Morehead Ave

04/02/2019



| Lane Group | EBT | WBT | NBT | SBT |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph) | 346 | 593 | 69 | 39 |
| v/c Ratio | 0.42 | 0.69 | 0.23 | 0.14 |
| Control Delay | 6.8 | 10.5 | 10.4 | 13.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 6.8 | 10.5 | 10.4 | 13.6 |
| Queue Length 50th (ft) | 29 | 56 | 5 | 6 |
| Queue Length 95th (ft) | 70 | 137 | 27 | 22 |
| Internal Link Dist (ft) | 1440 | 1642 | 774 | 692 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 1062 | 1113 | 812 | 806 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.33 | 0.53 | 0.08 | 0.05 |

Intersection Summary

HCM 6th Signalized Intersection Summary
 103: Church St/Main St & Morehead Ave

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 0 | 300 | 4 | 0 | 407 | 114 | 56 | 0 | 4 | 34 | 0 | 0 |
| Future Volume (veh/h) | 0 | 300 | 4 | 0 | 407 | 114 | 56 | 0 | 4 | 34 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1604 | 1604 | 1604 | 1678 | 1678 | 1678 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 341 | 5 | 0 | 462 | 130 | 64 | 0 | 5 | 39 | 0 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 20 | 20 | 20 | 15 | 15 | 15 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 0 | 767 | 11 | 0 | 613 | 172 | 494 | 10 | 19 | 536 | 0 | 0 |
| Arrive On Green | 0.00 | 0.49 | 0.49 | 0.00 | 0.49 | 0.49 | 0.18 | 0.00 | 0.18 | 0.18 | 0.00 | 0.00 |
| Sat Flow, veh/h | 0 | 1576 | 23 | 0 | 1260 | 354 | 1306 | 53 | 106 | 1485 | 0 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 346 | 0 | 0 | 592 | 69 | 0 | 0 | 39 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 0 | 1599 | 0 | 0 | 1614 | 1466 | 0 | 0 | 1485 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 3.9 | 0.0 | 0.0 | 8.1 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 3.9 | 0.0 | 0.0 | 8.1 | 1.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.01 | 0.00 | | 0.22 | 0.93 | | 0.07 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 0 | 0 | 778 | 0 | 0 | 785 | 524 | 0 | 0 | 536 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.44 | 0.00 | 0.00 | 0.75 | 0.13 | 0.00 | 0.00 | 0.07 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 0 | 1262 | 0 | 0 | 1273 | 1283 | 0 | 0 | 1287 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 4.6 | 0.0 | 0.0 | 5.7 | 9.5 | 0.0 | 0.0 | 9.3 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 1.5 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 1.2 | 0.3 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 7.2 | 9.6 | 0.0 | 0.0 | 9.3 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 346 | | | 592 | | | 69 | | | | 39 |
| Approach Delay, s/veh | | 5.0 | | | 7.2 | | | 9.6 | | | | 9.3 |
| Approach LOS | | A | | | A | | | A | | | | A |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 9.5 | | 17.8 | | 9.5 | | 17.8 | | | | |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | 4.5 | | 4.5 | | | | |
| Max Green Setting (Gmax), s | | 19.5 | | 21.5 | | 19.5 | | 21.5 | | | | |
| Max Q Clear Time (g_c+I1), s | | 3.0 | | 5.9 | | 2.5 | | 10.1 | | | | |
| Green Ext Time (p_c), s | | 0.2 | | 1.9 | | 0.1 | | 3.2 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 6.7 | | | | | | | | |
| HCM 6th LOS | | | | A | | | | | | | | |

HCM 6th TWSC
121: Reservoir Rd & US 220 Bypass SB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 5.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↗ | ↖ | ↑ | | | | | | ↕ | |
| Traffic Vol, veh/h | 0 | 14 | 9 | 30 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 103 |
| Future Vol, veh/h | 0 | 14 | 9 | 30 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 103 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 50 | 50 | 2 | 2 | 2 | 2 | 2 | 2 | 25 |
| Mvmt Flow | 0 | 16 | 10 | 34 | 89 | 0 | 0 | 0 | 0 | 0 | 0 | 117 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|-------|
| Conflicting Flow All | - | 0 | 0 | 26 | 0 | 0 | | 178 | 183 | 89 |
| Stage 1 | - | - | - | - | - | - | | 157 | 157 | - |
| Stage 2 | - | - | - | - | - | - | | 21 | 26 | - |
| Critical Hdwy | - | - | - | 4.6 | - | - | | 6.42 | 6.52 | 6.45 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Follow-up Hdwy | - | - | - | 2.65 | - | - | | 3.518 | 4.018 | 3.525 |
| Pot Cap-1 Maneuver | 0 | - | - | 1327 | - | 0 | | 812 | 711 | 909 |
| Stage 1 | 0 | - | - | - | - | 0 | | 871 | 768 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | 1002 | 874 | - |
| Platoon blocked, % | - | - | - | - | - | - | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1327 | - | - | | 791 | 0 | 909 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | 791 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | 871 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | 976 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 2.2 | 9.5 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|-----------------------|-----|-----|-------|-----|-------|
| Capacity (veh/h) | - | - | 1327 | - | 909 |
| HCM Lane V/C Ratio | - | - | 0.026 | - | 0.129 |
| HCM Control Delay (s) | - | - | 7.8 | - | 9.5 |
| HCM Lane LOS | - | - | A | - | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | - | 0.4 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 0.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↑ | | | ↗ | | | ↕ | | | | |
| Traffic Vol, veh/h | 14 | 0 | 0 | 0 | 3 | 24 | 105 | 0 | 6 | 0 | 0 | 0 |
| Future Vol, veh/h | 14 | 0 | 0 | 0 | 3 | 24 | 105 | 0 | 6 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 50 | 2 | 2 | 2 | 2 | 2 | 50 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 0 | 0 | 0 | 3 | 27 | 119 | 0 | 7 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 30 | 0 | 0 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | 4.6 | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | 2.65 | - | - |
| Pot Cap-1 Maneuver | 1322 | 0 | 0 |
| Stage 1 | - | 0 | 0 |
| Stage 2 | - | 0 | 0 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1322 | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 7.8 | 0 | |
| HCM LOS | | | - |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | 1322 | - | - | - |
| HCM Lane V/C Ratio | - | 0.012 | - | - | - |
| HCM Control Delay (s) | - | 7.8 | - | - | - |
| HCM Lane LOS | - | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 31 | 214 | 0 | 11 | 4 | 113 | 29 | 30 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 31 | 214 | 0 | 11 | 4 | 113 | 29 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 1 | 1 | 4 | 2 | 2 | 2 | 2 | 15 | 1 |
| Mvmt Flow | 0 | 0 | 0 | 22 | 35 | 243 | 0 | 13 | 5 | 128 | 33 | 34 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|----------------------|--------|-------|--------|-------|--------|-------|
| Conflicting Flow All | 322 | 339 | 16 | 67 | 0 | 18 |
| Stage 1 | 16 | 16 | - | - | - | - |
| Stage 2 | 306 | 323 | - | - | - | - |
| Critical Hdwy | 6.41 | 6.51 | 6.24 | 4.12 | - | 4.12 |
| Critical Hdwy Stg 1 | 5.41 | 5.51 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | 5.51 | - | - | - | - |
| Follow-up Hdwy | 3.509 | 4.009 | 3.336 | 2.218 | - | 2.218 |
| Pot Cap-1 Maneuver | 674 | 584 | 1057 | 1535 | - | 1599 |
| Stage 1 | 1009 | 884 | - | - | - | - |
| Stage 2 | 749 | 652 | - | - | - | - |
| Platoon blocked, % | | | | | - | - |
| Mov Cap-1 Maneuver | 620 | 0 | 1057 | 1535 | - | 1599 |
| Mov Cap-2 Maneuver | 620 | 0 | - | - | - | - |
| Stage 1 | 1009 | 0 | - | - | - | - |
| Stage 2 | 689 | 0 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 9.7 | 0 | 4.9 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|------|-----|-----|
| Capacity (veh/h) | 1535 | - | - | 620 | 1057 | 1599 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.035 | 0.263 | 0.08 | - | - |
| HCM Control Delay (s) | 0 | - | - | 11 | 9.6 | 7.4 | - | - |
| HCM Lane LOS | A | - | - | B | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 1.1 | 0.3 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.2 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 14 | 103 | 20 | 67 | 197 | 15 |
| Future Vol, veh/h | 14 | 103 | 20 | 67 | 197 | 15 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 117 | 23 | 76 | 224 | 17 |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 0 | 0 | 133 | 0 | 197 |
| Stage 1 | - | - | - | - | 75 |
| Stage 2 | - | - | - | - | 122 |
| Critical Hdwy | - | - | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | - | - | 1452 | - | 792 |
| Stage 1 | - | - | - | - | 948 |
| Stage 2 | - | - | - | - | 903 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1452 | - | 779 |
| Mov Cap-2 Maneuver | - | - | - | - | 779 |
| Stage 1 | - | - | - | - | 948 |
| Stage 2 | - | - | - | - | 888 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 1.7 | 11.5 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 791 | - | - | 1452 | - |
| HCM Lane V/C Ratio | 0.305 | - | - | 0.016 | - |
| HCM Control Delay (s) | 11.5 | - | - | 7.5 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 1.3 | - | - | 0 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.5 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↑↑ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 47 | 42 | 170 | 0 | 0 | 123 |
| Future Vol, veh/h | 47 | 42 | 170 | 0 | 0 | 123 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 1 | 4 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 53 | 48 | 193 | 0 | 0 | 140 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 333 | 193 | 0 | - | - | - |
| Stage 1 | 193 | - | - | - | - | - |
| Stage 2 | 140 | - | - | - | - | - |
| Critical Hdwy | 6.41 | 6.24 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.41 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - | - | - |
| Follow-up Hdwy | 3.509 | 3.336 | - | - | - | - |
| Pot Cap-1 Maneuver | 664 | 843 | - | 0 | 0 | - |
| Stage 1 | 842 | - | - | 0 | 0 | - |
| Stage 2 | 889 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 664 | 843 | - | - | - | - |
| Mov Cap-2 Maneuver | 664 | - | - | - | - | - |
| Stage 1 | 842 | - | - | - | - | - |
| Stage 2 | 889 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 10.7 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 738 | - |
| HCM Lane V/C Ratio | - 0.137 | - |
| HCM Control Delay (s) | - 10.7 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.5 | - |

HCM 6th TWSC
146: Fisher Farm Rd & US 58 EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 47 | 0 | 44 | 0 | 0 | 0 | 0 | 123 | 50 | 54 | 116 | 0 |
| Future Vol, veh/h | 47 | 0 | 44 | 0 | 0 | 0 | 0 | 123 | 50 | 54 | 116 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 4 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 53 | 0 | 50 | 0 | 0 | 0 | 0 | 140 | 57 | 61 | 132 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 423 | 451 | 132 | - | 0 | 0 | 197 | 0 | 0 |
| Stage 1 | 254 | 254 | - | - | - | - | - | - | - |
| Stage 2 | 169 | 197 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.44 | 6.51 | 6.21 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.44 | 5.51 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.44 | 5.51 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.536 | 4.009 | 3.309 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 584 | 505 | 920 | 0 | - | - | 1376 | - | 0 |
| Stage 1 | 784 | 699 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 856 | 740 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 556 | 0 | 920 | - | - | - | 1376 | - | - |
| Mov Cap-2 Maneuver | 556 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 784 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 815 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 11.2 | 0 | 2.5 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|
| Capacity (veh/h) | - | - | 688 | 1376 | - |
| HCM Lane V/C Ratio | - | - | 0.15 | 0.045 | - |
| HCM Control Delay (s) | - | - | 11.2 | 7.7 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.5 | 0.1 | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019





















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 368 | 124 | 505 | 864 | 85 |
| v/c Ratio | 0.76 | 0.23 | 0.29 | 0.50 | 0.10 |
| Control Delay | 32.2 | 4.3 | 3.4 | 13.7 | 3.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 32.2 | 4.3 | 3.4 | 13.7 | 3.6 |
| Queue Length 50th (ft) | 141 | 0 | 13 | 121 | 0 |
| Queue Length 95th (ft) | 198 | 27 | 18 | 195 | 22 |
| Internal Link Dist (ft) | 1343 | | 142 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 626 | 668 | 1758 | 1741 | 836 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.59 | 0.19 | 0.29 | 0.50 | 0.10 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 0 | 0 | 0 | 324 | 0 | 109 | 0 | 444 | 0 | 0 | 760 | 75 |
| Future Volume (vph) | 0 | 0 | 0 | 324 | 0 | 109 | 0 | 444 | 0 | 0 | 760 | 75 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1612 | 1524 | | 3471 | | | 3438 | 1568 |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1612 | 1524 | | 3471 | | | 3438 | 1568 |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 0 | 0 | 0 | 368 | 0 | 124 | 0 | 505 | 0 | 0 | 864 | 85 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 87 | 0 | 0 | 0 | 0 | 0 | 42 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 368 | 37 | 0 | 505 | 0 | 0 | 864 | 43 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 12% | 0% | 6% | 0% | 4% | 14% | 0% | 5% | 3% |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 |
| Actuated Green, G (s) | | | | | 21.0 | 21.0 | | 35.5 | | | 35.5 | 35.5 |
| Effective Green, g (s) | | | | | 21.0 | 21.0 | | 35.5 | | | 35.5 | 35.5 |
| Actuated g/C Ratio | | | | | 0.30 | 0.30 | | 0.51 | | | 0.51 | 0.51 |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 483 | 457 | | 1760 | | | 1743 | 795 |
| v/s Ratio Prot | | | | | | | | 0.15 | | | c0.25 | |
| v/s Ratio Perm | | | | | 0.23 | 0.02 | | | | | | 0.03 |
| v/c Ratio | | | | | 0.76 | 0.08 | | 0.29 | | | 0.50 | 0.05 |
| Uniform Delay, d1 | | | | | 22.2 | 17.6 | | 9.9 | | | 11.4 | 8.7 |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.28 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 7.0 | 0.1 | | 0.3 | | | 1.0 | 0.1 |
| Delay (s) | | | | | 29.2 | 17.7 | | 3.1 | | | 12.4 | 8.9 |
| Level of Service | | | | | C | B | | A | | | B | A |
| Approach Delay (s) | | 0.0 | | | 26.3 | | | 3.1 | | | 12.1 | |
| Approach LOS | | A | | | C | | | A | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 13.3 | | HCM 2000 Level of Service | | | | | | B | |
| HCM 2000 Volume to Capacity ratio | | | 0.59 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | Sum of lost time (s) | | | | | 13.5 | | |
| Intersection Capacity Utilization | | | 75.2% | | ICU Level of Service | | | | | | D | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019






















| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 40 | 199 | 861 | 209 | 167 | 1065 |
| v/c Ratio | 0.18 | 0.64 | 0.62 | 0.27 | 0.63 | 0.50 |
| Control Delay | 28.5 | 18.7 | 18.9 | 4.2 | 38.3 | 6.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 28.5 | 18.7 | 18.9 | 4.2 | 38.3 | 6.7 |
| Queue Length 50th (ft) | 16 | 19 | 147 | 4 | 70 | 55 |
| Queue Length 95th (ft) | 40 | 73 | 214 | 41 | 123 | 170 |
| Internal Link Dist (ft) | | | 585 | | | 516 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 262 | 342 | 1388 | 773 | 297 | 2144 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.15 | 0.58 | 0.62 | 0.27 | 0.56 | 0.50 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 2: US 220 Business & US 58 EB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  | |  | | | | |  |  |  |  |  | |
| Traffic Volume (vph) | 35 | 0 | 175 | 0 | 0 | 0 | 0 | 758 | 184 | 147 | 937 | 0 | |
| Future Volume (vph) | 35 | 0 | 175 | 0 | 0 | 0 | 0 | 758 | 184 | 147 | 937 | 0 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1380 | | | | | 3282 | 1568 | 1752 | 3195 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1380 | | | | | 3282 | 1568 | 1752 | 3195 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 40 | 0 | 199 | 0 | 0 | 0 | 0 | 861 | 209 | 167 | 1065 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 133 | 0 | 0 | 0 | 0 | 0 | 111 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 40 | 0 | 66 | 0 | 0 | 0 | 0 | 861 | 98 | 167 | 1065 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 17% | 2% | 2% | 2% | 0% | 10% | 3% | 3% | 13% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 9.1 | | 9.1 | | | | | 29.6 | 29.6 | 10.6 | 47.0 | | |
| Effective Green, g (s) | 9.1 | | 9.1 | | | | | 29.6 | 29.6 | 10.6 | 47.0 | | |
| Actuated g/C Ratio | 0.13 | | 0.13 | | | | | 0.42 | 0.42 | 0.15 | 0.67 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 221 | | 179 | | | | | 1387 | 663 | 265 | 2145 | | |
| v/s Ratio Prot | | | | | | | | c0.26 | | 0.10 | c0.33 | | |
| v/s Ratio Perm | 0.02 | | c0.05 | | | | | | 0.06 | | | | |
| v/c Ratio | 0.18 | | 0.37 | | | | | 0.62 | 0.15 | 0.63 | 0.50 | | |
| Uniform Delay, d1 | 27.1 | | 27.8 | | | | | 15.8 | 12.4 | 27.9 | 5.7 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.03 | 0.99 | | |
| Incremental Delay, d2 | 0.4 | | 1.3 | | | | | 2.1 | 0.5 | 4.2 | 0.7 | | |
| Delay (s) | 27.5 | | 29.1 | | | | | 17.9 | 12.9 | 33.0 | 6.3 | | |
| Level of Service | C | | C | | | | | B | B | C | A | | |
| Approach Delay (s) | | 28.8 | | | 0.0 | | | 16.9 | | | 9.9 | | |
| Approach LOS | | C | | | A | | | B | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 14.6 | | | | | | | | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.59 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 48.3% | | | | | | | | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 21 | 0 | 6 | 2 | 0 | 18 | 4 | 903 | 2 | 21 | 1076 | 15 |
| Future Vol, veh/h | 21 | 0 | 6 | 2 | 0 | 18 | 4 | 903 | 2 | 21 | 1076 | 15 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 13 | 0 | 0 | 13 | 6 |
| Mvmt Flow | 24 | 0 | 7 | 2 | 0 | 20 | 5 | 1026 | 2 | 24 | 1223 | 17 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1794 | 2309 | 612 | 1696 | 2324 | 513 | 1240 | 0 | 0 | 1028 | 0 | 0 |
| Stage 1 | 1271 | 1271 | - | 1036 | 1036 | - | - | - | - | - | - | - |
| Stage 2 | 523 | 1038 | - | 660 | 1288 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 52 | 39 | 441 | 61 | 38 | 483 | 569 | - | - | 683 | - | - |
| Stage 1 | 181 | 241 | - | 251 | 311 | - | - | - | - | - | - | - |
| Stage 2 | 510 | 311 | - | 423 | 237 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 48 | 37 | 441 | 58 | 36 | 483 | 569 | - | - | 683 | - | - |
| Mov Cap-2 Maneuver | 48 | 37 | - | 58 | 36 | - | - | - | - | - | - | - |
| Stage 1 | 179 | 233 | - | 249 | 308 | - | - | - | - | - | - | - |
| Stage 2 | 484 | 308 | - | 402 | 229 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | | | |
|----------------------|-----|--|----|--|-----|--|-----|--|--|--|
| HCM Control Delay, s | 116 | | 19 | | 0.1 | | 0.2 | | | |
| HCM LOS | F | | C | | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 569 | - | - | 60 | 279 | 683 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.511 | 0.081 | 0.035 | - | - |
| HCM Control Delay (s) | 11.4 | - | - | 116 | 19 | 10.5 | - | - |
| HCM Lane LOS | B | - | - | F | C | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 2 | 0.3 | 0.1 | - | - |

HCM 6th TWSC
 4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 866 | 8 | 17 | 1067 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 19 | 0 | 43 | 0 | 866 | 8 | 17 | 1067 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 13 | 0 | 0 | 13 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 22 | 0 | 49 | 0 | 984 | 9 | 19 | 1213 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|-----|---|---|
| Conflicting Flow All | 1743 | 2244 | 607 | 1629 | 2235 | 492 | - | 0 | 0 | 993 | 0 | 0 |
| Stage 1 | 1251 | 1251 | - | 984 | 984 | - | - | - | - | - | - | - |
| Stage 2 | 492 | 993 | - | 645 | 1251 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 57 | 43 | 444 | 69 | 43 | 509 | 0 | - | - | 704 | - | 0 |
| Stage 1 | 186 | 246 | - | 270 | 329 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 532 | 326 | - | 432 | 246 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 50 | 42 | 444 | 68 | 42 | 509 | - | - | - | 704 | - | - |
| Mov Cap-2 Maneuver | 50 | 42 | - | 68 | 42 | - | - | - | - | - | - | - |
| Stage 1 | 186 | 239 | - | 270 | 329 | - | - | - | - | - | - | - |
| Stage 2 | 481 | 326 | - | 420 | 239 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|-----|
| HCM Control Delay, s | 0 | 40.4 | 0 | 0.2 |
| HCM LOS | A | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|-------|-------|
| Capacity (veh/h) | - | - | - | 170 | 704 |
| HCM Lane V/C Ratio | - | - | - | 0.414 | 0.027 |
| HCM Control Delay (s) | - | - | 0 | 40.4 | 10.3 |
| HCM Lane LOS | - | - | A | E | B |
| HCM 95th %tile Q(veh) | - | - | - | 1.8 | 0.1 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 39.7 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 139 | 40 | 0 | 735 | 1061 | 25 |
| Future Vol, veh/h | 139 | 40 | 0 | 735 | 1061 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 13 | 16 | 0 |
| Mvmt Flow | 158 | 45 | 0 | 835 | 1206 | 28 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 1624 | 603 | - | 0 | - | 0 |
| Stage 1 | 1206 | - | - | - | - | - |
| Stage 2 | 418 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 95 | 447 | 0 | - | - | - |
| Stage 1 | 250 | - | 0 | - | - | - |
| Stage 2 | 638 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 95 | 447 | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 95 | - | - | - | - | - |
| Stage 1 | 250 | - | - | - | - | - |
| Stage 2 | 638 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|----|----|
| HCM Control Delay, s | \$ 443.5 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT EBLn1 | SBT | SBR |
|-----------------------|-----------|-----|-----|
| Capacity (veh/h) | - 115 | - | - |
| HCM Lane V/C Ratio | - 1.769 | - | - |
| HCM Control Delay (s) | -\$ 443.5 | - | - |
| HCM Lane LOS | - F | - | - |
| HCM 95th %tile Q(veh) | - 15.9 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 8 | 34 | 701 | 10 | 40 | 1061 |
| Future Vol, veh/h | 8 | 34 | 701 | 10 | 40 | 1061 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 13 | 0 | 0 | 13 |
| Mvmt Flow | 9 | 39 | 797 | 11 | 45 | 1206 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 1490 | 399 | 0 | 0 | 808 |
| Stage 1 | 797 | - | - | - | - |
| Stage 2 | 693 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 117 | 606 | - | - | 826 |
| Stage 1 | 409 | - | - | - | - |
| Stage 2 | 463 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 111 | 606 | - | - | 826 |
| Mov Cap-2 Maneuver | 111 | - | - | - | - |
| Stage 1 | 409 | - | - | - | - |
| Stage 2 | 438 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 17.8 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 328 | 826 |
| HCM Lane V/C Ratio | - | - | 0.146 | 0.055 |
| HCM Control Delay (s) | - | - | 17.8 | 9.6 |
| HCM Lane LOS | - | - | C | A |
| HCM 95th %tile Q(veh) | - | - | 0.5 | 0.2 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | | | ↔ | ↑↑ | ↔ | ↔ | ↑↑ | |
| Traffic Vol, veh/h | 22 | 0 | 7 | 0 | 0 | 0 | 8 | 689 | 13 | 35 | 1005 | 29 |
| Future Vol, veh/h | 22 | 0 | 7 | 0 | 0 | 0 | 8 | 689 | 13 | 35 | 1005 | 29 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 13 | 0 | 3 | 13 | 0 |
| Mvmt Flow | 25 | 0 | 8 | 0 | 0 | 0 | 9 | 783 | 15 | 40 | 1142 | 33 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1649 | 2055 | 588 | | | | 1175 | 0 | 0 | 798 | 0 | 0 |
| Stage 1 | 1239 | 1239 | - | | | | - | - | - | - | - | - |
| Stage 2 | 410 | 816 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 92 | 56 | 457 | | | | 602 | - | - | 814 | - | - |
| Stage 1 | 240 | 250 | - | | | | - | - | - | - | - | - |
| Stage 2 | 644 | 393 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 86 | 0 | 457 | | | | 602 | - | - | 814 | - | - |
| Mov Cap-2 Maneuver | 86 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 236 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 612 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 53 | 0.1 | 0.3 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 602 | - | - | 107 | 814 | - | - |
| HCM Lane V/C Ratio | 0.015 | - | - | 0.308 | 0.049 | - | - |
| HCM Control Delay (s) | 11.1 | - | - | 53 | 9.7 | - | - |
| HCM Lane LOS | B | - | - | F | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.2 | 0.2 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 4.1 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | T | | | T | | T |
| Traffic Vol, veh/h | 91 | 13 | 18 | 73 | 66 | 38 |
| Future Vol, veh/h | 91 | 13 | 18 | 73 | 66 | 38 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 103 | 15 | 20 | 83 | 75 | 43 |

| Major/Minor | Minor2 | Major1 | | Major2 | |
|----------------------|--------|--------|-------|--------|---|
| Conflicting Flow All | 220 | 97 | 118 | 0 | 0 |
| Stage 1 | 97 | - | - | - | - |
| Stage 2 | 123 | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - |
| Pot Cap-1 Maneuver | 768 | 959 | 1470 | - | - |
| Stage 1 | 927 | - | - | - | - |
| Stage 2 | 902 | - | - | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | 757 | 959 | 1470 | - | - |
| Mov Cap-2 Maneuver | 757 | - | - | - | - |
| Stage 1 | 914 | - | - | - | - |
| Stage 2 | 902 | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 10.5 | 1.5 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | 1470 | - | 777 | - | - |
| HCM Lane V/C Ratio | 0.014 | - | 0.152 | - | - |
| HCM Control Delay (s) | 7.5 | 0 | 10.5 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.5 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|-------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 58.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | ↑ | ↑ | |
| Traffic Vol, veh/h | 0 | 137 | 27 | 694 | 62 | 0 | 0 | 0 | 0 | 68 | 0 | 42 |
| Future Vol, veh/h | 0 | 137 | 27 | 694 | 62 | 0 | 0 | 0 | 0 | 68 | 0 | 42 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | Yield | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 100 | 0 | - | - | - | - | - | 200 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 9 | 1 | 2 | 2 | 2 | 2 | 10 | 0 | 0 |
| Mvmt Flow | 0 | 156 | 31 | 789 | 70 | 0 | 0 | 0 | 0 | 77 | 0 | 48 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|-----|
| Conflicting Flow All | - | 0 | 0 | 156 | 0 | 0 | | 1804 | 1804 | 70 |
| Stage 1 | - | - | - | - | - | - | | 1648 | 1648 | - |
| Stage 2 | - | - | - | - | - | - | | 156 | 156 | - |
| Critical Hdwy | - | - | - | 4.19 | - | - | | 6.5 | 6.5 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | 5.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | 5.5 | 5.5 | - |
| Follow-up Hdwy | - | - | - | 2.281 | - | - | | 3.59 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | - | 1382 | - | 0 | | 83 | 80 | 998 |
| Stage 1 | 0 | - | - | - | - | 0 | | 165 | 158 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | 853 | 772 | - |
| Platoon blocked, % | - | - | - | - | - | - | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1382 | - | - | | ~ 36 | 0 | 998 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | ~ 36 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | 165 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | 366 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|------|----------|
| HCM Control Delay, s | 0 | 10.1 | \$ 477.4 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|-------|-----|----------|-------|
| Capacity (veh/h) | - | - | 1382 | - | 36 | 998 |
| HCM Lane V/C Ratio | - | - | 0.571 | - | 2.146 | 0.048 |
| HCM Control Delay (s) | - | - | 11 | - | \$ 766.9 | 8.8 |
| HCM Lane LOS | - | - | B | - | F | A |
| HCM 95th %tile Q(veh) | - | - | 3.8 | - | 8.5 | 0.1 |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
 83: US 220 Bypass NB Ramp & US 220 Business

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 6.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↑ | | | ↑↑ | | ↘ | ↘ | | | | |
| Traffic Vol, veh/h | 19 | 186 | 0 | 0 | 742 | 20 | 14 | 0 | 490 | 0 | 0 | 0 |
| Future Vol, veh/h | 19 | 186 | 0 | 0 | 742 | 20 | 14 | 0 | 490 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | - | 200 | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 10 | 2 | 2 | 12 | 4 | 0 | 0 | 10 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 211 | 0 | 0 | 843 | 23 | 16 | 0 | 557 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 866 | 0 | 0 |
| Stage 1 | - | - | 255 |
| Stage 2 | - | - | 422 |
| Critical Hdwy | 4.13 | - | 6.6 |
| Critical Hdwy Stg 1 | - | - | 5.4 |
| Critical Hdwy Stg 2 | - | - | 5.8 |
| Follow-up Hdwy | 2.219 | - | 3.5 |
| Pot Cap-1 Maneuver | 775 | 0 | 406 |
| Stage 1 | - | 0 | 792 |
| Stage 2 | - | 0 | 635 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 775 | - | 395 |
| Mov Cap-2 Maneuver | - | - | 395 |
| Stage 1 | - | - | 770 |
| Stage 2 | - | - | 635 |

| Approach | EB | WB | NB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.9 | 0 | 18.7 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | 395 | 806 | 775 | - | - | - |
| HCM Lane V/C Ratio | 0.04 | 0.691 | 0.028 | - | - | - |
| HCM Control Delay (s) | 14.5 | 18.8 | 9.8 | - | - | - |
| HCM Lane LOS | B | C | A | - | - | - |
| HCM 95th %tile Q(veh) | 0.1 | 5.7 | 0.1 | - | - | - |

Queues

84: US 220 Business & Water Plant Road

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 75 | 94 | 713 | 56 | 359 | 791 |
| v/c Ratio | 0.39 | 0.37 | 0.73 | 0.11 | 0.86 | 0.34 |
| Control Delay | 31.9 | 11.4 | 25.6 | 6.3 | 45.1 | 4.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 31.9 | 11.4 | 25.6 | 6.3 | 45.1 | 4.6 |
| Queue Length 50th (ft) | 26 | 0 | 126 | 0 | 125 | 55 |
| Queue Length 95th (ft) | 60 | 35 | #198 | 21 | #252 | 76 |
| Internal Link Dist (ft) | 1185 | | 294 | | | 1333 |
| Turn Bay Length (ft) | 100 | 75 | | 150 | 250 | |
| Base Capacity (vph) | 191 | 256 | 972 | 504 | 435 | 2350 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.39 | 0.37 | 0.73 | 0.11 | 0.83 | 0.34 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 84: US 220 Business & Water Plant Road

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|-------|-------|------|-------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 66 | 83 | 627 | 49 | 316 | 696 |
| Future Volume (veh/h) | 66 | 83 | 627 | 49 | 316 | 696 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1900 | 1900 | 1767 | 1870 | 1826 | 1722 |
| Adj Flow Rate, veh/h | 75 | 94 | 712 | 56 | 359 | 791 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 0 | 0 | 9 | 2 | 5 | 12 |
| Cap, veh/h | 167 | 149 | 972 | 459 | 403 | 2117 |
| Arrive On Green | 0.09 | 0.09 | 0.29 | 0.29 | 0.23 | 0.65 |
| Sat Flow, veh/h | 1810 | 1610 | 3445 | 1585 | 1739 | 3358 |
| Grp Volume(v), veh/h | 75 | 94 | 712 | 56 | 359 | 791 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 1610 | 1678 | 1585 | 1739 | 1636 |
| Q Serve(g_s), s | 2.4 | 3.5 | 11.7 | 1.6 | 12.3 | 6.9 |
| Cycle Q Clear(g_c), s | 2.4 | 3.5 | 11.7 | 1.6 | 12.3 | 6.9 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 167 | 149 | 972 | 459 | 403 | 2117 |
| V/C Ratio(X) | 0.45 | 0.63 | 0.73 | 0.12 | 0.89 | 0.37 |
| Avail Cap(c_a), veh/h | 177 | 157 | 972 | 459 | 405 | 2117 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 26.4 | 26.8 | 19.7 | 16.1 | 22.8 | 5.0 |
| Incr Delay (d2), s/veh | 2.3 | 8.0 | 3.0 | 0.1 | 21.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 1.6 | 4.3 | 0.5 | 6.7 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 28.6 | 34.9 | 22.7 | 16.2 | 43.8 | 5.5 |
| LnGrp LOS | C | C | C | B | D | A |
| Approach Vol, veh/h | 169 | | 768 | | | 1150 |
| Approach Delay, s/veh | 32.1 | | 22.2 | | | 17.5 |
| Approach LOS | C | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 21.9 | 25.4 | | 14.1 | | 47.3 |
| Change Period (Y+Rc), s | * 7.7 | * 7.6 | | * 8.4 | | * 7.6 |
| Max Green Setting (Gmax), s | * 14 | * 16 | | * 6 | | * 40 |
| Max Q Clear Time (g_c+l1), s | 14.3 | 13.7 | | 5.5 | | 8.9 |
| Green Ext Time (p_c), s | 0.0 | 1.1 | | 0.0 | | 9.4 |

Intersection Summary

| | |
|--------------------|------|
| HCM 6th Ctrl Delay | 20.4 |
| HCM 6th LOS | C |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 4.8 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | |
| Traffic Vol, veh/h | 81 | 48 | 87 | 10 | 48 | 31 |
| Future Vol, veh/h | 81 | 48 | 87 | 10 | 48 | 31 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 92 | 55 | 99 | 11 | 55 | 35 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 110 | 0 | - | 0 | 344 105 |
| Stage 1 | - | - | - | - | 105 - |
| Stage 2 | - | - | - | - | 239 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1480 | - | - | - | 652 949 |
| Stage 1 | - | - | - | - | 919 - |
| Stage 2 | - | - | - | - | 801 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1480 | - | - | - | 610 949 |
| Mov Cap-2 Maneuver | - | - | - | - | 610 - |
| Stage 1 | - | - | - | - | 860 - |
| Stage 2 | - | - | - | - | 801 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 4.8 | 0 | 10.8 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1480 | - | - | - | 709 |
| HCM Lane V/C Ratio | 0.062 | - | - | - | 0.127 |
| HCM Control Delay (s) | 7.6 | 0 | - | - | 10.8 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 0.4 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.5 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | |
| Traffic Vol, veh/h | 54 | 42 | 51 | 40 | 126 | 46 |
| Future Vol, veh/h | 54 | 42 | 51 | 40 | 126 | 46 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 61 | 48 | 58 | 45 | 143 | 52 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 103 | 0 | - | 0 | 251 81 |
| Stage 1 | - | - | - | - | 81 - |
| Stage 2 | - | - | - | - | 170 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1489 | - | - | - | 738 979 |
| Stage 1 | - | - | - | - | 942 - |
| Stage 2 | - | - | - | - | 860 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1489 | - | - | - | 707 979 |
| Mov Cap-2 Maneuver | - | - | - | - | 707 - |
| Stage 1 | - | - | - | - | 902 - |
| Stage 2 | - | - | - | - | 860 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 4.2 | 0 | 11.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1489 | - | - | - | 764 |
| HCM Lane V/C Ratio | 0.041 | - | - | - | 0.256 |
| HCM Control Delay (s) | 7.5 | 0 | - | - | 11.3 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1 |

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 25.9 |
| Intersection LOS | D |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|------|------|------|------|------|------|
| Lane Configurations | ↘ | | | | ↘ | ↗ |
| Traffic Vol, veh/h | 21 | 0 | 0 | 0 | 494 | 0 |
| Future Vol, veh/h | 21 | 0 | 0 | 0 | 494 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles, % | 9 | 2 | 2 | 2 | 10 | 2 |
| Mvmt Flow | 24 | 0 | 0 | 0 | 561 | 0 |
| Number of Lanes | 1 | 0 | 0 | 0 | 1 | 1 |

| Approach | WB | SB |
|----------------------------|-----|------|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | WB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | SB | |
| Conflicting Lanes Right | 2 | 0 |
| HCM Control Delay | 9.1 | 26.6 |
| HCM LOS | A | D |

| Lane | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|
| Vol Left, % | 100% | 100% | 0% |
| Vol Thru, % | 0% | 0% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 21 | 494 | 0 |
| LT Vol | 21 | 494 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 24 | 561 | 0 |
| Geometry Grp | 2 | 7 | 7 |
| Degree of Util (X) | 0.039 | 0.813 | 0 |
| Departure Headway (Hd) | 5.856 | 5.212 | 4.576 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 615 | 696 | 0 |
| Service Time | 3.856 | 2.948 | 2.311 |
| HCM Lane V/C Ratio | 0.039 | 0.806 | 0 |
| HCM Control Delay | 9.1 | 26.6 | 7.3 |
| HCM Lane LOS | A | D | N |
| HCM 95th-tile Q | 0.1 | 8.5 | 0 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 0.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | | ↗ | ↘ | | | |
| Traffic Vol, veh/h | 0 | 494 | 0 | 0 | 21 | 265 | 0 | 0 | 36 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 494 | 0 | 0 | 21 | 265 | 0 | 0 | 36 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | 50 | - | - | 175 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16979 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 10 | 2 | 9 | 9 | 11 | 2 | 12 | 8 | 13 | 21 | 2 |
| Mvmt Flow | 0 | 561 | 0 | 0 | 24 | 301 | 0 | 0 | 41 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 325 | 0 | 0 |
| Stage 1 | - | - | 561 |
| Stage 2 | - | - | 325 |
| Critical Hdwy | 4.12 | - | 6.62 |
| Critical Hdwy Stg 1 | - | - | 5.62 |
| Critical Hdwy Stg 2 | - | - | 5.62 |
| Follow-up Hdwy | 2.218 | - | 4.108 |
| Pot Cap-1 Maneuver | 1235 | 0 | 273 |
| Stage 1 | - | 0 | 494 |
| Stage 2 | - | 0 | 632 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1235 | - | 0 |
| Mov Cap-2 Maneuver | - | - | 0 |
| Stage 1 | - | - | 0 |
| Stage 2 | - | - | 0 |

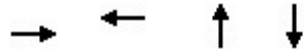
| Approach | EB | WB | NB |
|----------------------|----|----|------|
| HCM Control Delay, s | 0 | 0 | 12.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|------|-----|-----|-----|
| Capacity (veh/h) | - | 516 | 1235 | - | - | - |
| HCM Lane V/C Ratio | - | 0.079 | - | - | - | - |
| HCM Control Delay (s) | 0 | 12.6 | 0 | - | - | - |
| HCM Lane LOS | A | B | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0.3 | 0 | - | - | - |

Queues

103: Church St/Main St & Morehead Ave

04/02/2019



| Lane Group | EBT | WBT | NBT | SBT |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph) | 602 | 356 | 74 | 191 |
| v/c Ratio | 0.77 | 0.46 | 0.11 | 0.52 |
| Control Delay | 17.4 | 9.7 | 0.4 | 19.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 17.4 | 9.7 | 0.4 | 19.6 |
| Queue Length 50th (ft) | 95 | 46 | 0 | 38 |
| Queue Length 95th (ft) | #260 | 120 | 0 | 93 |
| Internal Link Dist (ft) | 1440 | 1642 | 774 | 692 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 1112 | 1106 | 907 | 627 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.32 | 0.08 | 0.30 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 103: Church St/Main St & Morehead Ave

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 0 | 472 | 58 | 20 | 286 | 7 | 0 | 0 | 65 | 168 | 0 | 0 |
| Future Volume (veh/h) | 0 | 472 | 58 | 20 | 286 | 7 | 0 | 0 | 65 | 168 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1604 | 1604 | 1604 | 1678 | 1678 | 1678 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 536 | 66 | 23 | 325 | 8 | 0 | 0 | 74 | 191 | 0 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 20 | 20 | 20 | 15 | 15 | 15 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 0 | 680 | 84 | 129 | 709 | 17 | 0 | 0 | 396 | 494 | 0 | 0 |
| Arrive On Green | 0.00 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.00 | 0.00 | 0.25 | 0.25 | 0.00 | 0.00 |
| Sat Flow, veh/h | 0 | 1400 | 172 | 34 | 1461 | 34 | 0 | 0 | 1585 | 1131 | 0 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 602 | 356 | 0 | 0 | 0 | 0 | 74 | 191 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 0 | 1573 | 1529 | 0 | 0 | 0 | 0 | 1585 | 1131 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 10.9 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 4.5 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 10.9 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 5.8 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.11 | 0.06 | | 0.02 | 0.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 0 | 0 | 764 | 855 | 0 | 0 | 0 | 0 | 396 | 494 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.79 | 0.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.19 | 0.39 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 0 | 1271 | 1353 | 0 | 0 | 0 | 0 | 862 | 884 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 7.3 | 5.7 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 12.3 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 1.9 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.5 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 2.3 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 1.1 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 9.2 | 6.1 | 0.0 | 0.0 | 0.0 | 0.0 | 10.3 | 12.8 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | A | A | B | B | A | A |
| Approach Vol, veh/h | | 602 | | | 356 | | | 74 | | | | 191 |
| Approach Delay, s/veh | | 9.2 | | | 6.1 | | | 10.3 | | | | 12.8 |
| Approach LOS | | A | | | A | | | B | | | | B |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 13.0 | | 21.0 | | 13.0 | | 21.0 | | | | |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | 4.5 | | 4.5 | | | | |
| Max Green Setting (Gmax), s | | 18.5 | | 27.5 | | 18.5 | | 27.5 | | | | |
| Max Q Clear Time (g_c+I1), s | | 3.2 | | 12.9 | | 7.8 | | 13.1 | | | | |
| Green Ext Time (p_c), s | | 0.3 | | 3.7 | | 0.7 | | 1.9 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 8.9 | | | | | | | | |
| HCM 6th LOS | | | | A | | | | | | | | |

HCM 6th TWSC
121: Reservoir Rd & US 220 Bypass SB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 2.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↗ | ↘ | ↑ | | | | | | ↕ | |
| Traffic Vol, veh/h | 0 | 63 | 38 | 27 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Future Vol, veh/h | 0 | 63 | 38 | 27 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 50 | 50 | 2 | 2 | 2 | 2 | 2 | 2 | 25 |
| Mvmt Flow | 0 | 72 | 43 | 31 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|-------|
| Conflicting Flow All | - | 0 | 0 | 115 | 0 | 0 | | 188 | 209 | 32 |
| Stage 1 | - | - | - | - | - | - | | 94 | 94 | - |
| Stage 2 | - | - | - | - | - | - | | 94 | 115 | - |
| Critical Hdwy | - | - | - | 4.6 | - | - | | 6.42 | 6.52 | 6.45 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Follow-up Hdwy | - | - | - | 2.65 | - | - | | 3.518 | 4.018 | 3.525 |
| Pot Cap-1 Maneuver | 0 | - | - | 1223 | - | 0 | | 801 | 688 | 980 |
| Stage 1 | 0 | - | - | - | - | 0 | | 930 | 817 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | 930 | 800 | - |
| Platoon blocked, % | - | - | - | - | - | - | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1223 | - | - | | 781 | 0 | 980 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | 781 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | 930 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | 907 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 3.9 | 8.7 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|-----------------------|-----|-----|-------|-----|-------|
| Capacity (veh/h) | - | - | 1223 | - | 980 |
| HCM Lane V/C Ratio | - | - | 0.025 | - | 0.02 |
| HCM Control Delay (s) | - | - | 8 | - | 8.7 |
| HCM Lane LOS | - | - | A | - | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | - | 0.1 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 3.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↑ | | | ↗ | | | ↕ | | | | |
| Traffic Vol, veh/h | 63 | 0 | 0 | 0 | 6 | 17 | 49 | 0 | 7 | 0 | 0 | 0 |
| Future Vol, veh/h | 63 | 0 | 0 | 0 | 6 | 17 | 49 | 0 | 7 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 50 | 2 | 2 | 2 | 2 | 2 | 50 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 72 | 0 | 0 | 0 | 7 | 19 | 56 | 0 | 8 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 26 | 0 | 0 |
| Stage 1 | - | - | 144 |
| Stage 2 | - | - | 17 |
| Critical Hdwy | 4.6 | - | 6.9 |
| Critical Hdwy Stg 1 | - | - | 5.9 |
| Critical Hdwy Stg 2 | - | - | 5.9 |
| Follow-up Hdwy | 2.65 | - | 3.95 |
| Pot Cap-1 Maneuver | 1327 | 0 | 730 |
| Stage 1 | - | 0 | 778 |
| Stage 2 | - | 0 | 895 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1327 | - | 691 |
| Mov Cap-2 Maneuver | - | - | 691 |
| Stage 1 | - | - | 736 |
| Stage 2 | - | - | 895 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 7.9 | 0 | |
| HCM LOS | | | - |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | 1327 | - | - | - |
| HCM Lane V/C Ratio | - | 0.054 | - | - | - |
| HCM Control Delay (s) | - | 7.9 | - | - | - |
| HCM Lane LOS | - | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0.2 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 8.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 6 | 71 | 234 | 0 | 13 | 6 | 166 | 0 | 26 |
| Future Vol, veh/h | 0 | 0 | 0 | 6 | 71 | 234 | 0 | 13 | 6 | 166 | 0 | 26 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 1 | 1 | 4 | 2 | 2 | 2 | 2 | 15 | 1 |
| Mvmt Flow | 0 | 0 | 0 | 7 | 81 | 266 | 0 | 15 | 7 | 189 | 0 | 30 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|----------------------|--------|-------|--------|-------|--------|-------|
| Conflicting Flow All | 412 | 427 | 19 | 30 | 0 | 22 |
| Stage 1 | 19 | 19 | - | - | - | - |
| Stage 2 | 393 | 408 | - | - | - | - |
| Critical Hdwy | 6.41 | 6.51 | 6.24 | 4.12 | - | 4.12 |
| Critical Hdwy Stg 1 | 5.41 | 5.51 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | 5.51 | - | - | - | - |
| Follow-up Hdwy | 3.509 | 4.009 | 3.336 | 2.218 | - | 2.218 |
| Pot Cap-1 Maneuver | 598 | 521 | 1053 | 1583 | - | 1593 |
| Stage 1 | 1006 | 882 | - | - | - | - |
| Stage 2 | 684 | 598 | - | - | - | - |
| Platoon blocked, % | | | | | - | - |
| Mov Cap-1 Maneuver | 527 | 0 | 1053 | 1583 | - | 1593 |
| Mov Cap-2 Maneuver | 527 | 0 | - | - | - | - |
| Stage 1 | 1006 | 0 | - | - | - | - |
| Stage 2 | 603 | 0 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.1 | 0 | 6.5 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1583 | - | - | 527 | 1053 | 1593 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.013 | 0.329 | 0.118 | - | - |
| HCM Control Delay (s) | 0 | - | - | 11.9 | 10.1 | 7.6 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | 1.4 | 0.4 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.9 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 17 | 155 | 28 | 72 | 239 | 22 |
| Future Vol, veh/h | 17 | 155 | 28 | 72 | 239 | 22 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 19 | 176 | 32 | 82 | 272 | 25 |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 0 | 0 | 195 | 0 | 253 |
| Stage 1 | - | - | - | - | 107 |
| Stage 2 | - | - | - | - | 146 |
| Critical Hdwy | - | - | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | - | - | 1378 | - | 736 |
| Stage 1 | - | - | - | - | 917 |
| Stage 2 | - | - | - | - | 881 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1378 | - | 718 |
| Mov Cap-2 Maneuver | - | - | - | - | 718 |
| Stage 1 | - | - | - | - | 917 |
| Stage 2 | - | - | - | - | 860 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 2.1 | 13.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 733 | - | - | 1378 | - |
| HCM Lane V/C Ratio | 0.405 | - | - | 0.023 | - |
| HCM Control Delay (s) | 13.2 | - | - | 7.7 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 2 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↑ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 1 | 31 | 230 | 0 | 0 | 183 |
| Future Vol, veh/h | 1 | 31 | 230 | 0 | 0 | 183 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 1 | 4 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 35 | 261 | 0 | 0 | 208 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 469 | 261 | 0 | - | - | - |
| Stage 1 | 261 | - | - | - | - | - |
| Stage 2 | 208 | - | - | - | - | - |
| Critical Hdwy | 6.41 | 6.24 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.41 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - | - | - |
| Follow-up Hdwy | 3.509 | 3.336 | - | - | - | - |
| Pot Cap-1 Maneuver | 555 | 773 | - | 0 | 0 | - |
| Stage 1 | 785 | - | - | 0 | 0 | - |
| Stage 2 | 829 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 555 | 773 | - | - | - | - |
| Mov Cap-2 Maneuver | 555 | - | - | - | - | - |
| Stage 1 | 785 | - | - | - | - | - |
| Stage 2 | 829 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 9.9 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 764 | - |
| HCM Lane V/C Ratio | - 0.048 | - |
| HCM Control Delay (s) | - 9.9 | - |
| HCM Lane LOS | - A | - |
| HCM 95th %tile Q(veh) | - 0.1 | - |

HCM 6th TWSC
146: Fisher Farm Rd & US 58 EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 35 | 0 | 28 | 0 | 0 | 0 | 0 | 195 | 45 | 28 | 156 | 0 |
| Future Vol, veh/h | 35 | 0 | 28 | 0 | 0 | 0 | 0 | 195 | 45 | 28 | 156 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 4 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 40 | 0 | 32 | 0 | 0 | 0 | 0 | 222 | 51 | 32 | 177 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 489 | 514 | 177 | - | 0 | 0 | 273 | 0 | 0 |
| Stage 1 | 241 | 241 | - | - | - | - | - | - | - |
| Stage 2 | 248 | 273 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.44 | 6.51 | 6.21 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.44 | 5.51 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.44 | 5.51 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.536 | 4.009 | 3.309 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 535 | 466 | 869 | 0 | - | - | 1290 | - | 0 |
| Stage 1 | 794 | 708 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 789 | 686 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 520 | 0 | 869 | - | - | - | 1290 | - | - |
| Mov Cap-2 Maneuver | 520 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 794 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 767 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 11.4 | 0 | 1.2 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|
| Capacity (veh/h) | - | - | 633 | 1290 | - |
| HCM Lane V/C Ratio | - | - | 0.113 | 0.025 | - |
| HCM Control Delay (s) | - | - | 11.4 | 7.9 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.4 | 0.1 | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019





















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 317 | 124 | 553 | 573 | 51 |
| v/c Ratio | 0.71 | 0.24 | 0.30 | 0.31 | 0.06 |
| Control Delay | 31.4 | 4.6 | 4.1 | 10.9 | 2.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 31.4 | 4.6 | 4.1 | 10.9 | 2.1 |
| Queue Length 50th (ft) | 123 | 0 | 19 | 67 | 0 |
| Queue Length 95th (ft) | 169 | 28 | 25 | 120 | 11 |
| Internal Link Dist (ft) | 1343 | | 142 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 672 | 708 | 1844 | 1827 | 868 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.47 | 0.18 | 0.30 | 0.31 | 0.06 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|--|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | | | | |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 0 | 0 | 0 | 279 | 0 | 109 | 0 | 487 | 0 | 0 | 504 | 45 | |
| Future Volume (vph) | 0 | 0 | 0 | 279 | 0 | 109 | 0 | 487 | 0 | 0 | 504 | 45 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 | |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 | |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (prot) | | | | | 1612 | 1524 | | 3471 | | | 3438 | 1568 | |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 | |
| Satd. Flow (perm) | | | | | 1612 | 1524 | | 3471 | | | 3438 | 1568 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 0 | 0 | 0 | 317 | 0 | 124 | 0 | 553 | 0 | 0 | 573 | 51 | |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 24 | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 317 | 34 | 0 | 553 | 0 | 0 | 573 | 27 | |
| Heavy Vehicles (%) | 2% | 2% | 2% | 12% | 0% | 6% | 0% | 4% | 14% | 0% | 5% | 3% | |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm | |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 | |
| Actuated Green, G (s) | | | | | 19.3 | 19.3 | | 37.2 | | | 37.2 | 37.2 | |
| Effective Green, g (s) | | | | | 19.3 | 19.3 | | 37.2 | | | 37.2 | 37.2 | |
| Actuated g/C Ratio | | | | | 0.28 | 0.28 | | 0.53 | | | 0.53 | 0.53 | |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | | | | 444 | 420 | | 1844 | | | 1827 | 833 | |
| v/s Ratio Prot | | | | | | | | 0.16 | | | c0.17 | | |
| v/s Ratio Perm | | | | | 0.20 | 0.02 | | | | | | 0.02 | |
| v/c Ratio | | | | | 0.71 | 0.08 | | 0.30 | | | 0.31 | 0.03 | |
| Uniform Delay, d1 | | | | | 22.9 | 18.8 | | 9.1 | | | 9.2 | 7.8 | |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.36 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | | | | 5.4 | 0.1 | | 0.4 | | | 0.4 | 0.1 | |
| Delay (s) | | | | | 28.2 | 18.9 | | 3.6 | | | 9.7 | 7.9 | |
| Level of Service | | | | | C | B | | A | | | A | A | |
| Approach Delay (s) | | 0.0 | | | 25.6 | | | 3.6 | | | 9.5 | | |
| Approach LOS | | A | | | C | | | A | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 11.9 | | HCM 2000 Level of Service | | | | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.45 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | Sum of lost time (s) | | | | | 13.5 | | | |
| Intersection Capacity Utilization | | | 64.0% | | ICU Level of Service | | | | | B | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 61 | 188 | 809 | 209 | 110 | 780 |
| v/c Ratio | 0.28 | 0.55 | 0.51 | 0.24 | 0.48 | 0.36 |
| Control Delay | 30.2 | 11.3 | 15.7 | 3.4 | 36.3 | 3.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 30.2 | 11.3 | 15.7 | 3.4 | 36.3 | 3.7 |
| Queue Length 50th (ft) | 25 | 0 | 127 | 1 | 45 | 34 |
| Queue Length 95th (ft) | 52 | 47 | 198 | 37 | 84 | 58 |
| Internal Link Dist (ft) | | | 585 | | | 516 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 311 | 405 | 1583 | 861 | 255 | 2145 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.46 | 0.51 | 0.24 | 0.43 | 0.36 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
|-----------------------------------|-------|------|-------|------|------|------|------|-------|------|------|-------|---------------------------|------|
| Lane Configurations | ↖ | | ↗ | | | | | ↑↑ | ↗ | ↖ | ↑↑ | | |
| Traffic Volume (vph) | 54 | 0 | 165 | 0 | 0 | 0 | 0 | 712 | 184 | 97 | 686 | 0 | |
| Future Volume (vph) | 54 | 0 | 165 | 0 | 0 | 0 | 0 | 712 | 184 | 97 | 686 | 0 | |
| Ideal Flow (vphp) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1703 | | 1380 | | | | | 3282 | 1568 | 1752 | 3195 | | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1703 | | 1380 | | | | | 3282 | 1568 | 1752 | 3195 | | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| Adj. Flow (vph) | 61 | 0 | 188 | 0 | 0 | 0 | 0 | 809 | 209 | 110 | 780 | 0 | |
| RTOR Reduction (vph) | 0 | 0 | 164 | 0 | 0 | 0 | 0 | 0 | 109 | 0 | 0 | 0 | |
| Lane Group Flow (vph) | 61 | 0 | 24 | 0 | 0 | 0 | 0 | 809 | 100 | 110 | 780 | 0 | |
| Heavy Vehicles (%) | 6% | 0% | 17% | 2% | 2% | 2% | 0% | 10% | 3% | 3% | 13% | 0% | |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | | |
| Actuated Green, G (s) | 9.1 | | 9.1 | | | | | 32.4 | 32.4 | 7.8 | 47.0 | | |
| Effective Green, g (s) | 9.1 | | 9.1 | | | | | 32.4 | 32.4 | 7.8 | 47.0 | | |
| Actuated g/C Ratio | 0.13 | | 0.13 | | | | | 0.46 | 0.46 | 0.11 | 0.67 | | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 221 | | 179 | | | | | 1519 | 725 | 195 | 2145 | | |
| v/s Ratio Prot | | | | | | | | c0.25 | | 0.06 | c0.24 | | |
| v/s Ratio Perm | c0.04 | | 0.02 | | | | | | 0.06 | | | | |
| v/c Ratio | 0.28 | | 0.14 | | | | | 0.53 | 0.14 | 0.56 | 0.36 | | |
| Uniform Delay, d1 | 27.5 | | 27.0 | | | | | 13.4 | 10.8 | 29.5 | 5.0 | | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.06 | 0.62 | | |
| Incremental Delay, d2 | 0.7 | | 0.3 | | | | | 1.3 | 0.4 | 3.5 | 0.5 | | |
| Delay (s) | 28.2 | | 27.3 | | | | | 14.7 | 11.2 | 34.8 | 3.5 | | |
| Level of Service | C | | C | | | | | B | B | C | A | | |
| Approach Delay (s) | | 27.5 | | | 0.0 | | | 14.0 | | | 7.4 | | |
| Approach LOS | | C | | | A | | | B | | | A | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 12.8 | | | | | | | | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.49 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 42.6% | | | | | | | | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 9 | 1 | 7 | 9 | 0 | 14 | 1 | 873 | 1 | 5 | 841 | 5 |
| Future Vol, veh/h | 9 | 1 | 7 | 9 | 0 | 14 | 1 | 873 | 1 | 5 | 841 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 13 | 0 | 0 | 13 | 6 |
| Mvmt Flow | 10 | 1 | 8 | 10 | 0 | 16 | 1 | 992 | 1 | 6 | 956 | 6 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|-----|---|---|
| Conflicting Flow All | 1466 | 1963 | 478 | 1485 | 1968 | 496 | 962 | 0 | 0 | 993 | 0 | 0 |
| Stage 1 | 968 | 968 | - | 994 | 994 | - | - | - | - | - | - | - |
| Stage 2 | 498 | 995 | - | 491 | 974 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 91 | 64 | 539 | 88 | 63 | 496 | 724 | - | - | 704 | - | - |
| Stage 1 | 276 | 335 | - | 267 | 326 | - | - | - | - | - | - | - |
| Stage 2 | 528 | 325 | - | 533 | 333 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 87 | 63 | 539 | 85 | 62 | 496 | 724 | - | - | 704 | - | - |
| Mov Cap-2 Maneuver | 87 | 63 | - | 85 | 62 | - | - | - | - | - | - | - |
| Stage 1 | 276 | 332 | - | 267 | 326 | - | - | - | - | - | - | - |
| Stage 2 | 510 | 325 | - | 519 | 330 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|----|--|-----|--|
| HCM Control Delay, s | 38.1 | | 29.6 | | 0 | | 0.1 | |
| HCM LOS | E | | D | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 724 | - | - | 128 | 172 | 704 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | 0.151 | 0.152 | 0.008 | - | - |
| HCM Control Delay (s) | 10 | - | - | 38.1 | 29.6 | 10.2 | - | - |
| HCM Lane LOS | A | - | - | E | D | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.5 | 0.5 | 0 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | ↔ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 16 | 0 | 37 | 0 | 838 | 4 | 2 | 855 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 16 | 0 | 37 | 0 | 838 | 4 | 2 | 855 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 13 | 0 | 0 | 13 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 18 | 0 | 42 | 0 | 952 | 5 | 2 | 972 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|-----|---|---|
| Conflicting Flow All | 1452 | 1933 | 486 | 1442 | 1928 | 476 | - | 0 | 0 | 957 | 0 | 0 |
| Stage 1 | 976 | 976 | - | 952 | 952 | - | - | - | - | - | - | - |
| Stage 2 | 476 | 957 | - | 490 | 976 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 93 | 67 | 533 | 95 | 67 | 522 | 0 | - | - | 727 | - | 0 |
| Stage 1 | 273 | 332 | - | 283 | 341 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 544 | 339 | - | 534 | 332 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 85 | 67 | 533 | 95 | 67 | 522 | - | - | - | 727 | - | - |
| Mov Cap-2 Maneuver | 85 | 67 | - | 95 | 67 | - | - | - | - | - | - | - |
| Stage 1 | 273 | 331 | - | 283 | 341 | - | - | - | - | - | - | - |
| Stage 2 | 500 | 339 | - | 533 | 331 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|----|
| HCM Control Delay, s | 0 | 27.3 | 0 | 0 |
| HCM LOS | A | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1WBLn1 | SBL | SBT |
|-----------------------|-----|-----|------------|-------|-------|
| Capacity (veh/h) | - | - | - | 221 | 727 |
| HCM Lane V/C Ratio | - | - | - | 0.273 | 0.003 |
| HCM Control Delay (s) | - | - | 0 | 27.3 | 10 |
| HCM Lane LOS | - | - | A | D | A |
| HCM 95th %tile Q(veh) | - | - | - | 1.1 | 0 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 11.8 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 120 | 22 | 0 | 722 | 861 | 10 |
| Future Vol, veh/h | 120 | 22 | 0 | 722 | 861 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 13 | 13 | 0 |
| Mvmt Flow | 136 | 25 | 0 | 820 | 978 | 11 |

| Major/Minor | Minor2 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | 1388 | 489 | - | 0 | - |
| Stage 1 | 978 | - | - | - | - |
| Stage 2 | 410 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - |
| Pot Cap-1 Maneuver | ~ 136 | 530 | 0 | - | - |
| Stage 1 | 330 | - | 0 | - | - |
| Stage 2 | 644 | - | 0 | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | ~ 136 | 530 | - | - | - |
| Mov Cap-2 Maneuver | ~ 136 | - | - | - | - |
| Stage 1 | 330 | - | - | - | - |
| Stage 2 | 644 | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|-------|----|----|
| HCM Control Delay, s | 144.7 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-------|-----|-----|
| Capacity (veh/h) | - | 154 | - | - |
| HCM Lane V/C Ratio | - | 1.048 | - | - |
| HCM Control Delay (s) | - | 144.7 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 8.3 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 15 | 42 | 680 | 3 | 14 | 869 |
| Future Vol, veh/h | 15 | 42 | 680 | 3 | 14 | 869 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 13 | 0 | 0 | 13 |
| Mvmt Flow | 17 | 48 | 773 | 3 | 16 | 988 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 1299 | 387 | 0 | 0 | 776 |
| Stage 1 | 773 | - | - | - | - |
| Stage 2 | 526 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 156 | 617 | - | - | 849 |
| Stage 1 | 421 | - | - | - | - |
| Stage 2 | 563 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 153 | 617 | - | - | 849 |
| Mov Cap-2 Maneuver | 153 | - | - | - | - |
| Stage 1 | 421 | - | - | - | - |
| Stage 2 | 552 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 17.9 | 0 | 0.1 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 343 | 849 |
| HCM Lane V/C Ratio | - | - | 0.189 | 0.019 |
| HCM Control Delay (s) | - | - | 17.9 | 9.3 |
| HCM Lane LOS | - | - | C | A |
| HCM 95th %tile Q(veh) | - | - | 0.7 | 0.1 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↕ | ↕ | ↕ | ↕ | ↕ |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 683 | 75 | 65 | 806 | 13 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 683 | 75 | 65 | 806 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 13 | 0 | 3 | 13 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 776 | 85 | 74 | 916 | 15 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1462 | 1935 | 466 | | | | 931 | 0 | 0 | 861 | 0 | 0 |
| Stage 1 | 1072 | 1072 | - | | | | - | - | - | - | - | - |
| Stage 2 | 390 | 863 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 122 | 67 | 549 | | | | 743 | - | - | 770 | - | - |
| Stage 1 | 294 | 299 | - | | | | - | - | - | - | - | - |
| Stage 2 | 659 | 374 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 110 | 0 | 549 | | | | 743 | - | - | 770 | - | - |
| Mov Cap-2 Maneuver | 110 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 294 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 596 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 0 | 0.7 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 743 | - | - | - | 770 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | - | 0.096 | - | - |
| HCM Control Delay (s) | 9.9 | - | - | 0 | 10.2 | - | - |
| HCM Lane LOS | A | - | - | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.3 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.1 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 104 | 0 | 4 | 117 | 119 | 51 |
| Future Vol, veh/h | 104 | 0 | 4 | 117 | 119 | 51 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 118 | 0 | 5 | 133 | 135 | 58 |

| Major/Minor | Minor2 | Major1 | | Major2 | |
|----------------------|--------|--------|-------|--------|---|
| Conflicting Flow All | 307 | 164 | 193 | 0 | 0 |
| Stage 1 | 164 | - | - | - | - |
| Stage 2 | 143 | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - |
| Pot Cap-1 Maneuver | 685 | 881 | 1380 | - | - |
| Stage 1 | 865 | - | - | - | - |
| Stage 2 | 884 | - | - | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | 682 | 881 | 1380 | - | - |
| Mov Cap-2 Maneuver | 682 | - | - | - | - |
| Stage 1 | 862 | - | - | - | - |
| Stage 2 | 884 | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 11.4 | 0.3 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | 1380 | - | 682 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | 0.173 | - | - |
| HCM Control Delay (s) | 7.6 | 0 | 11.4 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.6 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|-------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 9.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↗ | ↘ | ↑ | | | | | ↘ | ↗ | |
| Traffic Vol, veh/h | 0 | 189 | 32 | 515 | 153 | 0 | 0 | 0 | 0 | 30 | 0 | 17 |
| Future Vol, veh/h | 0 | 189 | 32 | 515 | 153 | 0 | 0 | 0 | 0 | 30 | 0 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | Yield | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 100 | 0 | - | - | - | - | - | 200 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 9 | 1 | 2 | 2 | 2 | 2 | 10 | 0 | 0 |
| Mvmt Flow | 0 | 215 | 36 | 585 | 174 | 0 | 0 | 0 | 0 | 34 | 0 | 19 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|-----|
| Conflicting Flow All | - | 0 | 0 | 215 | 0 | 0 | | 1559 | 1559 | 174 |
| Stage 1 | - | - | - | - | - | - | | 1344 | 1344 | - |
| Stage 2 | - | - | - | - | - | - | | 215 | 215 | - |
| Critical Hdwy | - | - | - | 4.19 | - | - | | 6.5 | 6.5 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | 5.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | 5.5 | 5.5 | - |
| Follow-up Hdwy | - | - | - | 2.281 | - | - | | 3.59 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | - | 1314 | - | 0 | | 118 | 113 | 875 |
| Stage 1 | 0 | - | - | - | - | 0 | | 234 | 222 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | 802 | 729 | - |
| Platoon blocked, % | - | - | - | - | - | - | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1314 | - | - | | 65 | 0 | 875 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | 65 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | 234 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | 445 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 7.6 | 73.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|-------|-----|-------|-------|
| Capacity (veh/h) | - | - | 1314 | - | 65 | 875 |
| HCM Lane V/C Ratio | - | - | 0.445 | - | 0.524 | 0.022 |
| HCM Control Delay (s) | - | - | 9.9 | - | 110 | 9.2 |
| HCM Lane LOS | - | - | A | - | F | A |
| HCM 95th %tile Q(veh) | - | - | 2.3 | - | 2.1 | 0.1 |

HCM 6th TWSC
 83: US 220 Bypass NB Ramp & US 220 Business

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 5.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↑ | | | ↑↑ | | ↖ | ↗ | | | | |
| Traffic Vol, veh/h | 65 | 154 | 0 | 0 | 648 | 78 | 20 | 0 | 455 | 0 | 0 | 0 |
| Future Vol, veh/h | 65 | 154 | 0 | 0 | 648 | 78 | 20 | 0 | 455 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | - | 200 | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 10 | 2 | 2 | 9 | 4 | 0 | 0 | 10 | 2 | 2 | 2 |
| Mvmt Flow | 74 | 175 | 0 | 0 | 736 | 89 | 23 | 0 | 517 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 825 | 0 | 0 |
| Stage 1 | - | - | 323 |
| Stage 2 | - | - | 368 |
| Critical Hdwy | 4.13 | - | 6.6 |
| Critical Hdwy Stg 1 | - | - | 5.4 |
| Critical Hdwy Stg 2 | - | - | 5.8 |
| Follow-up Hdwy | 2.219 | - | 3.5 |
| Pot Cap-1 Maneuver | 803 | 0 | 398 |
| Stage 1 | - | 0 | 738 |
| Stage 2 | - | 0 | 676 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 803 | - | 361 |
| Mov Cap-2 Maneuver | - | - | 361 |
| Stage 1 | - | - | 670 |
| Stage 2 | - | - | 676 |

| Approach | EB | WB | NB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 2.9 | 0 | 15.7 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | 361 | 845 | 803 | - | - | - |
| HCM Lane V/C Ratio | 0.063 | 0.612 | 0.092 | - | - | - |
| HCM Control Delay (s) | 15.6 | 15.7 | 9.9 | - | - | - |
| HCM Lane LOS | C | C | A | - | - | - |
| HCM 95th %tile Q(veh) | 0.2 | 4.3 | 0.3 | - | - | - |

Queues

84: US 220 Business & Water Plant Road

04/02/2019



| Lane Group | WBL | WBR | NBT | SBL | SBT |
|-----------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 23 | 170 | 692 | 114 | 802 |
| v/c Ratio | 0.11 | 0.51 | 0.44 | 0.48 | 0.35 |
| Control Delay | 24.7 | 10.7 | 15.7 | 31.3 | 5.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 24.7 | 10.7 | 15.7 | 31.3 | 5.1 |
| Queue Length 50th (ft) | 8 | 0 | 104 | 38 | 58 |
| Queue Length 95th (ft) | 25 | 44 | 152 | 80 | 87 |
| Internal Link Dist (ft) | 1185 | | 294 | | 1333 |
| Turn Bay Length (ft) | 100 | 75 | | 250 | |
| Base Capacity (vph) | 233 | 357 | 1574 | 250 | 2299 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.10 | 0.48 | 0.44 | 0.46 | 0.35 |
| Intersection Summary | | | | | |

HCM 6th Signalized Intersection Summary
 84: US 220 Business & Water Plant Road

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|--|-------|-------|------|-------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 20 | 150 | 609 | 0 | 100 | 706 |
| Future Volume (veh/h) | 20 | 150 | 609 | 0 | 100 | 706 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1900 | 1900 | 1767 | 1870 | 1870 | 1722 |
| Adj Flow Rate, veh/h | 23 | 170 | 692 | 0 | 114 | 802 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 0 | 0 | 9 | 2 | 2 | 12 |
| Cap, veh/h | 223 | 198 | 1374 | 649 | 149 | 2021 |
| Arrive On Green | 0.12 | 0.12 | 0.41 | 0.00 | 0.08 | 0.62 |
| Sat Flow, veh/h | 1810 | 1610 | 3445 | 1585 | 1781 | 3358 |
| Grp Volume(v), veh/h | 23 | 170 | 692 | 0 | 114 | 802 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 1610 | 1678 | 1585 | 1781 | 1636 |
| Q Serve(g_s), s | 0.7 | 6.4 | 9.5 | 0.0 | 3.9 | 7.7 |
| Cycle Q Clear(g_c), s | 0.7 | 6.4 | 9.5 | 0.0 | 3.9 | 7.7 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 223 | 198 | 1374 | 649 | 149 | 2021 |
| V/C Ratio(X) | 0.10 | 0.86 | 0.50 | 0.00 | 0.77 | 0.40 |
| Avail Cap(c_a), veh/h | 223 | 198 | 1374 | 649 | 240 | 2021 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.0 | 26.5 | 13.6 | 0.0 | 27.7 | 6.0 |
| Incr Delay (d2), s/veh | 0.2 | 29.5 | 0.4 | 0.0 | 9.5 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 3.9 | 2.9 | 0.0 | 1.9 | 1.8 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 24.3 | 56.0 | 13.9 | 0.0 | 37.2 | 6.6 |
| LnGrp LOS | C | E | B | A | D | A |
| Approach Vol, veh/h | 193 | | 692 | | | 916 |
| Approach Delay, s/veh | 52.2 | | 13.9 | | | 10.4 |
| Approach LOS | D | | B | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 12.8 | 32.9 | | 16.0 | | 45.7 |
| Change Period (Y+Rc), s | * 7.7 | * 7.6 | | * 8.4 | | * 7.6 |
| Max Green Setting (Gmax), s | * 8.3 | * 20 | | * 7.6 | | * 38 |
| Max Q Clear Time (g_c+I1), s | 5.9 | 11.5 | | 8.4 | | 9.7 |
| Green Ext Time (p_c), s | 0.1 | 3.3 | | 0.0 | | 9.3 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 16.2 | | | |
| HCM 6th LOS | | | B | | | |
| Notes | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.2 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↶ | ↷ | | ↶ | |
| Traffic Vol, veh/h | 121 | 30 | 0 | 0 | 0 | 119 |
| Future Vol, veh/h | 121 | 30 | 0 | 0 | 0 | 119 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 138 | 34 | 0 | 0 | 0 | 135 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 1 | 0 | - | 0 | 311 |
| Stage 1 | - | - | - | - | 1 |
| Stage 2 | - | - | - | - | 310 |
| Critical Hdwy | 4.12 | - | - | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 |
| Pot Cap-1 Maneuver | 1622 | - | - | - | 681 |
| Stage 1 | - | - | - | - | 1022 |
| Stage 2 | - | - | - | - | 744 |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1622 | - | - | - | 622 |
| Mov Cap-2 Maneuver | - | - | - | - | 622 |
| Stage 1 | - | - | - | - | 933 |
| Stage 2 | - | - | - | - | 744 |

| Approach | EB | WB | SB |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 5.9 | 0 | 8.8 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1622 | - | - | - | 1084 |
| HCM Lane V/C Ratio | 0.085 | - | - | - | 0.125 |
| HCM Control Delay (s) | 7.4 | 0 | - | - | 8.8 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0.3 | - | - | - | 0.4 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↶ | ↷ | | ↶ | |
| Traffic Vol, veh/h | 0 | 30 | 0 | 122 | 0 | 0 |
| Future Vol, veh/h | 0 | 30 | 0 | 122 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 34 | 0 | 139 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 139 | 0 | - | 0 | 104 70 |
| Stage 1 | - | - | - | - | 70 - |
| Stage 2 | - | - | - | - | 34 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1445 | - | - | - | 894 993 |
| Stage 1 | - | - | - | - | 953 - |
| Stage 2 | - | - | - | - | 988 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1445 | - | - | - | 894 993 |
| Mov Cap-2 Maneuver | - | - | - | - | 894 - |
| Stage 1 | - | - | - | - | 953 - |
| Stage 2 | - | - | - | - | 988 - |

| Approach | EB | WB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|------|-----|-----|-----|-------|
| Capacity (veh/h) | 1445 | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - | - |
| HCM Control Delay (s) | 0 | - | - | - | 0 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - |

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 11.5 |
| Intersection LOS | B |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|------|------|------|------|------|------|
| Lane Configurations | ↘ | | | | ↘ | ↗ |
| Traffic Vol, veh/h | 160 | 0 | 0 | 0 | 242 | 0 |
| Future Vol, veh/h | 160 | 0 | 0 | 0 | 242 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles, % | 9 | 2 | 2 | 2 | 10 | 2 |
| Mvmt Flow | 182 | 0 | 0 | 0 | 275 | 0 |
| Number of Lanes | 1 | 0 | 0 | 0 | 1 | 1 |

| Approach | WB | SB |
|----------------------------|-----|------|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | WB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | SB | |
| Conflicting Lanes Right | 2 | 0 |
| HCM Control Delay | 9.9 | 12.6 |
| HCM LOS | A | B |

| Lane | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|
| Vol Left, % | 100% | 100% | 0% |
| Vol Thru, % | 0% | 0% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 160 | 242 | 0 |
| LT Vol | 160 | 242 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 182 | 275 | 0 |
| Geometry Grp | 2 | 7 | 7 |
| Degree of Util (X) | 0.257 | 0.431 | 0 |
| Departure Headway (Hd) | 5.081 | 5.645 | 5.006 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 709 | 638 | 0 |
| Service Time | 3.103 | 3.381 | 2.742 |
| HCM Lane V/C Ratio | 0.257 | 0.431 | 0 |
| HCM Control Delay | 9.9 | 12.6 | 7.7 |
| HCM Lane LOS | A | B | N |
| HCM 95th-tile Q | 1 | 2.2 | 0 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 1.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | | ↗ | ↘ | | | |
| Traffic Vol, veh/h | 0 | 242 | 0 | 0 | 160 | 235 | 0 | 0 | 101 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 242 | 0 | 0 | 160 | 235 | 0 | 0 | 101 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | 50 | - | - | 175 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16979 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 10 | 2 | 9 | 9 | 11 | 2 | 12 | 8 | 13 | 21 | 2 |
| Mvmt Flow | 0 | 275 | 0 | 0 | 182 | 267 | 0 | 0 | 115 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 449 | 0 | 0 |
| Stage 1 | - | - | 275 |
| Stage 2 | - | - | 449 |
| Critical Hdwy | 4.12 | - | 6.62 |
| Critical Hdwy Stg 1 | - | - | 5.62 |
| Critical Hdwy Stg 2 | - | - | 5.62 |
| Follow-up Hdwy | 2.218 | - | 4.108 |
| Pot Cap-1 Maneuver | 1111 | 0 | 750 |
| Stage 1 | - | 0 | 665 |
| Stage 2 | - | 0 | 556 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1111 | - | 750 |
| Mov Cap-2 Maneuver | - | - | 0 |
| Stage 1 | - | - | 0 |
| Stage 2 | - | - | 0 |

| Approach | EB | WB | NB |
|----------------------|----|----|------|
| HCM Control Delay, s | 0 | 0 | 10.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|------|-----|-----|-----|
| Capacity (veh/h) | - | 750 | 1111 | - | - | - |
| HCM Lane V/C Ratio | - | 0.153 | - | - | - | - |
| HCM Control Delay (s) | 0 | 10.7 | 0 | - | - | - |
| HCM Lane LOS | A | B | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0.5 | 0 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 339 | 4 | 0 | 350 | 126 | 45 | 0 | 4 | 38 | 0 | 0 |
| Future Vol, veh/h | 0 | 339 | 4 | 0 | 350 | 126 | 45 | 0 | 4 | 38 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 20 | 2 | 2 | 15 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 385 | 5 | 0 | 398 | 143 | 51 | 0 | 5 | 43 | 0 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|--------|-------|-------|
| Conflicting Flow All | 541 | 0 | 0 | 390 | 0 | 0 | 858 | 929 | 388 | 860 | 860 | 470 |
| Stage 1 | - | - | - | - | - | - | 388 | 388 | - | 470 | 470 | - |
| Stage 2 | - | - | - | - | - | - | 470 | 541 | - | 390 | 390 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1028 | - | - | 1169 | - | - | 277 | 268 | 660 | 276 | 294 | 594 |
| Stage 1 | - | - | - | - | - | - | 636 | 609 | - | 574 | 560 | - |
| Stage 2 | - | - | - | - | - | - | 574 | 521 | - | 634 | 608 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 1028 | - | - | 1169 | - | - | 277 | 268 | 660 | 274 | 294 | 594 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 277 | 268 | - | 274 | 294 | - |
| Stage 1 | - | - | - | - | - | - | 636 | 609 | - | 574 | 560 | - |
| Stage 2 | - | - | - | - | - | - | 574 | 521 | - | 630 | 608 | - |

| Approach | EB | | | WB | | | NB | | | SB | | |
|----------------------|----|--|--|----|--|--|------|--|--|------|--|--|
| HCM Control Delay, s | 0 | | | 0 | | | 20.3 | | | 20.6 | | |
| HCM LOS | | | | | | | C | | | C | | |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|------|-----|-----|------|-----|-----|-------|
| Capacity (veh/h) | 291 | 1028 | - | - | 1169 | - | - | 274 |
| HCM Lane V/C Ratio | 0.191 | - | - | - | - | - | - | 0.158 |
| HCM Control Delay (s) | 20.3 | 0 | - | - | 0 | - | - | 20.6 |
| HCM Lane LOS | C | A | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.7 | 0 | - | - | 0 | - | - | 0.6 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 7.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | | ↕ | |
| Traffic Vol, veh/h | 0 | 43 | 32 | 67 | 163 | 0 | 0 | 0 | 0 | 0 | 0 | 312 |
| Future Vol, veh/h | 0 | 43 | 32 | 67 | 163 | 0 | 0 | 0 | 0 | 0 | 0 | 312 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 50 | 50 | 2 | 2 | 2 | 2 | 2 | 2 | 25 |
| Mvmt Flow | 0 | 49 | 36 | 76 | 185 | 0 | 0 | 0 | 0 | 0 | 0 | 355 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|-------|
| Conflicting Flow All | - | 0 | 0 | 85 | 0 | 0 | | 404 | 422 | 185 |
| Stage 1 | - | - | - | - | - | - | | 337 | 337 | - |
| Stage 2 | - | - | - | - | - | - | | 67 | 85 | - |
| Critical Hdwy | - | - | - | 4.6 | - | - | | 6.42 | 6.52 | 6.45 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Follow-up Hdwy | - | - | - | 2.65 | - | - | | 3.518 | 4.018 | 3.525 |
| Pot Cap-1 Maneuver | 0 | - | - | 1257 | - | 0 | | 603 | 523 | 802 |
| Stage 1 | 0 | - | - | - | - | 0 | | 723 | 641 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | 956 | 824 | - |
| Platoon blocked, % | - | - | - | - | - | - | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1257 | - | - | | 567 | 0 | 802 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | 567 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | 723 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | 899 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|-----|----|
| HCM Control Delay, s | 0 | 2.3 | 13 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|-----------------------|-----|-----|-------|-----|-------|
| Capacity (veh/h) | - | - | 1257 | - | 802 |
| HCM Lane V/C Ratio | - | - | 0.061 | - | 0.442 |
| HCM Control Delay (s) | - | - | 8 | - | 13 |
| HCM Lane LOS | - | - | A | - | B |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | 2.3 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 1.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↑ | | | ↗ | | | ↕ | | | | |
| Traffic Vol, veh/h | 43 | 0 | 0 | 0 | 4 | 27 | 226 | 0 | 12 | 0 | 0 | 0 |
| Future Vol, veh/h | 43 | 0 | 0 | 0 | 4 | 27 | 226 | 0 | 12 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 50 | 2 | 2 | 2 | 2 | 2 | 50 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 49 | 0 | 0 | 0 | 5 | 31 | 257 | 0 | 14 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 36 | 0 | 0 |
| Stage 1 | - | - | 98 |
| Stage 2 | - | - | 21 |
| Critical Hdwy | 4.6 | - | 6.9 |
| Critical Hdwy Stg 1 | - | - | 5.9 |
| Critical Hdwy Stg 2 | - | - | 5.9 |
| Follow-up Hdwy | 2.65 | - | 3.95 |
| Pot Cap-1 Maneuver | 1315 | 0 | 774 |
| Stage 1 | - | 0 | 819 |
| Stage 2 | - | 0 | 891 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1315 | - | 745 |
| Mov Cap-2 Maneuver | - | - | 745 |
| Stage 1 | - | - | 789 |
| Stage 2 | - | - | 891 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 7.8 | 0 | - |
| HCM LOS | - | - | - |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | 1315 | - | - | - |
| HCM Lane V/C Ratio | - | 0.037 | - | - | - |
| HCM Control Delay (s) | - | 7.8 | - | - | - |
| HCM Lane LOS | - | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0.1 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 20 | 32 | 224 | 0 | 11 | 4 | 122 | 33 | 34 |
| Future Vol, veh/h | 0 | 0 | 0 | 20 | 32 | 224 | 0 | 11 | 4 | 122 | 33 | 34 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 1 | 1 | 4 | 2 | 2 | 2 | 2 | 15 | 1 |
| Mvmt Flow | 0 | 0 | 0 | 23 | 36 | 255 | 0 | 13 | 5 | 139 | 38 | 39 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|----------------------|--------|-------|--------|-------|--------|-------|
| Conflicting Flow All | 352 | 371 | 16 | 77 | 0 | 18 |
| Stage 1 | 16 | 16 | - | - | - | - |
| Stage 2 | 336 | 355 | - | - | - | - |
| Critical Hdwy | 6.41 | 6.51 | 6.24 | 4.12 | - | 4.12 |
| Critical Hdwy Stg 1 | 5.41 | 5.51 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | 5.51 | - | - | - | - |
| Follow-up Hdwy | 3.509 | 4.009 | 3.336 | 2.218 | - | 2.218 |
| Pot Cap-1 Maneuver | 648 | 560 | 1057 | 1522 | - | 1599 |
| Stage 1 | 1009 | 884 | - | - | - | - |
| Stage 2 | 726 | 631 | - | - | - | - |
| Platoon blocked, % | | | | | - | - |
| Mov Cap-1 Maneuver | 592 | 0 | 1057 | 1522 | - | 1599 |
| Mov Cap-2 Maneuver | 592 | 0 | - | - | - | - |
| Stage 1 | 1009 | 0 | - | - | - | - |
| Stage 2 | 663 | 0 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 9.8 | 0 | 4.8 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1522 | - | - | 592 | 1057 | 1599 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.038 | 0.275 | 0.087 | - | - |
| HCM Control Delay (s) | 0 | - | - | 11.3 | 9.7 | 7.5 | - | - |
| HCM Lane LOS | A | - | - | B | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 1.1 | 0.3 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.4 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 111 | 20 | 69 | 207 | 16 |
| Future Vol, veh/h | 15 | 111 | 20 | 69 | 207 | 16 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 17 | 126 | 23 | 78 | 235 | 18 |

| Major/Minor | Major1 | Major2 | Minor1 | | |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 0 | 0 | 143 | 0 | 204 |
| Stage 1 | - | - | - | - | 80 |
| Stage 2 | - | - | - | - | 124 |
| Critical Hdwy | - | - | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | - | - | 1440 | - | 784 |
| Stage 1 | - | - | - | - | 943 |
| Stage 2 | - | - | - | - | 902 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1440 | - | 771 |
| Mov Cap-2 Maneuver | - | - | - | - | 771 |
| Stage 1 | - | - | - | - | 943 |
| Stage 2 | - | - | - | - | 887 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 1.7 | 11.8 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 783 | - | - | 1440 | - |
| HCM Lane V/C Ratio | 0.324 | - | - | 0.016 | - |
| HCM Control Delay (s) | 11.8 | - | - | 7.5 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 1.4 | - | - | 0 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.4 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↔ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 47 | 42 | 181 | 0 | 0 | 131 |
| Future Vol, veh/h | 47 | 42 | 181 | 0 | 0 | 131 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 1 | 4 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 53 | 48 | 206 | 0 | 0 | 149 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 355 | 206 | 0 | - | - | - |
| Stage 1 | 206 | - | - | - | - | - |
| Stage 2 | 149 | - | - | - | - | - |
| Critical Hdwy | 6.41 | 6.24 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.41 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - | - | - |
| Follow-up Hdwy | 3.509 | 3.336 | - | - | - | - |
| Pot Cap-1 Maneuver | 645 | 829 | - | 0 | 0 | - |
| Stage 1 | 831 | - | - | 0 | 0 | - |
| Stage 2 | 881 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 645 | 829 | - | - | - | - |
| Mov Cap-2 Maneuver | 645 | - | - | - | - | - |
| Stage 1 | 831 | - | - | - | - | - |
| Stage 2 | 881 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 10.8 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 720 | - |
| HCM Lane V/C Ratio | - 0.14 | - |
| HCM Control Delay (s) | - 10.8 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.5 | - |

HCM 6th TWSC
146: Fisher Farm Rd & US 58 EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↔ | | | ↕ | |
| Traffic Vol, veh/h | 56 | 0 | 52 | 0 | 0 | 0 | 0 | 125 | 51 | 58 | 120 | 0 |
| Future Vol, veh/h | 56 | 0 | 52 | 0 | 0 | 0 | 0 | 125 | 51 | 58 | 120 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 4 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 64 | 0 | 59 | 0 | 0 | 0 | 0 | 142 | 58 | 66 | 136 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 439 | 468 | 136 | - | 0 | 0 | 200 | 0 | 0 |
| Stage 1 | 268 | 268 | - | - | - | - | - | - | - |
| Stage 2 | 171 | 200 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.44 | 6.51 | 6.21 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.44 | 5.51 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.44 | 5.51 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.536 | 4.009 | 3.309 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 571 | 494 | 915 | 0 | - | - | 1372 | - | 0 |
| Stage 1 | 772 | 689 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 854 | 738 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 541 | 0 | 915 | - | - | - | 1372 | - | - |
| Mov Cap-2 Maneuver | 541 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 772 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 810 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 11.5 | 0 | 2.5 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-----|
| Capacity (veh/h) | - | - | 674 | 1372 | - |
| HCM Lane V/C Ratio | - | - | 0.182 | 0.048 | - |
| HCM Control Delay (s) | - | - | 11.5 | 7.8 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.7 | 0.2 | - |

Queues

1: US 220 Business & US 58 WB Ramp

04/02/2019





















| Lane Group | WBT | WBR | NBT | SBT | SBR |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 416 | 142 | 540 | 916 | 92 |
| v/c Ratio | 0.79 | 0.24 | 0.32 | 0.55 | 0.11 |
| Control Delay | 32.6 | 3.9 | 3.5 | 15.5 | 3.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 32.6 | 3.9 | 3.5 | 15.5 | 3.8 |
| Queue Length 50th (ft) | 158 | 0 | 11 | 141 | 0 |
| Queue Length 95th (ft) | 224 | 29 | 22 | 216 | 23 |
| Internal Link Dist (ft) | 1343 | | 142 | 723 | |
| Turn Bay Length (ft) | | | | | 250 |
| Base Capacity (vph) | 649 | 698 | 1670 | 1654 | 802 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.64 | 0.20 | 0.32 | 0.55 | 0.11 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: US 220 Business & US 58 WB Ramp

04/02/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | |  |  | |  |  | |  |  |
| Traffic Volume (vph) | 0 | 0 | 0 | 366 | 0 | 125 | 0 | 475 | 0 | 0 | 806 | 81 |
| Future Volume (vph) | 0 | 0 | 0 | 366 | 0 | 125 | 0 | 475 | 0 | 0 | 806 | 81 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Lane Util. Factor | | | | | 1.00 | 1.00 | | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 1.00 | 0.85 | | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1612 | 1524 | | 3471 | | | 3438 | 1568 |
| Flt Permitted | | | | | 0.95 | 1.00 | | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1612 | 1524 | | 3471 | | | 3438 | 1568 |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 0 | 0 | 0 | 416 | 0 | 142 | 0 | 540 | 0 | 0 | 916 | 92 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 96 | 0 | 0 | 0 | 0 | 0 | 48 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 416 | 46 | 0 | 540 | 0 | 0 | 916 | 44 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 12% | 0% | 6% | 0% | 4% | 14% | 0% | 5% | 3% |
| Turn Type | | | | Perm | NA | Perm | | NA | | | NA | Perm |
| Protected Phases | | | | | 3 | | | 2 | | | 6 | |
| Permitted Phases | | | | 3 | | 3 | | | | | | 6 |
| Actuated Green, G (s) | | | | | 22.8 | 22.8 | | 33.7 | | | 33.7 | 33.7 |
| Effective Green, g (s) | | | | | 22.8 | 22.8 | | 33.7 | | | 33.7 | 33.7 |
| Actuated g/C Ratio | | | | | 0.33 | 0.33 | | 0.48 | | | 0.48 | 0.48 |
| Clearance Time (s) | | | | | 7.8 | 7.8 | | 5.7 | | | 5.7 | 5.7 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 525 | 496 | | 1671 | | | 1655 | 754 |
| v/s Ratio Prot | | | | | | | | 0.16 | | | c0.27 | |
| v/s Ratio Perm | | | | | 0.26 | 0.03 | | | | | | 0.03 |
| v/c Ratio | | | | | 0.79 | 0.09 | | 0.32 | | | 0.55 | 0.06 |
| Uniform Delay, d1 | | | | | 21.4 | 16.4 | | 11.1 | | | 12.8 | 9.7 |
| Progression Factor | | | | | 1.00 | 1.00 | | 0.25 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 8.0 | 0.1 | | 0.4 | | | 1.3 | 0.1 |
| Delay (s) | | | | | 29.5 | 16.5 | | 3.2 | | | 14.2 | 9.8 |
| Level of Service | | | | | C | B | | A | | | B | A |
| Approach Delay (s) | | 0.0 | | | 26.2 | | | 3.2 | | | 13.8 | |
| Approach LOS | | A | | | C | | | A | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 14.3 | | HCM 2000 Level of Service | | | | | | B | |
| HCM 2000 Volume to Capacity ratio | | | 0.65 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | Sum of lost time (s) | | | | | 13.5 | | |
| Intersection Capacity Utilization | | | 80.3% | | ICU Level of Service | | | | | D | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Queues

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Lane Group | EBL | EBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 41 | 218 | 924 | 252 | 181 | 1151 |
| v/c Ratio | 0.18 | 0.69 | 0.68 | 0.32 | 0.67 | 0.54 |
| Control Delay | 28.3 | 22.3 | 20.5 | 4.9 | 39.0 | 8.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 28.3 | 22.3 | 20.5 | 4.9 | 39.0 | 8.4 |
| Queue Length 50th (ft) | 16 | 26 | 171 | 10 | 75 | 75 |
| Queue Length 95th (ft) | 41 | #88 | 235 | 50 | m131 | 213 |
| Internal Link Dist (ft) | | | 585 | | | 516 |
| Turn Bay Length (ft) | | | | 100 | 425 | |
| Base Capacity (vph) | 262 | 342 | 1361 | 776 | 300 | 2133 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.16 | 0.64 | 0.68 | 0.32 | 0.60 | 0.54 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: US 220 Business & US 58 EB Ramp

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|---------------------|------|-------|------|------|------|------|-------|------|------|---------------------------|------|
| Lane Configurations | ↘ | | ↗ | | | | | ↑↑ | ↗ | ↘ | ↑↑ | |
| Traffic Volume (vph) | 36 | 0 | 192 | 0 | 0 | 0 | 0 | 813 | 222 | 159 | 1013 | 0 |
| Future Volume (vph) | 36 | 0 | 192 | 0 | 0 | 0 | 0 | 813 | 222 | 159 | 1013 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | |
| Lane Util. Factor | 1.00 | | 1.00 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frt | 1.00 | | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | |
| Flt Protected | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1703 | | 1380 | | | | | 3282 | 1568 | 1752 | 3195 | |
| Flt Permitted | 0.95 | | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1703 | | 1380 | | | | | 3282 | 1568 | 1752 | 3195 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 41 | 0 | 218 | 0 | 0 | 0 | 0 | 924 | 252 | 181 | 1151 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 132 | 0 | 0 | 0 | 0 | 0 | 126 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 41 | 0 | 86 | 0 | 0 | 0 | 0 | 924 | 126 | 181 | 1151 | 0 |
| Heavy Vehicles (%) | 6% | 0% | 17% | 2% | 2% | 2% | 0% | 10% | 3% | 3% | 13% | 0% |
| Turn Type | Perm | | Perm | | | | | NA | Perm | Prot | NA | |
| Protected Phases | | | | | | | | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | 4 | | | | | | 6 | | | |
| Actuated Green, G (s) | 9.4 | | 9.4 | | | | | 29.0 | 29.0 | 10.9 | 46.7 | |
| Effective Green, g (s) | 9.4 | | 9.4 | | | | | 29.0 | 29.0 | 10.9 | 46.7 | |
| Actuated g/C Ratio | 0.13 | | 0.13 | | | | | 0.41 | 0.41 | 0.16 | 0.67 | |
| Clearance Time (s) | 8.2 | | 8.2 | | | | | 5.4 | 5.4 | 7.1 | 5.7 | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 228 | | 185 | | | | | 1359 | 649 | 272 | 2131 | |
| v/s Ratio Prot | | | | | | | | c0.28 | | 0.10 | c0.36 | |
| v/s Ratio Perm | 0.02 | | c0.06 | | | | | | 0.08 | | | |
| v/c Ratio | 0.18 | | 0.46 | | | | | 0.68 | 0.19 | 0.67 | 0.54 | |
| Uniform Delay, d1 | 26.9 | | 28.0 | | | | | 16.7 | 13.1 | 27.8 | 6.1 | |
| Progression Factor | 1.00 | | 1.00 | | | | | 1.00 | 1.00 | 1.03 | 1.18 | |
| Incremental Delay, d2 | 0.4 | | 1.8 | | | | | 2.8 | 0.7 | 5.0 | 0.8 | |
| Delay (s) | 27.3 | | 29.8 | | | | | 19.5 | 13.7 | 33.5 | 8.0 | |
| Level of Service | C | | C | | | | | B | B | C | A | |
| Approach Delay (s) | | 29.4 | | | 0.0 | | | 18.2 | | | 11.4 | |
| Approach LOS | | C | | | A | | | B | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 16.0 | | | | | | | | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | | | 0.66 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 70.0 | | | | | | | | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | | | 51.5% | | | | | | | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | |

HCM 6th TWSC
 3: US 220 Business & Kilarney Court/Villa Road

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↗ | ↗ | ↗ | ↗ | ↗ |
| Traffic Vol, veh/h | 22 | 0 | 6 | 2 | 0 | 16 | 5 | 997 | 2 | 22 | 1167 | 16 |
| Future Vol, veh/h | 22 | 0 | 6 | 2 | 0 | 16 | 5 | 997 | 2 | 22 | 1167 | 16 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 50 | 150 | - | 50 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 13 | 0 | 0 | 13 | 6 |
| Mvmt Flow | 25 | 0 | 7 | 2 | 0 | 18 | 6 | 1133 | 2 | 25 | 1326 | 18 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 1955 | 2523 | 663 | 1858 | 2539 | 567 | 1344 | 0 | 0 | 1135 | 0 | 0 |
| Stage 1 | 1376 | 1376 | - | 1145 | 1145 | - | - | - | - | - | - | - |
| Stage 2 | 579 | 1147 | - | 713 | 1394 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.12 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.41 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 39 | 28 | 409 | 46 | 28 | 445 | 519 | - | - | 623 | - | - |
| Stage 1 | 156 | 215 | - | 216 | 277 | - | - | - | - | - | - | - |
| Stage 2 | 473 | 276 | - | 394 | 210 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 36 | 27 | 409 | 43 | 27 | 445 | 519 | - | - | 623 | - | - |
| Mov Cap-2 Maneuver | 36 | 27 | - | 43 | 27 | - | - | - | - | - | - | - |
| Stage 1 | 154 | 206 | - | 213 | 274 | - | - | - | - | - | - | - |
| Stage 2 | 448 | 273 | - | 372 | 202 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|-------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 191.7 | | 23.2 | | 0.1 | | 0.2 | |
| HCM LOS | F | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|------|-----|-----|
| Capacity (veh/h) | 519 | - | - | 45 | 218 | 623 | - | - |
| HCM Lane V/C Ratio | 0.011 | - | - | 0.707 | 0.094 | 0.04 | - | - |
| HCM Control Delay (s) | 12 | - | - | 191.7 | 23.2 | 11 | - | - |
| HCM Lane LOS | B | - | - | F | C | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 2.7 | 0.3 | 0.1 | - | - |

HCM 6th TWSC
4: US 220 Business & Marrowbone Circle

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | ↑ | ↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 21 | 0 | 42 | 0 | 962 | 10 | 19 | 1156 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 21 | 0 | 42 | 0 | 962 | 10 | 19 | 1156 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 150 | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 13 | 0 | 0 | 13 | 6 |
| Mvmt Flow | 0 | 0 | 0 | 24 | 0 | 48 | 0 | 1093 | 11 | 22 | 1314 | 0 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|------|--------|------|--------|------|---|--------|---|------|---|---|
| Conflicting Flow All | 1905 | 2462 | 657 | 1794 | 2451 | 547 | - | 0 | 0 | 1104 | 0 | 0 |
| Stage 1 | 1358 | 1358 | - | 1093 | 1093 | - | - | - | - | - | - | - |
| Stage 2 | 547 | 1104 | - | 701 | 1358 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.04 | - | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.37 | - | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 43 | 31 | 412 | 52 | 31 | 468 | 0 | - | - | 640 | - | 0 |
| Stage 1 | 160 | 219 | - | 232 | 293 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 494 | 289 | - | 400 | 219 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 38 | 30 | 412 | 51 | 30 | 468 | - | - | - | 640 | - | - |
| Mov Cap-2 Maneuver | 38 | 30 | - | 51 | 30 | - | - | - | - | - | - | - |
| Stage 1 | 160 | 212 | - | 232 | 293 | - | - | - | - | - | - | - |
| Stage 2 | 444 | 289 | - | 386 | 212 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|------|----|-----|
| HCM Control Delay, s | 0 | 65.8 | 0 | 0.2 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-------|-----|
| Capacity (veh/h) | - | - | - | 126 | 640 | - |
| HCM Lane V/C Ratio | - | - | - | 0.568 | 0.034 | - |
| HCM Control Delay (s) | - | - | 0 | 65.8 | 10.8 | - |
| HCM Lane LOS | - | - | A | F | B | - |
| HCM 95th %tile Q(veh) | - | - | - | 2.8 | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 50.1 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Y | | | ↑↑ | ↑↑ | ↑ |
| Traffic Vol, veh/h | 134 | 43 | 0 | 838 | 1150 | 27 |
| Future Vol, veh/h | 134 | 43 | 0 | 838 | 1150 | 27 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 50 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 13 | 13 | 0 |
| Mvmt Flow | 152 | 49 | 0 | 952 | 1307 | 31 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 1783 | 654 | - | 0 | - | 0 |
| Stage 1 | 1307 | - | - | - | - | - |
| Stage 2 | 476 | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 75 | 414 | 0 | - | - | - |
| Stage 1 | 221 | - | 0 | - | - | - |
| Stage 2 | 597 | - | 0 | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 75 | 414 | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 75 | - | - | - | - | - |
| Stage 1 | 221 | - | - | - | - | - |
| Stage 2 | 597 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|----------|----|----|
| HCM Control Delay, s | \$ 620.1 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|----------|-----|-----|
| Capacity (veh/h) | - | 94 | - | - |
| HCM Lane V/C Ratio | - | 2.14 | - | - |
| HCM Control Delay (s) | | \$ 620.1 | - | - |
| HCM Lane LOS | - | F | - | - |
| HCM 95th %tile Q(veh) | - | 17.7 | - | - |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↘↗ | | ↑↑ | ↗ | ↘ | ↑↑ |
| Traffic Vol, veh/h | 8 | 31 | 807 | 13 | 43 | 1150 |
| Future Vol, veh/h | 8 | 31 | 807 | 13 | 43 | 1150 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 125 | 175 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 13 | 0 | 0 | 13 |
| Mvmt Flow | 9 | 35 | 917 | 15 | 49 | 1307 |

| Major/Minor | Minor1 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 1669 | 459 | 0 | 0 | 932 |
| Stage 1 | 917 | - | - | - | - |
| Stage 2 | 752 | - | - | - | - |
| Critical Hdwy | 6.8 | 6.9 | - | - | 4.1 |
| Critical Hdwy Stg 1 | 5.8 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 |
| Pot Cap-1 Maneuver | 89 | 554 | - | - | 743 |
| Stage 1 | 355 | - | - | - | - |
| Stage 2 | 432 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 83 | 554 | - | - | 743 |
| Mov Cap-2 Maneuver | 83 | - | - | - | - |
| Stage 1 | 355 | - | - | - | - |
| Stage 2 | 403 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|----|----|-----|
| HCM Control Delay, s | 22 | 0 | 0.4 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h) | - | - | 256 | 743 |
| HCM Lane V/C Ratio | - | - | 0.173 | 0.066 |
| HCM Control Delay (s) | - | - | 22 | 10.2 |
| HCM Lane LOS | - | - | C | B |
| HCM 95th %tile Q(veh) | - | - | 0.6 | 0.2 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | ↕ | ↕↕ | ↕ | ↕ | ↕↕ | |
| Traffic Vol, veh/h | 20 | 0 | 7 | 0 | 0 | 0 | 11 | 800 | 17 | 36 | 1088 | 34 |
| Future Vol, veh/h | 20 | 0 | 7 | 0 | 0 | 0 | 11 | 800 | 17 | 36 | 1088 | 34 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 125 | - | 200 | 175 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 0 | 0 | 0 | 15 | 15 | 15 | 0 | 13 | 0 | 3 | 13 | 0 |
| Mvmt Flow | 23 | 0 | 8 | 0 | 0 | 0 | 13 | 909 | 19 | 41 | 1236 | 39 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | | | | |
|----------------------|--------|------|-----|--------|--|--|--------|---|---|------|---|---|
| Conflicting Flow All | 1819 | 2292 | 638 | | | | 1275 | 0 | 0 | 928 | 0 | 0 |
| Stage 1 | 1338 | 1338 | - | | | | - | - | - | - | - | - |
| Stage 2 | 481 | 954 | - | | | | - | - | - | - | - | - |
| Critical Hdwy | 6.8 | 6.5 | 6.9 | | | | 4.1 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.8 | 5.5 | - | | | | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | | | | 2.2 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 71 | 40 | 424 | | | | 551 | - | - | 726 | - | - |
| Stage 1 | 213 | 224 | - | | | | - | - | - | - | - | - |
| Stage 2 | 593 | 340 | - | | | | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 65 | 0 | 424 | | | | 551 | - | - | 726 | - | - |
| Mov Cap-2 Maneuver | 65 | 0 | - | | | | - | - | - | - | - | - |
| Stage 1 | 208 | 0 | - | | | | - | - | - | - | - | - |
| Stage 2 | 560 | 0 | - | | | | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|-----|
| HCM Control Delay, s | 71.9 | 0.2 | 0.3 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-----|-----|
| Capacity (veh/h) | 551 | - | - | 83 | 726 | - | - |
| HCM Lane V/C Ratio | 0.023 | - | - | 0.37 | 0.056 | - | - |
| HCM Control Delay (s) | 11.7 | - | - | 71.9 | 10.3 | - | - |
| HCM Lane LOS | B | - | - | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 1.4 | 0.2 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 4 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 86 | 14 | 19 | 65 | 75 | 41 |
| Future Vol, veh/h | 86 | 14 | 19 | 65 | 75 | 41 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 98 | 16 | 22 | 74 | 85 | 47 |

| Major/Minor | Minor2 | Major1 | | Major2 | |
|----------------------|--------|--------|-------|--------|---|
| Conflicting Flow All | 227 | 109 | 132 | 0 | 0 |
| Stage 1 | 109 | - | - | - | - |
| Stage 2 | 118 | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - |
| Pot Cap-1 Maneuver | 761 | 945 | 1453 | - | - |
| Stage 1 | 916 | - | - | - | - |
| Stage 2 | 907 | - | - | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | 749 | 945 | 1453 | - | - |
| Mov Cap-2 Maneuver | 749 | - | - | - | - |
| Stage 1 | 901 | - | - | - | - |
| Stage 2 | 907 | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 10.5 | 1.7 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | 1453 | - | 771 | - | - |
| HCM Lane V/C Ratio | 0.015 | - | 0.147 | - | - |
| HCM Control Delay (s) | 7.5 | 0 | 10.5 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.5 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|-------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 89.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | ↑ | ↑ | |
| Traffic Vol, veh/h | 0 | 122 | 29 | 724 | 65 | 0 | 0 | 0 | 0 | 80 | 0 | 51 |
| Future Vol, veh/h | 0 | 122 | 29 | 724 | 65 | 0 | 0 | 0 | 0 | 80 | 0 | 51 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | Yield | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 100 | 0 | - | - | - | - | - | 200 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 9 | 1 | 2 | 2 | 2 | 2 | 10 | 0 | 0 |
| Mvmt Flow | 0 | 139 | 33 | 823 | 74 | 0 | 0 | 0 | 0 | 91 | 0 | 58 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|-----|
| Conflicting Flow All | - | 0 | 0 | 139 | 0 | 0 | | 1859 | 1859 | 74 |
| Stage 1 | - | - | - | - | - | - | | 1720 | 1720 | - |
| Stage 2 | - | - | - | - | - | - | | 139 | 139 | - |
| Critical Hdwy | - | - | - | 4.19 | - | - | | 6.5 | 6.5 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | 5.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | 5.5 | 5.5 | - |
| Follow-up Hdwy | - | - | - | 2.281 | - | - | | 3.59 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | - | 1402 | - | 0 | | ~ 77 | 74 | 993 |
| Stage 1 | 0 | - | - | - | - | 0 | | 152 | 146 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | 868 | 785 | - |
| Platoon blocked, % | - | - | - | - | - | - | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1402 | - | - | | ~ 32 | 0 | 993 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | ~ 32 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | 152 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | 358 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|------|----------|
| HCM Control Delay, s | 0 | 10.2 | \$ 671.1 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 | SBLn2 |
|-----------------------|-----|-----|-------|-----------|-------|-------|
| Capacity (veh/h) | - | - | 1402 | - | 32 | 993 |
| HCM Lane V/C Ratio | - | - | 0.587 | - | 2.841 | 0.058 |
| HCM Control Delay (s) | - | - | 11.1 | \$ 1093.3 | 8.9 | |
| HCM Lane LOS | - | - | B | - | F | A |
| HCM 95th %tile Q(veh) | - | - | 4 | - | 10.6 | 0.2 |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
 83: US 220 Bypass NB Ramp & US 220 Business

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 13 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↑ | | | ↑↑ | | ↖ | ↗ | | | | |
| Traffic Vol, veh/h | 20 | 182 | 0 | 0 | 769 | 50 | 20 | 0 | 634 | 0 | 0 | 0 |
| Future Vol, veh/h | 20 | 182 | 0 | 0 | 769 | 50 | 20 | 0 | 634 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | - | 200 | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 10 | 2 | 2 | 9 | 4 | 0 | 0 | 10 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 207 | 0 | 0 | 874 | 57 | 23 | 0 | 720 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 931 | 0 | 0 |
| Stage 1 | - | - | 253 |
| Stage 2 | - | - | 437 |
| Critical Hdwy | 4.13 | - | 6.6 |
| Critical Hdwy Stg 1 | - | - | 5.4 |
| Critical Hdwy Stg 2 | - | - | 5.8 |
| Follow-up Hdwy | 2.219 | - | 3.5 |
| Pot Cap-1 Maneuver | 733 | 0 | 398 |
| Stage 1 | - | 0 | 794 |
| Stage 2 | - | 0 | 624 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 733 | - | 386 |
| Mov Cap-2 Maneuver | - | - | 386 |
| Stage 1 | - | - | 769 |
| Stage 2 | - | - | 624 |

| Approach | EB | WB | NB |
|----------------------|----|----|------|
| HCM Control Delay, s | 1 | 0 | 32.9 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | 386 | 810 | 733 | - | - | - |
| HCM Lane V/C Ratio | 0.059 | 0.889 | 0.031 | - | - | - |
| HCM Control Delay (s) | 14.9 | 33.5 | 10.1 | - | - | - |
| HCM Lane LOS | B | D | B | - | - | - |
| HCM 95th %tile Q(veh) | 0.2 | 11.8 | 0.1 | - | - | - |

Queues

84: US 220 Business & Water Plant Road

04/02/2019



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 75 | 86 | 855 | 73 | 389 | 856 |
| v/c Ratio | 0.46 | 0.38 | 0.74 | 0.12 | 0.86 | 0.35 |
| Control Delay | 40.5 | 13.5 | 26.0 | 5.6 | 44.7 | 4.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 40.5 | 13.5 | 26.0 | 5.6 | 44.7 | 4.0 |
| Queue Length 50th (ft) | 32 | 0 | 176 | 0 | 158 | 61 |
| Queue Length 95th (ft) | #69 | 37 | #243 | 25 | #290 | 82 |
| Internal Link Dist (ft) | 1185 | | 294 | | | 1333 |
| Turn Bay Length (ft) | 100 | 75 | | 150 | 250 | |
| Base Capacity (vph) | 162 | 224 | 1154 | 599 | 486 | 2475 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.46 | 0.38 | 0.74 | 0.12 | 0.80 | 0.35 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

84: US 220 Business & Water Plant Road

04/02/2019



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|--|-------|-------|------|-------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 66 | 76 | 752 | 64 | 342 | 753 |
| Future Volume (veh/h) | 66 | 76 | 752 | 64 | 342 | 753 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1900 | 1900 | 1767 | 1870 | 1870 | 1722 |
| Adj Flow Rate, veh/h | 75 | 86 | 855 | 73 | 389 | 856 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 0 | 0 | 9 | 2 | 2 | 12 |
| Cap, veh/h | 146 | 130 | 1159 | 547 | 432 | 2276 |
| Arrive On Green | 0.08 | 0.08 | 0.35 | 0.35 | 0.24 | 0.70 |
| Sat Flow, veh/h | 1810 | 1610 | 3445 | 1585 | 1781 | 3358 |
| Grp Volume(v), veh/h | 75 | 86 | 855 | 73 | 389 | 856 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 1610 | 1678 | 1585 | 1781 | 1636 |
| Q Serve(g_s), s | 2.8 | 3.7 | 16.0 | 2.3 | 15.1 | 7.7 |
| Cycle Q Clear(g_c), s | 2.8 | 3.7 | 16.0 | 2.3 | 15.1 | 7.7 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 146 | 130 | 1159 | 547 | 432 | 2276 |
| V/C Ratio(X) | 0.51 | 0.66 | 0.74 | 0.13 | 0.90 | 0.38 |
| Avail Cap(c_a), veh/h | 152 | 135 | 1159 | 547 | 456 | 2276 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.5 | 31.9 | 20.5 | 16.1 | 26.2 | 4.5 |
| Incr Delay (d2), s/veh | 3.4 | 11.7 | 2.6 | 0.1 | 20.3 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.3 | 1.8 | 5.8 | 0.7 | 8.1 | 1.6 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 34.9 | 43.6 | 23.2 | 16.2 | 46.6 | 5.0 |
| LnGrp LOS | C | D | C | B | D | A |
| Approach Vol, veh/h | 161 | | 928 | | | 1245 |
| Approach Delay, s/veh | 39.6 | | 22.6 | | | 18.0 |
| Approach LOS | D | | C | | | B |
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
| Phs Duration (G+Y+Rc), s | 25.0 | 32.3 | | 14.2 | | 57.3 |
| Change Period (Y+Rc), s | * 7.7 | * 7.6 | | * 8.4 | | * 7.6 |
| Max Green Setting (Gmax), s | * 18 | * 22 | | * 6 | | * 50 |
| Max Q Clear Time (g_c+I1), s | 17.1 | 18.0 | | 5.7 | | 9.7 |
| Green Ext Time (p_c), s | 0.2 | 2.3 | | 0.0 | | 11.3 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 21.3 | | | |
| HCM 6th LOS | | | C | | | |
| Notes | | | | | | |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. | | | | | | |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 4.6 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↶ | ↷ | | ↶ | ↷ |
| Traffic Vol, veh/h | 61 | 51 | 96 | 23 | 84 | 5 |
| Future Vol, veh/h | 61 | 51 | 96 | 23 | 84 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 69 | 58 | 109 | 26 | 95 | 6 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 135 | 0 | - | 0 | 318 122 |
| Stage 1 | - | - | - | - | 122 - |
| Stage 2 | - | - | - | - | 196 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1449 | - | - | - | 675 929 |
| Stage 1 | - | - | - | - | 903 - |
| Stage 2 | - | - | - | - | 837 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1449 | - | - | - | 642 929 |
| Mov Cap-2 Maneuver | - | - | - | - | 642 - |
| Stage 1 | - | - | - | - | 859 - |
| Stage 2 | - | - | - | - | 837 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 4.1 | 0 | 11.5 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1449 | - | - | - | 653 |
| HCM Lane V/C Ratio | 0.048 | - | - | - | 0.155 |
| HCM Control Delay (s) | 7.6 | 0 | - | - | 11.5 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 0.5 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.6 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | |
| Traffic Vol, veh/h | 77 | 58 | 54 | 40 | 152 | 65 |
| Future Vol, veh/h | 77 | 58 | 54 | 40 | 152 | 65 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 88 | 66 | 61 | 45 | 173 | 74 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 106 | 0 | - | 0 | 326 84 |
| Stage 1 | - | - | - | - | 84 - |
| Stage 2 | - | - | - | - | 242 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1485 | - | - | - | 668 975 |
| Stage 1 | - | - | - | - | 939 - |
| Stage 2 | - | - | - | - | 798 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1485 | - | - | - | 627 975 |
| Mov Cap-2 Maneuver | - | - | - | - | 627 - |
| Stage 1 | - | - | - | - | 881 - |
| Stage 2 | - | - | - | - | 798 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 4.3 | 0 | 12.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1485 | - | - | - | 702 |
| HCM Lane V/C Ratio | 0.059 | - | - | - | 0.351 |
| HCM Control Delay (s) | 7.6 | 0 | - | - | 12.9 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 1.6 |

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 25.8 |
| Intersection LOS | D |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|------|------|------|------|------|------|
| Lane Configurations | ↘ | | | | ↘ | ↗ |
| Traffic Vol, veh/h | 25 | 0 | 0 | 0 | 493 | 0 |
| Future Vol, veh/h | 25 | 0 | 0 | 0 | 493 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles, % | 9 | 2 | 2 | 2 | 10 | 2 |
| Mvmt Flow | 28 | 0 | 0 | 0 | 560 | 0 |
| Number of Lanes | 1 | 0 | 0 | 0 | 1 | 1 |

| Approach | WB | SB |
|----------------------------|-----|------|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | WB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | SB | |
| Conflicting Lanes Right | 2 | 0 |
| HCM Control Delay | 9.1 | 26.6 |
| HCM LOS | A | D |

| Lane | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|
| Vol Left, % | 100% | 100% | 0% |
| Vol Thru, % | 0% | 0% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 25 | 493 | 0 |
| LT Vol | 25 | 493 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 28 | 560 | 0 |
| Geometry Grp | 2 | 7 | 7 |
| Degree of Util (X) | 0.046 | 0.812 | 0 |
| Departure Headway (Hd) | 5.854 | 5.22 | 4.583 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 615 | 695 | 0 |
| Service Time | 3.854 | 2.961 | 2.325 |
| HCM Lane V/C Ratio | 0.046 | 0.806 | 0 |
| HCM Control Delay | 9.1 | 26.6 | 7.3 |
| HCM Lane LOS | A | D | N |
| HCM 95th-tile Q | 0.1 | 8.5 | 0 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 0.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↑ | | | ↑ | ↗ | | ↑ | ↗ | | | |
| Traffic Vol, veh/h | 0 | 493 | 0 | 0 | 25 | 287 | 0 | 0 | 57 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 493 | 0 | 0 | 25 | 287 | 0 | 0 | 57 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | 50 | - | - | 175 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16979 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 9 | 9 | 11 | 2 | 12 | 8 | 13 | 21 | 2 |
| Mvmt Flow | 0 | 560 | 0 | 0 | 28 | 326 | 0 | 0 | 65 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 354 | 0 | 0 |
| Stage 1 | - | - | 560 |
| Stage 2 | - | - | 354 |
| Critical Hdwy | 4.12 | - | 6.62 |
| Critical Hdwy Stg 1 | - | - | 5.62 |
| Critical Hdwy Stg 2 | - | - | 5.62 |
| Follow-up Hdwy | 2.218 | - | 4.108 |
| Pot Cap-1 Maneuver | 1205 | 0 | 263 |
| Stage 1 | - | 0 | 495 |
| Stage 2 | - | 0 | 613 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1205 | - | 0 |
| Mov Cap-2 Maneuver | - | - | 0 |
| Stage 1 | - | - | 0 |
| Stage 2 | - | - | 0 |

| Approach | EB | WB | NB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0 | 0 | 13 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|------|-----|-----|-----|
| Capacity (veh/h) | - | 517 | 1205 | - | - | - |
| HCM Lane V/C Ratio | - | 0.125 | - | - | - | - |
| HCM Control Delay (s) | 0 | 13 | 0 | - | - | - |
| HCM Lane LOS | A | B | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0.4 | 0 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 47 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 490 | 60 | 21 | 312 | 8 | 0 | 0 | 69 | 210 | 0 | 0 |
| Future Vol, veh/h | 0 | 490 | 60 | 21 | 312 | 8 | 0 | 0 | 69 | 210 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 20 | 2 | 2 | 15 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 557 | 68 | 24 | 355 | 9 | 0 | 0 | 78 | 239 | 0 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|--------|-------|-------|
| Conflicting Flow All | 364 | 0 | 0 | 625 | 0 | 0 | 999 | 1003 | 591 | 1038 | 1033 | 360 |
| Stage 1 | - | - | - | - | - | - | 591 | 591 | - | 408 | 408 | - |
| Stage 2 | - | - | - | - | - | - | 408 | 412 | - | 630 | 625 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1195 | - | - | 956 | - | - | 222 | 242 | 507 | ~ 209 | 232 | 684 |
| Stage 1 | - | - | - | - | - | - | 493 | 494 | - | 620 | 597 | - |
| Stage 2 | - | - | - | - | - | - | 620 | 594 | - | 470 | 477 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 1195 | - | - | 956 | - | - | 217 | 234 | 507 | ~ 172 | 225 | 684 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 217 | 234 | - | ~ 172 | 225 | - |
| Stage 1 | - | - | - | - | - | - | 493 | 494 | - | 620 | 578 | - |
| Stage 2 | - | - | - | - | - | - | 600 | 575 | - | 397 | 477 | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|-----|------|-------|
| HCM Control Delay, s | 0 | 0.5 | 13.4 | 256.9 |
| HCM LOS | | | B | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 507 | 1195 | - | - | 956 | - | - | 172 |
| HCM Lane V/C Ratio | 0.155 | - | - | - | 0.025 | - | - | 1.387 |
| HCM Control Delay (s) | 13.4 | 0 | - | - | 8.9 | 0 | - | 256.9 |
| HCM Lane LOS | B | A | - | - | A | A | - | F |
| HCM 95th %tile Q(veh) | 0.5 | 0 | - | - | 0.1 | - | - | 14.5 |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 2.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | | ↕ | |
| Traffic Vol, veh/h | 0 | 256 | 159 | 45 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| Future Vol, veh/h | 0 | 256 | 159 | 45 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 50 | 50 | 2 | 2 | 2 | 2 | 2 | 2 | 25 |
| Mvmt Flow | 0 | 291 | 181 | 51 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 99 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|-------|
| Conflicting Flow All | - | 0 | 0 | 472 | 0 | 0 | | 536 | 626 | 52 |
| Stage 1 | - | - | - | - | - | - | | 154 | 154 | - |
| Stage 2 | - | - | - | - | - | - | | 382 | 472 | - |
| Critical Hdwy | - | - | - | 4.6 | - | - | | 6.42 | 6.52 | 6.45 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Follow-up Hdwy | - | - | - | 2.65 | - | - | | 3.518 | 4.018 | 3.525 |
| Pot Cap-1 Maneuver | 0 | - | - | 880 | - | 0 | | 505 | 401 | 954 |
| Stage 1 | 0 | - | - | - | - | 0 | | 874 | 770 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | 690 | 559 | - |
| Platoon blocked, % | - | - | - | - | - | - | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 880 | - | - | | 476 | 0 | 954 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | 476 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | 874 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | 650 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 4.6 | 9.2 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|-----------------------|-----|-----|-------|-----|-------|
| Capacity (veh/h) | - | - | 880 | - | 954 |
| HCM Lane V/C Ratio | - | - | 0.058 | - | 0.104 |
| HCM Control Delay (s) | - | - | 9.3 | - | 9.2 |
| HCM Lane LOS | - | - | A | - | A |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | 0.3 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 5.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↑ | | | ↗ | | | ↕ | | | | |
| Traffic Vol, veh/h | 256 | 0 | 0 | 0 | 7 | 20 | 84 | 0 | 12 | 0 | 0 | 0 |
| Future Vol, veh/h | 256 | 0 | 0 | 0 | 7 | 20 | 84 | 0 | 12 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 50 | 2 | 2 | 2 | 2 | 2 | 50 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 291 | 0 | 0 | 0 | 8 | 23 | 95 | 0 | 14 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 31 | 0 | 0 |
| Stage 1 | - | - | 582 |
| Stage 2 | - | - | 20 |
| Critical Hdwy | 4.6 | - | 6.9 |
| Critical Hdwy Stg 1 | - | - | 5.9 |
| Critical Hdwy Stg 2 | - | - | 5.9 |
| Follow-up Hdwy | 2.65 | - | 3.95 |
| Pot Cap-1 Maneuver | 1321 | 0 | 393 |
| Stage 1 | - | 0 | 475 |
| Stage 2 | - | 0 | 892 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1321 | - | 307 |
| Mov Cap-2 Maneuver | - | - | 307 |
| Stage 1 | - | - | 371 |
| Stage 2 | - | - | 892 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 8.5 | 0 | |
| HCM LOS | | | - |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | WBT | WBR |
|-----------------------|-------|------|-----|-----|-----|
| Capacity (veh/h) | - | 1321 | - | - | - |
| HCM Lane V/C Ratio | - | 0.22 | - | - | - |
| HCM Control Delay (s) | - | 8.5 | - | - | - |
| HCM Lane LOS | - | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0.8 | - | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 8.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 8 | 80 | 249 | 0 | 15 | 7 | 183 | 0 | 28 |
| Future Vol, veh/h | 0 | 0 | 0 | 8 | 80 | 249 | 0 | 15 | 7 | 183 | 0 | 28 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 1 | 1 | 4 | 2 | 2 | 2 | 2 | 15 | 1 |
| Mvmt Flow | 0 | 0 | 0 | 9 | 91 | 283 | 0 | 17 | 8 | 208 | 0 | 32 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|----------------------|--------|-------|--------|-------|--------|-------|
| Conflicting Flow All | 453 | 469 | 21 | 32 | 0 | 25 |
| Stage 1 | 21 | 21 | - | - | - | - |
| Stage 2 | 432 | 448 | - | - | - | - |
| Critical Hdwy | 6.41 | 6.51 | 6.24 | 4.12 | - | 4.12 |
| Critical Hdwy Stg 1 | 5.41 | 5.51 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | 5.51 | - | - | - | - |
| Follow-up Hdwy | 3.509 | 4.009 | 3.336 | 2.218 | - | 2.218 |
| Pot Cap-1 Maneuver | 566 | 494 | 1051 | 1580 | - | 1589 |
| Stage 1 | 1004 | 880 | - | - | - | - |
| Stage 2 | 657 | 575 | - | - | - | - |
| Platoon blocked, % | | | | | - | - |
| Mov Cap-1 Maneuver | 492 | 0 | 1051 | 1580 | - | 1589 |
| Mov Cap-2 Maneuver | 492 | 0 | - | - | - | - |
| Stage 1 | 1004 | 0 | - | - | - | - |
| Stage 2 | 571 | 0 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.4 | 0 | 6.6 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1580 | - | - | 492 | 1051 | 1589 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.018 | 0.356 | 0.131 | - | - |
| HCM Control Delay (s) | 0 | - | - | 12.5 | 10.3 | 7.6 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 1.6 | 0.5 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.1 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 20 | 170 | 35 | 92 | 245 | 23 |
| Future Vol, veh/h | 20 | 170 | 35 | 92 | 245 | 23 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 193 | 40 | 105 | 278 | 26 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 216 | 0 | 305 |
| Stage 1 | - | - | - | - | 120 |
| Stage 2 | - | - | - | - | 185 |
| Critical Hdwy | - | - | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | - | - | 1354 | - | 687 |
| Stage 1 | - | - | - | - | 905 |
| Stage 2 | - | - | - | - | 847 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1354 | - | 666 |
| Mov Cap-2 Maneuver | - | - | - | - | 666 |
| Stage 1 | - | - | - | - | 905 |
| Stage 2 | - | - | - | - | 821 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 2.1 | 14.4 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 683 | - | - | 1354 | - |
| HCM Lane V/C Ratio | 0.446 | - | - | 0.029 | - |
| HCM Control Delay (s) | 14.4 | - | - | 7.7 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 2.3 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.8 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ↑ | | ↑ | | | ↑ |
| Traffic Vol, veh/h | 28 | 4 | 264 | 0 | 0 | 205 |
| Future Vol, veh/h | 28 | 4 | 264 | 0 | 0 | 205 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 1 | 4 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 32 | 5 | 300 | 0 | 0 | 233 |

| Major/Minor | Minor1 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 533 | 300 | 0 | - | - | - |
| Stage 1 | 300 | - | - | - | - | - |
| Stage 2 | 233 | - | - | - | - | - |
| Critical Hdwy | 6.41 | 6.24 | - | - | - | - |
| Critical Hdwy Stg 1 | 5.41 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - | - | - |
| Follow-up Hdwy | 3.509 | 3.336 | - | - | - | - |
| Pot Cap-1 Maneuver | 509 | 735 | - | 0 | 0 | - |
| Stage 1 | 754 | - | - | 0 | 0 | - |
| Stage 2 | 808 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | 509 | 735 | - | - | - | - |
| Mov Cap-2 Maneuver | 509 | - | - | - | - | - |
| Stage 1 | 754 | - | - | - | - | - |
| Stage 2 | 808 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 12.3 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBT |
|-----------------------|----------|-----|
| Capacity (veh/h) | - 529 | - |
| HCM Lane V/C Ratio | - 0.069 | - |
| HCM Control Delay (s) | - 12.3 | - |
| HCM Lane LOS | - B | - |
| HCM 95th %tile Q(veh) | - 0.2 | - |

HCM 6th TWSC
146: Fisher Farm Rd & US 58 EB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 36 | 0 | 28 | 0 | 0 | 0 | 0 | 228 | 49 | 33 | 200 | 0 |
| Future Vol, veh/h | 36 | 0 | 28 | 0 | 0 | 0 | 0 | 228 | 49 | 33 | 200 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 16979 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 4 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 41 | 0 | 32 | 0 | 0 | 0 | 0 | 259 | 56 | 38 | 227 | 0 |

| Major/Minor | Minor2 | | | Major1 | | | Major2 | | |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 590 | 618 | 227 | - | 0 | 0 | 315 | 0 | 0 |
| Stage 1 | 303 | 303 | - | - | - | - | - | - | - |
| Stage 2 | 287 | 315 | - | - | - | - | - | - | - |
| Critical Hdwy | 6.44 | 6.51 | 6.21 | - | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 5.44 | 5.51 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.44 | 5.51 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.536 | 4.009 | 3.309 | - | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 467 | 406 | 815 | 0 | - | - | 1245 | - | 0 |
| Stage 1 | 745 | 665 | - | 0 | - | - | - | - | 0 |
| Stage 2 | 757 | 657 | - | 0 | - | - | - | - | 0 |
| Platoon blocked, % | | | | | | | | | |
| Mov Cap-1 Maneuver | 451 | 0 | 815 | - | - | - | 1245 | - | - |
| Mov Cap-2 Maneuver | 451 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 745 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 731 | 0 | - | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 12.4 | 0 | 1.1 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | SBL | SBT |
|-----------------------|-----|-----|-------|------|-----|
| Capacity (veh/h) | - | - | 561 | 1245 | - |
| HCM Lane V/C Ratio | - | - | 0.13 | 0.03 | - |
| HCM Control Delay (s) | - | - | 12.4 | 8 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.4 | 0.1 | - |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| | 10 | 1.3 | 51.4 | 0.8 | 54 |
| US 220 Bypass NB Ram | 86 | 0.2 | 5.9 | 0.1 | 52 |
| | 85 | 0.7 | 19.6 | 0.3 | 54 |
| | 28 | 0.2 | 5.0 | 0.1 | 50 |
| | 72 | 0.5 | 12.1 | 0.2 | 52 |
| | 80 | 0.7 | 15.7 | 0.2 | 52 |
| | 13 | 0.7 | 13.4 | 0.2 | 61 |
| | 38 | 2.1 | 49.0 | 0.7 | 53 |
| | 44 | 3.2 | 60.8 | 0.9 | 52 |
| US 220 NB Ramp | 43 | 0.3 | 4.4 | 0.1 | 54 |
| | 45 | 1.4 | 26.1 | 0.4 | 62 |
| | 39 | 0.8 | 5.6 | 0.1 | 44 |
| | 40 | 3.8 | 56.0 | 0.8 | 51 |
| US 220 Bypass NB Ram | 50 | 0.4 | 5.8 | 0.1 | 59 |
| Total | | 16.3 | 330.8 | 4.9 | 54 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| | 40 | 1.6 | 8.5 | 0.1 | 40 |
| | 39 | 2.9 | 55.5 | 0.8 | 52 |
| US 220 SB Ramp | 45 | 0.3 | 4.7 | 0.1 | 52 |
| | 43 | 1.0 | 25.2 | 0.4 | 64 |
| | 44 | 0.6 | 5.5 | 0.1 | 43 |
| | 38 | 2.4 | 60.2 | 0.9 | 53 |
| | 13 | 2.2 | 42.0 | 0.7 | 61 |
| | 80 | 0.8 | 15.6 | 0.2 | 53 |
| | 72 | 0.9 | 16.0 | 0.2 | 52 |
| | 28 | 0.8 | 12.4 | 0.2 | 51 |
| US 220 Bypass SB Ram | 85 | 0.5 | 4.5 | 0.1 | 55 |
| | 86 | 1.2 | 19.7 | 0.3 | 54 |
| | 10 | 0.4 | 6.5 | 0.1 | 47 |
| Total | | 15.6 | 276.3 | 4.2 | 54 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 82 | 0.6 | 3.9 | 0.0 | 34 |
| US 220 Bypass NB Ram | 83 | 0.5 | 11.3 | 0.1 | 35 |
| Water Plant Road | 84 | 5.8 | 11.9 | 0.1 | 22 |
| Drewry Mason School | 7 | 3.0 | 24.2 | 0.3 | 40 |
| Covington Lane | 6 | 1.3 | 26.7 | 0.3 | 43 |
| Shamrock Drive | 5 | 1.1 | 18.3 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.6 | 8.0 | 0.1 | 43 |
| Villa Road | 3 | 1.3 | 23.3 | 0.3 | 43 |
| Total | | 14.0 | 127.6 | 1.4 | 39 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 4 | 0.8 | 23.0 | 0.3 | 43 |
| Shamrock Drive | 5 | 0.4 | 7.9 | 0.1 | 43 |
| Covington Lane | 6 | 0.8 | 18.1 | 0.2 | 43 |
| Steve Drive | 7 | 1.4 | 26.4 | 0.3 | 43 |
| Water Plant Road | 84 | 1.2 | 22.3 | 0.3 | 43 |
| | 83 | 0.7 | 5.6 | 0.1 | 45 |
| US 220 Bypass SB Ram | 82 | 0.5 | 11.7 | 0.1 | 34 |
| Water Plant Road | 81 | 0.4 | 4.0 | 0.0 | 33 |
| Total | | 6.2 | 119.0 | 1.4 | 42 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 54 | 0.9 | 28.6 | 0.5 | 61 |
| | 42 | 0.2 | 5.2 | 0.1 | 49 |
| | 59 | 0.3 | 17.7 | 0.3 | 53 |
| | 94 | 0.6 | 29.7 | 0.4 | 54 |
| | 93 | 0.6 | 21.0 | 0.3 | 54 |
| | 125 | 1.1 | 32.0 | 0.5 | 53 |
| | 128 | 1.0 | 26.8 | 0.4 | 53 |
| | 108 | 1.7 | 24.8 | 0.4 | 51 |
| US 58 EB Ramp | 141 | 0.5 | 3.2 | 0.1 | 67 |
| | 107 | 0.3 | 7.5 | 0.1 | 53 |
| US 58 WB Ramp | 142 | 0.4 | 7.2 | 0.1 | 58 |
| Fisher Farm Rd | 143 | 1.3 | 5.7 | 0.1 | 48 |
| Total | | 8.7 | 209.4 | 3.1 | 54 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 58 WB Ramp | 142 | 0.6 | 6.2 | 0.1 | 44 |
| | 107 | 0.5 | 8.6 | 0.1 | 49 |
| US 58 EB Ramp | 141 | 0.3 | 7.6 | 0.1 | 52 |
| | 108 | 0.2 | 4.1 | 0.1 | 52 |
| | 128 | 0.6 | 25.4 | 0.4 | 50 |
| | 125 | 0.6 | 26.6 | 0.4 | 53 |
| | 93 | 0.6 | 31.6 | 0.5 | 54 |
| | 94 | 0.5 | 21.1 | 0.3 | 53 |
| | 59 | 1.0 | 30.1 | 0.4 | 53 |
| | 42 | 0.7 | 17.6 | 0.3 | 53 |
| US 220 Bypass SB Ram | 54 | 0.2 | 4.5 | 0.1 | 56 |
| | 50 | 1.7 | 31.3 | 0.5 | 56 |
| Total | | 7.5 | 214.7 | 3.1 | 53 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 82 | 0.9 | 4.2 | 0.0 | 31 |
| US 220 Bypass NB Ram | 83 | 0.7 | 11.5 | 0.1 | 34 |
| Water Plant Road | 84 | 14.7 | 20.7 | 0.1 | 12 |
| Drewry Mason School | 7 | 4.9 | 25.7 | 0.3 | 38 |
| Covington Lane | 6 | 1.6 | 27.0 | 0.3 | 43 |
| Shamrock Drive | 5 | 1.2 | 18.4 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.7 | 8.1 | 0.1 | 42 |
| Villa Road | 3 | 1.5 | 23.6 | 0.3 | 42 |
| Total | | 26.2 | 139.2 | 1.4 | 36 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 4 | 1.3 | 23.6 | 0.3 | 42 |
| Shamrock Drive | 5 | 0.8 | 8.1 | 0.1 | 42 |
| Covington Lane | 6 | 1.1 | 18.0 | 0.2 | 43 |
| Steve Drive | 7 | 2.0 | 27.4 | 0.3 | 42 |
| Water Plant Road | 84 | 5.9 | 26.7 | 0.3 | 36 |
| | 83 | 2.1 | 7.1 | 0.1 | 36 |
| US 220 Bypass SB Ram | 82 | 0.4 | 10.3 | 0.1 | 38 |
| Water Plant Road | 81 | 0.4 | 3.9 | 0.0 | 33 |
| Total | | 14.0 | 125.1 | 1.4 | 40 |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 10 | 1.4 | 51.7 | 0.8 | 54 |
| US 220 Bypass NB Ram | 86 | 0.2 | 5.9 | 0.1 | 51 |
| | 85 | 0.8 | 19.8 | 0.3 | 53 |
| | 28 | 0.3 | 5.0 | 0.1 | 49 |
| | 72 | 0.5 | 12.2 | 0.2 | 52 |
| | 80 | 0.7 | 15.8 | 0.2 | 52 |
| | 13 | 0.7 | 15.7 | 0.2 | 52 |
| | 38 | 2.7 | 49.6 | 0.7 | 52 |
| | 44 | 4.1 | 62.0 | 0.9 | 51 |
| US 220 NB Ramp | 43 | 0.3 | 4.6 | 0.1 | 52 |
| | 45 | 2.2 | 31.3 | 0.4 | 51 |
| Total | | 13.8 | 273.7 | 4.0 | 52 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 43 | 0.7 | 29.2 | 0.4 | 55 |
| | 44 | 0.2 | 5.2 | 0.1 | 46 |
| | 38 | 2.1 | 59.9 | 0.9 | 53 |
| | 13 | 2.3 | 49.1 | 0.7 | 53 |
| | 80 | 0.8 | 15.6 | 0.2 | 53 |
| | 72 | 0.8 | 15.9 | 0.2 | 52 |
| | 28 | 0.7 | 12.2 | 0.2 | 52 |
| US 220 Bypass SB Ram | 85 | 0.3 | 4.9 | 0.1 | 50 |
| | 86 | 1.2 | 19.7 | 0.3 | 53 |
| | 10 | 0.5 | 6.6 | 0.1 | 46 |
| Total | | 9.5 | 218.3 | 3.2 | 53 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 54 | 0.9 | 32.4 | 0.5 | 54 |
| | 42 | 0.2 | 5.2 | 0.1 | 49 |
| | 59 | 0.6 | 17.7 | 0.3 | 53 |
| | 94 | 1.1 | 30.2 | 0.4 | 53 |
| | 93 | 0.9 | 21.5 | 0.3 | 52 |
| | 125 | 1.5 | 32.5 | 0.5 | 52 |
| | 128 | 1.2 | 27.0 | 0.4 | 52 |
| | 108 | 2.3 | 25.4 | 0.4 | 50 |
| US 58 EB Ramp | 141 | 0.0 | 4.0 | 0.1 | 53 |
| | 107 | 0.0 | 7.2 | 0.1 | 55 |
| US 58 WB Ramp | 142 | 0.1 | 7.9 | 0.1 | 53 |
| Fisher Farm Rd | 143 | 1.4 | 6.2 | 0.1 | 44 |
| Total | | 10.4 | 217.3 | 3.1 | 52 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| US 58 WB Ramp | 142 | 0.7 | 11.7 | 0.1 | 23 |
| | 107 | 0.1 | 8.7 | 0.1 | 48 |
| US 58 EB Ramp | 141 | 0.4 | 6.9 | 0.1 | 58 |
| | 108 | 0.3 | 4.1 | 0.1 | 51 |
| | 128 | 0.3 | 24.5 | 0.4 | 52 |
| | 125 | 0.6 | 26.4 | 0.4 | 54 |
| | 93 | 0.6 | 31.6 | 0.5 | 54 |
| | 94 | 0.5 | 21.1 | 0.3 | 53 |
| | 59 | 1.1 | 30.2 | 0.4 | 53 |
| US 220 Bypass SB Ram | 42 | 0.8 | 17.8 | 0.3 | 52 |
| | 54 | 0.2 | 4.7 | 0.1 | 54 |
| | 50 | 2.1 | 33.3 | 0.5 | 52 |
| Total | | 7.7 | 221.0 | 3.1 | 51 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 82 | 0.6 | 4.0 | 0.0 | 33 |
| US 220 Bypass NB Ram | 83 | 0.6 | 11.4 | 0.1 | 34 |
| Water Plant Road | 84 | 12.1 | 18.1 | 0.1 | 14 |
| Drewry Mason School | 7 | 4.0 | 24.8 | 0.3 | 39 |
| Covington Lane | 6 | 1.3 | 26.8 | 0.3 | 43 |
| Shamrock Drive | 5 | 1.2 | 18.3 | 0.2 | 42 |
| Marrowbone Circle | 4 | 0.6 | 8.1 | 0.1 | 42 |
| Villa Road | 3 | 1.4 | 23.4 | 0.3 | 42 |
| | 20 | 0.6 | 7.5 | 0.1 | 41 |
| | 2 | 8.6 | 18.4 | 0.1 | 25 |
| | 12 | 2.4 | 11.1 | 0.1 | 37 |
| US 58 WB Ramp | 1 | 3.9 | 7.5 | 0.0 | 20 |
| Total | | 37.3 | 179.3 | 1.8 | 35 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 8.1 | 20.0 | 0.2 | 28 |
| | 12 | 1.4 | 3.6 | 0.0 | 42 |
| US 58 EB Ramp | 2 | 2.5 | 12.2 | 0.1 | 33 |
| | 20 | 1.3 | 11.6 | 0.1 | 39 |
| Kilarney Court | 3 | 0.3 | 7.1 | 0.1 | 44 |
| | 4 | 1.0 | 23.2 | 0.3 | 43 |
| Shamrock Drive | 5 | 0.5 | 8.1 | 0.1 | 42 |
| Covington Lane | 6 | 0.9 | 18.2 | 0.2 | 42 |
| Steve Drive | 7 | 1.6 | 27.0 | 0.3 | 43 |
| Water Plant Road | 84 | 3.5 | 24.6 | 0.3 | 39 |
| | 83 | 1.6 | 6.6 | 0.1 | 39 |
| US 220 Bypass SB Ram | 82 | 0.7 | 11.9 | 0.1 | 33 |
| Water Plant Road | 81 | 0.5 | 4.0 | 0.0 | 32 |
| Total | | 24.0 | 178.1 | 1.9 | 39 |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| | 10 | 1.6 | 51.9 | 0.8 | 54 |
| US 220 Bypass NB Ram | 86 | 0.2 | 5.9 | 0.1 | 51 |
| | 85 | 0.7 | 19.6 | 0.3 | 54 |
| | 28 | 0.3 | 5.0 | 0.1 | 49 |
| | 72 | 0.4 | 12.1 | 0.2 | 52 |
| | 80 | 0.6 | 15.7 | 0.2 | 53 |
| | 13 | 0.6 | 13.3 | 0.2 | 62 |
| | 38 | 1.9 | 48.6 | 0.7 | 53 |
| | 44 | 3.1 | 60.8 | 0.9 | 53 |
| US 220 NB Ramp | 43 | 0.3 | 4.4 | 0.1 | 54 |
| | 45 | 1.3 | 26.1 | 0.4 | 62 |
| Total | | 10.9 | 263.3 | 4.0 | 54 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| | 43 | 1.2 | 25.3 | 0.4 | 64 |
| | 44 | 0.5 | 5.5 | 0.1 | 43 |
| | 38 | 2.8 | 60.6 | 0.9 | 53 |
| | 13 | 2.4 | 42.6 | 0.7 | 61 |
| | 80 | 0.9 | 15.7 | 0.2 | 52 |
| | 72 | 1.0 | 16.1 | 0.2 | 51 |
| | 28 | 1.1 | 12.7 | 0.2 | 50 |
| US 220 Bypass SB Ram | 85 | 0.5 | 4.4 | 0.1 | 56 |
| | 86 | 1.1 | 19.6 | 0.3 | 54 |
| | 10 | 0.4 | 6.5 | 0.1 | 47 |
| Total | | 12.0 | 209.1 | 3.2 | 55 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 54 | 0.8 | 28.8 | 0.5 | 61 |
| | 42 | 0.3 | 5.3 | 0.1 | 48 |
| | 59 | 0.3 | 17.7 | 0.3 | 52 |
| | 94 | 0.6 | 29.7 | 0.4 | 54 |
| | 93 | 0.6 | 21.2 | 0.3 | 53 |
| | 125 | 1.2 | 32.2 | 0.5 | 53 |
| | 128 | 1.1 | 27.0 | 0.4 | 52 |
| | 108 | 1.9 | 25.0 | 0.4 | 51 |
| US 58 EB Ramp | 141 | 0.5 | 3.2 | 0.1 | 66 |
| | 107 | 0.1 | 7.3 | 0.1 | 55 |
| US 58 WB Ramp | 142 | 0.3 | 7.2 | 0.1 | 59 |
| Fisher Farm Rd | 143 | 1.2 | 5.3 | 0.1 | 51 |
| Total | | 9.1 | 210.0 | 3.1 | 54 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| US 58 WB Ramp | 143 | 0.8 | 10.1 | 0.1 | 53 |
| US 58 WB Ramp | 142 | 0.5 | 5.0 | 0.1 | 55 |
| | 107 | 0.3 | 8.2 | 0.1 | 51 |
| US 58 EB Ramp | 141 | 0.4 | 7.6 | 0.1 | 53 |
| | 108 | 0.3 | 4.2 | 0.1 | 51 |
| | 128 | 0.7 | 25.6 | 0.4 | 50 |
| | 125 | 0.7 | 26.6 | 0.4 | 53 |
| | 93 | 1.2 | 32.2 | 0.5 | 53 |
| | 94 | 1.0 | 21.5 | 0.3 | 52 |
| | 59 | 1.6 | 30.7 | 0.4 | 52 |
| | 42 | 1.1 | 18.0 | 0.3 | 52 |
| US 220 Bypass SB Ram | 54 | 0.3 | 4.6 | 0.1 | 55 |
| | 50 | 2.3 | 32.1 | 0.5 | 54 |
| Total | | 11.1 | 226.4 | 3.3 | 52 |

Arterial Level of Service: NB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 82 | 0.8 | 4.1 | 0.0 | 32 |
| US 220 Bypass NB Ram | 83 | 0.7 | 11.6 | 0.1 | 34 |
| Water Plant Road | 84 | 14.3 | 20.2 | 0.1 | 13 |
| Drewry Mason School | 7 | 5.4 | 26.3 | 0.3 | 37 |
| Covington Lane | 6 | 1.8 | 27.2 | 0.3 | 42 |
| Shamrock Drive | 5 | 1.3 | 18.5 | 0.2 | 41 |
| Marrowbone Circle | 4 | 0.8 | 8.2 | 0.1 | 42 |
| Villa Road | 3 | 1.8 | 23.9 | 0.3 | 42 |
| | 20 | 0.7 | 7.6 | 0.1 | 41 |
| | 2 | 10.0 | 19.7 | 0.1 | 23 |
| | 12 | 2.5 | 11.2 | 0.1 | 36 |
| US 58 WB Ramp | 1 | 4.3 | 7.9 | 0.0 | 19 |
| Total | | 44.3 | 186.3 | 1.8 | 34 |

Arterial Level of Service: SB US 220 Business

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| | 1 | 11.9 | 23.9 | 0.2 | 23 |
| | 12 | 1.8 | 4.1 | 0.0 | 37 |
| US 58 EB Ramp | 2 | 3.7 | 13.4 | 0.1 | 30 |
| | 20 | 1.9 | 12.2 | 0.1 | 37 |
| Kilarney Court | 3 | 0.5 | 7.3 | 0.1 | 42 |
| | 4 | 1.4 | 23.6 | 0.3 | 42 |
| Shamrock Drive | 5 | 0.7 | 8.2 | 0.1 | 41 |
| Covington Lane | 6 | 1.2 | 18.5 | 0.2 | 42 |
| Steve Drive | 7 | 2.2 | 27.5 | 0.3 | 42 |
| Water Plant Road | 84 | 5.8 | 26.4 | 0.3 | 37 |
| | 83 | 2.2 | 7.1 | 0.1 | 36 |
| US 220 Bypass SB Ram | 82 | 0.6 | 11.9 | 0.1 | 33 |
| Water Plant Road | 81 | 0.4 | 4.0 | 0.0 | 33 |
| Total | | 34.4 | 187.9 | 1.9 | 37 |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| | 10 | 1.5 | 51.7 | 0.8 | 54 |
| US 220 Bypass NB Ram | 86 | 0.2 | 5.9 | 0.1 | 51 |
| | 85 | 1.0 | 20.0 | 0.3 | 53 |
| | 28 | 0.6 | 5.4 | 0.1 | 46 |
| | 72 | 0.5 | 12.4 | 0.2 | 51 |
| | 80 | 0.6 | 15.7 | 0.2 | 52 |
| | 13 | 0.7 | 13.4 | 0.2 | 61 |
| | 38 | 2.5 | 49.2 | 0.7 | 52 |
| | 44 | 4.3 | 61.9 | 0.9 | 52 |
| US 220 NB Ramp | 43 | 0.4 | 4.6 | 0.1 | 52 |
| US 220 | 45 | 2.2 | 26.9 | 0.4 | 60 |
| Total | | 14.5 | 267.0 | 4.0 | 54 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|-----------|----------------|
| US 220 | 45 | - | - | 0.3 | - |
| | 43 | - | - | 0.4 | - |
| | 44 | 0.2 | 5.2 | 0.1 | 46 |
| | 38 | 2.2 | 59.9 | 0.9 | 53 |
| | 13 | 1.9 | 41.8 | 0.7 | 62 |
| | 80 | 0.7 | 15.5 | 0.2 | 53 |
| | 72 | 0.8 | 15.9 | 0.2 | 52 |
| | 28 | 0.7 | 12.3 | 0.2 | 52 |
| US 220 Bypass SB Ram | 85 | 0.5 | 4.4 | 0.1 | 56 |
| | 86 | 1.3 | 19.8 | 0.3 | 53 |
| | 10 | 0.7 | 6.8 | 0.1 | 45 |
| Total | | 9.0 | 181.5 | 3.5 | 69 |

Arterial Level of Service: NB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 54 | 1.0 | 29.2 | 0.5 | 60 |
| | 42 | 0.2 | 5.2 | 0.1 | 49 |
| | 59 | 0.5 | 17.7 | 0.3 | 53 |
| | 94 | 0.9 | 30.1 | 0.4 | 53 |
| | 93 | 0.8 | 21.4 | 0.3 | 53 |
| | 125 | 1.5 | 32.5 | 0.5 | 52 |
| | 128 | 1.3 | 27.2 | 0.4 | 52 |
| | 108 | 2.8 | 25.9 | 0.4 | 49 |
| US 58 EB Ramp | 141 | 0.6 | 3.3 | 0.1 | 65 |
| | 107 | 0.1 | 7.4 | 0.1 | 54 |
| US 58 WB Ramp | 142 | 0.3 | 7.2 | 0.1 | 58 |
| Fisher Farm Rd | 143 | 1.5 | 5.7 | 0.1 | 48 |
| Total | | 11.6 | 212.7 | 3.1 | 53 |

Arterial Level of Service: SB US 220 Bypass

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------------|------|---------------|-----------------|------------|----------------|
| US 58 WB Ramp | 142 | 2.6 | 5.4 | 0.1 | 51 |
| | 107 | 1.2 | 9.6 | 0.1 | 43 |
| US 58 EB Ramp | 141 | 0.3 | 8.0 | 0.1 | 49 |
| | 108 | 0.3 | 4.2 | 0.1 | 50 |
| | 128 | 0.7 | 25.6 | 0.4 | 49 |
| | 125 | 0.7 | 26.6 | 0.4 | 53 |
| | 93 | 1.2 | 32.1 | 0.5 | 53 |
| | 94 | 1.0 | 21.5 | 0.3 | 52 |
| | 59 | 1.6 | 30.7 | 0.4 | 52 |
| | 42 | 1.2 | 18.1 | 0.3 | 51 |
| US 220 Bypass SB Ram | 54 | 0.3 | 4.5 | 0.1 | 57 |
| | 50 | 2.2 | 32.1 | 0.5 | 54 |
| Total | | 13.3 | 218.5 | 3.1 | 52 |

APPENDIX L

FUTURE BUILD ALTERNATIVE E OPERATIONAL ANALYSIS
WORKSHEETS

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.2 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↶ | ↷ | | ↶ | |
| Traffic Vol, veh/h | 3 | 41 | 6 | 172 | 308 | 0 |
| Future Vol, veh/h | 3 | 41 | 6 | 172 | 308 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 47 | 7 | 195 | 350 | 0 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 202 | 0 | - | 0 | 158 |
| Stage 1 | - | - | - | - | 105 |
| Stage 2 | - | - | - | - | 53 |
| Critical Hdwy | 4.12 | - | - | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 |
| Pot Cap-1 Maneuver | 1370 | - | - | - | 833 |
| Stage 1 | - | - | - | - | 919 |
| Stage 2 | - | - | - | - | 970 |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1370 | - | - | - | 831 |
| Mov Cap-2 Maneuver | - | - | - | - | 831 |
| Stage 1 | - | - | - | - | 917 |
| Stage 2 | - | - | - | - | 970 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.5 | 0 | 12.4 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1370 | - | - | - | 831 |
| HCM Lane V/C Ratio | 0.002 | - | - | - | 0.421 |
| HCM Control Delay (s) | 7.6 | 0 | - | - | 12.4 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 2.1 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.4 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | |
| Traffic Vol, veh/h | 97 | 252 | 134 | 55 | 15 | 44 |
| Future Vol, veh/h | 97 | 252 | 134 | 55 | 15 | 44 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 110 | 286 | 152 | 63 | 17 | 50 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 215 | 0 | - | 0 | 690 184 |
| Stage 1 | - | - | - | - | 184 - |
| Stage 2 | - | - | - | - | 506 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1355 | - | - | - | 411 858 |
| Stage 1 | - | - | - | - | 848 - |
| Stage 2 | - | - | - | - | 606 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1355 | - | - | - | 371 858 |
| Mov Cap-2 Maneuver | - | - | - | - | 371 - |
| Stage 1 | - | - | - | - | 766 - |
| Stage 2 | - | - | - | - | 606 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 2.2 | 0 | 11.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1355 | - | - | - | 643 |
| HCM Lane V/C Ratio | 0.081 | - | - | - | 0.104 |
| HCM Control Delay (s) | 7.9 | 0 | - | - | 11.2 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.3 | - | - | - | 0.3 |

| Intersection | |
|---------------------------|----|
| Intersection Delay, s/veh | 25 |
| Intersection LOS | C |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|------|------|------|------|------|------|
| Lane Configurations | ↘ | | | | ↘ | ↗ |
| Traffic Vol, veh/h | 188 | 0 | 0 | 0 | 468 | 0 |
| Future Vol, veh/h | 188 | 0 | 0 | 0 | 468 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 214 | 0 | 0 | 0 | 532 | 0 |
| Number of Lanes | 1 | 0 | 0 | 0 | 1 | 1 |

| Approach | WB | SB |
|----------------------------|------|------|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | WB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | SB | |
| Conflicting Lanes Right | 2 | 0 |
| HCM Control Delay | 11.7 | 30.3 |
| HCM LOS | B | D |

| Lane | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|
| Vol Left, % | 100% | 100% | 0% |
| Vol Thru, % | 0% | 0% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 188 | 468 | 0 |
| LT Vol | 188 | 468 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 214 | 532 | 0 |
| Geometry Grp | 2 | 7 | 7 |
| Degree of Util (X) | 0.339 | 0.832 | 0 |
| Departure Headway (Hd) | 5.708 | 5.632 | 5.129 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 626 | 638 | 0 |
| Service Time | 3.773 | 3.407 | 2.904 |
| HCM Lane V/C Ratio | 0.342 | 0.834 | 0 |
| HCM Control Delay | 11.7 | 30.3 | 7.9 |
| HCM Lane LOS | B | D | N |
| HCM 95th-tile Q | 1.5 | 8.9 | 0 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | | ↗ | ↘ | | | |
| Traffic Vol, veh/h | 0 | 468 | 0 | 0 | 188 | 521 | 0 | 0 | 99 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 468 | 0 | 0 | 188 | 521 | 0 | 0 | 99 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | 50 | - | - | 175 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16979 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 9 | 2 | 11 | 2 | 12 | 8 | 13 | 21 | 2 |
| Mvmt Flow | 0 | 532 | 0 | 0 | 214 | 592 | 0 | 0 | 113 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 806 | 0 | 0 |
| Stage 1 | - | - | 532 |
| Stage 2 | - | - | 806 |
| Critical Hdwy | 4.12 | - | 6.62 |
| Critical Hdwy Stg 1 | - | - | 5.62 |
| Critical Hdwy Stg 2 | - | - | 5.62 |
| Follow-up Hdwy | 2.218 | - | 4.108 |
| Pot Cap-1 Maneuver | 819 | 0 | 536 |
| Stage 1 | - | 0 | 510 |
| Stage 2 | - | 0 | 381 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 819 | - | 536 |
| Mov Cap-2 Maneuver | - | - | 0 |
| Stage 1 | - | - | 0 |
| Stage 2 | - | - | 0 |

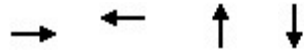
| Approach | EB | WB | NB |
|----------------------|----|----|------|
| HCM Control Delay, s | 0 | 0 | 13.5 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-----|-----|-----|-----|
| Capacity (veh/h) | - | 536 | 819 | - | - | - |
| HCM Lane V/C Ratio | - | 0.21 | - | - | - | - |
| HCM Control Delay (s) | 0 | 13.5 | 0 | - | - | - |
| HCM Lane LOS | A | B | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0.8 | 0 | - | - | - |

Queues

103: Church St/Main St & Morehead Ave

04/02/2019



| Lane Group | EBT | WBT | NBT | SBT |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph) | 644 | 478 | 139 | 312 |
| v/c Ratio | 0.81 | 0.43 | 0.65 | 0.56 |
| Control Delay | 19.4 | 7.6 | 35.5 | 9.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.4 | 7.6 | 35.5 | 9.0 |
| Queue Length 50th (ft) | 128 | 67 | 46 | 13 |
| Queue Length 95th (ft) | #384 | 150 | 95 | 64 |
| Internal Link Dist (ft) | 1440 | 1642 | 774 | 692 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 956 | 1334 | 349 | 732 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.67 | 0.36 | 0.40 | 0.43 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 103: Church St/Main St & Morehead Ave

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 164 | 330 | 73 | 0 | 399 | 22 | 74 | 48 | 0 | 39 | 0 | 236 |
| Future Volume (veh/h) | 164 | 330 | 73 | 0 | 399 | 22 | 74 | 48 | 0 | 39 | 0 | 236 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 186 | 375 | 83 | 0 | 453 | 25 | 84 | 55 | 0 | 44 | 0 | 268 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 265 | 474 | 96 | 0 | 1001 | 55 | 279 | 156 | 0 | 117 | 21 | 335 |
| Arrive On Green | 0.57 | 0.57 | 0.57 | 0.00 | 0.57 | 0.57 | 0.25 | 0.25 | 0.00 | 0.25 | 0.00 | 0.25 |
| Sat Flow, veh/h | 301 | 831 | 168 | 0 | 1756 | 97 | 655 | 628 | 0 | 137 | 85 | 1352 |
| Grp Volume(v), veh/h | 644 | 0 | 0 | 0 | 0 | 478 | 139 | 0 | 0 | 312 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1300 | 0 | 0 | 0 | 0 | 1853 | 1282 | 0 | 0 | 1574 | 0 | 0 |
| Q Serve(g_s), s | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | 7.4 | 0.0 | 0.0 | 0.0 | 4.6 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 22.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.4 | 4.1 | 0.0 | 0.0 | 9.1 | 0.0 | 0.0 |
| Prop In Lane | 0.29 | | 0.13 | 0.00 | | 0.05 | 0.60 | | 0.00 | 0.14 | | 0.86 |
| Lane Grp Cap(c), veh/h | 835 | 0 | 0 | 0 | 0 | 1056 | 435 | 0 | 0 | 473 | 0 | 0 |
| V/C Ratio(X) | 0.77 | 0.00 | 0.00 | 0.00 | 0.00 | 0.45 | 0.32 | 0.00 | 0.00 | 0.66 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 1100 | 0 | 0 | 0 | 0 | 1404 | 601 | 0 | 0 | 668 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 9.6 | 0.0 | 0.0 | 0.0 | 0.0 | 6.2 | 15.4 | 0.0 | 0.0 | 17.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.9 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 1.2 | 0.0 | 0.0 | 3.1 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 12.1 | 0.0 | 0.0 | 0.0 | 0.0 | 6.5 | 15.8 | 0.0 | 0.0 | 18.9 | 0.0 | 0.0 |
| LnGrp LOS | B | A | A | A | A | A | B | A | A | B | A | A |
| Approach Vol, veh/h | | 644 | | | 478 | | | 139 | | | | 312 |
| Approach Delay, s/veh | | 12.1 | | | 6.5 | | | 15.8 | | | | 18.9 |
| Approach LOS | | B | | | A | | | B | | | | B |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 16.8 | | 32.7 | | 16.8 | | 32.7 | | | | |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | 4.5 | | 4.5 | | | | |
| Max Green Setting (Gmax), s | | 18.5 | | 37.5 | | 18.5 | | 37.5 | | | | |
| Max Q Clear Time (g_c+I1), s | | 6.1 | | 24.0 | | 11.1 | | 9.4 | | | | |
| Green Ext Time (p_c), s | | 0.6 | | 4.3 | | 1.1 | | 3.3 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 12.1 | | | | | | | | |
| HCM 6th LOS | | | | B | | | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 4.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↑ | ↑ | ↑ | | | | | | ↕ | |
| Traffic Vol, veh/h | 0 | 18 | 12 | 30 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| Future Vol, veh/h | 0 | 18 | 12 | 30 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 20 | 14 | 34 | 82 | 0 | 0 | 0 | 0 | 0 | 0 | 103 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|-------|
| Conflicting Flow All | - | 0 | 0 | 34 | 0 | 0 | | 177 | 184 | 82 |
| Stage 1 | - | - | - | - | - | - | | 150 | 150 | - |
| Stage 2 | - | - | - | - | - | - | | 27 | 34 | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | | 6.42 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 1578 | - | 0 | | 813 | 710 | 978 |
| Stage 1 | 0 | - | - | - | - | 0 | | 878 | 773 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | 996 | 867 | - |
| Platoon blocked, % | - | - | - | - | - | - | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1578 | - | - | | 795 | 0 | 978 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | 795 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | 878 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | 974 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 2.2 | 9.1 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|-----------------------|-----|-----|-------|-----|-------|
| Capacity (veh/h) | - | - | 1578 | - | 978 |
| HCM Lane V/C Ratio | - | - | 0.022 | - | 0.106 |
| HCM Control Delay (s) | - | - | 7.3 | - | 9.1 |
| HCM Lane LOS | - | - | A | - | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | - | 0.4 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 0.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↑ | | | ↗ | | | ↕ | | | | |
| Traffic Vol, veh/h | 18 | 0 | 0 | 0 | 3 | 24 | 99 | 0 | 5 | 0 | 0 | 0 |
| Future Vol, veh/h | 18 | 0 | 0 | 0 | 3 | 24 | 99 | 0 | 5 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 0 | 0 | 0 | 3 | 27 | 113 | 0 | 6 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 30 | 0 | 0 |
| Stage 1 | - | - | 40 |
| Stage 2 | - | - | 17 |
| Critical Hdwy | 4.12 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | 3.518 |
| Pot Cap-1 Maneuver | 1583 | 0 | 950 |
| Stage 1 | - | 0 | 982 |
| Stage 2 | - | 0 | 1006 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1583 | - | 938 |
| Mov Cap-2 Maneuver | - | - | 938 |
| Stage 1 | - | - | 969 |
| Stage 2 | - | - | 1006 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 7.3 | 0 | - |
| HCM LOS | - | - | - |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | 1583 | - | - | - |
| HCM Lane V/C Ratio | - | 0.013 | - | - | - |
| HCM Control Delay (s) | - | 7.3 | - | - | - |
| HCM Lane LOS | - | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0 | - | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 11 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | |
| Traffic Vol, veh/h | 16 | 48 | 91 | 228 | 396 | 0 |
| Future Vol, veh/h | 16 | 48 | 91 | 228 | 396 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 55 | 103 | 259 | 450 | 0 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 362 | 0 | - | 0 | 324 233 |
| Stage 1 | - | - | - | - | 233 - |
| Stage 2 | - | - | - | - | 91 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1197 | - | - | - | 670 806 |
| Stage 1 | - | - | - | - | 806 - |
| Stage 2 | - | - | - | - | 933 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1197 | - | - | - | 659 806 |
| Mov Cap-2 Maneuver | - | - | - | - | 659 - |
| Stage 1 | - | - | - | - | 793 - |
| Stage 2 | - | - | - | - | 933 - |

| Approach | EB | WB | SB |
|----------------------|----|----|------|
| HCM Control Delay, s | 2 | 0 | 21.4 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1197 | - | - | - | 659 |
| HCM Lane V/C Ratio | 0.015 | - | - | - | 0.683 |
| HCM Control Delay (s) | 8.1 | 0 | - | - | 21.4 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 5.4 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 11.3 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | |
| Traffic Vol, veh/h | 224 | 220 | 241 | 26 | 103 | 78 |
| Future Vol, veh/h | 224 | 220 | 241 | 26 | 103 | 78 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 255 | 250 | 274 | 30 | 117 | 89 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 304 | 0 | - | 0 | 1049 289 |
| Stage 1 | - | - | - | - | 289 - |
| Stage 2 | - | - | - | - | 760 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1257 | - | - | - | 252 750 |
| Stage 1 | - | - | - | - | 760 - |
| Stage 2 | - | - | - | - | 462 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1257 | - | - | - | 193 750 |
| Mov Cap-2 Maneuver | - | - | - | - | 193 - |
| Stage 1 | - | - | - | - | 581 - |
| Stage 2 | - | - | - | - | 462 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 4.3 | 0 | 45 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1257 | - | - | - | 284 |
| HCM Lane V/C Ratio | 0.203 | - | - | - | 0.724 |
| HCM Control Delay (s) | 8.6 | 0 | - | - | 45 |
| HCM Lane LOS | A | A | - | - | E |
| HCM 95th %tile Q(veh) | 0.8 | - | - | - | 5.2 |

| Intersection | |
|---------------------------|-------|
| Intersection Delay, s/veh | 182.6 |
| Intersection LOS | F |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|------|------|------|------|------|------|
| Lane Configurations | ↘ | | | | ↘ | ↗ |
| Traffic Vol, veh/h | 36 | 0 | 0 | 0 | 825 | 0 |
| Future Vol, veh/h | 36 | 0 | 0 | 0 | 825 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 10 | 2 |
| Mvmt Flow | 41 | 0 | 0 | 0 | 938 | 0 |
| Number of Lanes | 1 | 0 | 0 | 0 | 1 | 1 |

| Approach | WB | SB |
|----------------------------|------|-------|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | WB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | SB | |
| Conflicting Lanes Right | 2 | 0 |
| HCM Control Delay | 10.3 | 190.1 |
| HCM LOS | B | F |

| Lane | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|
| Vol Left, % | 100% | 100% | 0% |
| Vol Thru, % | 0% | 0% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 36 | 825 | 0 |
| LT Vol | 36 | 825 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 41 | 938 | 0 |
| Geometry Grp | 2 | 7 | 7 |
| Degree of Util (X) | 0.068 | 1.365 | 0 |
| Departure Headway (Hd) | 6.823 | 5.242 | 4.605 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 528 | 694 | 0 |
| Service Time | 4.823 | 3.005 | 2.368 |
| HCM Lane V/C Ratio | 0.078 | 1.352 | 0 |
| HCM Control Delay | 10.3 | 190.1 | 7.4 |
| HCM Lane LOS | B | F | N |
| HCM 95th-tile Q | 0.2 | 39.7 | 0 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | | ↗ | ↘ | | | |
| Traffic Vol, veh/h | 0 | 825 | 0 | 0 | 36 | 597 | 0 | 0 | 72 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 825 | 0 | 0 | 36 | 597 | 0 | 0 | 72 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | 50 | - | - | 175 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16979 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 10 | 2 | 9 | 9 | 11 | 2 | 12 | 8 | 13 | 21 | 2 |
| Mvmt Flow | 0 | 938 | 0 | 0 | 41 | 678 | 0 | 0 | 82 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 719 | 0 | 0 |
| Stage 1 | - | - | 938 |
| Stage 2 | - | - | 719 |
| Critical Hdwy | 4.12 | - | 6.62 |
| Critical Hdwy Stg 1 | - | - | 5.62 |
| Critical Hdwy Stg 2 | - | - | 5.62 |
| Follow-up Hdwy | 2.218 | - | 4.108 |
| Pot Cap-1 Maneuver | 882 | 0 | 93 |
| Stage 1 | - | 0 | 330 |
| Stage 2 | - | 0 | 418 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 882 | - | 0 |
| Mov Cap-2 Maneuver | - | - | 0 |
| Stage 1 | - | - | 0 |
| Stage 2 | - | - | 0 |

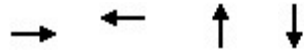
| Approach | EB | WB | NB |
|----------------------|----|----|------|
| HCM Control Delay, s | 0 | 0 | 20.6 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-----|-----|-----|-----|
| Capacity (veh/h) | - | 312 | 882 | - | - | - |
| HCM Lane V/C Ratio | - | 0.262 | - | - | - | - |
| HCM Control Delay (s) | 0 | 20.6 | 0 | - | - | - |
| HCM Lane LOS | A | C | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 1 | 0 | - | - | - |

Queues

103: Church St/Main St & Morehead Ave

04/02/2019



| Lane Group | EBT | WBT | NBT | SBT |
|-------------------------|-------|------|------|-------|
| Lane Group Flow (vph) | 1019 | 358 | 126 | 484 |
| v/c Ratio | 1.22 | 0.32 | 0.81 | 1.12 |
| Control Delay | 129.2 | 8.0 | 76.7 | 112.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 129.2 | 8.0 | 76.7 | 112.5 |
| Queue Length 50th (ft) | ~887 | 88 | 84 | ~350 |
| Queue Length 95th (ft) | #1100 | 131 | #186 | #536 |
| Internal Link Dist (ft) | 1440 | 1642 | 774 | 692 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 838 | 1107 | 155 | 433 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.22 | 0.32 | 0.81 | 1.12 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 103: Church St/Main St & Morehead Ave

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 208 | 631 | 58 | 0 | 248 | 67 | 111 | 0 | 0 | 130 | 22 | 274 |
| Future Volume (veh/h) | 208 | 631 | 58 | 0 | 248 | 67 | 111 | 0 | 0 | 130 | 22 | 274 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1604 | 1604 | 1604 | 1678 | 1678 | 1678 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 236 | 717 | 66 | 0 | 282 | 76 | 126 | 0 | 0 | 148 | 25 | 311 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 20 | 20 | 20 | 15 | 15 | 15 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 217 | 561 | 51 | 0 | 851 | 229 | 218 | 0 | 0 | 174 | 27 | 284 |
| Arrive On Green | 0.67 | 0.67 | 0.67 | 0.00 | 0.67 | 0.67 | 0.25 | 0.00 | 0.00 | 0.25 | 0.25 | 0.25 |
| Sat Flow, veh/h | 265 | 840 | 77 | 0 | 1273 | 343 | 609 | 0 | 0 | 523 | 110 | 1138 |
| Grp Volume(v), veh/h | 1019 | 0 | 0 | 0 | 0 | 358 | 126 | 0 | 0 | 484 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1182 | 0 | 0 | 0 | 0 | 1616 | 609 | 0 | 0 | 1771 | 0 | 0 |
| Q Serve(g_s), s | 63.1 | 0.0 | 0.0 | 0.0 | 0.0 | 10.4 | 0.0 | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 73.5 | 0.0 | 0.0 | 0.0 | 0.0 | 10.4 | 21.5 | 0.0 | 0.0 | 27.5 | 0.0 | 0.0 |
| Prop In Lane | 0.23 | | 0.06 | 0.00 | | 0.21 | 1.00 | | 0.00 | 0.31 | | 0.64 |
| Lane Grp Cap(c), veh/h | 830 | 0 | 0 | 0 | 0 | 1080 | 218 | 0 | 0 | 485 | 0 | 0 |
| V/C Ratio(X) | 1.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.33 | 0.58 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 830 | 0 | 0 | 0 | 0 | 1080 | 218 | 0 | 0 | 485 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 23.7 | 0.0 | 0.0 | 0.0 | 0.0 | 7.8 | 39.0 | 0.0 | 0.0 | 42.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 113.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 3.8 | 0.0 | 0.0 | 40.0 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 47.1 | 0.0 | 0.0 | 0.0 | 0.0 | 3.4 | 3.4 | 0.0 | 0.0 | 18.7 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 136.9 | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 | 42.8 | 0.0 | 0.0 | 82.1 | 0.0 | 0.0 |
| LnGrp LOS | F | A | A | A | A | A | D | A | A | F | A | A |
| Approach Vol, veh/h | | 1019 | | | 358 | | | 126 | | | | 484 |
| Approach Delay, s/veh | | 136.9 | | | 8.0 | | | 42.8 | | | | 82.1 |
| Approach LOS | | F | | | A | | | D | | | | F |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 32.0 | | 78.0 | | 32.0 | | 78.0 | | | | |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | 4.5 | | 4.5 | | | | |
| Max Green Setting (Gmax), s | | 27.5 | | 73.5 | | 27.5 | | 73.5 | | | | |
| Max Q Clear Time (g_c+I1), s | | 23.5 | | 75.5 | | 29.5 | | 12.4 | | | | |
| Green Ext Time (p_c), s | | 0.2 | | 0.0 | | 0.0 | | 2.6 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 94.3 | | | | | | | | |
| HCM 6th LOS | | | | F | | | | | | | | |

HCM 6th TWSC
121: Reservoir Rd & US 220 SB Ramp

04/02/2019

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 1.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↗ | ↘ | ↑ | | | | | | ↕ | |
| Traffic Vol, veh/h | 0 | 80 | 48 | 26 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Future Vol, veh/h | 0 | 80 | 48 | 26 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 50 | 50 | 2 | 2 | 2 | 2 | 2 | 2 | 25 |
| Mvmt Flow | 0 | 91 | 55 | 30 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|-------|
| Conflicting Flow All | - | 0 | 0 | 146 | 0 | 0 | | 209 | 236 | 30 |
| Stage 1 | - | - | - | - | - | - | | 90 | 90 | - |
| Stage 2 | - | - | - | - | - | - | | 119 | 146 | - |
| Critical Hdwy | - | - | - | 4.6 | - | - | | 6.42 | 6.52 | 6.45 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Follow-up Hdwy | - | - | - | 2.65 | - | - | | 3.518 | 4.018 | 3.525 |
| Pot Cap-1 Maneuver | 0 | - | - | 1189 | - | 0 | | 779 | 665 | 982 |
| Stage 1 | 0 | - | - | - | - | 0 | | 934 | 820 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | 906 | 776 | - |
| Platoon blocked, % | - | - | - | - | - | - | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1189 | - | - | | 760 | 0 | 982 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | 760 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | 934 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | 883 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 4.1 | 8.7 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|-----------------------|-----|-----|-------|-----|-------|
| Capacity (veh/h) | - | - | 1189 | - | 982 |
| HCM Lane V/C Ratio | - | - | 0.025 | - | 0.017 |
| HCM Control Delay (s) | - | - | 8.1 | - | 8.7 |
| HCM Lane LOS | - | - | A | - | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | - | 0.1 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 4.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↑ | | | ↗ | | | ↕ | | | | |
| Traffic Vol, veh/h | 80 | 0 | 0 | 0 | 6 | 17 | 46 | 0 | 6 | 0 | 0 | 0 |
| Future Vol, veh/h | 80 | 0 | 0 | 0 | 6 | 17 | 46 | 0 | 6 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 50 | 2 | 2 | 2 | 2 | 2 | 50 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 91 | 0 | 0 | 0 | 7 | 19 | 52 | 0 | 7 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|------------------------|
| Conflicting Flow All | 26 | 0 | - - - 0 199 208 0 |
| Stage 1 | - | - | - - - 182 182 - |
| Stage 2 | - | - | - - - 17 26 - |
| Critical Hdwy | 4.6 | - | - - - 6.9 6.52 6.22 |
| Critical Hdwy Stg 1 | - | - | - - - 5.9 5.52 - |
| Critical Hdwy Stg 2 | - | - | - - - 5.9 5.52 - |
| Follow-up Hdwy | 2.65 | - | - - - 3.95 4.018 3.318 |
| Pot Cap-1 Maneuver | 1327 | - 0 0 | - - 693 689 - |
| Stage 1 | - | - 0 0 | - - 746 749 - |
| Stage 2 | - | - 0 0 | - - 895 874 - |
| Platoon blocked, % | - | - | - - |
| Mov Cap-1 Maneuver | 1327 | - - - | - 645 0 - |
| Mov Cap-2 Maneuver | - | - - - | - 645 0 - |
| Stage 1 | - | - - - | - 695 0 - |
| Stage 2 | - | - - - | - 895 0 - |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 7.9 | 0 | |
| HCM LOS | | | - |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | 1327 | - | - | - |
| HCM Lane V/C Ratio | - | 0.069 | - | - | - |
| HCM Control Delay (s) | - | 7.9 | - | - | - |
| HCM Lane LOS | - | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0.2 | - | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.9 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↔ | ↔ | | ↔ | |
| Traffic Vol, veh/h | 3 | 44 | 6 | 181 | 342 | 0 |
| Future Vol, veh/h | 3 | 44 | 6 | 181 | 342 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 50 | 7 | 206 | 389 | 0 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 213 | 0 | - | 0 | 166 |
| Stage 1 | - | - | - | - | 110 |
| Stage 2 | - | - | - | - | 56 |
| Critical Hdwy | 4.12 | - | - | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 |
| Pot Cap-1 Maneuver | 1357 | - | - | - | 824 |
| Stage 1 | - | - | - | - | 915 |
| Stage 2 | - | - | - | - | 967 |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1357 | - | - | - | 822 |
| Mov Cap-2 Maneuver | - | - | - | - | 822 |
| Stage 1 | - | - | - | - | 913 |
| Stage 2 | - | - | - | - | 967 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.5 | 0 | 13.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1357 | - | - | - | 822 |
| HCM Lane V/C Ratio | 0.003 | - | - | - | 0.473 |
| HCM Control Delay (s) | 7.7 | 0 | - | - | 13.2 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 2.6 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.5 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | |
| Traffic Vol, veh/h | 107 | 279 | 138 | 56 | 16 | 49 |
| Future Vol, veh/h | 107 | 279 | 138 | 56 | 16 | 49 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 122 | 317 | 157 | 64 | 18 | 56 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 221 | 0 | - | 0 | 750 189 |
| Stage 1 | - | - | - | - | 189 - |
| Stage 2 | - | - | - | - | 561 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1348 | - | - | - | 379 853 |
| Stage 1 | - | - | - | - | 843 - |
| Stage 2 | - | - | - | - | 571 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1348 | - | - | - | 337 853 |
| Mov Cap-2 Maneuver | - | - | - | - | 337 - |
| Stage 1 | - | - | - | - | 750 - |
| Stage 2 | - | - | - | - | 571 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 2.2 | 0 | 11.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|------|-----|-----|-----|-------|
| Capacity (veh/h) | 1348 | - | - | - | 620 |
| HCM Lane V/C Ratio | 0.09 | - | - | - | 0.119 |
| HCM Control Delay (s) | 7.9 | 0 | - | - | 11.6 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.3 | - | - | - | 0.4 |

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 33.3 |
| Intersection LOS | D |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|------|------|------|------|------|------|
| Lane Configurations | ↘ | | | | ↘ | ↗ |
| Traffic Vol, veh/h | 207 | 0 | 0 | 0 | 495 | 0 |
| Future Vol, veh/h | 207 | 0 | 0 | 0 | 495 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 10 | 2 |
| Mvmt Flow | 235 | 0 | 0 | 0 | 563 | 0 |
| Number of Lanes | 1 | 0 | 0 | 0 | 1 | 1 |

| Approach | WB | SB |
|----------------------------|------|----|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | WB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | SB | |
| Conflicting Lanes Right | 2 | 0 |
| HCM Control Delay | 12.6 | 42 |
| HCM LOS | B | E |

| Lane | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|
| Vol Left, % | 100% | 100% | 0% |
| Vol Thru, % | 0% | 0% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 207 | 495 | 0 |
| LT Vol | 207 | 495 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 235 | 562 | 0 |
| Geometry Grp | 2 | 7 | 7 |
| Degree of Util (X) | 0.383 | 0.912 | 0 |
| Departure Headway (Hd) | 5.854 | 5.834 | 5.194 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 612 | 613 | 0 |
| Service Time | 3.93 | 3.631 | 2.991 |
| HCM Lane V/C Ratio | 0.384 | 0.917 | 0 |
| HCM Control Delay | 12.6 | 42 | 8 |
| HCM Lane LOS | B | E | N |
| HCM 95th-tile Q | 1.8 | 11.5 | 0 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | | ↗ | ↘ | | | |
| Traffic Vol, veh/h | 0 | 495 | 0 | 0 | 207 | 570 | 0 | 0 | 101 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 495 | 0 | 0 | 207 | 570 | 0 | 0 | 101 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | 50 | - | - | 175 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16979 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 10 | 2 | 9 | 9 | 11 | 2 | 12 | 8 | 13 | 21 | 2 |
| Mvmt Flow | 0 | 563 | 0 | 0 | 235 | 648 | 0 | 0 | 115 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 883 | 0 | 0 |
| Stage 1 | - | - | 563 |
| Stage 2 | - | - | 883 |
| Critical Hdwy | 4.12 | - | 6.62 |
| Critical Hdwy Stg 1 | - | - | 5.62 |
| Critical Hdwy Stg 2 | - | - | 5.62 |
| Follow-up Hdwy | 2.218 | - | 4.108 |
| Pot Cap-1 Maneuver | 766 | 0 | 125 |
| Stage 1 | - | 0 | 493 |
| Stage 2 | - | 0 | 350 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 766 | - | 0 |
| Mov Cap-2 Maneuver | - | - | 0 |
| Stage 1 | - | - | 0 |
| Stage 2 | - | - | 0 |

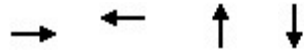
| Approach | EB | WB | NB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0 | 0 | 14 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-----|-----|-----|-----|
| Capacity (veh/h) | - | 514 | 766 | - | - | - |
| HCM Lane V/C Ratio | - | 0.223 | - | - | - | - |
| HCM Control Delay (s) | 0 | 14 | 0 | - | - | - |
| HCM Lane LOS | A | B | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0.8 | 0 | - | - | - |

Queues

103: Church St/Main St & Morehead Ave

04/02/2019



| Lane Group | EBT | WBT | NBT | SBT |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph) | 677 | 527 | 110 | 344 |
| v/c Ratio | 0.92 | 0.48 | 0.81 | 0.61 |
| Control Delay | 32.1 | 8.4 | 75.1 | 11.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 32.1 | 8.4 | 75.1 | 11.4 |
| Queue Length 50th (ft) | 278 | 124 | 59 | 22 |
| Queue Length 95th (ft) | #550 | 184 | #145 | 95 |
| Internal Link Dist (ft) | 1440 | 1642 | 774 | 692 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 841 | 1255 | 171 | 637 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.80 | 0.42 | 0.64 | 0.54 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 103: Church St/Main St & Morehead Ave

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 172 | 347 | 77 | 0 | 440 | 24 | 77 | 19 | 0 | 43 | 0 | 260 |
| Future Volume (veh/h) | 172 | 347 | 77 | 0 | 440 | 24 | 77 | 19 | 0 | 43 | 0 | 260 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1604 | 1604 | 1604 | 1678 | 1678 | 1678 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 195 | 394 | 88 | 0 | 500 | 27 | 88 | 22 | 0 | 49 | 0 | 295 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 20 | 20 | 20 | 15 | 15 | 15 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 232 | 424 | 90 | 0 | 1065 | 58 | 190 | 40 | 0 | 86 | 14 | 321 |
| Arrive On Green | 0.68 | 0.68 | 0.68 | 0.00 | 0.68 | 0.68 | 0.22 | 0.22 | 0.00 | 0.22 | 0.00 | 0.22 |
| Sat Flow, veh/h | 266 | 628 | 134 | 0 | 1577 | 85 | 525 | 179 | 0 | 175 | 64 | 1444 |
| Grp Volume(v), veh/h | 677 | 0 | 0 | 0 | 0 | 527 | 110 | 0 | 0 | 344 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1027 | 0 | 0 | 0 | 0 | 1662 | 704 | 0 | 0 | 1684 | 0 | 0 |
| Q Serve(g_s), s | 43.4 | 0.0 | 0.0 | 0.0 | 0.0 | 13.3 | 0.0 | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 56.7 | 0.0 | 0.0 | 0.0 | 0.0 | 13.3 | 14.0 | 0.0 | 0.0 | 17.4 | 0.0 | 0.0 |
| Prop In Lane | 0.29 | | 0.13 | 0.00 | | 0.05 | 0.80 | | 0.00 | 0.14 | | 0.86 |
| Lane Grp Cap(c), veh/h | 746 | 0 | 0 | 0 | 0 | 1123 | 230 | 0 | 0 | 421 | 0 | 0 |
| V/C Ratio(X) | 0.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.47 | 0.48 | 0.00 | 0.00 | 0.82 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 758 | 0 | 0 | 0 | 0 | 1139 | 241 | 0 | 0 | 436 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 16.8 | 0.0 | 0.0 | 0.0 | 0.0 | 6.8 | 31.7 | 0.0 | 0.0 | 33.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 1.5 | 0.0 | 0.0 | 11.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 14.5 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 2.2 | 0.0 | 0.0 | 8.3 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 31.4 | 0.0 | 0.0 | 0.0 | 0.0 | 7.1 | 33.2 | 0.0 | 0.0 | 44.6 | 0.0 | 0.0 |
| LnGrp LOS | C | A | A | A | A | A | C | A | A | D | A | A |
| Approach Vol, veh/h | | 677 | | | 527 | | | 110 | | | | 344 |
| Approach Delay, s/veh | | 31.4 | | | 7.1 | | | 33.2 | | | | 44.6 |
| Approach LOS | | C | | | A | | | C | | | | D |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 24.2 | | 64.1 | | 24.2 | | 64.1 | | | | |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | 4.5 | | 4.5 | | | | |
| Max Green Setting (Gmax), s | | 20.5 | | 60.5 | | 20.5 | | 60.5 | | | | |
| Max Q Clear Time (g_c+I1), s | | 16.0 | | 58.7 | | 19.4 | | 15.3 | | | | |
| Green Ext Time (p_c), s | | 0.2 | | 0.9 | | 0.2 | | 4.1 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 26.5 | | | | | | | | |
| HCM 6th LOS | | | | C | | | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 6.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↗ | ↘ | ↑ | | | | | | ↕ | |
| Traffic Vol, veh/h | 0 | 55 | 40 | 68 | 162 | 0 | 0 | 0 | 0 | 0 | 0 | 273 |
| Future Vol, veh/h | 0 | 55 | 40 | 68 | 162 | 0 | 0 | 0 | 0 | 0 | 0 | 273 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 50 | 50 | 2 | 2 | 2 | 2 | 2 | 2 | 25 |
| Mvmt Flow | 0 | 63 | 45 | 77 | 184 | 0 | 0 | 0 | 0 | 0 | 0 | 310 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|-------|
| Conflicting Flow All | - | 0 | 0 | 108 | 0 | 0 | | 424 | 446 | 184 |
| Stage 1 | - | - | - | - | - | - | | 338 | 338 | - |
| Stage 2 | - | - | - | - | - | - | | 86 | 108 | - |
| Critical Hdwy | - | - | - | 4.6 | - | - | | 6.42 | 6.52 | 6.45 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | | 5.42 | 5.52 | - |
| Follow-up Hdwy | - | - | - | 2.65 | - | - | | 3.518 | 4.018 | 3.525 |
| Pot Cap-1 Maneuver | 0 | - | - | 1231 | - | 0 | | 587 | 507 | 803 |
| Stage 1 | 0 | - | - | - | - | 0 | | 722 | 641 | - |
| Stage 2 | 0 | - | - | - | - | 0 | | 937 | 806 | - |
| Platoon blocked, % | - | - | - | - | - | - | | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 1231 | - | - | | 550 | 0 | 803 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | | 550 | 0 | - |
| Stage 1 | - | - | - | - | - | - | | 722 | 0 | - |
| Stage 2 | - | - | - | - | - | - | | 878 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 2.4 | 12.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|-----------------------|-----|-----|-------|-----|-------|
| Capacity (veh/h) | - | - | 1231 | - | 803 |
| HCM Lane V/C Ratio | - | - | 0.063 | - | 0.386 |
| HCM Control Delay (s) | - | - | 8.1 | - | 12.3 |
| HCM Lane LOS | - | - | A | - | B |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | 1.8 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 1.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↑ | | | ↗ | | | ↕ | | | | |
| Traffic Vol, veh/h | 55 | 0 | 0 | 0 | 4 | 28 | 226 | 0 | 10 | 0 | 0 | 0 |
| Future Vol, veh/h | 55 | 0 | 0 | 0 | 4 | 28 | 226 | 0 | 10 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 50 | 2 | 2 | 2 | 2 | 2 | 50 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 63 | 0 | 0 | 0 | 5 | 32 | 257 | 0 | 11 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 37 | 0 | 0 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | 4.6 | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | 2.65 | - | - |
| Pot Cap-1 Maneuver | 1313 | 0 | 0 |
| Stage 1 | - | 0 | 0 |
| Stage 2 | - | 0 | 0 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1313 | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 7.9 | 0 | |
| HCM LOS | | | - |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | 1313 | - | - | - |
| HCM Lane V/C Ratio | - | 0.048 | - | - | - |
| HCM Control Delay (s) | - | 7.9 | - | - | - |
| HCM Lane LOS | - | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 0.1 | - | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 13.8 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | |
| Traffic Vol, veh/h | 17 | 52 | 106 | 242 | 427 | 0 |
| Future Vol, veh/h | 17 | 52 | 106 | 242 | 427 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 19 | 59 | 120 | 275 | 485 | 0 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 395 | 0 | - | 0 | 355 258 |
| Stage 1 | - | - | - | - | 258 - |
| Stage 2 | - | - | - | - | 97 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1164 | - | - | - | 643 781 |
| Stage 1 | - | - | - | - | 785 - |
| Stage 2 | - | - | - | - | 927 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1164 | - | - | - | 632 781 |
| Mov Cap-2 Maneuver | - | - | - | - | 632 - |
| Stage 1 | - | - | - | - | 772 - |
| Stage 2 | - | - | - | - | 927 - |

| Approach | EB | WB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 2 | 0 | 27 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1164 | - | - | - | 632 |
| HCM Lane V/C Ratio | 0.017 | - | - | - | 0.768 |
| HCM Control Delay (s) | 8.1 | 0 | - | - | 27 |
| HCM Lane LOS | A | A | - | - | D |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 7.1 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 19.5 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | |
| Traffic Vol, veh/h | 242 | 237 | 259 | 28 | 116 | 89 |
| Future Vol, veh/h | 242 | 237 | 259 | 28 | 116 | 89 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 275 | 269 | 294 | 32 | 132 | 101 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 326 | 0 | - | 0 | 1129 310 |
| Stage 1 | - | - | - | - | 310 - |
| Stage 2 | - | - | - | - | 819 - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 3.318 |
| Pot Cap-1 Maneuver | 1234 | - | - | - | 226 730 |
| Stage 1 | - | - | - | - | 744 - |
| Stage 2 | - | - | - | - | 433 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1234 | - | - | - | 167 730 |
| Mov Cap-2 Maneuver | - | - | - | - | 167 - |
| Stage 1 | - | - | - | - | 549 - |
| Stage 2 | - | - | - | - | 433 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 4.4 | 0 | 82.2 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1234 | - | - | - | 251 |
| HCM Lane V/C Ratio | 0.223 | - | - | - | 0.928 |
| HCM Control Delay (s) | 8.8 | 0 | - | - | 82.2 |
| HCM Lane LOS | A | A | - | - | F |
| HCM 95th %tile Q(veh) | 0.9 | - | - | - | 8.3 |

| Intersection | |
|---------------------------|-------|
| Intersection Delay, s/veh | 267.5 |
| Intersection LOS | F |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|------|------|------|------|------|------|
| Lane Configurations | ↘ | | | | ↘ | ↗ |
| Traffic Vol, veh/h | 150 | 0 | 0 | 0 | 906 | 0 |
| Future Vol, veh/h | 150 | 0 | 0 | 0 | 906 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 10 | 2 |
| Mvmt Flow | 170 | 0 | 0 | 0 | 1030 | 0 |
| Number of Lanes | 1 | 0 | 0 | 0 | 1 | 1 |

| Approach | WB | SB |
|----------------------------|------|-------|
| Opposing Approach | | |
| Opposing Lanes | 0 | 0 |
| Conflicting Approach Left | | WB |
| Conflicting Lanes Left | 0 | 1 |
| Conflicting Approach Right | SB | |
| Conflicting Lanes Right | 2 | 0 |
| HCM Control Delay | 13.2 | 309.6 |
| HCM LOS | B | F |

| Lane | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|
| Vol Left, % | 100% | 100% | 0% |
| Vol Thru, % | 0% | 0% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 150 | 906 | 0 |
| LT Vol | 150 | 906 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 170 | 1030 | 0 |
| Geometry Grp | 2 | 7 | 7 |
| Degree of Util (X) | 0.281 | 1.638 | 0 |
| Departure Headway (Hd) | 7.36 | 5.729 | 5.09 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 491 | 649 | 0 |
| Service Time | 5.36 | 3.429 | 2.79 |
| HCM Lane V/C Ratio | 0.346 | 1.587 | 0 |
| HCM Control Delay | 13.2 | 309.6 | 7.8 |
| HCM Lane LOS | B | F | N |
| HCM 95th-tile Q | 1.1 | 56.9 | 0 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 1.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↘ | ↗ | | | ↗ | ↘ | | ↗ | ↘ | | | |
| Traffic Vol, veh/h | 0 | 906 | 0 | 0 | 150 | 584 | 0 | 0 | 94 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 906 | 0 | 0 | 150 | 584 | 0 | 0 | 94 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 0 | - | - | - | - | 50 | - | - | 175 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16979 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 10 | 2 | 9 | 9 | 11 | 2 | 12 | 8 | 13 | 21 | 2 |
| Mvmt Flow | 0 | 1030 | 0 | 0 | 170 | 664 | 0 | 0 | 107 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 834 | 0 | 0 |
| Stage 1 | - | - | 1030 |
| Stage 2 | - | - | 834 |
| Critical Hdwy | 4.12 | - | 6.62 |
| Critical Hdwy Stg 1 | - | - | 5.62 |
| Critical Hdwy Stg 2 | - | - | 5.62 |
| Follow-up Hdwy | 2.218 | - | 4.108 |
| Pot Cap-1 Maneuver | 799 | 0 | 69 |
| Stage 1 | - | 0 | 298 |
| Stage 2 | - | 0 | 370 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 799 | - | 0 |
| Mov Cap-2 Maneuver | - | - | 0 |
| Stage 1 | - | - | 0 |
| Stage 2 | - | - | 0 |

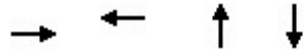
| Approach | EB | WB | NB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0 | 0 | 26 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-----|-----|-----|-----|
| Capacity (veh/h) | - | 276 | 799 | - | - | - |
| HCM Lane V/C Ratio | - | 0.387 | - | - | - | - |
| HCM Control Delay (s) | 0 | 26 | 0 | - | - | - |
| HCM Lane LOS | A | D | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 1.7 | 0 | - | - | - |

Queues

103: Church St/Main St & Morehead Ave

04/02/2019



| Lane Group | EBT | WBT | NBT | SBT |
|-------------------------|-------|------|-------|-------|
| Lane Group Flow (vph) | 1137 | 420 | 150 | 514 |
| v/c Ratio | 1.39 | 0.37 | 1.13 | 1.22 |
| Control Delay | 204.0 | 9.1 | 161.4 | 152.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 204.0 | 9.1 | 161.4 | 152.9 |
| Queue Length 50th (ft) | ~1279 | 127 | ~146 | ~480 |
| Queue Length 95th (ft) | #1495 | 176 | #277 | #678 |
| Internal Link Dist (ft) | 1440 | 1642 | 774 | 692 |
| Turn Bay Length (ft) | | | | |
| Base Capacity (vph) | 820 | 1139 | 133 | 423 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.39 | 0.37 | 1.13 | 1.22 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 103: Church St/Main St & Morehead Ave

04/02/2019



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|-------|-------|------|-------|------|------|------|------|------|-------|------|-------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 232 | 704 | 64 | 0 | 298 | 71 | 132 | 0 | 0 | 128 | 21 | 304 |
| Future Volume (veh/h) | 232 | 704 | 64 | 0 | 298 | 71 | 132 | 0 | 0 | 128 | 21 | 304 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1604 | 1604 | 1604 | 1678 | 1678 | 1678 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 264 | 800 | 73 | 0 | 339 | 81 | 150 | 0 | 0 | 145 | 24 | 345 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, % | 20 | 20 | 20 | 15 | 15 | 15 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 210 | 539 | 49 | 0 | 901 | 215 | 191 | 0 | 0 | 159 | 24 | 299 |
| Arrive On Green | 0.69 | 0.69 | 0.69 | 0.00 | 0.69 | 0.69 | 0.24 | 0.00 | 0.00 | 0.24 | 0.24 | 0.24 |
| Sat Flow, veh/h | 255 | 782 | 71 | 0 | 1309 | 313 | 558 | 0 | 0 | 508 | 97 | 1235 |
| Grp Volume(v), veh/h | 1137 | 0 | 0 | 0 | 0 | 420 | 150 | 0 | 0 | 514 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1109 | 0 | 0 | 0 | 0 | 1621 | 558 | 0 | 0 | 1840 | 0 | 0 |
| Q Serve(g_s), s | 75.3 | 0.0 | 0.0 | 0.0 | 0.0 | 14.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 89.5 | 0.0 | 0.0 | 0.0 | 0.0 | 14.2 | 31.5 | 0.0 | 0.0 | 31.5 | 0.0 | 0.0 |
| Prop In Lane | 0.23 | | 0.06 | 0.00 | | 0.19 | 1.00 | | 0.00 | 0.28 | | 0.67 |
| Lane Grp Cap(c), veh/h | 797 | 0 | 0 | 0 | 0 | 1116 | 191 | 0 | 0 | 481 | 0 | 0 |
| V/C Ratio(X) | 1.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.38 | 0.79 | 0.00 | 0.00 | 1.07 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 797 | 0 | 0 | 0 | 0 | 1116 | 191 | 0 | 0 | 481 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 28.5 | 0.0 | 0.0 | 0.0 | 0.0 | 8.5 | 50.8 | 0.0 | 0.0 | 50.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 198.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 19.3 | 0.0 | 0.0 | 60.3 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 68.9 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 6.0 | 0.0 | 0.0 | 24.0 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 227.4 | 0.0 | 0.0 | 0.0 | 0.0 | 8.7 | 70.1 | 0.0 | 0.0 | 110.7 | 0.0 | 0.0 |
| LnGrp LOS | F | A | A | A | A | A | E | A | A | F | A | A |
| Approach Vol, veh/h | | 1137 | | | 420 | | | 150 | | | | 514 |
| Approach Delay, s/veh | | 227.4 | | | 8.7 | | | 70.1 | | | | 110.7 |
| Approach LOS | | F | | | A | | | E | | | | F |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 36.0 | | 94.0 | | 36.0 | | 94.0 | | | | |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | 4.5 | | 4.5 | | | | |
| Max Green Setting (Gmax), s | | 31.5 | | 89.5 | | 31.5 | | 89.5 | | | | |
| Max Q Clear Time (g_c+I1), s | | 33.5 | | 91.5 | | 33.5 | | 16.2 | | | | |
| Green Ext Time (p_c), s | | 0.0 | | 0.0 | | 0.0 | | 3.1 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | | 148.4 | | | | | | | | |
| HCM 6th LOS | | | | F | | | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↑ | ↗ | ↘ | ↑ | | | | | | ↕ | |
| Traffic Vol, veh/h | 0 | 322 | 202 | 44 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| Future Vol, veh/h | 0 | 322 | 202 | 44 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 100 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 50 | 50 | 2 | 2 | 2 | 2 | 2 | 2 | 25 |
| Mvmt Flow | 0 | 366 | 230 | 50 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|
| Conflicting Flow All | - | 0 | 0 | 596 | 0 | 0 | 632 | 747 | 51 |
| Stage 1 | - | - | - | - | - | - | 151 | 151 | - |
| Stage 2 | - | - | - | - | - | - | 481 | 596 | - |
| Critical Hdwy | - | - | - | 4.6 | - | - | 6.42 | 6.52 | 6.45 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.42 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.42 | 5.52 | - |
| Follow-up Hdwy | - | - | - | 2.65 | - | - | 3.518 | 4.018 | 3.525 |
| Pot Cap-1 Maneuver | 0 | - | - | 784 | - | 0 | 444 | 341 | 956 |
| Stage 1 | 0 | - | - | - | - | 0 | 877 | 772 | - |
| Stage 2 | 0 | - | - | - | - | 0 | 622 | 492 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | - | 784 | - | - | 416 | 0 | 956 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 416 | 0 | - |
| Stage 1 | - | - | - | - | - | - | 877 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 582 | 0 | - |

| Approach | EB | WB | SB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 4.9 | 9.1 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|-----------------------|-----|-----|-------|-----|-------|
| Capacity (veh/h) | - | - | 784 | - | 956 |
| HCM Lane V/C Ratio | - | - | 0.064 | - | 0.09 |
| HCM Control Delay (s) | - | - | 9.9 | - | 9.1 |
| HCM Lane LOS | - | - | A | - | A |
| HCM 95th %tile Q(veh) | - | - | 0.2 | - | 0.3 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh | 6.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↖ | ↑ | | | ↗ | | | ↕ | | | | |
| Traffic Vol, veh/h | 322 | 0 | 0 | 0 | 8 | 20 | 81 | 0 | 10 | 0 | 0 | 0 |
| Future Vol, veh/h | 322 | 0 | 0 | 0 | 8 | 20 | 81 | 0 | 10 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 16965 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 50 | 2 | 2 | 2 | 2 | 2 | 50 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 366 | 0 | 0 | 0 | 9 | 23 | 92 | 0 | 11 | 0 | 0 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 32 | 0 | 0 |
| Stage 1 | - | - | 732 |
| Stage 2 | - | - | 21 |
| Critical Hdwy | 4.6 | - | 6.9 |
| Critical Hdwy Stg 1 | - | - | 5.9 |
| Critical Hdwy Stg 2 | - | - | 5.9 |
| Follow-up Hdwy | 2.65 | - | 3.95 |
| Pot Cap-1 Maneuver | 1319 | 0 | 316 |
| Stage 1 | - | 0 | 399 |
| Stage 2 | - | 0 | 891 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1319 | - | 228 |
| Mov Cap-2 Maneuver | - | - | 228 |
| Stage 1 | - | - | 288 |
| Stage 2 | - | - | 891 |

| Approach | EB | WB | NB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 8.8 | 0 | - |
| HCM LOS | - | - | - |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | WBT | WBR |
|-----------------------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | 1319 | - | - | - |
| HCM Lane V/C Ratio | - | 0.277 | - | - | - |
| HCM Control Delay (s) | - | 8.8 | - | - | - |
| HCM Lane LOS | - | A | - | - | - |
| HCM 95th %tile Q(veh) | - | 1.1 | - | - | - |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 10 | 1.0 | 51.4 | 0.8 | 54 |
| US 220 NB Ramp | 86 | 0.1 | 5.9 | 0.1 | 52 |
| | 85 | 0.5 | 19.4 | 0.3 | 54 |
| | 28 | 0.2 | 4.9 | 0.1 | 50 |
| | 72 | 0.3 | 12.1 | 0.2 | 53 |
| | 80 | 0.5 | 15.6 | 0.2 | 53 |
| | 13 | 0.5 | 15.5 | 0.2 | 53 |
| | 38 | 1.9 | 48.6 | 0.7 | 53 |
| | 44 | 5.9 | 63.4 | 0.9 | 50 |
| US 220 NB Ramp | 43 | 0.5 | 4.8 | 0.1 | 50 |
| | 45 | 1.9 | 31.0 | 0.4 | 52 |
| | 46 | 1.2 | 7.4 | 0.1 | 44 |
| | 83 | 3.1 | 67.2 | 1.0 | 53 |
| | 84 | 1.2 | 18.2 | 0.3 | 51 |
| | 7 | 1.3 | 18.9 | 0.3 | 51 |
| | 6 | 1.6 | 22.5 | 0.3 | 51 |
| | 5 | 1.3 | 15.3 | 0.2 | 50 |
| | 4 | 0.6 | 6.8 | 0.1 | 50 |
| | 3 | 2.0 | 16.2 | 0.2 | 48 |
| US 58 WB Ramp | 2 | 0.8 | 7.2 | 0.1 | 53 |
| US 58 EB Ramp | 14 | 0.4 | 10.5 | 0.1 | 50 |
| US 58 WB Ramp | 12 | 0.4 | 12.1 | 0.1 | 40 |
| US 58 WB Ramp | 1 | 1.2 | 11.0 | 0.1 | 48 |
| | 22 | 0.4 | 5.9 | 0.1 | 35 |
| Total | | 29.0 | 491.7 | 7.0 | 51 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 22 | 0.4 | 20.5 | 0.3 | 45 |
| US 58 WB Ramp | 1 | 0.1 | 4.9 | 0.1 | 43 |
| US 58 WB Ramp | 12 | 0.9 | 10.9 | 0.1 | 49 |
| US 58 EB Ramp | 14 | 0.2 | 12.7 | 0.1 | 38 |
| US 58 EB Ramp | 2 | 0.4 | 11.3 | 0.1 | 46 |
| | 3 | 0.9 | 9.7 | 0.1 | 38 |
| | 4 | 0.6 | 15.6 | 0.2 | 50 |
| | 5 | 0.3 | 6.5 | 0.1 | 52 |
| | 6 | 0.7 | 14.8 | 0.2 | 52 |
| | 7 | 1.2 | 22.1 | 0.3 | 52 |
| | 84 | 1.2 | 18.8 | 0.3 | 51 |
| | 83 | 1.2 | 18.2 | 0.3 | 51 |
| | 46 | 10.5 | 74.3 | 1.0 | 48 |
| US 220 SB Ramp | 45 | 2.1 | 359.8 | 0.1 | 47 |
| | 43 | 1.9 | 30.3 | 0.4 | 53 |
| | 44 | 0.6 | 5.6 | 0.1 | 42 |
| | 38 | 3.0 | 60.8 | 0.9 | 53 |
| | 13 | 3.4 | 50.2 | 0.7 | 51 |
| | 80 | 1.2 | 16.0 | 0.2 | 51 |
| | 72 | 1.3 | 16.4 | 0.2 | 50 |
| | 28 | 1.1 | 12.6 | 0.2 | 50 |
| US 220 SB Ramp | 85 | 0.4 | 5.0 | 0.1 | 49 |
| | 86 | 1.5 | 20.0 | 0.3 | 53 |
| | 10 | 0.6 | 6.7 | 0.1 | 46 |
| Total | | 35.7 | 823.7 | 6.5 | 50 |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 10 | 1.1 | 51.3 | 0.8 | 54 |
| US 220 NB Ramp | 86 | 0.2 | 5.9 | 0.1 | 52 |
| | 85 | 0.7 | 19.5 | 0.3 | 54 |
| | 28 | 0.3 | 5.0 | 0.1 | 49 |
| | 72 | 0.4 | 12.1 | 0.2 | 52 |
| | 80 | 0.5 | 15.6 | 0.2 | 53 |
| | 13 | 0.6 | 15.5 | 0.2 | 53 |
| | 38 | 2.3 | 49.0 | 0.7 | 53 |
| | 44 | 3.4 | 61.2 | 0.9 | 52 |
| US 220 NB Ramp | 43 | 0.3 | 4.5 | 0.1 | 52 |
| | 45 | 2.6 | 31.7 | 0.4 | 51 |
| | 46 | 1.6 | 7.7 | 0.1 | 42 |
| | 83 | 3.6 | 67.8 | 1.0 | 52 |
| | 84 | 1.3 | 18.4 | 0.3 | 51 |
| | 7 | 1.4 | 19.1 | 0.3 | 50 |
| | 6 | 1.7 | 22.7 | 0.3 | 51 |
| | 5 | 1.5 | 15.5 | 0.2 | 49 |
| | 4 | 0.6 | 6.9 | 0.1 | 49 |
| | 3 | 2.7 | 16.9 | 0.2 | 46 |
| US 58 WB Ramp | 2 | 1.0 | 8.1 | 0.1 | 51 |
| US 58 EB Ramp | 14 | 0.5 | 10.6 | 0.1 | 50 |
| US 58 WB Ramp | 12 | 0.5 | 12.1 | 0.1 | 40 |
| US 58 WB Ramp | 1 | 1.5 | 11.4 | 0.1 | 47 |
| | 22 | 0.5 | 6.1 | 0.1 | 34 |
| Total | | 30.6 | 494.5 | 7.0 | 51 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 22 | 0.5 | 20.6 | 0.3 | 45 |
| US 58 WB Ramp | 1 | 0.1 | 5.0 | 0.1 | 42 |
| US 58 WB Ramp | 12 | 2.4 | 12.4 | 0.1 | 43 |
| US 58 EB Ramp | 14 | 0.6 | 12.9 | 0.1 | 38 |
| US 58 EB Ramp | 2 | 0.7 | 11.6 | 0.1 | 45 |
| | 3 | 1.2 | 10.0 | 0.1 | 37 |
| | 4 | 0.8 | 15.8 | 0.2 | 49 |
| | 5 | 0.4 | 6.6 | 0.1 | 51 |
| | 6 | 0.9 | 15.0 | 0.2 | 51 |
| | 7 | 1.5 | 22.5 | 0.3 | 51 |
| | 84 | 1.5 | 19.1 | 0.3 | 50 |
| | 83 | 1.4 | 18.5 | 0.3 | 50 |
| | 46 | 20.1 | 83.6 | 1.0 | 42 |
| US 220 SB Ramp | 45 | 1.0 | 1778.4 | 0.1 | 48 |
| | 43 | 1.0 | 29.4 | 0.4 | 55 |
| | 44 | 0.2 | 5.2 | 0.1 | 45 |
| | 38 | 2.1 | 59.8 | 0.9 | 53 |
| | 13 | 2.3 | 49.4 | 0.7 | 52 |
| | 80 | 0.8 | 15.5 | 0.2 | 53 |
| | 72 | 0.8 | 16.0 | 0.2 | 52 |
| | 28 | 0.7 | 12.2 | 0.2 | 52 |
| US 220 SB Ramp | 85 | 0.3 | 4.9 | 0.1 | 50 |
| | 86 | 1.2 | 19.7 | 0.3 | 53 |
| | 10 | 0.5 | 6.6 | 0.1 | 46 |
| Total | | 42.8 | 2250.6 | 6.5 | 49 |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 10 | 1.5 | 51.8 | 0.8 | 54 |
| US 220 NB Ramp | 86 | 0.2 | 5.9 | 0.1 | 52 |
| | 85 | 0.6 | 19.5 | 0.3 | 54 |
| | 28 | 0.2 | 5.0 | 0.1 | 50 |
| | 72 | 0.4 | 12.1 | 0.2 | 52 |
| | 80 | 0.5 | 15.5 | 0.2 | 53 |
| | 13 | 0.5 | 15.4 | 0.2 | 53 |
| | 38 | 2.0 | 48.8 | 0.7 | 53 |
| | 44 | 3.0 | 60.4 | 0.9 | 53 |
| US 220 NB Ramp | 43 | 0.2 | 4.5 | 0.1 | 53 |
| | 45 | 2.1 | 31.1 | 0.4 | 52 |
| | 46 | 1.4 | 7.4 | 0.1 | 43 |
| | 83 | 3.4 | 67.3 | 1.0 | 53 |
| | 84 | 1.3 | 18.3 | 0.3 | 51 |
| | 7 | 1.4 | 19.0 | 0.3 | 51 |
| | 6 | 1.7 | 22.6 | 0.3 | 51 |
| | 5 | 1.3 | 15.4 | 0.2 | 50 |
| | 4 | 0.6 | 6.8 | 0.1 | 50 |
| | 3 | 2.3 | 16.4 | 0.2 | 47 |
| US 58 WB Ramp | 2 | 0.8 | 7.3 | 0.1 | 53 |
| US 58 EB Ramp | 14 | 0.4 | 10.5 | 0.1 | 50 |
| US 58 WB Ramp | 12 | 0.5 | 12.1 | 0.1 | 40 |
| US 58 WB Ramp | 1 | 1.4 | 11.2 | 0.1 | 47 |
| | 22 | 0.5 | 6.0 | 0.1 | 35 |
| Total | | 28.1 | 490.3 | 7.0 | 51 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 22 | 0.5 | 20.5 | 0.3 | 45 |
| US 58 WB Ramp | 1 | 0.1 | 4.9 | 0.1 | 42 |
| US 58 WB Ramp | 12 | 2.0 | 11.9 | 0.1 | 44 |
| US 58 EB Ramp | 14 | 0.3 | 12.7 | 0.1 | 38 |
| US 58 EB Ramp | 2 | 0.6 | 11.4 | 0.1 | 46 |
| | 3 | 1.1 | 9.9 | 0.1 | 38 |
| | 4 | 0.8 | 15.8 | 0.2 | 49 |
| | 5 | 0.3 | 6.6 | 0.1 | 51 |
| | 6 | 0.8 | 14.9 | 0.2 | 52 |
| | 7 | 1.4 | 22.3 | 0.3 | 51 |
| | 84 | 1.3 | 18.9 | 0.3 | 51 |
| | 83 | 1.3 | 18.3 | 0.3 | 51 |
| | 46 | 9.5 | 73.1 | 1.0 | 48 |
| US 220 SB Ramp | 45 | 2.5 | 314.8 | 0.1 | 44 |
| | 43 | 2.4 | 30.9 | 0.4 | 52 |
| | 44 | 0.8 | 5.8 | 0.1 | 41 |
| | 38 | 3.7 | 61.4 | 0.9 | 52 |
| | 13 | 3.9 | 50.7 | 0.7 | 51 |
| | 80 | 1.5 | 16.2 | 0.2 | 51 |
| | 72 | 1.4 | 16.5 | 0.2 | 50 |
| | 28 | 1.8 | 13.3 | 0.2 | 47 |
| US 220 SB Ramp | 85 | 0.4 | 5.1 | 0.1 | 49 |
| | 86 | 1.2 | 19.7 | 0.3 | 54 |
| | 10 | 0.6 | 6.7 | 0.1 | 45 |
| Total | | 40.2 | 782.5 | 6.5 | 49 |

Arterial Level of Service: NB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 10 | 1.1 | 51.4 | 0.8 | 54 |
| US 220 NB Ramp | 86 | 0.2 | 5.9 | 0.1 | 52 |
| | 85 | 0.9 | 19.8 | 0.3 | 53 |
| | 28 | 0.6 | 5.3 | 0.1 | 46 |
| | 72 | 0.4 | 12.4 | 0.2 | 51 |
| | 80 | 0.6 | 15.7 | 0.2 | 53 |
| | 13 | 0.7 | 15.6 | 0.2 | 53 |
| | 38 | 2.8 | 49.5 | 0.7 | 52 |
| | 44 | 4.5 | 62.1 | 0.9 | 51 |
| US 220 NB Ramp | 43 | 0.4 | 4.6 | 0.1 | 51 |
| | 45 | 3.3 | 32.4 | 0.4 | 50 |
| | 46 | 2.0 | 8.1 | 0.1 | 40 |
| | 83 | 4.1 | 68.1 | 1.0 | 52 |
| | 84 | 1.5 | 18.5 | 0.3 | 50 |
| | 7 | 1.6 | 19.2 | 0.3 | 50 |
| | 6 | 2.0 | 22.9 | 0.3 | 50 |
| | 5 | 1.8 | 15.9 | 0.2 | 48 |
| | 4 | 0.8 | 7.1 | 0.1 | 48 |
| | 3 | 4.9 | 19.1 | 0.2 | 41 |
| US 58 WB Ramp | 2 | 2.0 | 200.9 | 0.1 | 43 |
| US 58 EB Ramp | 14 | 0.5 | 10.6 | 0.1 | 49 |
| US 58 WB Ramp | 12 | 0.5 | 12.1 | 0.1 | 40 |
| US 58 WB Ramp | 1 | 1.7 | 11.5 | 0.1 | 46 |
| | 22 | 0.6 | 6.1 | 0.1 | 34 |
| Total | | 39.5 | 694.9 | 7.0 | 50 |

Arterial Level of Service: SB US 220

| Cross Street | Node | Delay (s/veh) | Travel time (s) | Dist (mi) | Arterial Speed |
|----------------|------|---------------|-----------------|------------|----------------|
| | 22 | 0.6 | 20.8 | 0.3 | 44 |
| US 58 WB Ramp | 1 | 0.2 | 5.0 | 0.1 | 42 |
| US 58 WB Ramp | 12 | 3.4 | 13.3 | 0.1 | 40 |
| US 58 EB Ramp | 14 | 0.7 | 13.1 | 0.1 | 37 |
| US 58 EB Ramp | 2 | 0.8 | 11.7 | 0.1 | 45 |
| | 3 | 1.4 | 10.3 | 0.1 | 36 |
| | 4 | 1.0 | 15.9 | 0.2 | 49 |
| | 5 | 0.4 | 6.7 | 0.1 | 51 |
| | 6 | 0.9 | 15.1 | 0.2 | 51 |
| | 7 | 1.7 | 22.7 | 0.3 | 51 |
| | 84 | 1.6 | 19.2 | 0.3 | 50 |
| | 83 | 1.5 | 18.6 | 0.3 | 50 |
| | 46 | 127.5 | 189.5 | 1.0 | 19 |
| US 220 SB Ramp | 45 | 0.3 | 2356.2 | 0.1 | 50 |
| | 43 | 1.1 | 29.5 | 0.4 | 54 |
| | 44 | 0.3 | 5.4 | 0.1 | 44 |
| | 38 | 2.3 | 60.1 | 0.9 | 53 |
| | 13 | 2.6 | 49.6 | 0.7 | 52 |
| | 80 | 0.9 | 15.6 | 0.2 | 52 |
| | 72 | 0.9 | 16.1 | 0.2 | 51 |
| | 28 | 0.8 | 12.3 | 0.2 | 51 |
| US 220 SB Ramp | 85 | 0.3 | 5.0 | 0.1 | 50 |
| | 86 | 1.5 | 20.1 | 0.3 | 52 |
| | 10 | 0.9 | 7.0 | 0.1 | 44 |
| Total | | 153.7 | 2938.6 | 6.5 | 40 |

**APPENDIX M:
ENTRADA WORKSHEETS AND
ENVIRONMENTAL TRAFFIC DATA**



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beging: North Carolina Border 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

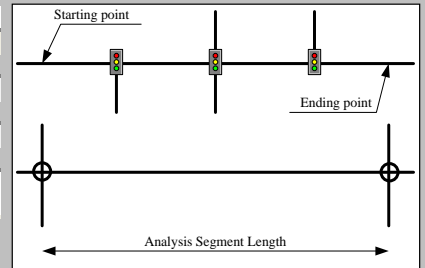
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 3 | | 4 | |
| 17. Analysis Segment No. of Signals: | 0 | | 0 | |
| 18. Average Cycle Length (sec.): | 0 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 0 | | 0 | |
| 20. Signal Coordination: | 0.00 | | 0.00 | |
| Delay caused by signal, mph: | #N/A | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 11,900 17,200 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 17,200

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: North Carolina Border
 To: Proposed Rte 220/Bypass Interchange (south of
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 11,900 No-build
 Design Year: 2040 ADT: 17,200 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.03 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.06 | A | 0.06 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.19 | A | 0.19 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.25 | A | 0.25 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.26 | A | 0.26 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.28 | A | 0.28 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.25 | A | 0.25 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.30 | A | 0.30 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.30 | A | 0.30 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.30 | B | 0.30 | B | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.23 | A | 0.23 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.18 | A | 0.18 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.13 | A | 0.13 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.12 | A | 0.12 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.06 | A | 0.06 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.16 | A | 0.16 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.28 | A | 0.28 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.29 | A | 0.29 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.29 | A | 0.29 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.30 | B | 0.30 | B | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.30 | B | 0.30 | B | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.29 | A | 0.29 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.19 | A | 0.19 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.14 | A | 0.14 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.13 | A | 0.13 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.10 | A | 0.10 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.07 | A | 0.07 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | | 59 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | | 31 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | | 30 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | | 12 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | | 40 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | | 107 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | | 264 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | | 409 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | | 385 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | | 296 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | | 338 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | | 339 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | | 398 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | | 364 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | | 434 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | | 493 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | | 548 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | | 603 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | | 460 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | | 359 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | | 253 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | | 193 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | | 131 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | | 70 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 2 | 16 | | | 23 | 23 |
| 1:00 | 1 | | | 1 | 1 | 22 | | | 31 | 31 |
| 2:00 | 0 | | | 0 | 0 | 27 | | | 39 | 39 |
| 3:00 | 1 | | | 1 | 1 | 26 | | | 38 | 38 |
| 4:00 | 3 | | | 4 | 4 | 31 | | | 45 | 45 |
| 5:00 | 2 | | | 3 | 3 | 35 | | | 51 | 51 |
| 6:00 | 9 | | | 13 | 13 | 55 | | | 79 | 79 |
| 7:00 | 16 | | | 23 | 23 | 67 | | | 97 | 97 |
| 8:00 | 9 | | | 13 | 13 | 63 | | | 91 | 91 |
| 9:00 | 20 | | | 30 | 30 | 70 | | | 101 | 101 |
| 10:00 | 10 | | | 15 | 15 | 87 | | | 125 | 125 |
| 11:00 | 7 | | | 10 | 10 | 74 | | | 107 | 107 |
| 12:00 | 9 | | | 13 | 13 | 83 | | | 120 | 120 |
| 13:00 | 13 | | | 19 | 19 | 68 | | | 98 | 98 |
| 14:00 | 10 | | | 14 | 14 | 64 | | | 93 | 93 |
| 15:00 | 11 | | | 16 | 16 | 68 | | | 98 | 98 |
| 16:00 | 7 | | | 10 | 10 | 55 | | | 79 | 79 |
| 17:00 | 5 | | | 7 | 7 | 46 | | | 66 | 66 |
| 18:00 | 3 | | | 4 | 4 | 34 | | | 50 | 50 |
| 19:00 | 5 | | | 7 | 7 | 26 | | | 38 | 38 |
| 20:00 | 3 | | | 4 | 4 | 22 | | | 31 | 31 |
| 21:00 | 4 | | | 6 | 6 | 29 | | | 42 | 42 |
| 22:00 | 1 | | | 1 | 1 | 28 | | | 41 | 41 |
| 23:00 | 1 | | | 1 | 1 | 19 | | | 27 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | 17,200 | 17,200 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|--|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | 43 | 43 | | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | 36 | 36 | | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | 27 | 27 | | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | 28 | 28 | | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | 78 | 78 | | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | 244 | 244 | | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | 415 | 415 | | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | 387 | 387 | | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | 350 | 350 | | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | 303 | 303 | | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | 336 | 336 | | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | 353 | 353 | | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | 382 | 382 | | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | 402 | 402 | | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | 441 | 441 | | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | 501 | 501 | | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | 481 | 481 | | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | 533 | 533 | | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | 390 | 390 | | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | 287 | 287 | | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | 247 | 247 | | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | 186 | 186 | | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | 147 | 147 | | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | 88 | 88 | | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|------------|--|------------------------|--|--------|------------|--|
| | Existing | | Design | Design Nbl | | Existing | | Design | Design Nbl | |
| 0:00 | 2 | | 2 | 2 | | 25 | | 36 | 36 | |
| 1:00 | 3 | | 4 | 4 | | 14 | | 20 | 20 | |
| 2:00 | 2 | | 3 | 3 | | 20 | | 30 | 30 | |
| 3:00 | 3 | | 4 | 4 | | 30 | | 44 | 44 | |
| 4:00 | 3 | | 4 | 4 | | 38 | | 56 | 56 | |
| 5:00 | 2 | | 2 | 2 | | 45 | | 64 | 64 | |
| 6:00 | 5 | | 7 | 7 | | 53 | | 76 | 76 | |
| 7:00 | 11 | | 16 | 16 | | 57 | | 83 | 83 | |
| 8:00 | 5 | | 7 | 7 | | 73 | | 106 | 106 | |
| 9:00 | 9 | | 13 | 13 | | 77 | | 112 | 112 | |
| 10:00 | 13 | | 19 | 19 | | 90 | | 130 | 130 | |
| 11:00 | 10 | | 15 | 15 | | 90 | | 130 | 130 | |
| 12:00 | 10 | | 14 | 14 | | 80 | | 116 | 116 | |
| 13:00 | 12 | | 18 | 18 | | 87 | | 126 | 126 | |
| 14:00 | 10 | | 14 | 14 | | 77 | | 112 | 112 | |
| 15:00 | 10 | | 15 | 15 | | 68 | | 98 | 98 | |
| 16:00 | 9 | | 13 | 13 | | 74 | | 107 | 107 | |
| 17:00 | 7 | | 10 | 10 | | 52 | | 75 | 75 | |
| 18:00 | 9 | | 13 | 13 | | 55 | | 80 | 80 | |
| 19:00 | 6 | | 9 | 9 | | 52 | | 76 | 76 | |
| 20:00 | 3 | | 4 | 4 | | 28 | | 40 | 40 | |
| 21:00 | 1 | | 1 | 1 | | 40 | | 58 | 58 | |
| 22:00 | 1 | | 1 | 1 | | 32 | | 47 | 47 | |
| 23:00 | 3 | | 4 | 4 | | 26 | | 37 | 37 | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---|---------------------------|--|
| Route: 220 | | Area Type: Exurban |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 17,200 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|----------------|---------------------------------|----------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 71 | | | 102 | 102 | 1.0% | 100% | | 44 | 0 | 63 |
| 1:00 | 46 | | | 67 | 67 | 0.7% | 100% | | 39 | 0 | 56 |
| 2:00 | 39 | | | 57 | 57 | 0.7% | 100% | | 50 | 0 | 72 |
| 3:00 | 28 | | | 40 | 40 | 0.7% | 100% | | 60 | 0 | 87 |
| 4:00 | 81 | | | 118 | 118 | 1.3% | 100% | | 75 | 0 | 109 |
| 5:00 | 243 | | | 351 | 351 | 2.7% | 100% | | 84 | 0 | 121 |
| 6:00 | 469 | | | 678 | 678 | 5.0% | 100% | | 121 | 0 | 176 |
| 7:00 | 551 | | | 796 | 796 | 5.9% | 100% | | 152 | 0 | 219 |
| 8:00 | 508 | | | 735 | 735 | 5.5% | 100% | | 150 | 0 | 217 |
| 9:00 | 414 | | | 598 | 598 | 5.0% | 100% | | 177 | 0 | 256 |
| 10:00 | 466 | | | 674 | 674 | 5.6% | 100% | | 200 | 0 | 289 |
| 11:00 | 479 | | | 692 | 692 | 5.5% | 100% | | 181 | 0 | 262 |
| 12:00 | 540 | | | 780 | 780 | 6.1% | 100% | | 182 | 0 | 263 |
| 13:00 | 530 | | | 767 | 767 | 6.0% | 100% | | 180 | 0 | 260 |
| 14:00 | 606 | | | 875 | 875 | 6.4% | 100% | | 161 | 0 | 233 |
| 15:00 | 688 | | | 994 | 994 | 7.1% | 100% | | 156 | 0 | 226 |
| 16:00 | 712 | | | 1,029 | 1,029 | 7.2% | 100% | | 146 | 0 | 210 |
| 17:00 | 786 | | | 1,135 | 1,135 | 7.5% | 100% | | 109 | 0 | 157 |
| 18:00 | 588 | | | 850 | 850 | 5.8% | 100% | | 102 | 0 | 147 |
| 19:00 | 447 | | | 647 | 647 | 4.5% | 100% | | 90 | 0 | 130 |
| 20:00 | 346 | | | 500 | 500 | 3.4% | 100% | | 55 | 0 | 80 |
| 21:00 | 262 | | | 379 | 379 | 2.8% | 100% | | 74 | 0 | 107 |
| 22:00 | 192 | | | 278 | 278 | 2.1% | 100% | | 63 | 0 | 90 |
| 23:00 | 110 | | | 158 | 158 | 1.3% | 100% | | 48 | 0 | 70 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 85 | | | 90 | 85 | 90 | 85 |
| 1:00 | 102 | 98 | | | 102 | 97 | 102 | 98 |
| 2:00 | 125 | 120 | | | 125 | 119 | 125 | 120 |
| 3:00 | 176 | 168 | | | 176 | 167 | 176 | 168 |
| 4:00 | 107 | 102 | | | 107 | 101 | 107 | 102 |
| 5:00 | 75 | 71 | | | 75 | 71 | 75 | 71 |
| 6:00 | 70 | 67 | | | 70 | 66 | 70 | 67 |
| 7:00 | 71 | 67 | | | 71 | 67 | 71 | 67 |
| 8:00 | 72 | 69 | | | 72 | 68 | 72 | 69 |
| 9:00 | 79 | 76 | | | 79 | 75 | 79 | 76 |
| 10:00 | 79 | 76 | | | 79 | 75 | 79 | 76 |
| 11:00 | 76 | 73 | | | 76 | 73 | 76 | 73 |
| 12:00 | 74 | 71 | | | 74 | 70 | 74 | 71 |
| 13:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 14:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 15:00 | 68 | 65 | | | 68 | 65 | 68 | 65 |
| 16:00 | 67 | 64 | | | 67 | 63 | 67 | 64 |
| 17:00 | 63 | 60 | | | 63 | 60 | 63 | 60 |
| 18:00 | 65 | 62 | | | 65 | 62 | 65 | 62 |
| 19:00 | 67 | 64 | | | 67 | 63 | 67 | 64 |
| 20:00 | 64 | 61 | | | 64 | 61 | 64 | 61 |
| 21:00 | 71 | 68 | | | 71 | 67 | 71 | 68 |
| 22:00 | 73 | 70 | | | 73 | 70 | 73 | 70 |
| 23:00 | 80 | 76 | | | 80 | 76 | 80 | 76 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 3.10

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Morehead Ave (Ridgeway 87) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

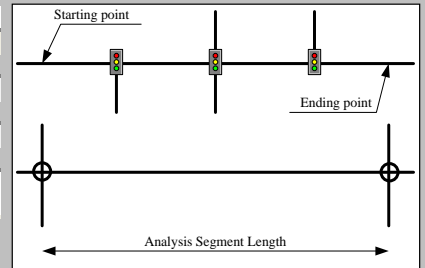
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 6 | | 6 | |
| 17. Analysis Segment No. of Signals: | 1 | | 1 | |
| 18. Average Cycle Length (sec.): | 130 | | 75 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 51 | |
| 20. Signal Coordination: | No Coord. | | No Coord. | |
| Delay caused by signal, mph: | 1 | | 1 | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 11,900 7,900 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 17,200

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |
| 100% | | | | | | | | | | |

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: Proposed Rte 220/Bypass Interchange (south of
 To: Morehead Ave (Ridgeway 87)
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 11,900 No-build
 Design Year: 2040 ADT: 7,900 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.09 | A | 0.09 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.12 | A | 0.12 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.12 | A | 0.12 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.12 | A | 0.12 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.11 | A | 0.11 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.08 | A | 0.08 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.06 | A | 0.06 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.02 | A | 0.02 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.07 | A | 0.07 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.13 | A | 0.13 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.13 | A | 0.13 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.13 | A | 0.13 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.09 | A | 0.09 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.06 | A | 0.06 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.06 | A | 0.06 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.05 | A | 0.05 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.03 | A | 0.03 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 7,900 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | 27 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | 14 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | 14 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | 5 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | 18 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | 49 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | 121 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | 188 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | 177 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | 136 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | 155 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | 156 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | 183 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | 167 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | 199 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | 226 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | 252 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | 277 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | 211 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | 165 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | 116 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | 89 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | 60 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | 32 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|------------|------------------------|--|--------|------------|
| | Existing | | Design | Design Nbl | Existing | | Design | Design Nbl |
| 0:00 | 2 | | 1 | 2 | 16 | | 11 | 23 |
| 1:00 | 1 | | 1 | 1 | 22 | | 14 | 31 |
| 2:00 | 0 | | 0 | 0 | 27 | | 18 | 39 |
| 3:00 | 1 | | 1 | 1 | 26 | | 17 | 38 |
| 4:00 | 3 | | 2 | 4 | 31 | | 21 | 45 |
| 5:00 | 2 | | 1 | 3 | 35 | | 23 | 51 |
| 6:00 | 9 | | 6 | 13 | 55 | | 36 | 79 |
| 7:00 | 16 | | 11 | 23 | 67 | | 45 | 97 |
| 8:00 | 9 | | 6 | 13 | 63 | | 42 | 91 |
| 9:00 | 20 | | 14 | 30 | 70 | | 47 | 101 |
| 10:00 | 10 | | 7 | 15 | 87 | | 57 | 125 |
| 11:00 | 7 | | 4 | 10 | 74 | | 49 | 107 |
| 12:00 | 9 | | 6 | 13 | 83 | | 55 | 120 |
| 13:00 | 13 | | 9 | 19 | 68 | | 45 | 98 |
| 14:00 | 10 | | 6 | 14 | 64 | | 43 | 93 |
| 15:00 | 11 | | 7 | 16 | 68 | | 45 | 98 |
| 16:00 | 7 | | 5 | 10 | 55 | | 36 | 79 |
| 17:00 | 5 | | 3 | 7 | 46 | | 30 | 66 |
| 18:00 | 3 | | 2 | 4 | 34 | | 23 | 50 |
| 19:00 | 5 | | 3 | 7 | 26 | | 17 | 38 |
| 20:00 | 3 | | 2 | 4 | 22 | | 14 | 31 |
| 21:00 | 4 | | 3 | 6 | 29 | | 19 | 42 |
| 22:00 | 1 | | 1 | 1 | 28 | | 19 | 41 |
| 23:00 | 1 | | 1 | 1 | 19 | | 13 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|---|
| Route: 220 | | Area Type: Exurban |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 7,900 17,200 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|---|------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 7,900 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | | 20 | 43 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | | 16 | 36 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | | 13 | 27 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | | 13 | 28 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | | 36 | 78 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | | 112 | 244 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | | 191 | 415 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | | 178 | 387 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | | 161 | 350 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | | 139 | 303 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | | 154 | 336 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | | 162 | 353 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | | 176 | 382 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | | 185 | 402 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | | 203 | 441 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | | 230 | 501 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | | 221 | 481 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | | 245 | 533 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | | 179 | 390 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | | 132 | 287 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | | 113 | 247 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | | 85 | 186 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | | 67 | 147 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | | 40 | 88 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 1 | 2 | 25 | | | 16 | 36 |
| 1:00 | 3 | | | 2 | 4 | 14 | | | 9 | 20 |
| 2:00 | 2 | | | 1 | 3 | 20 | | | 14 | 30 |
| 3:00 | 3 | | | 2 | 4 | 30 | | | 20 | 44 |
| 4:00 | 3 | | | 2 | 4 | 38 | | | 26 | 56 |
| 5:00 | 2 | | | 1 | 2 | 45 | | | 30 | 64 |
| 6:00 | 5 | | | 3 | 7 | 53 | | | 35 | 76 |
| 7:00 | 11 | | | 7 | 16 | 57 | | | 38 | 83 |
| 8:00 | 5 | | | 3 | 7 | 73 | | | 49 | 106 |
| 9:00 | 9 | | | 6 | 13 | 77 | | | 51 | 112 |
| 10:00 | 13 | | | 9 | 19 | 90 | | | 60 | 130 |
| 11:00 | 10 | | | 7 | 15 | 90 | | | 60 | 130 |
| 12:00 | 10 | | | 6 | 14 | 80 | | | 53 | 116 |
| 13:00 | 12 | | | 8 | 18 | 87 | | | 58 | 126 |
| 14:00 | 10 | | | 6 | 14 | 77 | | | 51 | 112 |
| 15:00 | 10 | | | 7 | 15 | 68 | | | 45 | 98 |
| 16:00 | 9 | | | 6 | 13 | 74 | | | 49 | 107 |
| 17:00 | 7 | | | 4 | 10 | 52 | | | 34 | 75 |
| 18:00 | 9 | | | 6 | 13 | 55 | | | 37 | 80 |
| 19:00 | 6 | | | 4 | 9 | 52 | | | 35 | 76 |
| 20:00 | 3 | | | 2 | 4 | 28 | | | 18 | 40 |
| 21:00 | 1 | | | 0 | 1 | 40 | | | 27 | 58 |
| 22:00 | 1 | | | 1 | 1 | 32 | | | 21 | 47 |
| 23:00 | 3 | | | 2 | 4 | 26 | | | 17 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 7,900 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

Route: 220

Area Type: Exurban

From: Proposed Rte 220/Bypass Interchange (s

Traffic Assignment: Constrained - Noise Study

To: Morehead Ave (Ridgeway 87)

Existing Year: 2018 ADT: 11,900

No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 hrs.

Design Year: 2040 ADT: 7,900

17,200

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | Total Truck Volume (Class 4-13) | | | |
|---------------|-------------------------------|--|--------|------------|------------------|------------------|---------------------------------|---|--------|--|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design | |
| 0:00 | 71 | | 47 | 102 | 1.0% | 100% | 44 | 0 | 29 | |
| 1:00 | 46 | | 31 | 67 | 0.7% | 100% | 39 | 0 | 26 | |
| 2:00 | 39 | | 26 | 57 | 0.7% | 100% | 50 | 0 | 33 | |
| 3:00 | 28 | | 18 | 40 | 0.7% | 100% | 60 | 0 | 40 | |
| 4:00 | 81 | | 54 | 118 | 1.3% | 100% | 75 | 0 | 50 | |
| 5:00 | 243 | | 161 | 351 | 2.7% | 100% | 84 | 0 | 55 | |
| 6:00 | 469 | | 312 | 678 | 5.0% | 100% | 121 | 0 | 81 | |
| 7:00 | 551 | | 366 | 796 | 5.9% | 100% | 152 | 0 | 101 | |
| 8:00 | 508 | | 337 | 735 | 5.5% | 100% | 150 | 0 | 100 | |
| 9:00 | 414 | | 275 | 598 | 5.0% | 100% | 177 | 0 | 118 | |
| 10:00 | 466 | | 310 | 674 | 5.6% | 100% | 200 | 0 | 133 | |
| 11:00 | 479 | | 318 | 692 | 5.5% | 100% | 181 | 0 | 120 | |
| 12:00 | 540 | | 358 | 780 | 6.1% | 100% | 182 | 0 | 121 | |
| 13:00 | 530 | | 352 | 767 | 6.0% | 100% | 180 | 0 | 119 | |
| 14:00 | 606 | | 402 | 875 | 6.4% | 100% | 161 | 0 | 107 | |
| 15:00 | 688 | | 457 | 994 | 7.1% | 100% | 156 | 0 | 104 | |
| 16:00 | 712 | | 473 | 1,029 | 7.2% | 100% | 146 | 0 | 97 | |
| 17:00 | 786 | | 521 | 1,135 | 7.5% | 100% | 109 | 0 | 72 | |
| 18:00 | 588 | | 391 | 850 | 5.8% | 100% | 102 | 0 | 68 | |
| 19:00 | 447 | | 297 | 647 | 4.5% | 100% | 90 | 0 | 60 | |
| 20:00 | 346 | | 230 | 500 | 3.4% | 100% | 55 | 0 | 37 | |
| 21:00 | 262 | | 174 | 379 | 2.8% | 100% | 74 | 0 | 49 | |
| 22:00 | 192 | | 128 | 278 | 2.1% | 100% | 63 | 0 | 42 | |
| 23:00 | 110 | | 73 | 158 | 1.3% | 100% | 48 | 0 | 32 | |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 86 | | | 90 | 86 | 90 | 86 |
| 1:00 | 102 | 98 | | | 102 | 98 | 102 | 98 |
| 2:00 | 125 | 120 | | | 125 | 120 | 125 | 120 |
| 3:00 | 176 | 168 | | | 176 | 168 | 176 | 168 |
| 4:00 | 107 | 102 | | | 107 | 102 | 107 | 102 |
| 5:00 | 75 | 71 | | | 75 | 71 | 75 | 71 |
| 6:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 7:00 | 71 | 68 | | | 71 | 67 | 71 | 68 |
| 8:00 | 72 | 69 | | | 72 | 69 | 72 | 69 |
| 9:00 | 79 | 76 | | | 79 | 76 | 79 | 76 |
| 10:00 | 79 | 76 | | | 79 | 76 | 79 | 76 |
| 11:00 | 76 | 73 | | | 76 | 73 | 76 | 73 |
| 12:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 13:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 14:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 15:00 | 68 | 65 | | | 68 | 65 | 68 | 65 |
| 16:00 | 67 | 64 | | | 67 | 64 | 67 | 64 |
| 17:00 | 63 | 61 | | | 63 | 60 | 63 | 61 |
| 18:00 | 65 | 62 | | | 65 | 62 | 65 | 62 |
| 19:00 | 67 | 64 | | | 67 | 64 | 67 | 64 |
| 20:00 | 64 | 62 | | | 64 | 61 | 64 | 62 |
| 21:00 | 71 | 68 | | | 71 | 68 | 71 | 68 |
| 22:00 | 73 | 70 | | | 73 | 70 | 73 | 70 |
| 23:00 | 80 | 77 | | | 80 | 76 | 80 | 77 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Morehead Ave (Ridgeway 87) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Soapstone Rd (Rte 687) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

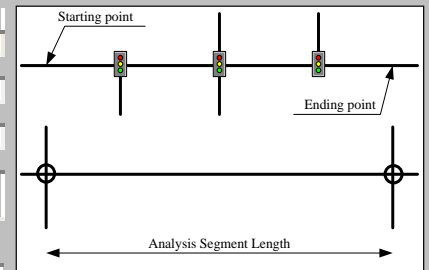
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 1 | | 1 | |
| 17. Analysis Segment No. of Signals: | 1 | | 1 | |
| 18. Average Cycle Length (sec.): | 180 | | 120 | |
| 19. Average Green Time per Cycle (sec.): | 148 | | 88 | |
| 20. Signal Coordination: | No Coord. | | No Coord. | |
| Delay caused by signal, mph: | 4 | | 5 | |

Note:

[Empty box for notes]

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly

22. Two-way ADT or AADT: Existing Year 2018 15,600 Design Year 2040 12,000 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 21,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: Morehead Ave (Ridgeway 87)
 To: Soapstone Rd (Rte 687)
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 15,600 No-build
 Design Year: 2040 ADT: 12,000 21,400

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 1:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 3:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 4:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.08 | A | 0.08 |
| 5:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.12 | A | 0.12 |
| 6:00 | 0.17 | A | | | | | 0.13 | A | 0.13 | A | 0.24 | A | 0.24 |
| 7:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 8:00 | 0.23 | A | | | | | 0.17 | A | 0.17 | A | 0.31 | B | 0.31 |
| 9:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | A | 0.30 |
| 10:00 | 0.24 | A | | | | | 0.18 | A | 0.18 | A | 0.33 | B | 0.33 |
| 11:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | B | 0.30 |
| 12:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.35 | B | 0.35 |
| 13:00 | 0.23 | A | | | | | 0.18 | A | 0.18 | A | 0.31 | B | 0.31 |
| 14:00 | 0.24 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 15:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 17:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.38 | B | 0.38 |
| 18:00 | 0.21 | A | | | | | 0.16 | A | 0.16 | A | 0.28 | A | 0.28 |
| 19:00 | 0.16 | A | | | | | 0.13 | A | 0.13 | A | 0.23 | A | 0.23 |
| 20:00 | 0.12 | A | | | | | 0.09 | A | 0.09 | A | 0.16 | A | 0.16 |
| 21:00 | 0.11 | A | | | | | 0.08 | A | 0.08 | A | 0.15 | A | 0.15 |
| 22:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.11 | A | 0.11 |
| 23:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 1:00 | 0.03 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 3:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 4:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.11 | A | 0.11 |
| 5:00 | 0.14 | A | | | | | 0.11 | A | 0.11 | A | 0.20 | A | 0.20 |
| 6:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | A | 0.30 |
| 7:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | B | 0.30 |
| 8:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | B | 0.30 |
| 9:00 | 0.21 | A | | | | | 0.17 | A | 0.17 | A | 0.29 | A | 0.29 |
| 10:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 11:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 12:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 13:00 | 0.27 | A | | | | | 0.20 | A | 0.20 | A | 0.36 | B | 0.36 |
| 14:00 | 0.26 | A | | | | | 0.20 | A | 0.20 | A | 0.36 | B | 0.36 |
| 15:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 17:00 | 0.26 | A | | | | | 0.20 | A | 0.20 | A | 0.36 | B | 0.36 |
| 18:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | A | 0.30 |
| 19:00 | 0.17 | A | | | | | 0.13 | A | 0.13 | A | 0.24 | A | 0.24 |
| 20:00 | 0.12 | A | | | | | 0.10 | A | 0.10 | A | 0.17 | A | 0.17 |
| 21:00 | 0.12 | A | | | | | 0.09 | A | 0.09 | A | 0.16 | A | 0.16 |
| 22:00 | 0.09 | A | | | | | 0.07 | A | 0.07 | A | 0.13 | A | 0.13 |
| 23:00 | 0.07 | A | | | | | 0.05 | A | 0.05 | A | 0.09 | A | 0.09 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,000 | 21,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 54 | | | 41 | 74 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 28 | | | 22 | 39 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 27 | | | 21 | 37 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 11 | | | 8 | 15 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 36 | | | 28 | 50 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 97 | | | 75 | 134 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 239 | | | 184 | 328 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 371 | | | 285 | 509 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 349 | | | 269 | 479 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 268 | | | 206 | 368 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 306 | | | 236 | 420 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 308 | | | 237 | 422 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 361 | | | 277 | 495 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 330 | | | 254 | 453 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 394 | | | 303 | 540 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 447 | | | 344 | 613 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 497 | | | 382 | 682 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 547 | | | 421 | 750 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 417 | | | 321 | 572 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 326 | | | 251 | 447 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 230 | | | 177 | 315 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 175 | | | 135 | 241 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 119 | | | 91 | 163 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 64 | | | 49 | 88 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 21 | | | 16 | 29 |
| 1:00 | 1 | | | 1 | 2 | 28 | | | 22 | 39 |
| 2:00 | 0 | | | 0 | 0 | 36 | | | 27 | 49 |
| 3:00 | 1 | | | 1 | 2 | 34 | | | 26 | 47 |
| 4:00 | 3 | | | 3 | 5 | 41 | | | 32 | 56 |
| 5:00 | 3 | | | 2 | 4 | 46 | | | 36 | 64 |
| 6:00 | 12 | | | 9 | 17 | 72 | | | 55 | 99 |
| 7:00 | 21 | | | 16 | 29 | 88 | | | 68 | 121 |
| 8:00 | 12 | | | 9 | 17 | 83 | | | 64 | 113 |
| 9:00 | 27 | | | 21 | 37 | 92 | | | 71 | 126 |
| 10:00 | 13 | | | 10 | 18 | 114 | | | 87 | 156 |
| 11:00 | 9 | | | 7 | 12 | 97 | | | 75 | 134 |
| 12:00 | 11 | | | 9 | 16 | 109 | | | 84 | 149 |
| 13:00 | 17 | | | 13 | 23 | 89 | | | 68 | 122 |
| 14:00 | 13 | | | 10 | 18 | 84 | | | 65 | 115 |
| 15:00 | 14 | | | 11 | 19 | 89 | | | 68 | 122 |
| 16:00 | 9 | | | 7 | 13 | 72 | | | 55 | 99 |
| 17:00 | 6 | | | 5 | 8 | 60 | | | 46 | 82 |
| 18:00 | 4 | | | 3 | 6 | 45 | | | 35 | 62 |
| 19:00 | 7 | | | 5 | 9 | 34 | | | 26 | 47 |
| 20:00 | 4 | | | 3 | 6 | 28 | | | 22 | 39 |
| 21:00 | 5 | | | 4 | 7 | 38 | | | 29 | 53 |
| 22:00 | 1 | | | 1 | 2 | 37 | | | 28 | 51 |
| 23:00 | 1 | | | 1 | 2 | 25 | | | 19 | 34 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | | | | | |
|--|------------------------------|--------------------|--------------------------------|---|---|------------|-----------------------|------------|
| Route: 220 | | | | Area Type: Exurban | | | | |
| From: Morehead Ave (Ridgeway 87) | | | | Traffic Assignment: Constrained - Noise Study | | | | |
| To: Soapstone Rd (Rte 687) | | | | Existing Year: 2018 ADT: 15,600 No-build | | | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 12,000 21,400 | | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--|--|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 12,000 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 39 | | | 30 | 53 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 32 | | | 25 | 44 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 25 | | | 19 | 34 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 26 | | | 20 | 35 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 71 | | | 54 | 97 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 221 | | | 170 | 303 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 376 | | | 289 | 516 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 351 | | | 270 | 482 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 317 | | | 244 | 435 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 275 | | | 211 | 377 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 305 | | | 235 | 418 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 320 | | | 246 | 439 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 347 | | | 267 | 475 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 365 | | | 281 | 500 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 400 | | | 308 | 549 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 455 | | | 350 | 624 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 437 | | | 336 | 599 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 483 | | | 372 | 663 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 354 | | | 272 | 486 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 261 | | | 200 | 358 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 224 | | | 172 | 307 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 169 | | | 130 | 231 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 133 | | | 102 | 182 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 80 | | | 61 | 110 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 32 | | | 25 | 44 |
| 1:00 | 3 | | | 3 | 5 | 18 | | | 14 | 25 |
| 2:00 | 3 | | | 2 | 4 | 27 | | | 21 | 37 |
| 3:00 | 3 | | | 3 | 5 | 40 | | | 30 | 54 |
| 4:00 | 4 | | | 3 | 6 | 50 | | | 39 | 69 |
| 5:00 | 2 | | | 2 | 3 | 58 | | | 45 | 80 |
| 6:00 | 6 | | | 5 | 8 | 69 | | | 53 | 95 |
| 7:00 | 15 | | | 11 | 20 | 75 | | | 58 | 103 |
| 8:00 | 6 | | | 5 | 8 | 96 | | | 74 | 132 |
| 9:00 | 12 | | | 9 | 17 | 101 | | | 78 | 139 |
| 10:00 | 17 | | | 13 | 23 | 118 | | | 91 | 162 |
| 11:00 | 13 | | | 10 | 18 | 118 | | | 91 | 162 |
| 12:00 | 13 | | | 10 | 18 | 105 | | | 81 | 145 |
| 13:00 | 16 | | | 12 | 22 | 114 | | | 88 | 157 |
| 14:00 | 13 | | | 10 | 18 | 101 | | | 78 | 139 |
| 15:00 | 13 | | | 10 | 18 | 89 | | | 68 | 122 |
| 16:00 | 12 | | | 9 | 17 | 97 | | | 75 | 134 |
| 17:00 | 9 | | | 7 | 12 | 68 | | | 52 | 93 |
| 18:00 | 12 | | | 9 | 17 | 73 | | | 56 | 100 |
| 19:00 | 8 | | | 6 | 11 | 69 | | | 53 | 94 |
| 20:00 | 4 | | | 3 | 6 | 36 | | | 28 | 50 |
| 21:00 | 1 | | | 1 | 1 | 52 | | | 40 | 72 |
| 22:00 | 1 | | | 1 | 2 | 42 | | | 33 | 58 |
| 23:00 | 3 | | | 3 | 5 | 34 | | | 26 | 46 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,000 21,400 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 12,000 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 93 | | 71 | 127 | 1.0% | 100% | | 57 | 0 | 44 |
| 1:00 | 60 | | 47 | 83 | 0.7% | 100% | | 51 | 0 | 39 |
| 2:00 | 52 | | 40 | 71 | 0.7% | 100% | | 65 | 0 | 50 |
| 3:00 | 36 | | 28 | 50 | 0.7% | 100% | | 79 | 0 | 60 |
| 4:00 | 107 | | 82 | 147 | 1.3% | 100% | | 99 | 0 | 76 |
| 5:00 | 318 | | 245 | 437 | 2.7% | 100% | | 109 | 0 | 84 |
| 6:00 | 615 | | 473 | 844 | 5.0% | 100% | | 159 | 0 | 122 |
| 7:00 | 722 | | 555 | 991 | 5.9% | 100% | | 199 | 0 | 153 |
| 8:00 | 666 | | 513 | 914 | 5.5% | 100% | | 197 | 0 | 151 |
| 9:00 | 543 | | 418 | 745 | 5.0% | 100% | | 232 | 0 | 179 |
| 10:00 | 611 | | 470 | 839 | 5.6% | 100% | | 262 | 0 | 202 |
| 11:00 | 627 | | 483 | 861 | 5.5% | 100% | | 238 | 0 | 183 |
| 12:00 | 707 | | 544 | 970 | 6.1% | 100% | | 238 | 0 | 183 |
| 13:00 | 695 | | 535 | 954 | 6.0% | 100% | | 236 | 0 | 181 |
| 14:00 | 794 | | 611 | 1,089 | 6.4% | 100% | | 211 | 0 | 162 |
| 15:00 | 901 | | 693 | 1,237 | 7.1% | 100% | | 205 | 0 | 158 |
| 16:00 | 934 | | 718 | 1,281 | 7.2% | 100% | | 191 | 0 | 147 |
| 17:00 | 1,030 | | 792 | 1,413 | 7.5% | 100% | | 142 | 0 | 110 |
| 18:00 | 771 | | 593 | 1,058 | 5.8% | 100% | | 134 | 0 | 103 |
| 19:00 | 586 | | 451 | 804 | 4.5% | 100% | | 118 | 0 | 90 |
| 20:00 | 453 | | 349 | 622 | 3.4% | 100% | | 73 | 0 | 56 |
| 21:00 | 344 | | 265 | 472 | 2.8% | 100% | | 97 | 0 | 74 |
| 22:00 | 252 | | 194 | 346 | 2.1% | 100% | | 82 | 0 | 63 |
| 23:00 | 144 | | 111 | 197 | 1.3% | 100% | | 63 | 0 | 49 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 83 | | | 90 | 80 | 90 | 83 |
| 1:00 | 102 | 95 | | | 102 | 92 | 102 | 95 |
| 2:00 | 125 | 116 | | | 125 | 112 | 125 | 116 |
| 3:00 | 176 | 163 | | | 176 | 157 | 176 | 163 |
| 4:00 | 107 | 99 | | | 107 | 96 | 107 | 99 |
| 5:00 | 75 | 69 | | | 75 | 67 | 75 | 69 |
| 6:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 7:00 | 71 | 66 | | | 71 | 63 | 71 | 66 |
| 8:00 | 72 | 67 | | | 72 | 64 | 72 | 67 |
| 9:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 10:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 11:00 | 76 | 71 | | | 76 | 69 | 76 | 71 |
| 12:00 | 74 | 69 | | | 74 | 66 | 74 | 69 |
| 13:00 | 74 | 69 | | | 74 | 67 | 74 | 69 |
| 14:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 15:00 | 68 | 63 | | | 68 | 61 | 68 | 63 |
| 16:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 17:00 | 63 | 59 | | | 63 | 57 | 63 | 59 |
| 18:00 | 65 | 60 | | | 65 | 58 | 65 | 60 |
| 19:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 20:00 | 64 | 60 | | | 64 | 58 | 64 | 60 |
| 21:00 | 71 | 66 | | | 71 | 64 | 71 | 66 |
| 22:00 | 73 | 68 | | | 73 | 66 | 73 | 68 |
| 23:00 | 80 | 74 | | | 80 | 72 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.90

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Soapstone Rd (Rte 687) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Water Plant Rd 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

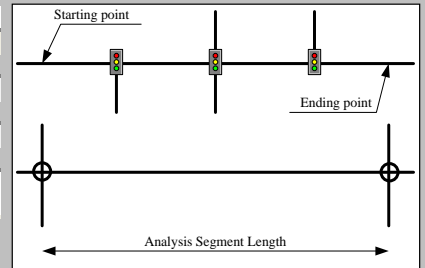
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 3 | | 3 | |
| 17. Analysis Segment No. of Signals: | 1 | | 1 | |
| 18. Average Cycle Length (sec.): | 135 | | 90 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 58 | |
| 20. Signal Coordination: | No Coord. | | No Coord. | |
| Delay caused by signal, mph: | 3 | | 5 | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 18,000 14,300 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 23,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
From: Soapstone Rd (Rte 687)
To: Water Plant Rd
Jurisdiction: 2. Salem/Henry Co
Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
Existing Year: 2018 ADT: 18,000 No-build
Design Year: 2040 ADT: 14,300 23,400

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--------|-----------------------|--------|-----------------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.05 | A | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 1:00 | 0.05 | A | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 2:00 | 0.05 | A | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 3:00 | 0.04 | A | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 4:00 | 0.07 | A | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 5:00 | 0.10 | A | | | | 0.08 | A | 0.08 | A | 0.13 | A | 0.13 |
| 6:00 | 0.20 | A | | | | 0.16 | A | 0.16 | A | 0.26 | A | 0.26 |
| 7:00 | 0.29 | A | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 8:00 | 0.26 | A | | | | 0.21 | A | 0.21 | A | 0.34 | B | 0.34 |
| 9:00 | 0.25 | A | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 10:00 | 0.28 | A | | | | 0.22 | A | 0.22 | A | 0.36 | B | 0.36 |
| 11:00 | 0.25 | A | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 12:00 | 0.29 | A | | | | 0.23 | A | 0.23 | A | 0.38 | B | 0.38 |
| 13:00 | 0.26 | A | | | | 0.21 | A | 0.21 | A | 0.34 | B | 0.34 |
| 14:00 | 0.28 | A | | | | 0.22 | A | 0.22 | A | 0.37 | B | 0.37 |
| 15:00 | 0.31 | B | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 16:00 | 0.31 | B | | | | 0.25 | A | 0.25 | A | 0.40 | B | 0.40 |
| 17:00 | 0.32 | B | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 18:00 | 0.24 | A | | | | 0.19 | A | 0.19 | A | 0.31 | B | 0.31 |
| 19:00 | 0.19 | A | | | | 0.15 | A | 0.15 | A | 0.25 | A | 0.25 |
| 20:00 | 0.14 | A | | | | 0.11 | A | 0.11 | A | 0.18 | A | 0.18 |
| 21:00 | 0.13 | A | | | | 0.10 | A | 0.10 | A | 0.16 | A | 0.16 |
| 22:00 | 0.10 | A | | | | 0.08 | A | 0.08 | A | 0.12 | A | 0.12 |
| 23:00 | 0.06 | A | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--------|-----------------------|--------|-----------------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.06 | A | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 1:00 | 0.04 | A | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 3:00 | 0.06 | A | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | 0.07 | A | 0.07 | A | 0.12 | A | 0.12 |
| 5:00 | 0.17 | A | | | | 0.13 | A | 0.13 | A | 0.21 | A | 0.21 |
| 6:00 | 0.25 | A | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 7:00 | 0.26 | A | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 8:00 | 0.25 | A | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 9:00 | 0.25 | A | | | | 0.20 | A | 0.20 | A | 0.32 | B | 0.32 |
| 10:00 | 0.29 | A | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 11:00 | 0.29 | A | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 12:00 | 0.28 | A | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 13:00 | 0.31 | B | | | | 0.24 | A | 0.24 | A | 0.40 | B | 0.40 |
| 14:00 | 0.30 | B | | | | 0.24 | A | 0.24 | A | 0.40 | B | 0.40 |
| 15:00 | 0.32 | B | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 16:00 | 0.32 | B | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 17:00 | 0.30 | A | | | | 0.24 | A | 0.24 | A | 0.39 | B | 0.39 |
| 18:00 | 0.25 | A | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 19:00 | 0.20 | A | | | | 0.16 | A | 0.16 | A | 0.26 | A | 0.26 |
| 20:00 | 0.14 | A | | | | 0.11 | A | 0.11 | A | 0.19 | A | 0.19 |
| 21:00 | 0.13 | A | | | | 0.11 | A | 0.11 | A | 0.17 | A | 0.17 |
| 22:00 | 0.11 | A | | | | 0.09 | A | 0.09 | A | 0.14 | A | 0.14 |
| 23:00 | 0.08 | A | | | | 0.06 | A | 0.06 | A | 0.10 | A | 0.10 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | |
|--|---------------------------|--|---------------|--|
| Route: 220 | | Area Type: Exurban | | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,300 | 23,400 | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 62 | | | 49 | 81 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 33 | | | 26 | 42 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 31 | | | 25 | 40 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 12 | | | 10 | 16 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 42 | | | 33 | 54 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 112 | | | 89 | 146 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 276 | | | 219 | 359 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 428 | | | 340 | 556 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 403 | | | 320 | 524 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 309 | | | 246 | 402 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 353 | | | 281 | 459 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 355 | | | 282 | 461 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 416 | | | 331 | 541 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 381 | | | 303 | 496 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 454 | | | 361 | 590 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 515 | | | 409 | 670 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 574 | | | 456 | 746 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 631 | | | 501 | 820 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 481 | | | 382 | 626 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 376 | | | 299 | 489 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 265 | | | 211 | 345 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 202 | | | 161 | 263 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 137 | | | 109 | 178 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 74 | | | 58 | 96 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 2 | | | 2 | 3 | 24 | | | 19 | 31 |
| 1:00 | 2 | | | 1 | 2 | 33 | | | 26 | 42 |
| 2:00 | 0 | | | 0 | 0 | 41 | | | 33 | 53 |
| 3:00 | 2 | | | 1 | 2 | 40 | | | 31 | 51 |
| 4:00 | 4 | | | 3 | 5 | 47 | | | 38 | 61 |
| 5:00 | 3 | | | 2 | 4 | 53 | | | 42 | 70 |
| 6:00 | 14 | | | 11 | 18 | 83 | | | 66 | 108 |
| 7:00 | 24 | | | 19 | 31 | 102 | | | 81 | 132 |
| 8:00 | 14 | | | 11 | 18 | 95 | | | 76 | 124 |
| 9:00 | 31 | | | 25 | 40 | 106 | | | 84 | 138 |
| 10:00 | 16 | | | 12 | 20 | 131 | | | 104 | 170 |
| 11:00 | 10 | | | 8 | 13 | 112 | | | 89 | 146 |
| 12:00 | 13 | | | 10 | 17 | 126 | | | 100 | 163 |
| 13:00 | 19 | | | 15 | 25 | 102 | | | 81 | 133 |
| 14:00 | 15 | | | 12 | 19 | 97 | | | 77 | 126 |
| 15:00 | 16 | | | 13 | 21 | 102 | | | 81 | 133 |
| 16:00 | 11 | | | 9 | 14 | 83 | | | 66 | 108 |
| 17:00 | 7 | | | 6 | 9 | 69 | | | 55 | 90 |
| 18:00 | 5 | | | 4 | 6 | 52 | | | 41 | 68 |
| 19:00 | 8 | | | 6 | 10 | 40 | | | 31 | 51 |
| 20:00 | 5 | | | 4 | 6 | 33 | | | 26 | 42 |
| 21:00 | 6 | | | 5 | 8 | 44 | | | 35 | 57 |
| 22:00 | 2 | | | 1 | 2 | 43 | | | 34 | 55 |
| 23:00 | 2 | | | 1 | 2 | 29 | | | 23 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---------------------------------|--------------------|---|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,300 23,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|------------|--|--|---|------------|-----------------------|------------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 14,300 | 23,400 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 45 | | | 36 | 58 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 37 | | | 30 | 48 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 29 | | | 23 | 37 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 29 | | | 23 | 38 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 81 | | | 65 | 106 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 255 | | | 203 | 332 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 434 | | | 345 | 564 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 405 | | | 322 | 527 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 366 | | | 291 | 476 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 317 | | | 252 | 412 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 352 | | | 280 | 457 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 369 | | | 293 | 480 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 400 | | | 318 | 520 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 421 | | | 334 | 547 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 462 | | | 367 | 601 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 525 | | | 417 | 682 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 504 | | | 400 | 655 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 557 | | | 443 | 724 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 408 | | | 325 | 531 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 301 | | | 239 | 391 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 258 | | | 205 | 336 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 195 | | | 155 | 253 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 153 | | | 122 | 200 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 92 | | | 73 | 120 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 37 | | | 30 | 48 |
| 1:00 | 4 | | | 3 | 5 | 21 | | | 17 | 27 |
| 2:00 | 3 | | | 2 | 4 | 31 | | | 25 | 40 |
| 3:00 | 4 | | | 3 | 5 | 46 | | | 36 | 59 |
| 4:00 | 5 | | | 4 | 6 | 58 | | | 46 | 76 |
| 5:00 | 2 | | | 2 | 3 | 67 | | | 54 | 88 |
| 6:00 | 7 | | | 6 | 9 | 80 | | | 63 | 104 |
| 7:00 | 17 | | | 14 | 22 | 87 | | | 69 | 113 |
| 8:00 | 7 | | | 6 | 9 | 111 | | | 88 | 144 |
| 9:00 | 14 | | | 11 | 18 | 117 | | | 93 | 152 |
| 10:00 | 19 | | | 15 | 25 | 136 | | | 108 | 177 |
| 11:00 | 16 | | | 12 | 20 | 136 | | | 108 | 177 |
| 12:00 | 15 | | | 12 | 19 | 122 | | | 97 | 158 |
| 13:00 | 19 | | | 15 | 24 | 132 | | | 105 | 171 |
| 14:00 | 15 | | | 12 | 19 | 117 | | | 93 | 152 |
| 15:00 | 16 | | | 12 | 20 | 102 | | | 81 | 133 |
| 16:00 | 14 | | | 11 | 18 | 112 | | | 89 | 146 |
| 17:00 | 10 | | | 8 | 13 | 78 | | | 62 | 102 |
| 18:00 | 14 | | | 11 | 18 | 84 | | | 67 | 109 |
| 19:00 | 9 | | | 7 | 12 | 79 | | | 63 | 103 |
| 20:00 | 5 | | | 4 | 6 | 42 | | | 33 | 54 |
| 21:00 | 1 | | | 1 | 1 | 60 | | | 48 | 79 |
| 22:00 | 2 | | | 1 | 2 | 49 | | | 39 | 63 |
| 23:00 | 4 | | | 3 | 5 | 39 | | | 31 | 50 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---------------------------------|--------------------|---|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 |
| Jurisdiction: 2. Salem/Henry Co | | No-build |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | Design Year: 2040 ADT: 14,300 |
| | | 23,400 |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---------------------------------|--|---|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 |
| Jurisdiction: 2. Salem/Henry Co | | No-build |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 107 | | 85 | 139 | 1.0% | 100% | | 66 | 0 | 52 |
| 1:00 | 70 | | 55 | 91 | 0.7% | 100% | | 59 | 0 | 47 |
| 2:00 | 60 | | 47 | 78 | 0.7% | 100% | | 75 | 0 | 60 |
| 3:00 | 42 | | 33 | 54 | 0.7% | 100% | | 91 | 0 | 72 |
| 4:00 | 123 | | 98 | 160 | 1.3% | 100% | | 114 | 0 | 91 |
| 5:00 | 367 | | 292 | 478 | 2.7% | 100% | | 126 | 0 | 100 |
| 6:00 | 710 | | 564 | 923 | 5.0% | 100% | | 184 | 0 | 146 |
| 7:00 | 833 | | 662 | 1,083 | 5.9% | 100% | | 229 | 0 | 182 |
| 8:00 | 769 | | 611 | 1,000 | 5.5% | 100% | | 227 | 0 | 180 |
| 9:00 | 626 | | 498 | 814 | 5.0% | 100% | | 268 | 0 | 213 |
| 10:00 | 705 | | 560 | 917 | 5.6% | 100% | | 302 | 0 | 240 |
| 11:00 | 724 | | 575 | 941 | 5.5% | 100% | | 274 | 0 | 218 |
| 12:00 | 816 | | 648 | 1,061 | 6.1% | 100% | | 275 | 0 | 219 |
| 13:00 | 802 | | 637 | 1,043 | 6.0% | 100% | | 272 | 0 | 216 |
| 14:00 | 916 | | 728 | 1,191 | 6.4% | 100% | | 243 | 0 | 193 |
| 15:00 | 1,040 | | 826 | 1,352 | 7.1% | 100% | | 236 | 0 | 188 |
| 16:00 | 1,077 | | 856 | 1,401 | 7.2% | 100% | | 220 | 0 | 175 |
| 17:00 | 1,188 | | 944 | 1,545 | 7.5% | 100% | | 164 | 0 | 131 |
| 18:00 | 890 | | 707 | 1,157 | 5.8% | 100% | | 154 | 0 | 123 |
| 19:00 | 677 | | 538 | 880 | 4.5% | 100% | | 136 | 0 | 108 |
| 20:00 | 523 | | 416 | 680 | 3.4% | 100% | | 84 | 0 | 67 |
| 21:00 | 397 | | 315 | 516 | 2.8% | 100% | | 112 | 0 | 89 |
| 22:00 | 291 | | 231 | 378 | 2.1% | 100% | | 95 | 0 | 75 |
| 23:00 | 166 | | 132 | 216 | 1.3% | 100% | | 73 | 0 | 58 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 83 | | | 90 | 80 | 90 | 83 |
| 1:00 | 102 | 95 | | | 102 | 92 | 102 | 95 |
| 2:00 | 125 | 116 | | | 125 | 112 | 125 | 116 |
| 3:00 | 176 | 163 | | | 176 | 158 | 176 | 163 |
| 4:00 | 107 | 99 | | | 107 | 96 | 107 | 99 |
| 5:00 | 75 | 69 | | | 75 | 67 | 75 | 69 |
| 6:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 7:00 | 71 | 65 | | | 71 | 63 | 71 | 65 |
| 8:00 | 72 | 66 | | | 72 | 64 | 72 | 66 |
| 9:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 10:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 11:00 | 76 | 71 | | | 76 | 69 | 76 | 71 |
| 12:00 | 74 | 69 | | | 74 | 67 | 74 | 69 |
| 13:00 | 74 | 69 | | | 74 | 67 | 74 | 69 |
| 14:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 15:00 | 68 | 63 | | | 68 | 61 | 68 | 63 |
| 16:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 17:00 | 63 | 58 | | | 63 | 57 | 63 | 58 |
| 18:00 | 65 | 60 | | | 65 | 58 | 65 | 60 |
| 19:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 20:00 | 64 | 60 | | | 64 | 58 | 64 | 60 |
| 21:00 | 71 | 66 | | | 71 | 64 | 71 | 66 |
| 22:00 | 73 | 68 | | | 73 | 66 | 73 | 68 |
| 23:00 | 80 | 74 | | | 80 | 72 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 1.50

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beging: Water Plant Rd 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Rte 58/Rte 220 Interchange 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

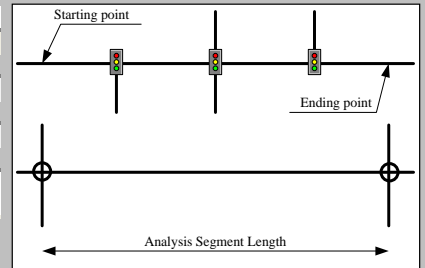
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 45 | 45 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 48 | 48 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------------|------------|------------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 10 | | 10 | |
| 17. Analysis Segment No. of Signals: | 2 | | 2 | |
| 18. Average Cycle Length (sec.): | 108 | | 108 | |
| 19. Average Green Time per Cycle (sec.): | 93 | | 93 | |
| 20. Signal Coordination: | Excellent Coord. | | Excellent Coord. | |
| Delay caused by signal, mph: | 0 | | 0 | |

Note:

[Empty box for notes]

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 25,300 22,000 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 31,900

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: **220**
 From: **Water Plant Rd**
 To: **Rte 58/Rte 220 Interchange**
 Jurisdiction: **2. Salem/Henry Co**
 Run Date: **4/29/2019** Time Span: **24 Hours**



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: **Exurban**
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: **25,300** No-build
 Design Year: 2040 ADT: **22,000** **31,900**

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 1:00 | 0.06 | A | | | | | 0.06 | A | 0.06 | A | 0.08 | A | 0.08 |
| 2:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 3:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | | 0.08 | A | 0.08 | A | 0.12 | A | 0.12 |
| 5:00 | 0.14 | A | | | | | 0.12 | A | 0.12 | A | 0.17 | A | 0.17 |
| 6:00 | 0.28 | A | | | | | 0.24 | A | 0.24 | A | 0.35 | B | 0.35 |
| 7:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 8:00 | 0.37 | B | | | | | 0.32 | B | 0.32 | B | 0.46 | B | 0.46 |
| 9:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 10:00 | 0.39 | B | | | | | 0.34 | B | 0.34 | B | 0.49 | B | 0.49 |
| 11:00 | 0.36 | B | | | | | 0.31 | B | 0.31 | B | 0.45 | B | 0.45 |
| 12:00 | 0.41 | B | | | | | 0.36 | B | 0.36 | B | 0.52 | C | 0.52 |
| 13:00 | 0.37 | B | | | | | 0.32 | B | 0.32 | B | 0.47 | B | 0.47 |
| 14:00 | 0.40 | B | | | | | 0.34 | B | 0.34 | B | 0.50 | B | 0.50 |
| 15:00 | 0.44 | B | | | | | 0.38 | B | 0.38 | B | 0.55 | C | 0.55 |
| 16:00 | 0.44 | B | | | | | 0.38 | B | 0.38 | B | 0.55 | C | 0.55 |
| 17:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 18:00 | 0.34 | B | | | | | 0.29 | A | 0.29 | A | 0.42 | B | 0.42 |
| 19:00 | 0.27 | A | | | | | 0.23 | A | 0.23 | A | 0.34 | B | 0.34 |
| 20:00 | 0.19 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 21:00 | 0.18 | A | | | | | 0.15 | A | 0.15 | A | 0.22 | A | 0.22 |
| 22:00 | 0.13 | A | | | | | 0.12 | A | 0.12 | A | 0.17 | A | 0.17 |
| 23:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |
| 1:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |
| 2:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 3:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |
| 4:00 | 0.13 | A | | | | | 0.11 | A | 0.11 | A | 0.16 | A | 0.16 |
| 5:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.29 | A | 0.29 |
| 6:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 7:00 | 0.36 | B | | | | | 0.31 | B | 0.31 | B | 0.45 | B | 0.45 |
| 8:00 | 0.36 | B | | | | | 0.31 | B | 0.31 | B | 0.45 | B | 0.45 |
| 9:00 | 0.35 | B | | | | | 0.30 | B | 0.30 | B | 0.44 | B | 0.44 |
| 10:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 11:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 12:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 13:00 | 0.43 | B | | | | | 0.37 | B | 0.37 | B | 0.54 | C | 0.54 |
| 14:00 | 0.43 | B | | | | | 0.37 | B | 0.37 | B | 0.54 | C | 0.54 |
| 15:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 16:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 17:00 | 0.42 | B | | | | | 0.37 | B | 0.37 | B | 0.53 | C | 0.53 |
| 18:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 19:00 | 0.28 | A | | | | | 0.25 | A | 0.25 | A | 0.36 | B | 0.36 |
| 20:00 | 0.20 | A | | | | | 0.18 | A | 0.18 | A | 0.26 | A | 0.26 |
| 21:00 | 0.19 | A | | | | | 0.16 | A | 0.16 | A | 0.24 | A | 0.24 |
| 22:00 | 0.15 | A | | | | | 0.13 | A | 0.13 | A | 0.19 | A | 0.19 |
| 23:00 | 0.11 | A | | | | | 0.09 | A | 0.09 | A | 0.14 | A | 0.14 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 22,000 | 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 87 | | | 76 | 110 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 46 | | | 40 | 58 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 44 | | | 38 | 55 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 17 | | | 15 | 22 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 59 | | | 51 | 74 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 158 | | | 137 | 199 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 388 | | | 337 | 489 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 601 | | | 523 | 758 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 567 | | | 493 | 714 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 435 | | | 378 | 548 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 497 | | | 432 | 626 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 499 | | | 434 | 629 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 585 | | | 509 | 738 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 536 | | | 466 | 676 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 638 | | | 555 | 805 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 724 | | | 630 | 913 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 806 | | | 701 | 1,016 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 887 | | | 771 | 1,118 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 677 | | | 588 | 853 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 528 | | | 459 | 666 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 373 | | | 324 | 470 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 284 | | | 247 | 359 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 193 | | | 168 | 243 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 103 | | | 90 | 130 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 3 | | | 3 | 4 | 34 | | | 29 | 43 |
| 1:00 | 2 | | | 2 | 3 | 46 | | | 40 | 58 |
| 2:00 | 0 | | | 0 | 0 | 58 | | | 50 | 73 |
| 3:00 | 2 | | | 2 | 3 | 56 | | | 48 | 70 |
| 4:00 | 5 | | | 5 | 7 | 66 | | | 58 | 84 |
| 5:00 | 4 | | | 4 | 5 | 75 | | | 65 | 95 |
| 6:00 | 20 | | | 17 | 25 | 117 | | | 101 | 147 |
| 7:00 | 34 | | | 29 | 43 | 143 | | | 124 | 180 |
| 8:00 | 20 | | | 17 | 25 | 134 | | | 117 | 169 |
| 9:00 | 44 | | | 38 | 55 | 149 | | | 130 | 188 |
| 10:00 | 22 | | | 19 | 27 | 184 | | | 160 | 232 |
| 11:00 | 14 | | | 12 | 18 | 158 | | | 137 | 199 |
| 12:00 | 19 | | | 16 | 23 | 176 | | | 153 | 223 |
| 13:00 | 27 | | | 24 | 34 | 144 | | | 125 | 181 |
| 14:00 | 21 | | | 18 | 26 | 136 | | | 118 | 172 |
| 15:00 | 23 | | | 20 | 29 | 144 | | | 125 | 181 |
| 16:00 | 15 | | | 13 | 19 | 117 | | | 101 | 147 |
| 17:00 | 10 | | | 9 | 12 | 97 | | | 84 | 122 |
| 18:00 | 7 | | | 6 | 8 | 73 | | | 63 | 92 |
| 19:00 | 11 | | | 9 | 14 | 56 | | | 48 | 70 |
| 20:00 | 7 | | | 6 | 8 | 46 | | | 40 | 58 |
| 21:00 | 9 | | | 8 | 11 | 62 | | | 54 | 78 |
| 22:00 | 2 | | | 2 | 3 | 60 | | | 52 | 76 |
| 23:00 | 2 | | | 2 | 3 | 40 | | | 35 | 51 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 22,000 | 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 45) | | | | Design (PS= 45) | | Design Nbl'd (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 1:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 2:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 3:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 4:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 5:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 6:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 7:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 8:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 9:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 10:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 11:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 12:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 13:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 14:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 15:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 16:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 17:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 18:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 19:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 20:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 21:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 22:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 23:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--|--|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 22,000 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 63 | | | 55 | 80 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 52 | | | 45 | 66 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 40 | | | 35 | 51 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 41 | | | 36 | 52 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 114 | | | 99 | 144 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 358 | | | 312 | 452 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 610 | | | 531 | 769 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 570 | | | 495 | 718 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 514 | | | 447 | 648 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 446 | | | 387 | 562 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 495 | | | 430 | 624 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 519 | | | 451 | 654 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 562 | | | 489 | 709 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 592 | | | 514 | 746 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 649 | | | 565 | 819 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 738 | | | 641 | 930 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 708 | | | 616 | 893 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 783 | | | 681 | 988 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 574 | | | 499 | 724 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 423 | | | 368 | 533 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 363 | | | 315 | 457 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 273 | | | 238 | 345 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 216 | | | 188 | 272 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 130 | | | 113 | 163 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 3 | | | 3 | 4 | 52 | | | 45 | 66 |
| 1:00 | 5 | | | 5 | 7 | 29 | | | 26 | 37 |
| 2:00 | 4 | | | 4 | 5 | 44 | | | 38 | 55 |
| 3:00 | 5 | | | 5 | 7 | 64 | | | 56 | 81 |
| 4:00 | 7 | | | 6 | 8 | 82 | | | 71 | 103 |
| 5:00 | 3 | | | 3 | 4 | 95 | | | 82 | 120 |
| 6:00 | 10 | | | 9 | 12 | 112 | | | 98 | 141 |
| 7:00 | 24 | | | 21 | 30 | 122 | | | 106 | 154 |
| 8:00 | 10 | | | 9 | 12 | 156 | | | 135 | 196 |
| 9:00 | 20 | | | 17 | 25 | 165 | | | 143 | 207 |
| 10:00 | 27 | | | 24 | 34 | 192 | | | 167 | 242 |
| 11:00 | 22 | | | 19 | 27 | 192 | | | 167 | 242 |
| 12:00 | 21 | | | 18 | 26 | 171 | | | 149 | 216 |
| 13:00 | 26 | | | 23 | 33 | 185 | | | 161 | 234 |
| 14:00 | 21 | | | 18 | 26 | 165 | | | 143 | 207 |
| 15:00 | 22 | | | 19 | 27 | 144 | | | 125 | 181 |
| 16:00 | 20 | | | 17 | 25 | 158 | | | 137 | 199 |
| 17:00 | 14 | | | 12 | 18 | 110 | | | 96 | 139 |
| 18:00 | 20 | | | 17 | 25 | 118 | | | 102 | 148 |
| 19:00 | 13 | | | 11 | 16 | 111 | | | 97 | 140 |
| 20:00 | 7 | | | 6 | 8 | 59 | | | 51 | 74 |
| 21:00 | 1 | | | 1 | 1 | 85 | | | 74 | 107 |
| 22:00 | 2 | | | 2 | 3 | 69 | | | 60 | 87 |
| 23:00 | 5 | | | 5 | 7 | 54 | | | 47 | 69 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---------------------------------|--------------------|---|
| Route: 220 | | Area Type: Exurban |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 22,000 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Southbound Hourly Speed, mph | | Travel-Time Model: BPR Updated Arterial | | | | | |
|---------------|------------------------------|-----------|---|-----------|-----------------------|-----------|----|----|
| | Calc. Existing (PS= 45) | | Design (PS= 45) | | Design Nbl'd (PS= 45) | | | |
| | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. | | |
| 0:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 1:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 2:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 3:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 4:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 5:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 6:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 7:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 8:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 9:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 10:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 11:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 12:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 13:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 14:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 15:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 16:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 17:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 18:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 19:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 20:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 21:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 22:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 23:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | |
|--|--|--|---------------|--|
| Route: 220 | | Area Type: Exurban | | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 22,000 | 31,900 | |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 150 | | | 131 | 190 | 1.0% | 100% | | 93 | 0 | 81 |
| 1:00 | 98 | | | 85 | 124 | 0.7% | 100% | | 83 | 0 | 72 |
| 2:00 | 84 | | | 73 | 106 | 0.7% | 100% | | 106 | 0 | 92 |
| 3:00 | 59 | | | 51 | 74 | 0.7% | 100% | | 127 | 0 | 111 |
| 4:00 | 173 | | | 151 | 218 | 1.3% | 100% | | 160 | 0 | 139 |
| 5:00 | 516 | | | 449 | 651 | 2.7% | 100% | | 178 | 0 | 154 |
| 6:00 | 998 | | | 868 | 1,258 | 5.0% | 100% | | 258 | 0 | 225 |
| 7:00 | 1,171 | | | 1,018 | 1,477 | 5.9% | 100% | | 322 | 0 | 280 |
| 8:00 | 1,081 | | | 940 | 1,363 | 5.5% | 100% | | 319 | 0 | 278 |
| 9:00 | 880 | | | 765 | 1,110 | 5.0% | 100% | | 377 | 0 | 328 |
| 10:00 | 991 | | | 862 | 1,250 | 5.6% | 100% | | 425 | 0 | 369 |
| 11:00 | 1,018 | | | 885 | 1,283 | 5.5% | 100% | | 386 | 0 | 335 |
| 12:00 | 1,147 | | | 998 | 1,446 | 6.1% | 100% | | 387 | 0 | 336 |
| 13:00 | 1,128 | | | 980 | 1,422 | 6.0% | 100% | | 382 | 0 | 333 |
| 14:00 | 1,288 | | | 1,120 | 1,624 | 6.4% | 100% | | 342 | 0 | 297 |
| 15:00 | 1,462 | | | 1,271 | 1,843 | 7.1% | 100% | | 332 | 0 | 289 |
| 16:00 | 1,514 | | | 1,317 | 1,909 | 7.2% | 100% | | 309 | 0 | 269 |
| 17:00 | 1,670 | | | 1,452 | 2,106 | 7.5% | 100% | | 231 | 0 | 201 |
| 18:00 | 1,251 | | | 1,088 | 1,577 | 5.8% | 100% | | 217 | 0 | 189 |
| 19:00 | 951 | | | 827 | 1,199 | 4.5% | 100% | | 191 | 0 | 166 |
| 20:00 | 735 | | | 639 | 927 | 3.4% | 100% | | 118 | 0 | 102 |
| 21:00 | 558 | | | 485 | 703 | 2.8% | 100% | | 157 | 0 | 136 |
| 22:00 | 409 | | | 355 | 515 | 2.1% | 100% | | 133 | 0 | 116 |
| 23:00 | 233 | | | 203 | 294 | 1.3% | 100% | | 102 | 0 | 89 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 45) | | | | Design (PS= 45) | | Design Nbl (PS= 45) | |
|---------------|-------------------------|------------|--|--|-----------------|------------|---------------------|------------|
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 77 | 72 | | | 77 | 72 | 77 | 72 |
| 1:00 | 88 | 82 | | | 88 | 82 | 88 | 82 |
| 2:00 | 107 | 101 | | | 107 | 101 | 107 | 101 |
| 3:00 | 151 | 141 | | | 151 | 141 | 151 | 141 |
| 4:00 | 92 | 86 | | | 92 | 86 | 92 | 86 |
| 5:00 | 64 | 60 | | | 64 | 60 | 64 | 60 |
| 6:00 | 60 | 56 | | | 60 | 56 | 60 | 56 |
| 7:00 | 61 | 57 | | | 61 | 57 | 61 | 57 |
| 8:00 | 62 | 58 | | | 62 | 58 | 62 | 58 |
| 9:00 | 68 | 64 | | | 68 | 64 | 68 | 64 |
| 10:00 | 68 | 64 | | | 68 | 64 | 68 | 64 |
| 11:00 | 66 | 61 | | | 66 | 61 | 66 | 61 |
| 12:00 | 64 | 60 | | | 64 | 60 | 64 | 60 |
| 13:00 | 64 | 60 | | | 64 | 60 | 64 | 60 |
| 14:00 | 60 | 56 | | | 60 | 56 | 60 | 56 |
| 15:00 | 58 | 55 | | | 58 | 55 | 58 | 55 |
| 16:00 | 57 | 54 | | | 57 | 54 | 57 | 54 |
| 17:00 | 54 | 51 | | | 54 | 51 | 54 | 51 |
| 18:00 | 56 | 52 | | | 56 | 52 | 56 | 52 |
| 19:00 | 57 | 54 | | | 57 | 54 | 57 | 54 |
| 20:00 | 55 | 52 | | | 55 | 52 | 55 | 52 |
| 21:00 | 61 | 57 | | | 61 | 57 | 61 | 57 |
| 22:00 | 63 | 59 | | | 63 | 59 | 63 | 59 |
| 23:00 | 68 | 64 | | | 68 | 64 | 68 | 64 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.50

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: 58 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Rte 58/Rte 220 Interchange 4b. Facility Direction: East-West

4c. Analysis Segment Ending: Proposed Route 58/Bypass Interchange (near Trinity Terrace) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

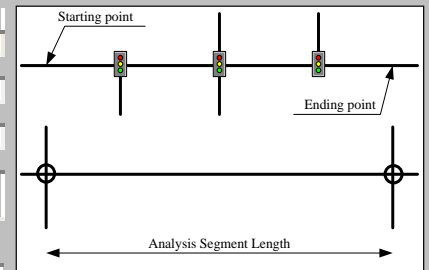
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Eastbound | Westbound | Eastbound | Westbound |
|--|-----------|-----------|-----------|-----------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | 6.0 | 6.0 | 6.0 | 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 16,900 14,000 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 20,000

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|-----------|-------------------|---------|-------------------|---------|--|--|--|--|
| | Tow-way | Eastbound | Eastbound % Truck | | Westbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

58
TBA

V 2018-0

Route: 58

From: Rte 58/Rte 220 Interchange

To: Proposed Route 58/Bypass Interchange (near Tr



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: 16,900 No-build

Design Year: 2040 ADT: 14,000 20,000

Eastbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nbfd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 1:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 3:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 4:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 5:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.09 | A | 0.09 |
| 6:00 | 0.16 | A | | | | | 0.13 | A | 0.13 | A | 0.19 | A | 0.19 |
| 7:00 | 0.23 | A | | | | | 0.19 | A | 0.19 | A | 0.27 | A | 0.27 |
| 8:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.25 | A | 0.25 |
| 9:00 | 0.20 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 10:00 | 0.23 | A | | | | | 0.19 | A | 0.19 | A | 0.27 | A | 0.27 |
| 11:00 | 0.21 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 12:00 | 0.24 | A | | | | | 0.20 | A | 0.20 | A | 0.28 | A | 0.28 |
| 13:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.25 | A | 0.25 |
| 14:00 | 0.23 | A | | | | | 0.19 | A | 0.19 | A | 0.27 | A | 0.27 |
| 15:00 | 0.25 | A | | | | | 0.21 | A | 0.21 | A | 0.30 | A | 0.30 |
| 16:00 | 0.25 | A | | | | | 0.21 | A | 0.21 | A | 0.30 | A | 0.30 |
| 17:00 | 0.26 | A | | | | | 0.21 | A | 0.21 | A | 0.30 | A | 0.30 |
| 18:00 | 0.19 | A | | | | | 0.16 | A | 0.16 | A | 0.23 | A | 0.23 |
| 19:00 | 0.15 | A | | | | | 0.13 | A | 0.13 | A | 0.18 | A | 0.18 |
| 20:00 | 0.11 | A | | | | | 0.09 | A | 0.09 | A | 0.13 | A | 0.13 |
| 21:00 | 0.10 | A | | | | | 0.09 | A | 0.09 | A | 0.12 | A | 0.12 |
| 22:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 23:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |

Westbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nbfd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 3:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 4:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 5:00 | 0.13 | A | | | | | 0.11 | A | 0.11 | A | 0.16 | A | 0.16 |
| 6:00 | 0.20 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 7:00 | 0.21 | A | | | | | 0.17 | A | 0.17 | A | 0.25 | A | 0.25 |
| 8:00 | 0.21 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 9:00 | 0.20 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 10:00 | 0.23 | A | | | | | 0.19 | A | 0.19 | A | 0.27 | A | 0.27 |
| 11:00 | 0.23 | A | | | | | 0.19 | A | 0.19 | A | 0.28 | A | 0.28 |
| 12:00 | 0.23 | A | | | | | 0.19 | A | 0.19 | A | 0.27 | A | 0.27 |
| 13:00 | 0.25 | A | | | | | 0.21 | A | 0.21 | A | 0.30 | A | 0.30 |
| 14:00 | 0.25 | A | | | | | 0.21 | A | 0.21 | A | 0.29 | A | 0.29 |
| 15:00 | 0.26 | A | | | | | 0.21 | A | 0.21 | A | 0.30 | A | 0.30 |
| 16:00 | 0.26 | A | | | | | 0.21 | A | 0.21 | A | 0.30 | A | 0.30 |
| 17:00 | 0.24 | A | | | | | 0.20 | A | 0.20 | A | 0.29 | A | 0.29 |
| 18:00 | 0.20 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 19:00 | 0.16 | A | | | | | 0.14 | A | 0.14 | A | 0.19 | A | 0.19 |
| 20:00 | 0.12 | A | | | | | 0.10 | A | 0.10 | A | 0.14 | A | 0.14 |
| 21:00 | 0.11 | A | | | | | 0.09 | A | 0.09 | A | 0.13 | A | 0.13 |
| 22:00 | 0.09 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |
| 23:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,000 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Eastbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|--------------|------------------|------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl'd | Tow-way K-factor | Eastbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 58 | | 48 | 69 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 31 | | 25 | 36 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 29 | | 24 | 34 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 12 | | 10 | 14 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 39 | | 33 | 47 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 106 | | 87 | 125 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 259 | | 215 | 307 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 402 | | 333 | 475 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 378 | | 313 | 448 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 290 | | 241 | 344 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 332 | | 275 | 393 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 333 | | 276 | 394 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 391 | | 324 | 462 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 358 | | 297 | 424 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 426 | | 353 | 505 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 484 | | 401 | 573 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 539 | | 446 | 637 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 592 | | 491 | 701 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 452 | | 374 | 535 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 353 | | 292 | 418 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 249 | | 206 | 295 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 190 | | 157 | 225 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 129 | | 107 | 152 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 69 | | 57 | 82 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Eastbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|--------------|------------------------|--|--------|--------------|
| | Existing | | Design | Design Nbl'd | Existing | | Design | Design Nbl'd |
| 0:00 | 2 | | 2 | 3 | 23 | | 19 | 27 |
| 1:00 | 1 | | 1 | 2 | 31 | | 25 | 36 |
| 2:00 | 0 | | 0 | 0 | 39 | | 32 | 46 |
| 3:00 | 1 | | 1 | 2 | 37 | | 31 | 44 |
| 4:00 | 4 | | 3 | 4 | 44 | | 37 | 53 |
| 5:00 | 3 | | 2 | 3 | 50 | | 42 | 59 |
| 6:00 | 13 | | 11 | 16 | 78 | | 65 | 92 |
| 7:00 | 23 | | 19 | 27 | 95 | | 79 | 113 |
| 8:00 | 13 | | 11 | 16 | 90 | | 74 | 106 |
| 9:00 | 29 | | 24 | 34 | 100 | | 83 | 118 |
| 10:00 | 15 | | 12 | 17 | 123 | | 102 | 146 |
| 11:00 | 9 | | 8 | 11 | 106 | | 87 | 125 |
| 12:00 | 12 | | 10 | 15 | 118 | | 98 | 140 |
| 13:00 | 18 | | 15 | 22 | 96 | | 80 | 114 |
| 14:00 | 14 | | 11 | 16 | 91 | | 75 | 108 |
| 15:00 | 15 | | 13 | 18 | 96 | | 80 | 114 |
| 16:00 | 10 | | 8 | 12 | 78 | | 65 | 92 |
| 17:00 | 7 | | 5 | 8 | 65 | | 54 | 77 |
| 18:00 | 4 | | 4 | 5 | 49 | | 40 | 58 |
| 19:00 | 7 | | 6 | 9 | 37 | | 31 | 44 |
| 20:00 | 4 | | 4 | 5 | 31 | | 25 | 36 |
| 21:00 | 6 | | 5 | 7 | 41 | | 34 | 49 |
| 22:00 | 1 | | 1 | 2 | 40 | | 33 | 47 |
| 23:00 | 1 | | 1 | 2 | 27 | | 22 | 32 |




ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | |
|--|---|--|
| Route: 58 |  | Area Type: Exurban |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,000 20,000 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Eastbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-1a Hwy Spd 60 mph | | | |
|---------------|-----------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 1:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 2:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 3:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 4:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 5:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 6:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 7:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 8:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 9:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 10:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 11:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 12:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 13:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 14:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 15:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 16:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 17:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 18:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 19:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 20:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 21:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 22:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 23:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,000 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Westbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|--------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Westbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 42 | | | 35 | 50 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 35 | | | 29 | 41 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 27 | | | 22 | 32 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 28 | | | 23 | 33 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 76 | | | 63 | 90 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 239 | | | 198 | 283 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 408 | | | 338 | 482 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 381 | | | 315 | 450 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 343 | | | 285 | 406 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 298 | | | 247 | 352 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 330 | | | 274 | 391 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 346 | | | 287 | 410 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 376 | | | 311 | 444 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 395 | | | 327 | 468 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 434 | | | 359 | 513 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 493 | | | 408 | 583 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 473 | | | 392 | 560 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 523 | | | 433 | 619 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 384 | | | 318 | 454 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 282 | | | 234 | 334 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 242 | | | 201 | 287 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 183 | | | 151 | 216 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 144 | | | 119 | 171 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 87 | | | 72 | 102 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Westbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 35 | | | 29 | 41 |
| 1:00 | 4 | | | 3 | 4 | 20 | | | 16 | 23 |
| 2:00 | 3 | | | 2 | 3 | 29 | | | 24 | 34 |
| 3:00 | 4 | | | 3 | 4 | 43 | | | 36 | 51 |
| 4:00 | 4 | | | 4 | 5 | 55 | | | 45 | 65 |
| 5:00 | 2 | | | 2 | 3 | 63 | | | 52 | 75 |
| 6:00 | 7 | | | 5 | 8 | 75 | | | 62 | 89 |
| 7:00 | 16 | | | 13 | 19 | 82 | | | 68 | 96 |
| 8:00 | 7 | | | 5 | 8 | 104 | | | 86 | 123 |
| 9:00 | 13 | | | 11 | 16 | 110 | | | 91 | 130 |
| 10:00 | 18 | | | 15 | 22 | 128 | | | 106 | 152 |
| 11:00 | 15 | | | 12 | 17 | 128 | | | 106 | 152 |
| 12:00 | 14 | | | 11 | 16 | 114 | | | 95 | 135 |
| 13:00 | 17 | | | 14 | 21 | 124 | | | 102 | 146 |
| 14:00 | 14 | | | 11 | 16 | 110 | | | 91 | 130 |
| 15:00 | 15 | | | 12 | 17 | 96 | | | 80 | 114 |
| 16:00 | 13 | | | 11 | 16 | 106 | | | 87 | 125 |
| 17:00 | 9 | | | 8 | 11 | 74 | | | 61 | 87 |
| 18:00 | 13 | | | 11 | 16 | 79 | | | 65 | 93 |
| 19:00 | 9 | | | 7 | 10 | 74 | | | 61 | 88 |
| 20:00 | 4 | | | 4 | 5 | 39 | | | 33 | 47 |
| 21:00 | 1 | | | 1 | 1 | 57 | | | 47 | 67 |
| 22:00 | 1 | | | 1 | 2 | 46 | | | 38 | 54 |
| 23:00 | 4 | | | 3 | 4 | 36 | | | 30 | 43 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,000 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Westbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-ls Hwy Spd 60 mph | | | |
|---------------|-----------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 1:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 2:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 3:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 4:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 5:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 6:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 7:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 8:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 9:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 10:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 11:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 12:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 13:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 14:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 15:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 16:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 17:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 18:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 19:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 20:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 21:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 22:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 23:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

Route: 58

Area Type: Exurban

From: Rte 58/Rte 220 Interchange

Traffic Assignment: Constrained - Noise Study

To: Proposed Route 58/Bypass Interchange

Existing Year: 2018 ADT: 16,900

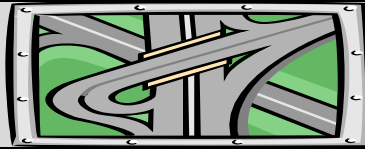
No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019 Time Span: 24 hrs.

Design Year: 2040 ADT: 14,000

20,000



Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 100 | | | 83 | 119 | 1.0% | 100% | | 62 | 0 | 51 |
| 1:00 | 65 | | | 54 | 78 | 0.7% | 100% | | 55 | 0 | 46 |
| 2:00 | 56 | | | 46 | 66 | 0.7% | 100% | | 71 | 0 | 58 |
| 3:00 | 39 | | | 33 | 47 | 0.7% | 100% | | 85 | 0 | 71 |
| 4:00 | 116 | | | 96 | 137 | 1.3% | 100% | | 107 | 0 | 89 |
| 5:00 | 345 | | | 286 | 408 | 2.7% | 100% | | 119 | 0 | 98 |
| 6:00 | 667 | | | 552 | 789 | 5.0% | 100% | | 172 | 0 | 143 |
| 7:00 | 782 | | | 648 | 926 | 5.9% | 100% | | 215 | 0 | 178 |
| 8:00 | 722 | | | 598 | 854 | 5.5% | 100% | | 213 | 0 | 177 |
| 9:00 | 588 | | | 487 | 696 | 5.0% | 100% | | 252 | 0 | 209 |
| 10:00 | 662 | | | 549 | 784 | 5.6% | 100% | | 284 | 0 | 235 |
| 11:00 | 680 | | | 563 | 804 | 5.5% | 100% | | 258 | 0 | 213 |
| 12:00 | 766 | | | 635 | 907 | 6.1% | 100% | | 258 | 0 | 214 |
| 13:00 | 753 | | | 624 | 891 | 6.0% | 100% | | 255 | 0 | 212 |
| 14:00 | 860 | | | 713 | 1,018 | 6.4% | 100% | | 229 | 0 | 189 |
| 15:00 | 977 | | | 809 | 1,156 | 7.1% | 100% | | 222 | 0 | 184 |
| 16:00 | 1,012 | | | 838 | 1,197 | 7.2% | 100% | | 207 | 0 | 171 |
| 17:00 | 1,116 | | | 924 | 1,320 | 7.5% | 100% | | 154 | 0 | 128 |
| 18:00 | 835 | | | 692 | 989 | 5.8% | 100% | | 145 | 0 | 120 |
| 19:00 | 635 | | | 526 | 752 | 4.5% | 100% | | 127 | 0 | 105 |
| 20:00 | 491 | | | 407 | 581 | 3.4% | 100% | | 79 | 0 | 65 |
| 21:00 | 373 | | | 309 | 441 | 2.8% | 100% | | 105 | 0 | 87 |
| 22:00 | 273 | | | 226 | 323 | 2.1% | 100% | | 89 | 0 | 74 |
| 23:00 | 156 | | | 129 | 184 | 1.3% | 100% | | 68 | 0 | 57 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 115 | 115 | | | 115 | 115 | 115 | 115 |
| 1:00 | 132 | 132 | | | 132 | 132 | 132 | 132 |
| 2:00 | 161 | 161 | | | 161 | 161 | 161 | 161 |
| 3:00 | 226 | 226 | | | 226 | 226 | 226 | 226 |
| 4:00 | 137 | 137 | | | 137 | 137 | 137 | 137 |
| 5:00 | 96 | 96 | | | 96 | 96 | 96 | 96 |
| 6:00 | 89 | 89 | | | 89 | 89 | 89 | 89 |
| 7:00 | 90 | 90 | | | 90 | 90 | 89 | 89 |
| 8:00 | 91 | 91 | | | 92 | 92 | 91 | 91 |
| 9:00 | 101 | 101 | | | 101 | 101 | 100 | 100 |
| 10:00 | 100 | 100 | | | 101 | 101 | 100 | 100 |
| 11:00 | 97 | 97 | | | 98 | 98 | 96 | 96 |
| 12:00 | 94 | 94 | | | 94 | 94 | 93 | 93 |
| 13:00 | 94 | 94 | | | 95 | 95 | 93 | 93 |
| 14:00 | 89 | 89 | | | 89 | 89 | 88 | 88 |
| 15:00 | 86 | 86 | | | 87 | 87 | 85 | 85 |
| 16:00 | 84 | 84 | | | 85 | 85 | 83 | 83 |
| 17:00 | 80 | 80 | | | 80 | 80 | 79 | 79 |
| 18:00 | 83 | 83 | | | 83 | 83 | 82 | 82 |
| 19:00 | 85 | 85 | | | 85 | 85 | 85 | 85 |
| 20:00 | 83 | 83 | | | 83 | 83 | 82 | 82 |
| 21:00 | 91 | 91 | | | 91 | 91 | 91 | 91 |
| 22:00 | 95 | 95 | | | 95 | 95 | 94 | 94 |
| 23:00 | 103 | 103 | | | 103 | 103 | 103 | 103 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 4.90

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: Byp 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Proposed Rte 220/Bypass Interchange 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Soapstone Rd (Rte 687) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

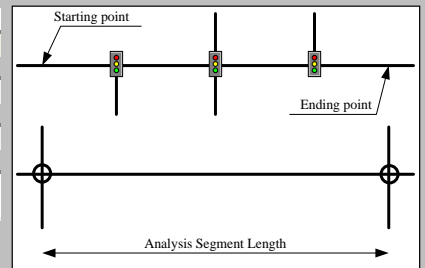
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | 6.0 | 6.0 | 6.0 | 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 0 11,400 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 0

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

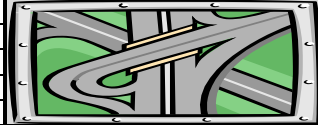
V 2018-0

Byp
TBA

Route: **Byp**

From: **Proposed Rte 220/Bypass Interchange**

To: **Soapstone Rd (Rte 687)**



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: **Exurban**

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: **0** No-build

Jurisdiction: **2. Salem/Henry Co**

Run Date: **4/29/2019** Time Span: **24 Hours**

Design Year: 2040 ADT: **11,400** **0**

Northbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | |
|---------------|-----------------------|--|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.11 | A | 0.11 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.13 | A | 0.13 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.10 | A | 0.10 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |

Southbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | |
|---------------|-----------------------|--|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.09 | A | 0.09 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.11 | A | 0.11 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VD0T




ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|--|---|--|----------|
| Route: Byp |  | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | Design Year: 2040 ADT: 11,400 | 0 |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | | 39 | 0 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 0 | | | 21 | 0 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 0 | | | 20 | 0 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 0 | | | 8 | 0 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 0 | | | 27 | 0 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 0 | | | 71 | 0 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 0 | | | 175 | 0 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 0 | | | 271 | 0 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 0 | | | 255 | 0 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 0 | | | 196 | 0 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 0 | | | 224 | 0 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 0 | | | 225 | 0 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 0 | | | 264 | 0 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 0 | | | 242 | 0 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 0 | | | 288 | 0 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 0 | | | 326 | 0 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 0 | | | 363 | 0 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 0 | | | 400 | 0 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 0 | | | 305 | 0 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 0 | | | 238 | 0 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 0 | | | 168 | 0 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 0 | | | 128 | 0 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 0 | | | 87 | 0 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 0 | | | 47 | 0 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 0 | | | 1 | 0 | 0 | | | 15 | 0 |
| 1:00 | 0 | | | 1 | 0 | 0 | | | 21 | 0 |
| 2:00 | 0 | | | 0 | 0 | 0 | | | 26 | 0 |
| 3:00 | 0 | | | 1 | 0 | 0 | | | 25 | 0 |
| 4:00 | 0 | | | 2 | 0 | 0 | | | 30 | 0 |
| 5:00 | 0 | | | 2 | 0 | 0 | | | 34 | 0 |
| 6:00 | 0 | | | 9 | 0 | 0 | | | 53 | 0 |
| 7:00 | 0 | | | 15 | 0 | 0 | | | 64 | 0 |
| 8:00 | 0 | | | 9 | 0 | 0 | | | 60 | 0 |
| 9:00 | 0 | | | 20 | 0 | 0 | | | 67 | 0 |
| 10:00 | 0 | | | 10 | 0 | 0 | | | 83 | 0 |
| 11:00 | 0 | | | 6 | 0 | 0 | | | 71 | 0 |
| 12:00 | 0 | | | 8 | 0 | 0 | | | 80 | 0 |
| 13:00 | 0 | | | 12 | 0 | 0 | | | 65 | 0 |
| 14:00 | 0 | | | 9 | 0 | 0 | | | 61 | 0 |
| 15:00 | 0 | | | 10 | 0 | 0 | | | 65 | 0 |
| 16:00 | 0 | | | 7 | 0 | 0 | | | 53 | 0 |
| 17:00 | 0 | | | 4 | 0 | 0 | | | 44 | 0 |
| 18:00 | 0 | | | 3 | 0 | 0 | | | 33 | 0 |
| 19:00 | 0 | | | 5 | 0 | 0 | | | 25 | 0 |
| 20:00 | 0 | | | 3 | 0 | 0 | | | 21 | 0 |
| 21:00 | 0 | | | 4 | 0 | 0 | | | 28 | 0 |
| 22:00 | 0 | | | 1 | 0 | 0 | | | 27 | 0 |
| 23:00 | 0 | | | 1 | 0 | 0 | | | 18 | 0 |



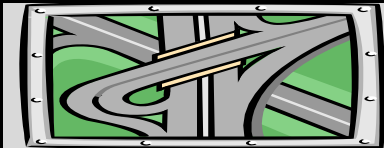
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | | | | | | |
|--|-------------------------------------|---|--|----------|---|-----------|------------------------------|-----------|
| Route: Byp | |  | Area Type: Exurban | | | | | |
| From: Proposed Rte 220/Bypass Interchange | | | Traffic Assignment: Constrained - Noise Study | | | | | |
| To: Soapstone Rd (Rte 687) | | | Existing Year: 2018 ADT: 0 | No-build | | | | |
| Jurisdiction: 2. Salem/Henry Co | | | Design Year: 2040 ADT: 11,400 | | 0 | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-1a Hwy Spd 60 mph | | | |
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | | |
|--|---------------------------|--|--|----------|
| Route: Byp | | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange | | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | Design Year: 2040 ADT: 11,400 0 | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | | |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|------------------|---------------------|--|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Southbound D-factor | | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | 28 | 0 | 1.0% | 49% | | 2.8% | 44.0% | 46.8% |
| 1:00 | 0 | | 24 | 0 | 0.7% | 48% | | 6.3% | 33.8% | 40.0% |
| 2:00 | 0 | | 18 | 0 | 0.7% | 47% | | 4.9% | 49.4% | 54.3% |
| 3:00 | 0 | | 19 | 0 | 0.7% | 60% | | 4.9% | 57.8% | 62.7% |
| 4:00 | 0 | | 52 | 0 | 1.3% | 61% | | 3.2% | 40.3% | 43.5% |
| 5:00 | 0 | | 162 | 0 | 2.7% | 66% | | 0.7% | 20.8% | 21.5% |
| 6:00 | 0 | | 275 | 0 | 5.0% | 58% | | 1.3% | 15.3% | 16.7% |
| 7:00 | 0 | | 257 | 0 | 5.9% | 48% | | 3.3% | 17.0% | 20.4% |
| 8:00 | 0 | | 232 | 0 | 5.5% | 49% | | 1.4% | 22.9% | 24.4% |
| 9:00 | 0 | | 201 | 0 | 5.0% | 50% | | 3.1% | 26.1% | 29.2% |
| 10:00 | 0 | | 223 | 0 | 5.6% | 50% | | 3.8% | 26.9% | 30.7% |
| 11:00 | 0 | | 234 | 0 | 5.5% | 52% | | 3.0% | 26.2% | 29.2% |
| 12:00 | 0 | | 253 | 0 | 6.1% | 49% | | 2.7% | 22.7% | 25.4% |
| 13:00 | 0 | | 267 | 0 | 6.0% | 53% | | 3.3% | 23.1% | 26.3% |
| 14:00 | 0 | | 293 | 0 | 6.4% | 51% | | 2.5% | 19.7% | 22.2% |
| 15:00 | 0 | | 332 | 0 | 7.1% | 50% | | 2.4% | 15.9% | 18.3% |
| 16:00 | 0 | | 319 | 0 | 7.2% | 49% | | 2.2% | 17.8% | 20.0% |
| 17:00 | 0 | | 353 | 0 | 7.5% | 48% | | 1.6% | 12.1% | 13.7% |
| 18:00 | 0 | | 259 | 0 | 5.8% | 48% | | 2.8% | 16.5% | 19.3% |
| 19:00 | 0 | | 190 | 0 | 4.5% | 48% | | 2.4% | 20.3% | 22.7% |
| 20:00 | 0 | | 163 | 0 | 3.4% | 50% | | 1.5% | 13.7% | 15.3% |
| 21:00 | 0 | | 123 | 0 | 2.8% | 50% | | 0.3% | 23.6% | 23.9% |
| 22:00 | 0 | | 97 | 0 | 2.1% | 53% | | 0.8% | 24.0% | 24.7% |
| 23:00 | 0 | | 58 | 0 | 1.3% | 56% | | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|------------|------------------------|--|--------|------------|
| | Existing | | Design | Design Nbl | Existing | | Design | Design Nbl |
| 0:00 | 0 | | 1 | 0 | 0 | | 24 | 0 |
| 1:00 | 0 | | 2 | 0 | 0 | | 13 | 0 |
| 2:00 | 0 | | 2 | 0 | 0 | | 20 | 0 |
| 3:00 | 0 | | 2 | 0 | 0 | | 29 | 0 |
| 4:00 | 0 | | 3 | 0 | 0 | | 37 | 0 |
| 5:00 | 0 | | 1 | 0 | 0 | | 43 | 0 |
| 6:00 | 0 | | 4 | 0 | 0 | | 51 | 0 |
| 7:00 | 0 | | 11 | 0 | 0 | | 55 | 0 |
| 8:00 | 0 | | 4 | 0 | 0 | | 70 | 0 |
| 9:00 | 0 | | 9 | 0 | 0 | | 74 | 0 |
| 10:00 | 0 | | 12 | 0 | 0 | | 86 | 0 |
| 11:00 | 0 | | 10 | 0 | 0 | | 86 | 0 |
| 12:00 | 0 | | 9 | 0 | 0 | | 77 | 0 |
| 13:00 | 0 | | 12 | 0 | 0 | | 83 | 0 |
| 14:00 | 0 | | 9 | 0 | 0 | | 74 | 0 |
| 15:00 | 0 | | 10 | 0 | 0 | | 65 | 0 |
| 16:00 | 0 | | 9 | 0 | 0 | | 71 | 0 |
| 17:00 | 0 | | 6 | 0 | 0 | | 50 | 0 |
| 18:00 | 0 | | 9 | 0 | 0 | | 53 | 0 |
| 19:00 | 0 | | 6 | 0 | 0 | | 50 | 0 |
| 20:00 | 0 | | 3 | 0 | 0 | | 27 | 0 |
| 21:00 | 0 | | 0 | 0 | 0 | | 38 | 0 |
| 22:00 | 0 | | 1 | 0 | 0 | | 31 | 0 |
| 23:00 | 0 | | 2 | 0 | 0 | | 25 | 0 |



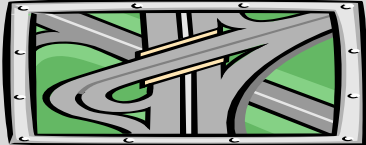
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|--|---|--|----------|
| Route: Byp |  | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 11,400 | 0 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-ls Hwy Spd 60 mph | | | |
|---------------|------------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



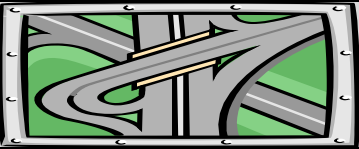
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|--|---|--|----------|
| Route: Byp |  | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | Design Year: 2040 ADT: 11,400 | 0 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 0 | | 68 | 0 | 1.0% | 100% | | 0 | 0 | 42 |
| 1:00 | 0 | | 44 | 0 | 0.7% | 100% | | 0 | 0 | 37 |
| 2:00 | 0 | | 38 | 0 | 0.7% | 100% | | 0 | 0 | 48 |
| 3:00 | 0 | | 27 | 0 | 0.7% | 100% | | 0 | 0 | 57 |
| 4:00 | 0 | | 78 | 0 | 1.3% | 100% | | 0 | 0 | 72 |
| 5:00 | 0 | | 233 | 0 | 2.7% | 100% | | 0 | 0 | 80 |
| 6:00 | 0 | | 450 | 0 | 5.0% | 100% | | 0 | 0 | 116 |
| 7:00 | 0 | | 528 | 0 | 5.9% | 100% | | 0 | 0 | 145 |
| 8:00 | 0 | | 487 | 0 | 5.5% | 100% | | 0 | 0 | 144 |
| 9:00 | 0 | | 397 | 0 | 5.0% | 100% | | 0 | 0 | 170 |
| 10:00 | 0 | | 447 | 0 | 5.6% | 100% | | 0 | 0 | 191 |
| 11:00 | 0 | | 458 | 0 | 5.5% | 100% | | 0 | 0 | 174 |
| 12:00 | 0 | | 517 | 0 | 6.1% | 100% | | 0 | 0 | 174 |
| 13:00 | 0 | | 508 | 0 | 6.0% | 100% | | 0 | 0 | 172 |
| 14:00 | 0 | | 580 | 0 | 6.4% | 100% | | 0 | 0 | 154 |
| 15:00 | 0 | | 659 | 0 | 7.1% | 100% | | 0 | 0 | 150 |
| 16:00 | 0 | | 682 | 0 | 7.2% | 100% | | 0 | 0 | 139 |
| 17:00 | 0 | | 753 | 0 | 7.5% | 100% | | 0 | 0 | 104 |
| 18:00 | 0 | | 564 | 0 | 5.8% | 100% | | 0 | 0 | 98 |
| 19:00 | 0 | | 429 | 0 | 4.5% | 100% | | 0 | 0 | 86 |
| 20:00 | 0 | | 331 | 0 | 3.4% | 100% | | 0 | 0 | 53 |
| 21:00 | 0 | | 251 | 0 | 2.8% | 100% | | 0 | 0 | 71 |
| 22:00 | 0 | | 184 | 0 | 2.1% | 100% | | 0 | 0 | 60 |
| 23:00 | 0 | | 105 | 0 | 1.3% | 100% | | 0 | 0 | 46 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 65 | 65 | | | 115 | 115 | 65 | 65 |
| 1:00 | 65 | 65 | | | 132 | 132 | 65 | 65 |
| 2:00 | 65 | 65 | | | 161 | 161 | 65 | 65 |
| 3:00 | 65 | 65 | | | 226 | 226 | 65 | 65 |
| 4:00 | 65 | 65 | | | 137 | 137 | 65 | 65 |
| 5:00 | 65 | 65 | | | 96 | 96 | 65 | 65 |
| 6:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 7:00 | 65 | 65 | | | 91 | 91 | 65 | 65 |
| 8:00 | 65 | 65 | | | 92 | 92 | 65 | 65 |
| 9:00 | 65 | 65 | | | 102 | 102 | 65 | 65 |
| 10:00 | 65 | 65 | | | 101 | 101 | 65 | 65 |
| 11:00 | 65 | 65 | | | 98 | 98 | 65 | 65 |
| 12:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 13:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 14:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 15:00 | 65 | 65 | | | 87 | 87 | 65 | 65 |
| 16:00 | 65 | 65 | | | 85 | 85 | 65 | 65 |
| 17:00 | 65 | 65 | | | 81 | 81 | 65 | 65 |
| 18:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 19:00 | 65 | 65 | | | 86 | 86 | 65 | 65 |
| 20:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 21:00 | 65 | 65 | | | 91 | 91 | 65 | 65 |
| 22:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 23:00 | 65 | 65 | | | 103 | 103 | 65 | 65 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 1.40

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: Byp 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Soapstone Rd (Rte 687) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Proposed Route 58/Bypass Interchange (near Trinity Terrace) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

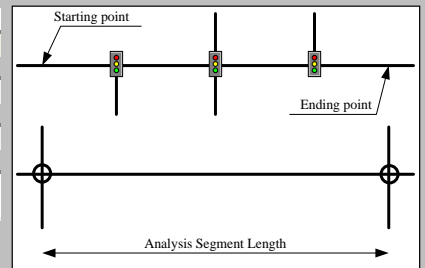
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Northbound | Southbound | Northbound | Southbound |
|--|------------|-------------|------------|-------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside 6.0 | Outside 6.0 | Inside 6.0 | Outside 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 0 12,200 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 0

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |
| 100% | | | | | | | | | | |

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

V 2018-0

Byp
TBA

Route: **Byp**

From: **Soapstone Rd (Rte 687)**

To: **Proposed Route 58/Bypass Interchange (near Tr**



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: **Exurban**

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: **0** No-build

Design Year: 2040 ADT: **12,200** **0**

Northbound

| Starting Time | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | | |
|---------------|----------------------|--|----------------------|--|----------------------|--|----------------------|-------------|----------------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.12 | A | 0.12 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.11 | A | 0.11 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |

Southbound

| Starting Time | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | | |
|---------------|----------------------|--|----------------------|--|----------------------|--|----------------------|-------------|----------------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.10 | A | 0.10 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.12 | A | 0.12 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VD0T




ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|---|---|--|----------|
| Route: Byp |  | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,200 | 0 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | | 42 | 0 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 0 | | | 22 | 0 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 0 | | | 21 | 0 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 0 | | | 8 | 0 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 0 | | | 28 | 0 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 0 | | | 76 | 0 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 0 | | | 187 | 0 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 0 | | | 290 | 0 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 0 | | | 273 | 0 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 0 | | | 210 | 0 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 0 | | | 240 | 0 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 0 | | | 241 | 0 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 0 | | | 282 | 0 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 0 | | | 258 | 0 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 0 | | | 308 | 0 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 0 | | | 349 | 0 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 0 | | | 389 | 0 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 0 | | | 428 | 0 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 0 | | | 326 | 0 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 0 | | | 255 | 0 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 0 | | | 180 | 0 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 0 | | | 137 | 0 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 0 | | | 93 | 0 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 0 | | | 50 | 0 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 0 | | | 2 | 0 | 0 | | | 16 | 0 |
| 1:00 | 0 | | | 1 | 0 | 0 | | | 22 | 0 |
| 2:00 | 0 | | | 0 | 0 | 0 | | | 28 | 0 |
| 3:00 | 0 | | | 1 | 0 | 0 | | | 27 | 0 |
| 4:00 | 0 | | | 3 | 0 | 0 | | | 32 | 0 |
| 5:00 | 0 | | | 2 | 0 | 0 | | | 36 | 0 |
| 6:00 | 0 | | | 9 | 0 | 0 | | | 56 | 0 |
| 7:00 | 0 | | | 16 | 0 | 0 | | | 69 | 0 |
| 8:00 | 0 | | | 9 | 0 | 0 | | | 65 | 0 |
| 9:00 | 0 | | | 21 | 0 | 0 | | | 72 | 0 |
| 10:00 | 0 | | | 11 | 0 | 0 | | | 89 | 0 |
| 11:00 | 0 | | | 7 | 0 | 0 | | | 76 | 0 |
| 12:00 | 0 | | | 9 | 0 | 0 | | | 85 | 0 |
| 13:00 | 0 | | | 13 | 0 | 0 | | | 69 | 0 |
| 14:00 | 0 | | | 10 | 0 | 0 | | | 66 | 0 |
| 15:00 | 0 | | | 11 | 0 | 0 | | | 69 | 0 |
| 16:00 | 0 | | | 7 | 0 | 0 | | | 56 | 0 |
| 17:00 | 0 | | | 5 | 0 | 0 | | | 47 | 0 |
| 18:00 | 0 | | | 3 | 0 | 0 | | | 35 | 0 |
| 19:00 | 0 | | | 5 | 0 | 0 | | | 27 | 0 |
| 20:00 | 0 | | | 3 | 0 | 0 | | | 22 | 0 |
| 21:00 | 0 | | | 4 | 0 | 0 | | | 30 | 0 |
| 22:00 | 0 | | | 1 | 0 | 0 | | | 29 | 0 |
| 23:00 | 0 | | | 1 | 0 | 0 | | | 19 | 0 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| Route: Byp | | | | Area Type: Exurban | | | | | | | | |
|---|------------------------------|---------------------------|--|---|-----------------|------------|---------------|------------|-----------------------|------------|---------------|------------|
| From: Soapstone Rd (Rte 687) | | | | Traffic Assignment: Constrained - Noise Study | | | | | | | | |
| To: Proposed Route 58/Bypass Interchange | | | | Existing Year: 2018 ADT: 0 | No-build | | | | | | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 12,200 | 0 | | | | | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | Travel-Time Model: BPR HCM 4-1a Hwy Spd 60 mph | | | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Design (PS= 65) | | | | Design Nbl'd (PS= 65) | | | |
| | Calc. Existing (PS= 65) | | | | Un-Interrupt. | | Interrupt. | | Un-Interrupt. | | Interrupt. | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | | Comment, Q & Problem: Ed Azimi | | | | V 2018-09 | | | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|---|--|--|--------------------------------------|
| Route: Byp | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 12,200 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|--|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | 30 | 0 | | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 0 | | 25 | 0 | | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 0 | | 19 | 0 | | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 0 | | 20 | 0 | | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 0 | | 55 | 0 | | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 0 | | 173 | 0 | | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 0 | | 294 | 0 | | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 0 | | 275 | 0 | | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 0 | | 248 | 0 | | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 0 | | 215 | 0 | | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 0 | | 239 | 0 | | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 0 | | 250 | 0 | | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 0 | | 271 | 0 | | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 0 | | 285 | 0 | | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 0 | | 313 | 0 | | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 0 | | 356 | 0 | | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 0 | | 341 | 0 | | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 0 | | 378 | 0 | | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 0 | | 277 | 0 | | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 0 | | 204 | 0 | | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 0 | | 175 | 0 | | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 0 | | 132 | 0 | | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 0 | | 104 | 0 | | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 0 | | 63 | 0 | | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|------------|--|------------------------|--|--------|------------|--|
| | Existing | | Design | Design Nbl | | Existing | | Design | Design Nbl | |
| 0:00 | 0 | | 2 | 0 | | 0 | | 25 | 0 | |
| 1:00 | 0 | | 3 | 0 | | 0 | | 14 | 0 | |
| 2:00 | 0 | | 2 | 0 | | 0 | | 21 | 0 | |
| 3:00 | 0 | | 3 | 0 | | 0 | | 31 | 0 | |
| 4:00 | 0 | | 3 | 0 | | 0 | | 39 | 0 | |
| 5:00 | 0 | | 2 | 0 | | 0 | | 46 | 0 | |
| 6:00 | 0 | | 5 | 0 | | 0 | | 54 | 0 | |
| 7:00 | 0 | | 12 | 0 | | 0 | | 59 | 0 | |
| 8:00 | 0 | | 5 | 0 | | 0 | | 75 | 0 | |
| 9:00 | 0 | | 9 | 0 | | 0 | | 79 | 0 | |
| 10:00 | 0 | | 13 | 0 | | 0 | | 92 | 0 | |
| 11:00 | 0 | | 11 | 0 | | 0 | | 92 | 0 | |
| 12:00 | 0 | | 10 | 0 | | 0 | | 82 | 0 | |
| 13:00 | 0 | | 13 | 0 | | 0 | | 89 | 0 | |
| 14:00 | 0 | | 10 | 0 | | 0 | | 79 | 0 | |
| 15:00 | 0 | | 11 | 0 | | 0 | | 69 | 0 | |
| 16:00 | 0 | | 9 | 0 | | 0 | | 76 | 0 | |
| 17:00 | 0 | | 7 | 0 | | 0 | | 53 | 0 | |
| 18:00 | 0 | | 9 | 0 | | 0 | | 57 | 0 | |
| 19:00 | 0 | | 6 | 0 | | 0 | | 54 | 0 | |
| 20:00 | 0 | | 3 | 0 | | 0 | | 28 | 0 | |
| 21:00 | 0 | | 1 | 0 | | 0 | | 41 | 0 | |
| 22:00 | 0 | | 1 | 0 | | 0 | | 33 | 0 | |
| 23:00 | 0 | | 3 | 0 | | 0 | | 26 | 0 | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|---|---------------------------|--|----------|
| Route: Byp | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,200 | 0 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-ls Hwy Spd 60 mph | | | |
|---------------|------------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nblld (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



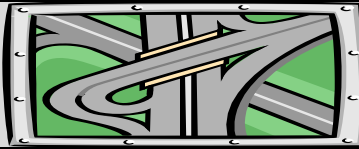
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|---|---|--|----------|
| Route: Byp |  | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | Design Year: 2040 ADT: 12,200 | 0 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 0 | | 72 | 0 | 1.0% | 100% | | 0 | 0 | 45 |
| 1:00 | 0 | | 47 | 0 | 0.7% | 100% | | 0 | 0 | 40 |
| 2:00 | 0 | | 40 | 0 | 0.7% | 100% | | 0 | 0 | 51 |
| 3:00 | 0 | | 28 | 0 | 0.7% | 100% | | 0 | 0 | 61 |
| 4:00 | 0 | | 84 | 0 | 1.3% | 100% | | 0 | 0 | 77 |
| 5:00 | 0 | | 249 | 0 | 2.7% | 100% | | 0 | 0 | 86 |
| 6:00 | 0 | | 481 | 0 | 5.0% | 100% | | 0 | 0 | 125 |
| 7:00 | 0 | | 565 | 0 | 5.9% | 100% | | 0 | 0 | 156 |
| 8:00 | 0 | | 521 | 0 | 5.5% | 100% | | 0 | 0 | 154 |
| 9:00 | 0 | | 424 | 0 | 5.0% | 100% | | 0 | 0 | 182 |
| 10:00 | 0 | | 478 | 0 | 5.6% | 100% | | 0 | 0 | 205 |
| 11:00 | 0 | | 491 | 0 | 5.5% | 100% | | 0 | 0 | 186 |
| 12:00 | 0 | | 553 | 0 | 6.1% | 100% | | 0 | 0 | 186 |
| 13:00 | 0 | | 544 | 0 | 6.0% | 100% | | 0 | 0 | 184 |
| 14:00 | 0 | | 621 | 0 | 6.4% | 100% | | 0 | 0 | 165 |
| 15:00 | 0 | | 705 | 0 | 7.1% | 100% | | 0 | 0 | 160 |
| 16:00 | 0 | | 730 | 0 | 7.2% | 100% | | 0 | 0 | 149 |
| 17:00 | 0 | | 805 | 0 | 7.5% | 100% | | 0 | 0 | 111 |
| 18:00 | 0 | | 603 | 0 | 5.8% | 100% | | 0 | 0 | 105 |
| 19:00 | 0 | | 459 | 0 | 4.5% | 100% | | 0 | 0 | 92 |
| 20:00 | 0 | | 355 | 0 | 3.4% | 100% | | 0 | 0 | 57 |
| 21:00 | 0 | | 269 | 0 | 2.8% | 100% | | 0 | 0 | 76 |
| 22:00 | 0 | | 197 | 0 | 2.1% | 100% | | 0 | 0 | 64 |
| 23:00 | 0 | | 112 | 0 | 1.3% | 100% | | 0 | 0 | 49 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 65 | 65 | | | 115 | 115 | 65 | 65 |
| 1:00 | 65 | 65 | | | 132 | 132 | 65 | 65 |
| 2:00 | 65 | 65 | | | 161 | 161 | 65 | 65 |
| 3:00 | 65 | 65 | | | 226 | 226 | 65 | 65 |
| 4:00 | 65 | 65 | | | 137 | 137 | 65 | 65 |
| 5:00 | 65 | 65 | | | 96 | 96 | 65 | 65 |
| 6:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 7:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 8:00 | 65 | 65 | | | 92 | 92 | 65 | 65 |
| 9:00 | 65 | 65 | | | 101 | 101 | 65 | 65 |
| 10:00 | 65 | 65 | | | 101 | 101 | 65 | 65 |
| 11:00 | 65 | 65 | | | 98 | 98 | 65 | 65 |
| 12:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 13:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 14:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 15:00 | 65 | 65 | | | 87 | 87 | 65 | 65 |
| 16:00 | 65 | 65 | | | 85 | 85 | 65 | 65 |
| 17:00 | 65 | 65 | | | 81 | 81 | 65 | 65 |
| 18:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 19:00 | 65 | 65 | | | 85 | 85 | 65 | 65 |
| 20:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 21:00 | 65 | 65 | | | 91 | 91 | 65 | 65 |
| 22:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 23:00 | 65 | 65 | | | 103 | 103 | 65 | 65 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beging: North Carolina Border 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

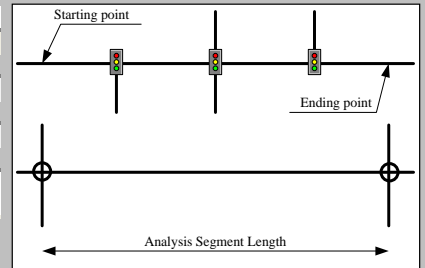
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 3 | | 4 | |
| 17. Analysis Segment No. of Signals: | 0 | | 0 | |
| 18. Average Cycle Length (sec.): | 0 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 0 | | 0 | |
| 20. Signal Coordination: | 0.00 | | 0.00 | |
| Delay caused by signal, mph: | #N/A | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 11,900 17,200 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 17,200

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: North Carolina Border
 To: Proposed Rte 220/Bypass Interchange (south of
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 11,900 No-build
 Design Year: 2040 ADT: 17,200 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.03 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.06 | A | 0.06 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.19 | A | 0.19 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.25 | A | 0.25 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.26 | A | 0.26 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.28 | A | 0.28 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.25 | A | 0.25 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.30 | A | 0.30 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.30 | A | 0.30 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.30 | B | 0.30 | B | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.23 | A | 0.23 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.18 | A | 0.18 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.13 | A | 0.13 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.12 | A | 0.12 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.06 | A | 0.06 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.16 | A | 0.16 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.28 | A | 0.28 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.29 | A | 0.29 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.29 | A | 0.29 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.30 | B | 0.30 | B | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.30 | B | 0.30 | B | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.29 | A | 0.29 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.19 | A | 0.19 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.14 | A | 0.14 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.13 | A | 0.13 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.10 | A | 0.10 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.07 | A | 0.07 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | 59 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | 31 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | 30 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | 12 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | 40 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | 107 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | 264 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | 409 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | 385 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | 296 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | 338 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | 339 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | 398 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | 364 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | 434 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | 493 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | 548 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | 603 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | 460 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | 359 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | 253 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | 193 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | 131 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | 70 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|--------------|------------------------|--|--------|--------------|
| | Existing | | Design | Design Nbl'd | Existing | | Design | Design Nbl'd |
| 0:00 | 2 | | 2 | 2 | 16 | | 23 | 23 |
| 1:00 | 1 | | 1 | 1 | 22 | | 31 | 31 |
| 2:00 | 0 | | 0 | 0 | 27 | | 39 | 39 |
| 3:00 | 1 | | 1 | 1 | 26 | | 38 | 38 |
| 4:00 | 3 | | 4 | 4 | 31 | | 45 | 45 |
| 5:00 | 2 | | 3 | 3 | 35 | | 51 | 51 |
| 6:00 | 9 | | 13 | 13 | 55 | | 79 | 79 |
| 7:00 | 16 | | 23 | 23 | 67 | | 97 | 97 |
| 8:00 | 9 | | 13 | 13 | 63 | | 91 | 91 |
| 9:00 | 20 | | 30 | 30 | 70 | | 101 | 101 |
| 10:00 | 10 | | 15 | 15 | 87 | | 125 | 125 |
| 11:00 | 7 | | 10 | 10 | 74 | | 107 | 107 |
| 12:00 | 9 | | 13 | 13 | 83 | | 120 | 120 |
| 13:00 | 13 | | 19 | 19 | 68 | | 98 | 98 |
| 14:00 | 10 | | 14 | 14 | 64 | | 93 | 93 |
| 15:00 | 11 | | 16 | 16 | 68 | | 98 | 98 |
| 16:00 | 7 | | 10 | 10 | 55 | | 79 | 79 |
| 17:00 | 5 | | 7 | 7 | 46 | | 66 | 66 |
| 18:00 | 3 | | 4 | 4 | 34 | | 50 | 50 |
| 19:00 | 5 | | 7 | 7 | 26 | | 38 | 38 |
| 20:00 | 3 | | 4 | 4 | 22 | | 31 | 31 |
| 21:00 | 4 | | 6 | 6 | 29 | | 42 | 42 |
| 22:00 | 1 | | 1 | 1 | 28 | | 41 | 41 |
| 23:00 | 1 | | 1 | 1 | 19 | | 27 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 17,200 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | | 43 | 43 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | | 36 | 36 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | | 27 | 27 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | | 28 | 28 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | | 78 | 78 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | | 244 | 244 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | | 415 | 415 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | | 387 | 387 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | | 350 | 350 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | | 303 | 303 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | | 336 | 336 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | | 353 | 353 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | | 382 | 382 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | | 402 | 402 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | | 441 | 441 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | | 501 | 501 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | | 481 | 481 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | | 533 | 533 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | | 390 | 390 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | | 287 | 287 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | | 247 | 247 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | | 186 | 186 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | | 147 | 147 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | | 88 | 88 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 2 | 25 | | | 36 | 36 |
| 1:00 | 3 | | | 4 | 4 | 14 | | | 20 | 20 |
| 2:00 | 2 | | | 3 | 3 | 20 | | | 30 | 30 |
| 3:00 | 3 | | | 4 | 4 | 30 | | | 44 | 44 |
| 4:00 | 3 | | | 4 | 4 | 38 | | | 56 | 56 |
| 5:00 | 2 | | | 2 | 2 | 45 | | | 64 | 64 |
| 6:00 | 5 | | | 7 | 7 | 53 | | | 76 | 76 |
| 7:00 | 11 | | | 16 | 16 | 57 | | | 83 | 83 |
| 8:00 | 5 | | | 7 | 7 | 73 | | | 106 | 106 |
| 9:00 | 9 | | | 13 | 13 | 77 | | | 112 | 112 |
| 10:00 | 13 | | | 19 | 19 | 90 | | | 130 | 130 |
| 11:00 | 10 | | | 15 | 15 | 90 | | | 130 | 130 |
| 12:00 | 10 | | | 14 | 14 | 80 | | | 116 | 116 |
| 13:00 | 12 | | | 18 | 18 | 87 | | | 126 | 126 |
| 14:00 | 10 | | | 14 | 14 | 77 | | | 112 | 112 |
| 15:00 | 10 | | | 15 | 15 | 68 | | | 98 | 98 |
| 16:00 | 9 | | | 13 | 13 | 74 | | | 107 | 107 |
| 17:00 | 7 | | | 10 | 10 | 52 | | | 75 | 75 |
| 18:00 | 9 | | | 13 | 13 | 55 | | | 80 | 80 |
| 19:00 | 6 | | | 9 | 9 | 52 | | | 76 | 76 |
| 20:00 | 3 | | | 4 | 4 | 28 | | | 40 | 40 |
| 21:00 | 1 | | | 1 | 1 | 40 | | | 58 | 58 |
| 22:00 | 1 | | | 1 | 1 | 32 | | | 47 | 47 |
| 23:00 | 3 | | | 4 | 4 | 26 | | | 37 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---|---------------------------|--|
| Route: 220 | | Area Type: Exurban |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 17,200 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 71 | | 102 | 102 | 1.0% | 100% | | 44 | 0 | 63 |
| 1:00 | 46 | | 67 | 67 | 0.7% | 100% | | 39 | 0 | 56 |
| 2:00 | 39 | | 57 | 57 | 0.7% | 100% | | 50 | 0 | 72 |
| 3:00 | 28 | | 40 | 40 | 0.7% | 100% | | 60 | 0 | 87 |
| 4:00 | 81 | | 118 | 118 | 1.3% | 100% | | 75 | 0 | 109 |
| 5:00 | 243 | | 351 | 351 | 2.7% | 100% | | 84 | 0 | 121 |
| 6:00 | 469 | | 678 | 678 | 5.0% | 100% | | 121 | 0 | 176 |
| 7:00 | 551 | | 796 | 796 | 5.9% | 100% | | 152 | 0 | 219 |
| 8:00 | 508 | | 735 | 735 | 5.5% | 100% | | 150 | 0 | 217 |
| 9:00 | 414 | | 598 | 598 | 5.0% | 100% | | 177 | 0 | 256 |
| 10:00 | 466 | | 674 | 674 | 5.6% | 100% | | 200 | 0 | 289 |
| 11:00 | 479 | | 692 | 692 | 5.5% | 100% | | 181 | 0 | 262 |
| 12:00 | 540 | | 780 | 780 | 6.1% | 100% | | 182 | 0 | 263 |
| 13:00 | 530 | | 767 | 767 | 6.0% | 100% | | 180 | 0 | 260 |
| 14:00 | 606 | | 875 | 875 | 6.4% | 100% | | 161 | 0 | 233 |
| 15:00 | 688 | | 994 | 994 | 7.1% | 100% | | 156 | 0 | 226 |
| 16:00 | 712 | | 1,029 | 1,029 | 7.2% | 100% | | 146 | 0 | 210 |
| 17:00 | 786 | | 1,135 | 1,135 | 7.5% | 100% | | 109 | 0 | 157 |
| 18:00 | 588 | | 850 | 850 | 5.8% | 100% | | 102 | 0 | 147 |
| 19:00 | 447 | | 647 | 647 | 4.5% | 100% | | 90 | 0 | 130 |
| 20:00 | 346 | | 500 | 500 | 3.4% | 100% | | 55 | 0 | 80 |
| 21:00 | 262 | | 379 | 379 | 2.8% | 100% | | 74 | 0 | 107 |
| 22:00 | 192 | | 278 | 278 | 2.1% | 100% | | 63 | 0 | 90 |
| 23:00 | 110 | | 158 | 158 | 1.3% | 100% | | 48 | 0 | 70 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 85 | | | 90 | 85 | 90 | 85 |
| 1:00 | 102 | 98 | | | 102 | 97 | 102 | 98 |
| 2:00 | 125 | 120 | | | 125 | 119 | 125 | 120 |
| 3:00 | 176 | 168 | | | 176 | 167 | 176 | 168 |
| 4:00 | 107 | 102 | | | 107 | 101 | 107 | 102 |
| 5:00 | 75 | 71 | | | 75 | 71 | 75 | 71 |
| 6:00 | 70 | 67 | | | 70 | 66 | 70 | 67 |
| 7:00 | 71 | 67 | | | 71 | 67 | 71 | 67 |
| 8:00 | 72 | 69 | | | 72 | 68 | 72 | 69 |
| 9:00 | 79 | 76 | | | 79 | 75 | 79 | 76 |
| 10:00 | 79 | 76 | | | 79 | 75 | 79 | 76 |
| 11:00 | 76 | 73 | | | 76 | 73 | 76 | 73 |
| 12:00 | 74 | 71 | | | 74 | 70 | 74 | 71 |
| 13:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 14:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 15:00 | 68 | 65 | | | 68 | 65 | 68 | 65 |
| 16:00 | 67 | 64 | | | 67 | 63 | 67 | 64 |
| 17:00 | 63 | 60 | | | 63 | 60 | 63 | 60 |
| 18:00 | 65 | 62 | | | 65 | 62 | 65 | 62 |
| 19:00 | 67 | 64 | | | 67 | 63 | 67 | 64 |
| 20:00 | 64 | 61 | | | 64 | 61 | 64 | 61 |
| 21:00 | 71 | 68 | | | 71 | 67 | 71 | 68 |
| 22:00 | 73 | 70 | | | 73 | 70 | 73 | 70 |
| 23:00 | 80 | 76 | | | 80 | 76 | 80 | 76 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 3.10

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Morehead Ave (Ridgeway 87) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

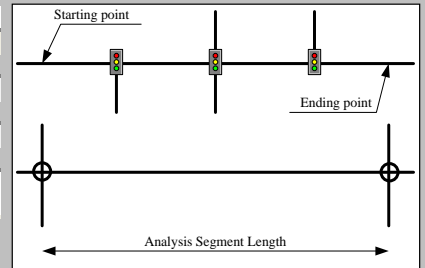
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 6 | | 6 | |
| 17. Analysis Segment No. of Signals: | 1 | | 1 | |
| 18. Average Cycle Length (sec.): | 130 | | 75 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 51 | |
| 20. Signal Coordination: | No Coord. | | No Coord. | |
| Delay caused by signal, mph: | 1 | | 1 | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 11,900 7,900 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 17,200

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |
| 100% | | | | | | | | | | |

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220

From: Proposed Rte 220/Bypass Interchange (south of

To: Morehead Ave (Ridgeway 87)

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: 11,900 No-build

Design Year: 2040 ADT: 7,900 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.09 | A | 0.09 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.12 | A | 0.12 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.12 | A | 0.12 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.12 | A | 0.12 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.11 | A | 0.11 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.08 | A | 0.08 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.06 | A | 0.06 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.02 | A | 0.02 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.07 | A | 0.07 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.13 | A | 0.13 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.13 | A | 0.13 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.13 | A | 0.13 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.09 | A | 0.09 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.06 | A | 0.06 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.06 | A | 0.06 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.05 | A | 0.05 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.03 | A | 0.03 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 7,900 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | 27 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | 14 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | 14 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | 5 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | 18 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | 49 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | 121 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | 188 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | 177 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | 136 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | 155 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | 156 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | 183 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | 167 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | 199 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | 226 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | 252 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | 277 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | 211 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | 165 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | 116 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | 89 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | 60 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | 32 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | 1 | 2 | 16 | | | 11 | 23 |
| 1:00 | 1 | | 1 | 1 | 22 | | | 14 | 31 |
| 2:00 | 0 | | 0 | 0 | 27 | | | 18 | 39 |
| 3:00 | 1 | | 1 | 1 | 26 | | | 17 | 38 |
| 4:00 | 3 | | 2 | 4 | 31 | | | 21 | 45 |
| 5:00 | 2 | | 1 | 3 | 35 | | | 23 | 51 |
| 6:00 | 9 | | 6 | 13 | 55 | | | 36 | 79 |
| 7:00 | 16 | | 11 | 23 | 67 | | | 45 | 97 |
| 8:00 | 9 | | 6 | 13 | 63 | | | 42 | 91 |
| 9:00 | 20 | | 14 | 30 | 70 | | | 47 | 101 |
| 10:00 | 10 | | 7 | 15 | 87 | | | 57 | 125 |
| 11:00 | 7 | | 4 | 10 | 74 | | | 49 | 107 |
| 12:00 | 9 | | 6 | 13 | 83 | | | 55 | 120 |
| 13:00 | 13 | | 9 | 19 | 68 | | | 45 | 98 |
| 14:00 | 10 | | 6 | 14 | 64 | | | 43 | 93 |
| 15:00 | 11 | | 7 | 16 | 68 | | | 45 | 98 |
| 16:00 | 7 | | 5 | 10 | 55 | | | 36 | 79 |
| 17:00 | 5 | | 3 | 7 | 46 | | | 30 | 66 |
| 18:00 | 3 | | 2 | 4 | 34 | | | 23 | 50 |
| 19:00 | 5 | | 3 | 7 | 26 | | | 17 | 38 |
| 20:00 | 3 | | 2 | 4 | 22 | | | 14 | 31 |
| 21:00 | 4 | | 3 | 6 | 29 | | | 19 | 42 |
| 22:00 | 1 | | 1 | 1 | 28 | | | 19 | 41 |
| 23:00 | 1 | | 1 | 1 | 19 | | | 13 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|---|
| Route: 220 | | Area Type: Exurban |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 7,900 17,200 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09




ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|---|--|----------|
| Route: 220 |  | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 7,900 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | | 20 | 43 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | | 16 | 36 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | | 13 | 27 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | | 13 | 28 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | | 36 | 78 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | | 112 | 244 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | | 191 | 415 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | | 178 | 387 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | | 161 | 350 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | | 139 | 303 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | | 154 | 336 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | | 162 | 353 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | | 176 | 382 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | | 185 | 402 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | | 203 | 441 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | | 230 | 501 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | | 221 | 481 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | | 245 | 533 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | | 179 | 390 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | | 132 | 287 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | | 113 | 247 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | | 85 | 186 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | | 67 | 147 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | | 40 | 88 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 1 | 2 | 25 | | | 16 | 36 |
| 1:00 | 3 | | | 2 | 4 | 14 | | | 9 | 20 |
| 2:00 | 2 | | | 1 | 3 | 20 | | | 14 | 30 |
| 3:00 | 3 | | | 2 | 4 | 30 | | | 20 | 44 |
| 4:00 | 3 | | | 2 | 4 | 38 | | | 26 | 56 |
| 5:00 | 2 | | | 1 | 2 | 45 | | | 30 | 64 |
| 6:00 | 5 | | | 3 | 7 | 53 | | | 35 | 76 |
| 7:00 | 11 | | | 7 | 16 | 57 | | | 38 | 83 |
| 8:00 | 5 | | | 3 | 7 | 73 | | | 49 | 106 |
| 9:00 | 9 | | | 6 | 13 | 77 | | | 51 | 112 |
| 10:00 | 13 | | | 9 | 19 | 90 | | | 60 | 130 |
| 11:00 | 10 | | | 7 | 15 | 90 | | | 60 | 130 |
| 12:00 | 10 | | | 6 | 14 | 80 | | | 53 | 116 |
| 13:00 | 12 | | | 8 | 18 | 87 | | | 58 | 126 |
| 14:00 | 10 | | | 6 | 14 | 77 | | | 51 | 112 |
| 15:00 | 10 | | | 7 | 15 | 68 | | | 45 | 98 |
| 16:00 | 9 | | | 6 | 13 | 74 | | | 49 | 107 |
| 17:00 | 7 | | | 4 | 10 | 52 | | | 34 | 75 |
| 18:00 | 9 | | | 6 | 13 | 55 | | | 37 | 80 |
| 19:00 | 6 | | | 4 | 9 | 52 | | | 35 | 76 |
| 20:00 | 3 | | | 2 | 4 | 28 | | | 18 | 40 |
| 21:00 | 1 | | | 0 | 1 | 40 | | | 27 | 58 |
| 22:00 | 1 | | | 1 | 1 | 32 | | | 21 | 47 |
| 23:00 | 3 | | | 2 | 4 | 26 | | | 17 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---|---------------------------|--|
| Route: 220 | | Area Type: Exurban |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 7,900 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

Route: 220

Area Type: Exurban

From: Proposed Rte 220/Bypass Interchange (s

Traffic Assignment: Constrained - Noise Study

To: Morehead Ave (Ridgeway 87)

Existing Year: 2018 ADT: 11,900

No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 hrs.

Design Year: 2040 ADT: 7,900

17,200

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 71 | | 47 | 102 | 1.0% | 100% | | 44 | 0 | 29 |
| 1:00 | 46 | | 31 | 67 | 0.7% | 100% | | 39 | 0 | 26 |
| 2:00 | 39 | | 26 | 57 | 0.7% | 100% | | 50 | 0 | 33 |
| 3:00 | 28 | | 18 | 40 | 0.7% | 100% | | 60 | 0 | 40 |
| 4:00 | 81 | | 54 | 118 | 1.3% | 100% | | 75 | 0 | 50 |
| 5:00 | 243 | | 161 | 351 | 2.7% | 100% | | 84 | 0 | 55 |
| 6:00 | 469 | | 312 | 678 | 5.0% | 100% | | 121 | 0 | 81 |
| 7:00 | 551 | | 366 | 796 | 5.9% | 100% | | 152 | 0 | 101 |
| 8:00 | 508 | | 337 | 735 | 5.5% | 100% | | 150 | 0 | 100 |
| 9:00 | 414 | | 275 | 598 | 5.0% | 100% | | 177 | 0 | 118 |
| 10:00 | 466 | | 310 | 674 | 5.6% | 100% | | 200 | 0 | 133 |
| 11:00 | 479 | | 318 | 692 | 5.5% | 100% | | 181 | 0 | 120 |
| 12:00 | 540 | | 358 | 780 | 6.1% | 100% | | 182 | 0 | 121 |
| 13:00 | 530 | | 352 | 767 | 6.0% | 100% | | 180 | 0 | 119 |
| 14:00 | 606 | | 402 | 875 | 6.4% | 100% | | 161 | 0 | 107 |
| 15:00 | 688 | | 457 | 994 | 7.1% | 100% | | 156 | 0 | 104 |
| 16:00 | 712 | | 473 | 1,029 | 7.2% | 100% | | 146 | 0 | 97 |
| 17:00 | 786 | | 521 | 1,135 | 7.5% | 100% | | 109 | 0 | 72 |
| 18:00 | 588 | | 391 | 850 | 5.8% | 100% | | 102 | 0 | 68 |
| 19:00 | 447 | | 297 | 647 | 4.5% | 100% | | 90 | 0 | 60 |
| 20:00 | 346 | | 230 | 500 | 3.4% | 100% | | 55 | 0 | 37 |
| 21:00 | 262 | | 174 | 379 | 2.8% | 100% | | 74 | 0 | 49 |
| 22:00 | 192 | | 128 | 278 | 2.1% | 100% | | 63 | 0 | 42 |
| 23:00 | 110 | | 73 | 158 | 1.3% | 100% | | 48 | 0 | 32 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 86 | | | 90 | 86 | 90 | 86 |
| 1:00 | 102 | 98 | | | 102 | 98 | 102 | 98 |
| 2:00 | 125 | 120 | | | 125 | 120 | 125 | 120 |
| 3:00 | 176 | 168 | | | 176 | 168 | 176 | 168 |
| 4:00 | 107 | 102 | | | 107 | 102 | 107 | 102 |
| 5:00 | 75 | 71 | | | 75 | 71 | 75 | 71 |
| 6:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 7:00 | 71 | 68 | | | 71 | 67 | 71 | 68 |
| 8:00 | 72 | 69 | | | 72 | 69 | 72 | 69 |
| 9:00 | 79 | 76 | | | 79 | 76 | 79 | 76 |
| 10:00 | 79 | 76 | | | 79 | 76 | 79 | 76 |
| 11:00 | 76 | 73 | | | 76 | 73 | 76 | 73 |
| 12:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 13:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 14:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 15:00 | 68 | 65 | | | 68 | 65 | 68 | 65 |
| 16:00 | 67 | 64 | | | 67 | 64 | 67 | 64 |
| 17:00 | 63 | 61 | | | 63 | 60 | 63 | 61 |
| 18:00 | 65 | 62 | | | 65 | 62 | 65 | 62 |
| 19:00 | 67 | 64 | | | 67 | 64 | 67 | 64 |
| 20:00 | 64 | 62 | | | 64 | 61 | 64 | 62 |
| 21:00 | 71 | 68 | | | 71 | 68 | 71 | 68 |
| 22:00 | 73 | 70 | | | 73 | 70 | 73 | 70 |
| 23:00 | 80 | 77 | | | 80 | 76 | 80 | 77 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Morehead Ave (Ridgeway 87) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Soapstone Rd (Rte 687) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

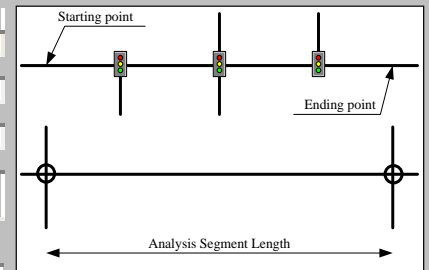
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 1 | | 1 | |
| 17. Analysis Segment No. of Signals: | 1 | | 1 | |
| 18. Average Cycle Length (sec.): | 180 | | 120 | |
| 19. Average Green Time per Cycle (sec.): | 148 | | 88 | |
| 20. Signal Coordination: | No Coord. | | No Coord. | |
| Delay caused by signal, mph: | 4 | | 5 | |

Note:

[Empty box for notes]

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly

22. Two-way ADT or AADT: Existing Year 2018: 15,600 Design Year 2040: 12,000

ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 21,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: Morehead Ave (Ridgeway 87)
 To: Soapstone Rd (Rte 687)
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 15,600 No-build
 Design Year: 2040 ADT: 12,000 21,400

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 1:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 3:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 4:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.08 | A | 0.08 |
| 5:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.12 | A | 0.12 |
| 6:00 | 0.17 | A | | | | | 0.13 | A | 0.13 | A | 0.24 | A | 0.24 |
| 7:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 8:00 | 0.23 | A | | | | | 0.17 | A | 0.17 | A | 0.31 | B | 0.31 |
| 9:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | A | 0.30 |
| 10:00 | 0.24 | A | | | | | 0.18 | A | 0.18 | A | 0.33 | B | 0.33 |
| 11:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | B | 0.30 |
| 12:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.35 | B | 0.35 |
| 13:00 | 0.23 | A | | | | | 0.18 | A | 0.18 | A | 0.31 | B | 0.31 |
| 14:00 | 0.24 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 15:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 17:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.38 | B | 0.38 |
| 18:00 | 0.21 | A | | | | | 0.16 | A | 0.16 | A | 0.28 | A | 0.28 |
| 19:00 | 0.16 | A | | | | | 0.13 | A | 0.13 | A | 0.23 | A | 0.23 |
| 20:00 | 0.12 | A | | | | | 0.09 | A | 0.09 | A | 0.16 | A | 0.16 |
| 21:00 | 0.11 | A | | | | | 0.08 | A | 0.08 | A | 0.15 | A | 0.15 |
| 22:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.11 | A | 0.11 |
| 23:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 1:00 | 0.03 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 3:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 4:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.11 | A | 0.11 |
| 5:00 | 0.14 | A | | | | | 0.11 | A | 0.11 | A | 0.20 | A | 0.20 |
| 6:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | A | 0.30 |
| 7:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | B | 0.30 |
| 8:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | B | 0.30 |
| 9:00 | 0.21 | A | | | | | 0.17 | A | 0.17 | A | 0.29 | A | 0.29 |
| 10:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 11:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 12:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 13:00 | 0.27 | A | | | | | 0.20 | A | 0.20 | A | 0.36 | B | 0.36 |
| 14:00 | 0.26 | A | | | | | 0.20 | A | 0.20 | A | 0.36 | B | 0.36 |
| 15:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 17:00 | 0.26 | A | | | | | 0.20 | A | 0.20 | A | 0.36 | B | 0.36 |
| 18:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | A | 0.30 |
| 19:00 | 0.17 | A | | | | | 0.13 | A | 0.13 | A | 0.24 | A | 0.24 |
| 20:00 | 0.12 | A | | | | | 0.10 | A | 0.10 | A | 0.17 | A | 0.17 |
| 21:00 | 0.12 | A | | | | | 0.09 | A | 0.09 | A | 0.16 | A | 0.16 |
| 22:00 | 0.09 | A | | | | | 0.07 | A | 0.07 | A | 0.13 | A | 0.13 |
| 23:00 | 0.07 | A | | | | | 0.05 | A | 0.05 | A | 0.09 | A | 0.09 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,000 | 21,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 54 | | | 41 | 74 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 28 | | | 22 | 39 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 27 | | | 21 | 37 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 11 | | | 8 | 15 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 36 | | | 28 | 50 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 97 | | | 75 | 134 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 239 | | | 184 | 328 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 371 | | | 285 | 509 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 349 | | | 269 | 479 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 268 | | | 206 | 368 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 306 | | | 236 | 420 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 308 | | | 237 | 422 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 361 | | | 277 | 495 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 330 | | | 254 | 453 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 394 | | | 303 | 540 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 447 | | | 344 | 613 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 497 | | | 382 | 682 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 547 | | | 421 | 750 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 417 | | | 321 | 572 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 326 | | | 251 | 447 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 230 | | | 177 | 315 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 175 | | | 135 | 241 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 119 | | | 91 | 163 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 64 | | | 49 | 88 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 21 | | | 16 | 29 |
| 1:00 | 1 | | | 1 | 2 | 28 | | | 22 | 39 |
| 2:00 | 0 | | | 0 | 0 | 36 | | | 27 | 49 |
| 3:00 | 1 | | | 1 | 2 | 34 | | | 26 | 47 |
| 4:00 | 3 | | | 3 | 5 | 41 | | | 32 | 56 |
| 5:00 | 3 | | | 2 | 4 | 46 | | | 36 | 64 |
| 6:00 | 12 | | | 9 | 17 | 72 | | | 55 | 99 |
| 7:00 | 21 | | | 16 | 29 | 88 | | | 68 | 121 |
| 8:00 | 12 | | | 9 | 17 | 83 | | | 64 | 113 |
| 9:00 | 27 | | | 21 | 37 | 92 | | | 71 | 126 |
| 10:00 | 13 | | | 10 | 18 | 114 | | | 87 | 156 |
| 11:00 | 9 | | | 7 | 12 | 97 | | | 75 | 134 |
| 12:00 | 11 | | | 9 | 16 | 109 | | | 84 | 149 |
| 13:00 | 17 | | | 13 | 23 | 89 | | | 68 | 122 |
| 14:00 | 13 | | | 10 | 18 | 84 | | | 65 | 115 |
| 15:00 | 14 | | | 11 | 19 | 89 | | | 68 | 122 |
| 16:00 | 9 | | | 7 | 13 | 72 | | | 55 | 99 |
| 17:00 | 6 | | | 5 | 8 | 60 | | | 46 | 82 |
| 18:00 | 4 | | | 3 | 6 | 45 | | | 35 | 62 |
| 19:00 | 7 | | | 5 | 9 | 34 | | | 26 | 47 |
| 20:00 | 4 | | | 3 | 6 | 28 | | | 22 | 39 |
| 21:00 | 5 | | | 4 | 7 | 38 | | | 29 | 53 |
| 22:00 | 1 | | | 1 | 2 | 37 | | | 28 | 51 |
| 23:00 | 1 | | | 1 | 2 | 25 | | | 19 | 34 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | | | | | |
|--|------------------------------|--------------------|--------------------------------|---|---|-----------|-----------------------|-----------|
| Route: 220 | | | | Area Type: Exurban | | | | |
| From: Morehead Ave (Ridgeway 87) | | | | Traffic Assignment: Constrained - Noise Study | | | | |
| To: Soapstone Rd (Rte 687) | | | | Existing Year: 2018 ADT: 15,600 No-build | | | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 12,000 21,400 | | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 12,000 | 21,400 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 39 | | | 30 | 53 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 32 | | | 25 | 44 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 25 | | | 19 | 34 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 26 | | | 20 | 35 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 71 | | | 54 | 97 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 221 | | | 170 | 303 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 376 | | | 289 | 516 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 351 | | | 270 | 482 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 317 | | | 244 | 435 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 275 | | | 211 | 377 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 305 | | | 235 | 418 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 320 | | | 246 | 439 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 347 | | | 267 | 475 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 365 | | | 281 | 500 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 400 | | | 308 | 549 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 455 | | | 350 | 624 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 437 | | | 336 | 599 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 483 | | | 372 | 663 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 354 | | | 272 | 486 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 261 | | | 200 | 358 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 224 | | | 172 | 307 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 169 | | | 130 | 231 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 133 | | | 102 | 182 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 80 | | | 61 | 110 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 32 | | | 25 | 44 |
| 1:00 | 3 | | | 3 | 5 | 18 | | | 14 | 25 |
| 2:00 | 3 | | | 2 | 4 | 27 | | | 21 | 37 |
| 3:00 | 3 | | | 3 | 5 | 40 | | | 30 | 54 |
| 4:00 | 4 | | | 3 | 6 | 50 | | | 39 | 69 |
| 5:00 | 2 | | | 2 | 3 | 58 | | | 45 | 80 |
| 6:00 | 6 | | | 5 | 8 | 69 | | | 53 | 95 |
| 7:00 | 15 | | | 11 | 20 | 75 | | | 58 | 103 |
| 8:00 | 6 | | | 5 | 8 | 96 | | | 74 | 132 |
| 9:00 | 12 | | | 9 | 17 | 101 | | | 78 | 139 |
| 10:00 | 17 | | | 13 | 23 | 118 | | | 91 | 162 |
| 11:00 | 13 | | | 10 | 18 | 118 | | | 91 | 162 |
| 12:00 | 13 | | | 10 | 18 | 105 | | | 81 | 145 |
| 13:00 | 16 | | | 12 | 22 | 114 | | | 88 | 157 |
| 14:00 | 13 | | | 10 | 18 | 101 | | | 78 | 139 |
| 15:00 | 13 | | | 10 | 18 | 89 | | | 68 | 122 |
| 16:00 | 12 | | | 9 | 17 | 97 | | | 75 | 134 |
| 17:00 | 9 | | | 7 | 12 | 68 | | | 52 | 93 |
| 18:00 | 12 | | | 9 | 17 | 73 | | | 56 | 100 |
| 19:00 | 8 | | | 6 | 11 | 69 | | | 53 | 94 |
| 20:00 | 4 | | | 3 | 6 | 36 | | | 28 | 50 |
| 21:00 | 1 | | | 1 | 1 | 52 | | | 40 | 72 |
| 22:00 | 1 | | | 1 | 2 | 42 | | | 33 | 58 |
| 23:00 | 3 | | | 3 | 5 | 34 | | | 26 | 46 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,000 21,400 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 12,000 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 93 | | | 71 | 127 | 1.0% | 100% | 57 | 0 | 44 |
| 1:00 | 60 | | | 47 | 83 | 0.7% | 100% | 51 | 0 | 39 |
| 2:00 | 52 | | | 40 | 71 | 0.7% | 100% | 65 | 0 | 50 |
| 3:00 | 36 | | | 28 | 50 | 0.7% | 100% | 79 | 0 | 60 |
| 4:00 | 107 | | | 82 | 147 | 1.3% | 100% | 99 | 0 | 76 |
| 5:00 | 318 | | | 245 | 437 | 2.7% | 100% | 109 | 0 | 84 |
| 6:00 | 615 | | | 473 | 844 | 5.0% | 100% | 159 | 0 | 122 |
| 7:00 | 722 | | | 555 | 991 | 5.9% | 100% | 199 | 0 | 153 |
| 8:00 | 666 | | | 513 | 914 | 5.5% | 100% | 197 | 0 | 151 |
| 9:00 | 543 | | | 418 | 745 | 5.0% | 100% | 232 | 0 | 179 |
| 10:00 | 611 | | | 470 | 839 | 5.6% | 100% | 262 | 0 | 202 |
| 11:00 | 627 | | | 483 | 861 | 5.5% | 100% | 238 | 0 | 183 |
| 12:00 | 707 | | | 544 | 970 | 6.1% | 100% | 238 | 0 | 183 |
| 13:00 | 695 | | | 535 | 954 | 6.0% | 100% | 236 | 0 | 181 |
| 14:00 | 794 | | | 611 | 1,089 | 6.4% | 100% | 211 | 0 | 162 |
| 15:00 | 901 | | | 693 | 1,237 | 7.1% | 100% | 205 | 0 | 158 |
| 16:00 | 934 | | | 718 | 1,281 | 7.2% | 100% | 191 | 0 | 147 |
| 17:00 | 1,030 | | | 792 | 1,413 | 7.5% | 100% | 142 | 0 | 110 |
| 18:00 | 771 | | | 593 | 1,058 | 5.8% | 100% | 134 | 0 | 103 |
| 19:00 | 586 | | | 451 | 804 | 4.5% | 100% | 118 | 0 | 90 |
| 20:00 | 453 | | | 349 | 622 | 3.4% | 100% | 73 | 0 | 56 |
| 21:00 | 344 | | | 265 | 472 | 2.8% | 100% | 97 | 0 | 74 |
| 22:00 | 252 | | | 194 | 346 | 2.1% | 100% | 82 | 0 | 63 |
| 23:00 | 144 | | | 111 | 197 | 1.3% | 100% | 63 | 0 | 49 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 83 | | | 90 | 80 | 90 | 83 |
| 1:00 | 102 | 95 | | | 102 | 92 | 102 | 95 |
| 2:00 | 125 | 116 | | | 125 | 112 | 125 | 116 |
| 3:00 | 176 | 163 | | | 176 | 157 | 176 | 163 |
| 4:00 | 107 | 99 | | | 107 | 96 | 107 | 99 |
| 5:00 | 75 | 69 | | | 75 | 67 | 75 | 69 |
| 6:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 7:00 | 71 | 66 | | | 71 | 63 | 71 | 66 |
| 8:00 | 72 | 67 | | | 72 | 64 | 72 | 67 |
| 9:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 10:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 11:00 | 76 | 71 | | | 76 | 69 | 76 | 71 |
| 12:00 | 74 | 69 | | | 74 | 66 | 74 | 69 |
| 13:00 | 74 | 69 | | | 74 | 67 | 74 | 69 |
| 14:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 15:00 | 68 | 63 | | | 68 | 61 | 68 | 63 |
| 16:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 17:00 | 63 | 59 | | | 63 | 57 | 63 | 59 |
| 18:00 | 65 | 60 | | | 65 | 58 | 65 | 60 |
| 19:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 20:00 | 64 | 60 | | | 64 | 58 | 64 | 60 |
| 21:00 | 71 | 66 | | | 71 | 64 | 71 | 66 |
| 22:00 | 73 | 68 | | | 73 | 66 | 73 | 68 |
| 23:00 | 80 | 74 | | | 80 | 72 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.90

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beging: Soapstone Rd (Rte 687) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Water Plant Rd 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

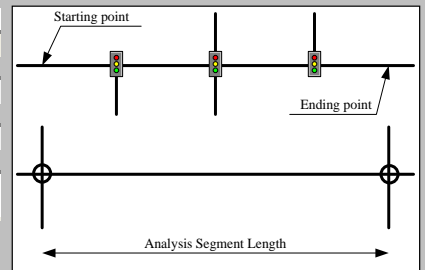
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 3 | | 3 | |
| 17. Analysis Segment No. of Signals: | 1 | | 1 | |
| 18. Average Cycle Length (sec.): | 135 | | 90 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 58 | |
| 20. Signal Coordination: | No Coord. | | No Coord. | |
| Delay caused by signal, mph: | 3 | | 5 | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly

22. Two-way ADT or AADT: Existing Year 2018 18,000 Design Year 2040 14,300

ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 23,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
From: Soapstone Rd (Rte 687)
To: Water Plant Rd
Jurisdiction: 2. Salem/Henry Co
Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
Existing Year: 2018 ADT: 18,000 No-build
Design Year: 2040 ADT: 14,300 23,400

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 1:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 2:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 3:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 4:00 | 0.07 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 5:00 | 0.10 | A | | | | | 0.08 | A | 0.08 | A | 0.13 | A | 0.13 |
| 6:00 | 0.20 | A | | | | | 0.16 | A | 0.16 | A | 0.26 | A | 0.26 |
| 7:00 | 0.29 | A | | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 8:00 | 0.26 | A | | | | | 0.21 | A | 0.21 | A | 0.34 | B | 0.34 |
| 9:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 10:00 | 0.28 | A | | | | | 0.22 | A | 0.22 | A | 0.36 | B | 0.36 |
| 11:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 12:00 | 0.29 | A | | | | | 0.23 | A | 0.23 | A | 0.38 | B | 0.38 |
| 13:00 | 0.26 | A | | | | | 0.21 | A | 0.21 | A | 0.34 | B | 0.34 |
| 14:00 | 0.28 | A | | | | | 0.22 | A | 0.22 | A | 0.37 | B | 0.37 |
| 15:00 | 0.31 | B | | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 16:00 | 0.31 | B | | | | | 0.25 | A | 0.25 | A | 0.40 | B | 0.40 |
| 17:00 | 0.32 | B | | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 18:00 | 0.24 | A | | | | | 0.19 | A | 0.19 | A | 0.31 | B | 0.31 |
| 19:00 | 0.19 | A | | | | | 0.15 | A | 0.15 | A | 0.25 | A | 0.25 |
| 20:00 | 0.14 | A | | | | | 0.11 | A | 0.11 | A | 0.18 | A | 0.18 |
| 21:00 | 0.13 | A | | | | | 0.10 | A | 0.10 | A | 0.16 | A | 0.16 |
| 22:00 | 0.10 | A | | | | | 0.08 | A | 0.08 | A | 0.12 | A | 0.12 |
| 23:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 1:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 3:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | | 0.07 | A | 0.07 | A | 0.12 | A | 0.12 |
| 5:00 | 0.17 | A | | | | | 0.13 | A | 0.13 | A | 0.21 | A | 0.21 |
| 6:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 7:00 | 0.26 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 8:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 9:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.32 | B | 0.32 |
| 10:00 | 0.29 | A | | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 11:00 | 0.29 | A | | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 12:00 | 0.28 | A | | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 13:00 | 0.31 | B | | | | | 0.24 | A | 0.24 | A | 0.40 | B | 0.40 |
| 14:00 | 0.30 | B | | | | | 0.24 | A | 0.24 | A | 0.40 | B | 0.40 |
| 15:00 | 0.32 | B | | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 16:00 | 0.32 | B | | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 17:00 | 0.30 | A | | | | | 0.24 | A | 0.24 | A | 0.39 | B | 0.39 |
| 18:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 19:00 | 0.20 | A | | | | | 0.16 | A | 0.16 | A | 0.26 | A | 0.26 |
| 20:00 | 0.14 | A | | | | | 0.11 | A | 0.11 | A | 0.19 | A | 0.19 |
| 21:00 | 0.13 | A | | | | | 0.11 | A | 0.11 | A | 0.17 | A | 0.17 |
| 22:00 | 0.11 | A | | | | | 0.09 | A | 0.09 | A | 0.14 | A | 0.14 |
| 23:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.10 | A | 0.10 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|---------------------------|--|---------------|
| Route: 220 | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,300 | 23,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 62 | | | 49 | 81 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 33 | | | 26 | 42 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 31 | | | 25 | 40 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 12 | | | 10 | 16 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 42 | | | 33 | 54 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 112 | | | 89 | 146 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 276 | | | 219 | 359 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 428 | | | 340 | 556 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 403 | | | 320 | 524 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 309 | | | 246 | 402 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 353 | | | 281 | 459 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 355 | | | 282 | 461 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 416 | | | 331 | 541 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 381 | | | 303 | 496 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 454 | | | 361 | 590 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 515 | | | 409 | 670 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 574 | | | 456 | 746 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 631 | | | 501 | 820 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 481 | | | 382 | 626 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 376 | | | 299 | 489 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 265 | | | 211 | 345 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 202 | | | 161 | 263 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 137 | | | 109 | 178 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 74 | | | 58 | 96 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 2 | | | 2 | 3 | 24 | | | 19 | 31 |
| 1:00 | 2 | | | 1 | 2 | 33 | | | 26 | 42 |
| 2:00 | 0 | | | 0 | 0 | 41 | | | 33 | 53 |
| 3:00 | 2 | | | 1 | 2 | 40 | | | 31 | 51 |
| 4:00 | 4 | | | 3 | 5 | 47 | | | 38 | 61 |
| 5:00 | 3 | | | 2 | 4 | 53 | | | 42 | 70 |
| 6:00 | 14 | | | 11 | 18 | 83 | | | 66 | 108 |
| 7:00 | 24 | | | 19 | 31 | 102 | | | 81 | 132 |
| 8:00 | 14 | | | 11 | 18 | 95 | | | 76 | 124 |
| 9:00 | 31 | | | 25 | 40 | 106 | | | 84 | 138 |
| 10:00 | 16 | | | 12 | 20 | 131 | | | 104 | 170 |
| 11:00 | 10 | | | 8 | 13 | 112 | | | 89 | 146 |
| 12:00 | 13 | | | 10 | 17 | 126 | | | 100 | 163 |
| 13:00 | 19 | | | 15 | 25 | 102 | | | 81 | 133 |
| 14:00 | 15 | | | 12 | 19 | 97 | | | 77 | 126 |
| 15:00 | 16 | | | 13 | 21 | 102 | | | 81 | 133 |
| 16:00 | 11 | | | 9 | 14 | 83 | | | 66 | 108 |
| 17:00 | 7 | | | 6 | 9 | 69 | | | 55 | 90 |
| 18:00 | 5 | | | 4 | 6 | 52 | | | 41 | 68 |
| 19:00 | 8 | | | 6 | 10 | 40 | | | 31 | 51 |
| 20:00 | 5 | | | 4 | 6 | 33 | | | 26 | 42 |
| 21:00 | 6 | | | 5 | 8 | 44 | | | 35 | 57 |
| 22:00 | 2 | | | 1 | 2 | 43 | | | 34 | 55 |
| 23:00 | 2 | | | 1 | 2 | 29 | | | 23 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | | | | | |
|--|-------------------------------------|--------------------|--|--|--|------------|------------------------------|------------|
| Route: 220 | | | | Area Type: Exurban | | | | |
| From: Soapstone Rd (Rte 687) | | | | Traffic Assignment: Constrained - Noise Study | | | | |
| To: Water Plant Rd | | | | Existing Year: 2018 ADT: 18,000 No-build | | | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 14,300 23,400 | | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---|--|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 14,300 | 23,400 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 45 | | | 36 | 58 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 37 | | | 30 | 48 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 29 | | | 23 | 37 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 29 | | | 23 | 38 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 81 | | | 65 | 106 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 255 | | | 203 | 332 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 434 | | | 345 | 564 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 405 | | | 322 | 527 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 366 | | | 291 | 476 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 317 | | | 252 | 412 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 352 | | | 280 | 457 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 369 | | | 293 | 480 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 400 | | | 318 | 520 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 421 | | | 334 | 547 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 462 | | | 367 | 601 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 525 | | | 417 | 682 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 504 | | | 400 | 655 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 557 | | | 443 | 724 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 408 | | | 325 | 531 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 301 | | | 239 | 391 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 258 | | | 205 | 336 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 195 | | | 155 | 253 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 153 | | | 122 | 200 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 92 | | | 73 | 120 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 37 | | | 30 | 48 |
| 1:00 | 4 | | | 3 | 5 | 21 | | | 17 | 27 |
| 2:00 | 3 | | | 2 | 4 | 31 | | | 25 | 40 |
| 3:00 | 4 | | | 3 | 5 | 46 | | | 36 | 59 |
| 4:00 | 5 | | | 4 | 6 | 58 | | | 46 | 76 |
| 5:00 | 2 | | | 2 | 3 | 67 | | | 54 | 88 |
| 6:00 | 7 | | | 6 | 9 | 80 | | | 63 | 104 |
| 7:00 | 17 | | | 14 | 22 | 87 | | | 69 | 113 |
| 8:00 | 7 | | | 6 | 9 | 111 | | | 88 | 144 |
| 9:00 | 14 | | | 11 | 18 | 117 | | | 93 | 152 |
| 10:00 | 19 | | | 15 | 25 | 136 | | | 108 | 177 |
| 11:00 | 16 | | | 12 | 20 | 136 | | | 108 | 177 |
| 12:00 | 15 | | | 12 | 19 | 122 | | | 97 | 158 |
| 13:00 | 19 | | | 15 | 24 | 132 | | | 105 | 171 |
| 14:00 | 15 | | | 12 | 19 | 117 | | | 93 | 152 |
| 15:00 | 16 | | | 12 | 20 | 102 | | | 81 | 133 |
| 16:00 | 14 | | | 11 | 18 | 112 | | | 89 | 146 |
| 17:00 | 10 | | | 8 | 13 | 78 | | | 62 | 102 |
| 18:00 | 14 | | | 11 | 18 | 84 | | | 67 | 109 |
| 19:00 | 9 | | | 7 | 12 | 79 | | | 63 | 103 |
| 20:00 | 5 | | | 4 | 6 | 42 | | | 33 | 54 |
| 21:00 | 1 | | | 1 | 1 | 60 | | | 48 | 79 |
| 22:00 | 2 | | | 1 | 2 | 49 | | | 39 | 63 |
| 23:00 | 4 | | | 3 | 5 | 39 | | | 31 | 50 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---------------------------------|--------------------|---|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 |
| Jurisdiction: 2. Salem/Henry Co | | No-build |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | Design Year: 2040 ADT: 14,300 |
| | | 23,400 |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | |
|--|--|--|---------------|--|
| Route: 220 | | Area Type: Exurban | | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 14,300 | 23,400 | |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 107 | | | 85 | 139 | 1.0% | 100% | 66 | 0 | 52 |
| 1:00 | 70 | | | 55 | 91 | 0.7% | 100% | 59 | 0 | 47 |
| 2:00 | 60 | | | 47 | 78 | 0.7% | 100% | 75 | 0 | 60 |
| 3:00 | 42 | | | 33 | 54 | 0.7% | 100% | 91 | 0 | 72 |
| 4:00 | 123 | | | 98 | 160 | 1.3% | 100% | 114 | 0 | 91 |
| 5:00 | 367 | | | 292 | 478 | 2.7% | 100% | 126 | 0 | 100 |
| 6:00 | 710 | | | 564 | 923 | 5.0% | 100% | 184 | 0 | 146 |
| 7:00 | 833 | | | 662 | 1,083 | 5.9% | 100% | 229 | 0 | 182 |
| 8:00 | 769 | | | 611 | 1,000 | 5.5% | 100% | 227 | 0 | 180 |
| 9:00 | 626 | | | 498 | 814 | 5.0% | 100% | 268 | 0 | 213 |
| 10:00 | 705 | | | 560 | 917 | 5.6% | 100% | 302 | 0 | 240 |
| 11:00 | 724 | | | 575 | 941 | 5.5% | 100% | 274 | 0 | 218 |
| 12:00 | 816 | | | 648 | 1,061 | 6.1% | 100% | 275 | 0 | 219 |
| 13:00 | 802 | | | 637 | 1,043 | 6.0% | 100% | 272 | 0 | 216 |
| 14:00 | 916 | | | 728 | 1,191 | 6.4% | 100% | 243 | 0 | 193 |
| 15:00 | 1,040 | | | 826 | 1,352 | 7.1% | 100% | 236 | 0 | 188 |
| 16:00 | 1,077 | | | 856 | 1,401 | 7.2% | 100% | 220 | 0 | 175 |
| 17:00 | 1,188 | | | 944 | 1,545 | 7.5% | 100% | 164 | 0 | 131 |
| 18:00 | 890 | | | 707 | 1,157 | 5.8% | 100% | 154 | 0 | 123 |
| 19:00 | 677 | | | 538 | 880 | 4.5% | 100% | 136 | 0 | 108 |
| 20:00 | 523 | | | 416 | 680 | 3.4% | 100% | 84 | 0 | 67 |
| 21:00 | 397 | | | 315 | 516 | 2.8% | 100% | 112 | 0 | 89 |
| 22:00 | 291 | | | 231 | 378 | 2.1% | 100% | 95 | 0 | 75 |
| 23:00 | 166 | | | 132 | 216 | 1.3% | 100% | 73 | 0 | 58 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 83 | | | 90 | 80 | 90 | 83 |
| 1:00 | 102 | 95 | | | 102 | 92 | 102 | 95 |
| 2:00 | 125 | 116 | | | 125 | 112 | 125 | 116 |
| 3:00 | 176 | 163 | | | 176 | 158 | 176 | 163 |
| 4:00 | 107 | 99 | | | 107 | 96 | 107 | 99 |
| 5:00 | 75 | 69 | | | 75 | 67 | 75 | 69 |
| 6:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 7:00 | 71 | 65 | | | 71 | 63 | 71 | 65 |
| 8:00 | 72 | 66 | | | 72 | 64 | 72 | 66 |
| 9:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 10:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 11:00 | 76 | 71 | | | 76 | 69 | 76 | 71 |
| 12:00 | 74 | 69 | | | 74 | 67 | 74 | 69 |
| 13:00 | 74 | 69 | | | 74 | 67 | 74 | 69 |
| 14:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 15:00 | 68 | 63 | | | 68 | 61 | 68 | 63 |
| 16:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 17:00 | 63 | 58 | | | 63 | 57 | 63 | 58 |
| 18:00 | 65 | 60 | | | 65 | 58 | 65 | 60 |
| 19:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 20:00 | 64 | 60 | | | 64 | 58 | 64 | 60 |
| 21:00 | 71 | 66 | | | 71 | 64 | 71 | 66 |
| 22:00 | 73 | 68 | | | 73 | 66 | 73 | 68 |
| 23:00 | 80 | 74 | | | 80 | 72 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 1.50

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beging: Water Plant Rd 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Rte 58/Rte 220 Interchange 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

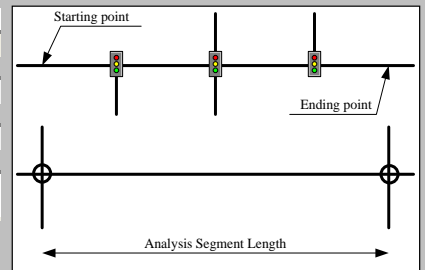
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 45 | 45 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 48 | 48 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------------|------------|------------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 10 | | 10 | |
| 17. Analysis Segment No. of Signals: | 2 | | 2 | |
| 18. Average Cycle Length (sec.): | 108 | | 108 | |
| 19. Average Green Time per Cycle (sec.): | 93 | | 93 | |
| 20. Signal Coordination: | Excellent Coord. | | Excellent Coord. | |
| Delay caused by signal, mph: | 0 | | 0 | |

Note:

[Empty box for notes]

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 25,300 22,000 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 31,900

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
From: Water Plant Rd
To: Rte 58/Rte 220 Interchange
Jurisdiction: 2. Salem/Henry Co
Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
Existing Year: 2018 ADT: 25,300 No-build
Design Year: 2040 ADT: 22,000 31,900

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 1:00 | 0.06 | A | | | | | 0.06 | A | 0.06 | A | 0.08 | A | 0.08 |
| 2:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 3:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | | 0.08 | A | 0.08 | A | 0.12 | A | 0.12 |
| 5:00 | 0.14 | A | | | | | 0.12 | A | 0.12 | A | 0.17 | A | 0.17 |
| 6:00 | 0.28 | A | | | | | 0.24 | A | 0.24 | A | 0.35 | B | 0.35 |
| 7:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 8:00 | 0.37 | B | | | | | 0.32 | B | 0.32 | B | 0.46 | B | 0.46 |
| 9:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 10:00 | 0.39 | B | | | | | 0.34 | B | 0.34 | B | 0.49 | B | 0.49 |
| 11:00 | 0.36 | B | | | | | 0.31 | B | 0.31 | B | 0.45 | B | 0.45 |
| 12:00 | 0.41 | B | | | | | 0.36 | B | 0.36 | B | 0.52 | C | 0.52 |
| 13:00 | 0.37 | B | | | | | 0.32 | B | 0.32 | B | 0.47 | B | 0.47 |
| 14:00 | 0.40 | B | | | | | 0.34 | B | 0.34 | B | 0.50 | B | 0.50 |
| 15:00 | 0.44 | B | | | | | 0.38 | B | 0.38 | B | 0.55 | C | 0.55 |
| 16:00 | 0.44 | B | | | | | 0.38 | B | 0.38 | B | 0.55 | C | 0.55 |
| 17:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 18:00 | 0.34 | B | | | | | 0.29 | A | 0.29 | A | 0.42 | B | 0.42 |
| 19:00 | 0.27 | A | | | | | 0.23 | A | 0.23 | A | 0.34 | B | 0.34 |
| 20:00 | 0.19 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 21:00 | 0.18 | A | | | | | 0.15 | A | 0.15 | A | 0.22 | A | 0.22 |
| 22:00 | 0.13 | A | | | | | 0.12 | A | 0.12 | A | 0.17 | A | 0.17 |
| 23:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |
| 1:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |
| 2:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 3:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |
| 4:00 | 0.13 | A | | | | | 0.11 | A | 0.11 | A | 0.16 | A | 0.16 |
| 5:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.29 | A | 0.29 |
| 6:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 7:00 | 0.36 | B | | | | | 0.31 | B | 0.31 | B | 0.45 | B | 0.45 |
| 8:00 | 0.36 | B | | | | | 0.31 | B | 0.31 | B | 0.45 | B | 0.45 |
| 9:00 | 0.35 | B | | | | | 0.30 | B | 0.30 | B | 0.44 | B | 0.44 |
| 10:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 11:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 12:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 13:00 | 0.43 | B | | | | | 0.37 | B | 0.37 | B | 0.54 | C | 0.54 |
| 14:00 | 0.43 | B | | | | | 0.37 | B | 0.37 | B | 0.54 | C | 0.54 |
| 15:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 16:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 17:00 | 0.42 | B | | | | | 0.37 | B | 0.37 | B | 0.53 | C | 0.53 |
| 18:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 19:00 | 0.28 | A | | | | | 0.25 | A | 0.25 | A | 0.36 | B | 0.36 |
| 20:00 | 0.20 | A | | | | | 0.18 | A | 0.18 | A | 0.26 | A | 0.26 |
| 21:00 | 0.19 | A | | | | | 0.16 | A | 0.16 | A | 0.24 | A | 0.24 |
| 22:00 | 0.15 | A | | | | | 0.13 | A | 0.13 | A | 0.19 | A | 0.19 |
| 23:00 | 0.11 | A | | | | | 0.09 | A | 0.09 | A | 0.14 | A | 0.14 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 22,000 | 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 87 | | | 76 | 110 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 46 | | | 40 | 58 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 44 | | | 38 | 55 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 17 | | | 15 | 22 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 59 | | | 51 | 74 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 158 | | | 137 | 199 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 388 | | | 337 | 489 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 601 | | | 523 | 758 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 567 | | | 493 | 714 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 435 | | | 378 | 548 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 497 | | | 432 | 626 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 499 | | | 434 | 629 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 585 | | | 509 | 738 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 536 | | | 466 | 676 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 638 | | | 555 | 805 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 724 | | | 630 | 913 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 806 | | | 701 | 1,016 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 887 | | | 771 | 1,118 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 677 | | | 588 | 853 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 528 | | | 459 | 666 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 373 | | | 324 | 470 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 284 | | | 247 | 359 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 193 | | | 168 | 243 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 103 | | | 90 | 130 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 3 | | | 3 | 4 | 34 | | | 29 | 43 |
| 1:00 | 2 | | | 2 | 3 | 46 | | | 40 | 58 |
| 2:00 | 0 | | | 0 | 0 | 58 | | | 50 | 73 |
| 3:00 | 2 | | | 2 | 3 | 56 | | | 48 | 70 |
| 4:00 | 5 | | | 5 | 7 | 66 | | | 58 | 84 |
| 5:00 | 4 | | | 4 | 5 | 75 | | | 65 | 95 |
| 6:00 | 20 | | | 17 | 25 | 117 | | | 101 | 147 |
| 7:00 | 34 | | | 29 | 43 | 143 | | | 124 | 180 |
| 8:00 | 20 | | | 17 | 25 | 134 | | | 117 | 169 |
| 9:00 | 44 | | | 38 | 55 | 149 | | | 130 | 188 |
| 10:00 | 22 | | | 19 | 27 | 184 | | | 160 | 232 |
| 11:00 | 14 | | | 12 | 18 | 158 | | | 137 | 199 |
| 12:00 | 19 | | | 16 | 23 | 176 | | | 153 | 223 |
| 13:00 | 27 | | | 24 | 34 | 144 | | | 125 | 181 |
| 14:00 | 21 | | | 18 | 26 | 136 | | | 118 | 172 |
| 15:00 | 23 | | | 20 | 29 | 144 | | | 125 | 181 |
| 16:00 | 15 | | | 13 | 19 | 117 | | | 101 | 147 |
| 17:00 | 10 | | | 9 | 12 | 97 | | | 84 | 122 |
| 18:00 | 7 | | | 6 | 8 | 73 | | | 63 | 92 |
| 19:00 | 11 | | | 9 | 14 | 56 | | | 48 | 70 |
| 20:00 | 7 | | | 6 | 8 | 46 | | | 40 | 58 |
| 21:00 | 9 | | | 8 | 11 | 62 | | | 54 | 78 |
| 22:00 | 2 | | | 2 | 3 | 60 | | | 52 | 76 |
| 23:00 | 2 | | | 2 | 3 | 40 | | | 35 | 51 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | | | | | |
|--|------------------------------|--------------------|--------------------------------|---|---|-----------|-----------------------|-----------|
| Route: 220 | | | | Area Type: Exurban | | | | |
| From: Water Plant Rd | | | | Traffic Assignment: Constrained - Noise Study | | | | |
| To: Rte 58/Rte 220 Interchange | | | | Existing Year: 2018 ADT: 25,300 | | No-build | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 22,000 | | 31,900 | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
| | Calc. Existing (PS= 45) | | | | Design (PS= 45) | | Design Nbl'd (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 1:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 2:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 3:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 4:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 5:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 6:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 7:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 8:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 9:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 10:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 11:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 12:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 13:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 14:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 15:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 16:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 17:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 18:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 19:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 20:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 21:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 22:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 23:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 22,000 | 31,900 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 63 | | | 55 | 80 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 52 | | | 45 | 66 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 40 | | | 35 | 51 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 41 | | | 36 | 52 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 114 | | | 99 | 144 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 358 | | | 312 | 452 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 610 | | | 531 | 769 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 570 | | | 495 | 718 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 514 | | | 447 | 648 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 446 | | | 387 | 562 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 495 | | | 430 | 624 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 519 | | | 451 | 654 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 562 | | | 489 | 709 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 592 | | | 514 | 746 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 649 | | | 565 | 819 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 738 | | | 641 | 930 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 708 | | | 616 | 893 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 783 | | | 681 | 988 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 574 | | | 499 | 724 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 423 | | | 368 | 533 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 363 | | | 315 | 457 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 273 | | | 238 | 345 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 216 | | | 188 | 272 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 130 | | | 113 | 163 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 3 | | | 3 | 4 | 52 | | | 45 | 66 |
| 1:00 | 5 | | | 5 | 7 | 29 | | | 26 | 37 |
| 2:00 | 4 | | | 4 | 5 | 44 | | | 38 | 55 |
| 3:00 | 5 | | | 5 | 7 | 64 | | | 56 | 81 |
| 4:00 | 7 | | | 6 | 8 | 82 | | | 71 | 103 |
| 5:00 | 3 | | | 3 | 4 | 95 | | | 82 | 120 |
| 6:00 | 10 | | | 9 | 12 | 112 | | | 98 | 141 |
| 7:00 | 24 | | | 21 | 30 | 122 | | | 106 | 154 |
| 8:00 | 10 | | | 9 | 12 | 156 | | | 135 | 196 |
| 9:00 | 20 | | | 17 | 25 | 165 | | | 143 | 207 |
| 10:00 | 27 | | | 24 | 34 | 192 | | | 167 | 242 |
| 11:00 | 22 | | | 19 | 27 | 192 | | | 167 | 242 |
| 12:00 | 21 | | | 18 | 26 | 171 | | | 149 | 216 |
| 13:00 | 26 | | | 23 | 33 | 185 | | | 161 | 234 |
| 14:00 | 21 | | | 18 | 26 | 165 | | | 143 | 207 |
| 15:00 | 22 | | | 19 | 27 | 144 | | | 125 | 181 |
| 16:00 | 20 | | | 17 | 25 | 158 | | | 137 | 199 |
| 17:00 | 14 | | | 12 | 18 | 110 | | | 96 | 139 |
| 18:00 | 20 | | | 17 | 25 | 118 | | | 102 | 148 |
| 19:00 | 13 | | | 11 | 16 | 111 | | | 97 | 140 |
| 20:00 | 7 | | | 6 | 8 | 59 | | | 51 | 74 |
| 21:00 | 1 | | | 1 | 1 | 85 | | | 74 | 107 |
| 22:00 | 2 | | | 2 | 3 | 69 | | | 60 | 87 |
| 23:00 | 5 | | | 5 | 7 | 54 | | | 47 | 69 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--------------------|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 22,000 | 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 45) | | | | Design (PS= 45) | | Design Nbl'd (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 1:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 2:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 3:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 4:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 5:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 6:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 7:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 8:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 9:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 10:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 11:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 12:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 13:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 14:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 15:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 16:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 17:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 18:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 19:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 20:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 21:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 22:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 23:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



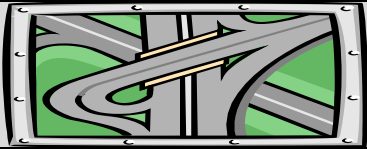
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|---|--|---------------|
| Route: 220 |  | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 22,000 | 31,900 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 150 | | | 131 | 190 | 1.0% | 100% | 93 | 0 | 81 |
| 1:00 | 98 | | | 85 | 124 | 0.7% | 100% | 83 | 0 | 72 |
| 2:00 | 84 | | | 73 | 106 | 0.7% | 100% | 106 | 0 | 92 |
| 3:00 | 59 | | | 51 | 74 | 0.7% | 100% | 127 | 0 | 111 |
| 4:00 | 173 | | | 151 | 218 | 1.3% | 100% | 160 | 0 | 139 |
| 5:00 | 516 | | | 449 | 651 | 2.7% | 100% | 178 | 0 | 154 |
| 6:00 | 998 | | | 868 | 1,258 | 5.0% | 100% | 258 | 0 | 225 |
| 7:00 | 1,171 | | | 1,018 | 1,477 | 5.9% | 100% | 322 | 0 | 280 |
| 8:00 | 1,081 | | | 940 | 1,363 | 5.5% | 100% | 319 | 0 | 278 |
| 9:00 | 880 | | | 765 | 1,110 | 5.0% | 100% | 377 | 0 | 328 |
| 10:00 | 991 | | | 862 | 1,250 | 5.6% | 100% | 425 | 0 | 369 |
| 11:00 | 1,018 | | | 885 | 1,283 | 5.5% | 100% | 386 | 0 | 335 |
| 12:00 | 1,147 | | | 998 | 1,446 | 6.1% | 100% | 387 | 0 | 336 |
| 13:00 | 1,128 | | | 980 | 1,422 | 6.0% | 100% | 382 | 0 | 333 |
| 14:00 | 1,288 | | | 1,120 | 1,624 | 6.4% | 100% | 342 | 0 | 297 |
| 15:00 | 1,462 | | | 1,271 | 1,843 | 7.1% | 100% | 332 | 0 | 289 |
| 16:00 | 1,514 | | | 1,317 | 1,909 | 7.2% | 100% | 309 | 0 | 269 |
| 17:00 | 1,670 | | | 1,452 | 2,106 | 7.5% | 100% | 231 | 0 | 201 |
| 18:00 | 1,251 | | | 1,088 | 1,577 | 5.8% | 100% | 217 | 0 | 189 |
| 19:00 | 951 | | | 827 | 1,199 | 4.5% | 100% | 191 | 0 | 166 |
| 20:00 | 735 | | | 639 | 927 | 3.4% | 100% | 118 | 0 | 102 |
| 21:00 | 558 | | | 485 | 703 | 2.8% | 100% | 157 | 0 | 136 |
| 22:00 | 409 | | | 355 | 515 | 2.1% | 100% | 133 | 0 | 116 |
| 23:00 | 233 | | | 203 | 294 | 1.3% | 100% | 102 | 0 | 89 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 45) | | | | Design (PS= 45) | | Design Nbl (PS= 45) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 77 | 72 | | | 77 | 72 | 77 | 72 |
| 1:00 | 88 | 82 | | | 88 | 82 | 88 | 82 |
| 2:00 | 107 | 101 | | | 107 | 101 | 107 | 101 |
| 3:00 | 151 | 141 | | | 151 | 141 | 151 | 141 |
| 4:00 | 92 | 86 | | | 92 | 86 | 92 | 86 |
| 5:00 | 64 | 60 | | | 64 | 60 | 64 | 60 |
| 6:00 | 60 | 56 | | | 60 | 56 | 60 | 56 |
| 7:00 | 61 | 57 | | | 61 | 57 | 61 | 57 |
| 8:00 | 62 | 58 | | | 62 | 58 | 62 | 58 |
| 9:00 | 68 | 64 | | | 68 | 64 | 68 | 64 |
| 10:00 | 68 | 64 | | | 68 | 64 | 68 | 64 |
| 11:00 | 66 | 61 | | | 66 | 61 | 66 | 61 |
| 12:00 | 64 | 60 | | | 64 | 60 | 64 | 60 |
| 13:00 | 64 | 60 | | | 64 | 60 | 64 | 60 |
| 14:00 | 60 | 56 | | | 60 | 56 | 60 | 56 |
| 15:00 | 58 | 55 | | | 58 | 55 | 58 | 55 |
| 16:00 | 57 | 54 | | | 57 | 54 | 57 | 54 |
| 17:00 | 54 | 51 | | | 54 | 51 | 54 | 51 |
| 18:00 | 56 | 52 | | | 56 | 52 | 56 | 52 |
| 19:00 | 57 | 54 | | | 57 | 54 | 57 | 54 |
| 20:00 | 55 | 52 | | | 55 | 52 | 55 | 52 |
| 21:00 | 61 | 57 | | | 61 | 57 | 61 | 57 |
| 22:00 | 63 | 59 | | | 63 | 59 | 63 | 59 |
| 23:00 | 68 | 64 | | | 68 | 64 | 68 | 64 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.50

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: 58 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Rte 58/Rte 220 Interchange 4b. Facility Direction: East-West

4c. Analysis Segment Ending: Proposed Route 58/Bypass Interchange (near Trinity Terrace) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

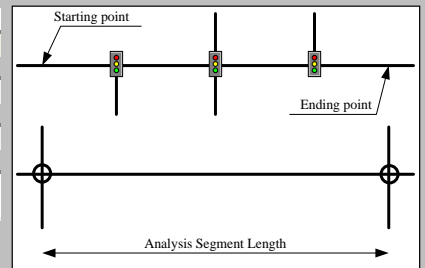
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Existing Year 2018 | | Design Year 2040 | |
|--|--------------------|-----------|------------------|-----------|
| 13. Number of Lane: | Eastbound | Westbound | Eastbound | Westbound |
| | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | 6.0 | 6.0 | 6.0 | 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 16,900 14,500 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 20,000

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|-----------|-------------------|---------|-------------------|---------|--|--|--|--|
| | Tow-way | Eastbound | Eastbound % Truck | | Westbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |
| 100% | | | | | | | | | | |

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

58
TBA

V 2018-0

Route: 58
From: Rte 58/Rte 220 Interchange
To: Proposed Route 58/Bypass Interchange (near Tr
Jurisdiction: 2. Salem/Henry Co
Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
Existing Year: 2018 ADT: 16,900 No-build
Design Year: 2040 ADT: 14,500 20,000

Eastbound

| Starting Time | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | | | |
|---------------|----------------------|---|----------------------|--|----------------------|--|----------------------|-------------|----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nbfd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 1:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 2:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 3:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 4:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 5:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.09 | A | 0.09 |
| 6:00 | 0.16 | A | | | | | 0.14 | A | 0.14 | A | 0.19 | A | 0.19 |
| 7:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.27 | A | 0.27 |
| 8:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.25 | A | 0.25 |
| 9:00 | 0.20 | A | | | | | 0.18 | A | 0.18 | A | 0.24 | A | 0.24 |
| 10:00 | 0.23 | A | | | | | 0.19 | A | 0.19 | A | 0.27 | A | 0.27 |
| 11:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.24 | A | 0.24 |
| 12:00 | 0.24 | A | | | | | 0.20 | A | 0.20 | A | 0.28 | A | 0.28 |
| 13:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.25 | A | 0.25 |
| 14:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.27 | A | 0.27 |
| 15:00 | 0.25 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 16:00 | 0.25 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 17:00 | 0.26 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 18:00 | 0.19 | A | | | | | 0.17 | A | 0.17 | A | 0.23 | A | 0.23 |
| 19:00 | 0.15 | A | | | | | 0.13 | A | 0.13 | A | 0.18 | A | 0.18 |
| 20:00 | 0.11 | A | | | | | 0.10 | A | 0.10 | A | 0.13 | A | 0.13 |
| 21:00 | 0.10 | A | | | | | 0.09 | A | 0.09 | A | 0.12 | A | 0.12 |
| 22:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.09 | A | 0.09 |
| 23:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |

Westbound

| Starting Time | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | | | |
|---------------|----------------------|---|----------------------|--|----------------------|--|----------------------|-------------|----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nbfd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 3:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 4:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 5:00 | 0.13 | A | | | | | 0.12 | A | 0.12 | A | 0.16 | A | 0.16 |
| 6:00 | 0.20 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 7:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.25 | A | 0.25 |
| 8:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.24 | A | 0.24 |
| 9:00 | 0.20 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 10:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.27 | A | 0.27 |
| 11:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.28 | A | 0.28 |
| 12:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.27 | A | 0.27 |
| 13:00 | 0.25 | A | | | | | 0.21 | A | 0.21 | A | 0.30 | A | 0.30 |
| 14:00 | 0.25 | A | | | | | 0.21 | A | 0.21 | A | 0.29 | A | 0.29 |
| 15:00 | 0.26 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 16:00 | 0.26 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 17:00 | 0.24 | A | | | | | 0.21 | A | 0.21 | A | 0.29 | A | 0.29 |
| 18:00 | 0.20 | A | | | | | 0.18 | A | 0.18 | A | 0.24 | A | 0.24 |
| 19:00 | 0.16 | A | | | | | 0.14 | A | 0.14 | A | 0.19 | A | 0.19 |
| 20:00 | 0.12 | A | | | | | 0.10 | A | 0.10 | A | 0.14 | A | 0.14 |
| 21:00 | 0.11 | A | | | | | 0.09 | A | 0.09 | A | 0.13 | A | 0.13 |
| 22:00 | 0.09 | A | | | | | 0.08 | A | 0.08 | A | 0.10 | A | 0.10 |
| 23:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT




ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | |
|---|---|---|
| Route: 58 |  | Area Type: Exurban |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,500 20,000 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

Eastbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Eastbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 58 | | | 50 | 69 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 31 | | | 26 | 36 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 29 | | | 25 | 34 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 12 | | | 10 | 14 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 39 | | | 34 | 47 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 106 | | | 91 | 125 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 259 | | | 222 | 307 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 402 | | | 345 | 475 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 378 | | | 325 | 448 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 290 | | | 249 | 344 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 332 | | | 285 | 393 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 333 | | | 286 | 394 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 391 | | | 335 | 462 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 358 | | | 307 | 424 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 426 | | | 366 | 505 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 484 | | | 415 | 573 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 539 | | | 462 | 637 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 592 | | | 508 | 701 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 452 | | | 388 | 535 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 353 | | | 303 | 418 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 249 | | | 214 | 295 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 190 | | | 163 | 225 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 129 | | | 111 | 152 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 69 | | | 59 | 82 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Eastbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 23 | | | 19 | 27 |
| 1:00 | 1 | | | 1 | 2 | 31 | | | 26 | 36 |
| 2:00 | 0 | | | 0 | 0 | 39 | | | 33 | 46 |
| 3:00 | 1 | | | 1 | 2 | 37 | | | 32 | 44 |
| 4:00 | 4 | | | 3 | 4 | 44 | | | 38 | 53 |
| 5:00 | 3 | | | 2 | 3 | 50 | | | 43 | 59 |
| 6:00 | 13 | | | 11 | 16 | 78 | | | 67 | 92 |
| 7:00 | 23 | | | 19 | 27 | 95 | | | 82 | 113 |
| 8:00 | 13 | | | 11 | 16 | 90 | | | 77 | 106 |
| 9:00 | 29 | | | 25 | 34 | 100 | | | 86 | 118 |
| 10:00 | 15 | | | 12 | 17 | 123 | | | 106 | 146 |
| 11:00 | 9 | | | 8 | 11 | 106 | | | 91 | 125 |
| 12:00 | 12 | | | 11 | 15 | 118 | | | 101 | 140 |
| 13:00 | 18 | | | 16 | 22 | 96 | | | 82 | 114 |
| 14:00 | 14 | | | 12 | 16 | 91 | | | 78 | 108 |
| 15:00 | 15 | | | 13 | 18 | 96 | | | 82 | 114 |
| 16:00 | 10 | | | 9 | 12 | 78 | | | 67 | 92 |
| 17:00 | 7 | | | 6 | 8 | 65 | | | 56 | 77 |
| 18:00 | 4 | | | 4 | 5 | 49 | | | 42 | 58 |
| 19:00 | 7 | | | 6 | 9 | 37 | | | 32 | 44 |
| 20:00 | 4 | | | 4 | 5 | 31 | | | 26 | 36 |
| 21:00 | 6 | | | 5 | 7 | 41 | | | 36 | 49 |
| 22:00 | 1 | | | 1 | 2 | 40 | | | 34 | 47 |
| 23:00 | 1 | | | 1 | 2 | 27 | | | 23 | 32 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 58 | | Area Type: Exurban |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,500 20,000 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Eastbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-la Hwy Spd 60 mph | | | |
|---------------|-----------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 1:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 2:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 3:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 4:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 5:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 6:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 7:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 8:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 9:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 10:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 11:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 12:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 13:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 14:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 15:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 16:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 17:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 18:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 19:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 20:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 21:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 22:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 23:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange (| | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,500 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Westbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|--------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Westbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 42 | | | 36 | 50 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 35 | | | 30 | 41 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 27 | | | 23 | 32 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 28 | | | 24 | 33 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 76 | | | 66 | 90 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 239 | | | 205 | 283 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 408 | | | 350 | 482 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 381 | | | 327 | 450 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 343 | | | 295 | 406 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 298 | | | 255 | 352 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 330 | | | 283 | 391 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 346 | | | 297 | 410 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 376 | | | 322 | 444 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 395 | | | 339 | 468 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 434 | | | 372 | 513 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 493 | | | 423 | 583 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 473 | | | 406 | 560 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 523 | | | 449 | 619 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 384 | | | 329 | 454 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 282 | | | 242 | 334 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 242 | | | 208 | 287 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 183 | | | 157 | 216 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 144 | | | 124 | 171 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 87 | | | 74 | 102 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Westbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 35 | | | 30 | 41 |
| 1:00 | 4 | | | 3 | 4 | 20 | | | 17 | 23 |
| 2:00 | 3 | | | 2 | 3 | 29 | | | 25 | 34 |
| 3:00 | 4 | | | 3 | 4 | 43 | | | 37 | 51 |
| 4:00 | 4 | | | 4 | 5 | 55 | | | 47 | 65 |
| 5:00 | 2 | | | 2 | 3 | 63 | | | 54 | 75 |
| 6:00 | 7 | | | 6 | 8 | 75 | | | 64 | 89 |
| 7:00 | 16 | | | 14 | 19 | 82 | | | 70 | 96 |
| 8:00 | 7 | | | 6 | 8 | 104 | | | 89 | 123 |
| 9:00 | 13 | | | 11 | 16 | 110 | | | 94 | 130 |
| 10:00 | 18 | | | 16 | 22 | 128 | | | 110 | 152 |
| 11:00 | 15 | | | 12 | 17 | 128 | | | 110 | 152 |
| 12:00 | 14 | | | 12 | 16 | 114 | | | 98 | 135 |
| 13:00 | 17 | | | 15 | 21 | 124 | | | 106 | 146 |
| 14:00 | 14 | | | 12 | 16 | 110 | | | 94 | 130 |
| 15:00 | 15 | | | 12 | 17 | 96 | | | 82 | 114 |
| 16:00 | 13 | | | 11 | 16 | 106 | | | 91 | 125 |
| 17:00 | 9 | | | 8 | 11 | 74 | | | 63 | 87 |
| 18:00 | 13 | | | 11 | 16 | 79 | | | 67 | 93 |
| 19:00 | 9 | | | 7 | 10 | 74 | | | 64 | 88 |
| 20:00 | 4 | | | 4 | 5 | 39 | | | 34 | 47 |
| 21:00 | 1 | | | 1 | 1 | 57 | | | 49 | 67 |
| 22:00 | 1 | | | 1 | 2 | 46 | | | 39 | 54 |
| 23:00 | 4 | | | 3 | 4 | 36 | | | 31 | 43 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,500 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Westbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-ls Hwy Spd 60 mph | | | |
|---------------|-----------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 1:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 2:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 3:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 4:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 5:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 6:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 7:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 8:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 9:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 10:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 11:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 12:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 13:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 14:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 15:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 16:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 17:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 18:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 19:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 20:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 21:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 22:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 23:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



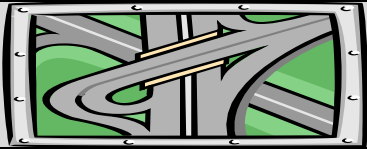
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | |
|--|---|--|
| Route: 58 |  | Area Type: Exurban |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 14,500 20,000 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 100 | | 86 | 119 | 1.0% | 100% | | 62 | 0 | 53 |
| 1:00 | 65 | | 56 | 78 | 0.7% | 100% | | 55 | 0 | 47 |
| 2:00 | 56 | | 48 | 66 | 0.7% | 100% | | 71 | 0 | 61 |
| 3:00 | 39 | | 34 | 47 | 0.7% | 100% | | 85 | 0 | 73 |
| 4:00 | 116 | | 99 | 137 | 1.3% | 100% | | 107 | 0 | 92 |
| 5:00 | 345 | | 296 | 408 | 2.7% | 100% | | 119 | 0 | 102 |
| 6:00 | 667 | | 572 | 789 | 5.0% | 100% | | 172 | 0 | 148 |
| 7:00 | 782 | | 671 | 926 | 5.9% | 100% | | 215 | 0 | 185 |
| 8:00 | 722 | | 619 | 854 | 5.5% | 100% | | 213 | 0 | 183 |
| 9:00 | 588 | | 504 | 696 | 5.0% | 100% | | 252 | 0 | 216 |
| 10:00 | 662 | | 568 | 784 | 5.6% | 100% | | 284 | 0 | 244 |
| 11:00 | 680 | | 583 | 804 | 5.5% | 100% | | 258 | 0 | 221 |
| 12:00 | 766 | | 657 | 907 | 6.1% | 100% | | 258 | 0 | 222 |
| 13:00 | 753 | | 646 | 891 | 6.0% | 100% | | 255 | 0 | 219 |
| 14:00 | 860 | | 738 | 1,018 | 6.4% | 100% | | 229 | 0 | 196 |
| 15:00 | 977 | | 838 | 1,156 | 7.1% | 100% | | 222 | 0 | 190 |
| 16:00 | 1,012 | | 868 | 1,197 | 7.2% | 100% | | 207 | 0 | 177 |
| 17:00 | 1,116 | | 957 | 1,320 | 7.5% | 100% | | 154 | 0 | 132 |
| 18:00 | 835 | | 717 | 989 | 5.8% | 100% | | 145 | 0 | 124 |
| 19:00 | 635 | | 545 | 752 | 4.5% | 100% | | 127 | 0 | 109 |
| 20:00 | 491 | | 421 | 581 | 3.4% | 100% | | 79 | 0 | 67 |
| 21:00 | 373 | | 320 | 441 | 2.8% | 100% | | 105 | 0 | 90 |
| 22:00 | 273 | | 234 | 323 | 2.1% | 100% | | 89 | 0 | 76 |
| 23:00 | 156 | | 134 | 184 | 1.3% | 100% | | 68 | 0 | 59 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 115 | 115 | | | 115 | 115 | 115 | 115 |
| 1:00 | 132 | 132 | | | 132 | 132 | 132 | 132 |
| 2:00 | 161 | 161 | | | 161 | 161 | 161 | 161 |
| 3:00 | 226 | 226 | | | 226 | 226 | 226 | 226 |
| 4:00 | 137 | 137 | | | 137 | 137 | 137 | 137 |
| 5:00 | 96 | 96 | | | 96 | 96 | 96 | 96 |
| 6:00 | 89 | 89 | | | 89 | 89 | 89 | 89 |
| 7:00 | 90 | 90 | | | 90 | 90 | 89 | 89 |
| 8:00 | 91 | 91 | | | 92 | 92 | 91 | 91 |
| 9:00 | 101 | 101 | | | 101 | 101 | 100 | 100 |
| 10:00 | 100 | 100 | | | 101 | 101 | 100 | 100 |
| 11:00 | 97 | 97 | | | 98 | 98 | 96 | 96 |
| 12:00 | 94 | 94 | | | 94 | 94 | 93 | 93 |
| 13:00 | 94 | 94 | | | 95 | 95 | 93 | 93 |
| 14:00 | 89 | 89 | | | 89 | 89 | 88 | 88 |
| 15:00 | 86 | 86 | | | 86 | 86 | 85 | 85 |
| 16:00 | 84 | 84 | | | 85 | 85 | 83 | 83 |
| 17:00 | 80 | 80 | | | 80 | 80 | 79 | 79 |
| 18:00 | 83 | 83 | | | 83 | 83 | 82 | 82 |
| 19:00 | 85 | 85 | | | 85 | 85 | 85 | 85 |
| 20:00 | 83 | 83 | | | 83 | 83 | 82 | 82 |
| 21:00 | 91 | 91 | | | 91 | 91 | 91 | 91 |
| 22:00 | 95 | 95 | | | 95 | 95 | 94 | 94 |
| 23:00 | 103 | 103 | | | 103 | 103 | 103 | 103 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 4.60

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: Byp 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Proposed Rte 220/Bypass Interchange 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Soapstone Rd (Rte 687) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

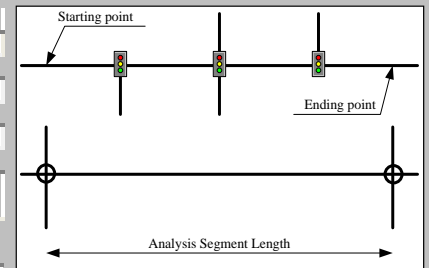
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | 6.0 | 6.0 | 6.0 | 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 0 11,300 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 0

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

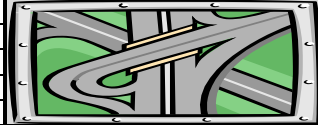
Byp
TBA

V 2018-0

Route: **Byp**

From: **Proposed Rte 220/Bypass Interchange**

To: **Soapstone Rd (Rte 687)**



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: **Exurban**

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: **0** No-build

Design Year: 2040 ADT: **11,300** **0**

Northbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | |
|---------------|-----------------------|--|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.11 | A | 0.11 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.13 | A | 0.13 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.10 | A | 0.10 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |

Southbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | |
|---------------|-----------------------|--|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.09 | A | 0.09 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.13 | A | 0.13 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.11 | A | 0.11 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VD0T



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | |
|--|--|--|
| Route: Byp | | Area Type: Exurban |
| From: Proposed Rte 220/Bypass Interchange | | Traffic Assignment: Constrained - Noise Study |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 0 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 11,300 0 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | | 39 | 0 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 0 | | | 20 | 0 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 0 | | | 19 | 0 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 0 | | | 8 | 0 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 0 | | | 26 | 0 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 0 | | | 71 | 0 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 0 | | | 173 | 0 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 0 | | | 269 | 0 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 0 | | | 253 | 0 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 0 | | | 194 | 0 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 0 | | | 222 | 0 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 0 | | | 223 | 0 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 0 | | | 261 | 0 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 0 | | | 239 | 0 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 0 | | | 285 | 0 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 0 | | | 324 | 0 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 0 | | | 360 | 0 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 0 | | | 396 | 0 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 0 | | | 302 | 0 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 0 | | | 236 | 0 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 0 | | | 166 | 0 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 0 | | | 127 | 0 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 0 | | | 86 | 0 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 0 | | | 46 | 0 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 0 | | | 1 | 0 | 0 | | | 15 | 0 |
| 1:00 | 0 | | | 1 | 0 | 0 | | | 20 | 0 |
| 2:00 | 0 | | | 0 | 0 | 0 | | | 26 | 0 |
| 3:00 | 0 | | | 1 | 0 | 0 | | | 25 | 0 |
| 4:00 | 0 | | | 2 | 0 | 0 | | | 30 | 0 |
| 5:00 | 0 | | | 2 | 0 | 0 | | | 34 | 0 |
| 6:00 | 0 | | | 9 | 0 | 0 | | | 52 | 0 |
| 7:00 | 0 | | | 15 | 0 | 0 | | | 64 | 0 |
| 8:00 | 0 | | | 9 | 0 | 0 | | | 60 | 0 |
| 9:00 | 0 | | | 19 | 0 | 0 | | | 67 | 0 |
| 10:00 | 0 | | | 10 | 0 | 0 | | | 82 | 0 |
| 11:00 | 0 | | | 6 | 0 | 0 | | | 71 | 0 |
| 12:00 | 0 | | | 8 | 0 | 0 | | | 79 | 0 |
| 13:00 | 0 | | | 12 | 0 | 0 | | | 64 | 0 |
| 14:00 | 0 | | | 9 | 0 | 0 | | | 61 | 0 |
| 15:00 | 0 | | | 10 | 0 | 0 | | | 64 | 0 |
| 16:00 | 0 | | | 7 | 0 | 0 | | | 52 | 0 |
| 17:00 | 0 | | | 4 | 0 | 0 | | | 43 | 0 |
| 18:00 | 0 | | | 3 | 0 | 0 | | | 33 | 0 |
| 19:00 | 0 | | | 5 | 0 | 0 | | | 25 | 0 |
| 20:00 | 0 | | | 3 | 0 | 0 | | | 20 | 0 |
| 21:00 | 0 | | | 4 | 0 | 0 | | | 28 | 0 |
| 22:00 | 0 | | | 1 | 0 | 0 | | | 27 | 0 |
| 23:00 | 0 | | | 1 | 0 | 0 | | | 18 | 0 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | | | | | | |
|--|-------------------------------------|---------------------------|--|--|---|-----------|------------------------------|-----------|
| Route: Byp | | | | Area Type: Exurban | | | | |
| From: Proposed Rte 220/Bypass Interchange | | | | Traffic Assignment: Constrained - Noise Study | | | | |
| To: Soapstone Rd (Rte 687) | | | | Existing Year: 2018 ADT: 0 | No-build | | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 11,300 | | 0 | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-1a Hwy Spd 60 mph | | | |
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | | |
|--|---------------------------|--|--|----------|
| Route: Byp | | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange | | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | Design Year: 2040 ADT: 11,300 0 | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | | |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|------------------|---------------------|--|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Southbound D-factor | | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | 28 | 0 | 1.0% | 49% | | 2.8% | 44.0% | 46.8% |
| 1:00 | 0 | | 23 | 0 | 0.7% | 48% | | 6.3% | 33.8% | 40.0% |
| 2:00 | 0 | | 18 | 0 | 0.7% | 47% | | 4.9% | 49.4% | 54.3% |
| 3:00 | 0 | | 18 | 0 | 0.7% | 60% | | 4.9% | 57.8% | 62.7% |
| 4:00 | 0 | | 51 | 0 | 1.3% | 61% | | 3.2% | 40.3% | 43.5% |
| 5:00 | 0 | | 160 | 0 | 2.7% | 66% | | 0.7% | 20.8% | 21.5% |
| 6:00 | 0 | | 272 | 0 | 5.0% | 58% | | 1.3% | 15.3% | 16.7% |
| 7:00 | 0 | | 254 | 0 | 5.9% | 48% | | 3.3% | 17.0% | 20.4% |
| 8:00 | 0 | | 230 | 0 | 5.5% | 49% | | 1.4% | 22.9% | 24.4% |
| 9:00 | 0 | | 199 | 0 | 5.0% | 50% | | 3.1% | 26.1% | 29.2% |
| 10:00 | 0 | | 221 | 0 | 5.6% | 50% | | 3.8% | 26.9% | 30.7% |
| 11:00 | 0 | | 232 | 0 | 5.5% | 52% | | 3.0% | 26.2% | 29.2% |
| 12:00 | 0 | | 251 | 0 | 6.1% | 49% | | 2.7% | 22.7% | 25.4% |
| 13:00 | 0 | | 264 | 0 | 6.0% | 53% | | 3.3% | 23.1% | 26.3% |
| 14:00 | 0 | | 290 | 0 | 6.4% | 51% | | 2.5% | 19.7% | 22.2% |
| 15:00 | 0 | | 329 | 0 | 7.1% | 50% | | 2.4% | 15.9% | 18.3% |
| 16:00 | 0 | | 316 | 0 | 7.2% | 49% | | 2.2% | 17.8% | 20.0% |
| 17:00 | 0 | | 350 | 0 | 7.5% | 48% | | 1.6% | 12.1% | 13.7% |
| 18:00 | 0 | | 256 | 0 | 5.8% | 48% | | 2.8% | 16.5% | 19.3% |
| 19:00 | 0 | | 189 | 0 | 4.5% | 48% | | 2.4% | 20.3% | 22.7% |
| 20:00 | 0 | | 162 | 0 | 3.4% | 50% | | 1.5% | 13.7% | 15.3% |
| 21:00 | 0 | | 122 | 0 | 2.8% | 50% | | 0.3% | 23.6% | 23.9% |
| 22:00 | 0 | | 96 | 0 | 2.1% | 53% | | 0.8% | 24.0% | 24.7% |
| 23:00 | 0 | | 58 | 0 | 1.3% | 56% | | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|------------|------------------------|--|--------|------------|
| | Existing | | Design | Design Nbl | Existing | | Design | Design Nbl |
| 0:00 | 0 | | 1 | 0 | 0 | | 23 | 0 |
| 1:00 | 0 | | 2 | 0 | 0 | | 13 | 0 |
| 2:00 | 0 | | 2 | 0 | 0 | | 19 | 0 |
| 3:00 | 0 | | 2 | 0 | 0 | | 29 | 0 |
| 4:00 | 0 | | 3 | 0 | 0 | | 36 | 0 |
| 5:00 | 0 | | 1 | 0 | 0 | | 42 | 0 |
| 6:00 | 0 | | 4 | 0 | 0 | | 50 | 0 |
| 7:00 | 0 | | 11 | 0 | 0 | | 54 | 0 |
| 8:00 | 0 | | 4 | 0 | 0 | | 70 | 0 |
| 9:00 | 0 | | 9 | 0 | 0 | | 73 | 0 |
| 10:00 | 0 | | 12 | 0 | 0 | | 86 | 0 |
| 11:00 | 0 | | 10 | 0 | 0 | | 86 | 0 |
| 12:00 | 0 | | 9 | 0 | 0 | | 76 | 0 |
| 13:00 | 0 | | 12 | 0 | 0 | | 83 | 0 |
| 14:00 | 0 | | 9 | 0 | 0 | | 73 | 0 |
| 15:00 | 0 | | 10 | 0 | 0 | | 64 | 0 |
| 16:00 | 0 | | 9 | 0 | 0 | | 71 | 0 |
| 17:00 | 0 | | 6 | 0 | 0 | | 49 | 0 |
| 18:00 | 0 | | 9 | 0 | 0 | | 53 | 0 |
| 19:00 | 0 | | 6 | 0 | 0 | | 50 | 0 |
| 20:00 | 0 | | 3 | 0 | 0 | | 26 | 0 |
| 21:00 | 0 | | 0 | 0 | 0 | | 38 | 0 |
| 22:00 | 0 | | 1 | 0 | 0 | | 31 | 0 |
| 23:00 | 0 | | 2 | 0 | 0 | | 24 | 0 |



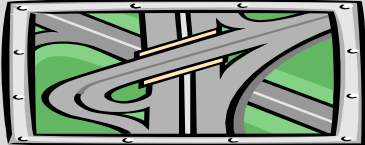
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|--|---|--|----------|
| Route: Byp |  | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 11,300 | 0 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-ls Hwy Spd 60 mph | | | |
|---------------|------------------------------|------------|--|--|--|------------|-----------------------|------------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | | |
|--|--|--|----------|--|
| Route: Byp | | Area Type: Exurban | | |
| From: Proposed Rte 220/Bypass Interchange | | Traffic Assignment: Constrained - Noise Study | | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 0 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 11,300 | 0 | |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 0 | | 67 | 0 | 1.0% | 100% | 0 | 0 | 41 |
| 1:00 | 0 | | 44 | 0 | 0.7% | 100% | 0 | 0 | 37 |
| 2:00 | 0 | | 37 | 0 | 0.7% | 100% | 0 | 0 | 47 |
| 3:00 | 0 | | 26 | 0 | 0.7% | 100% | 0 | 0 | 57 |
| 4:00 | 0 | | 77 | 0 | 1.3% | 100% | 0 | 0 | 72 |
| 5:00 | 0 | | 231 | 0 | 2.7% | 100% | 0 | 0 | 79 |
| 6:00 | 0 | | 446 | 0 | 5.0% | 100% | 0 | 0 | 115 |
| 7:00 | 0 | | 523 | 0 | 5.9% | 100% | 0 | 0 | 144 |
| 8:00 | 0 | | 483 | 0 | 5.5% | 100% | 0 | 0 | 143 |
| 9:00 | 0 | | 393 | 0 | 5.0% | 100% | 0 | 0 | 168 |
| 10:00 | 0 | | 443 | 0 | 5.6% | 100% | 0 | 0 | 190 |
| 11:00 | 0 | | 454 | 0 | 5.5% | 100% | 0 | 0 | 172 |
| 12:00 | 0 | | 512 | 0 | 6.1% | 100% | 0 | 0 | 173 |
| 13:00 | 0 | | 504 | 0 | 6.0% | 100% | 0 | 0 | 171 |
| 14:00 | 0 | | 575 | 0 | 6.4% | 100% | 0 | 0 | 153 |
| 15:00 | 0 | | 653 | 0 | 7.1% | 100% | 0 | 0 | 148 |
| 16:00 | 0 | | 676 | 0 | 7.2% | 100% | 0 | 0 | 138 |
| 17:00 | 0 | | 746 | 0 | 7.5% | 100% | 0 | 0 | 103 |
| 18:00 | 0 | | 559 | 0 | 5.8% | 100% | 0 | 0 | 97 |
| 19:00 | 0 | | 425 | 0 | 4.5% | 100% | 0 | 0 | 85 |
| 20:00 | 0 | | 328 | 0 | 3.4% | 100% | 0 | 0 | 53 |
| 21:00 | 0 | | 249 | 0 | 2.8% | 100% | 0 | 0 | 70 |
| 22:00 | 0 | | 182 | 0 | 2.1% | 100% | 0 | 0 | 59 |
| 23:00 | 0 | | 104 | 0 | 1.3% | 100% | 0 | 0 | 46 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 65 | 65 | | | 115 | 115 | 65 | 65 |
| 1:00 | 65 | 65 | | | 132 | 132 | 65 | 65 |
| 2:00 | 65 | 65 | | | 161 | 161 | 65 | 65 |
| 3:00 | 65 | 65 | | | 226 | 226 | 65 | 65 |
| 4:00 | 65 | 65 | | | 137 | 137 | 65 | 65 |
| 5:00 | 65 | 65 | | | 96 | 96 | 65 | 65 |
| 6:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 7:00 | 65 | 65 | | | 91 | 91 | 65 | 65 |
| 8:00 | 65 | 65 | | | 92 | 92 | 65 | 65 |
| 9:00 | 65 | 65 | | | 102 | 102 | 65 | 65 |
| 10:00 | 65 | 65 | | | 101 | 101 | 65 | 65 |
| 11:00 | 65 | 65 | | | 98 | 98 | 65 | 65 |
| 12:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 13:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 14:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 15:00 | 65 | 65 | | | 87 | 87 | 65 | 65 |
| 16:00 | 65 | 65 | | | 85 | 85 | 65 | 65 |
| 17:00 | 65 | 65 | | | 81 | 81 | 65 | 65 |
| 18:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 19:00 | 65 | 65 | | | 86 | 86 | 65 | 65 |
| 20:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 21:00 | 65 | 65 | | | 91 | 91 | 65 | 65 |
| 22:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 23:00 | 65 | 65 | | | 103 | 103 | 65 | 65 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 1.50

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: Byp 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Soapstone Rd (Rte 687) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Proposed Route 58/Bypass Interchange (near Trinity Terrace) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

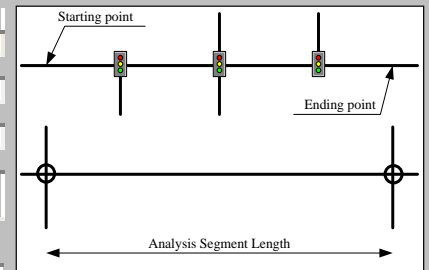
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | 6.0 | 6.0 | 6.0 | 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 0 12,800 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 0

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |
| 100% | | | | | | | | | | |



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

V 2018-0

Byp
TBA

Route: **Byp**
From: **Soapstone Rd (Rte 687)**
To: **Proposed Route 58/Bypass Interchange (near Tr**
Jurisdiction: **2. Salem/Henry Co**
Run Date: **4/29/2019** Time Span: **24 Hours**



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: **Exurban**
Traffic Assignment: Constrained - Noise Study
Existing Year: 2018 ADT: **0** No-build
Design Year: 2040 ADT: **12,800** **0**

Northbound

| Starting Time | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | | | | |
|---------------|----------------------|--|----------------------|--|----------------------|--|----------------------|-------------|--------|-------------|-----|-----|
| | Existing | | | | | | Design | | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.12 | A | 0.12 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.12 | A | 0.12 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |

Southbound

| Starting Time | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | | | | |
|---------------|----------------------|--|----------------------|--|----------------------|--|----------------------|-------------|--------|-------------|-----|-----|
| | Existing | | | | | | Design | | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.10 | A | 0.10 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.12 | A | 0.12 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.09 | A | 0.09 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VD0T



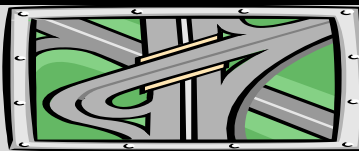
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|---|---|--|----------|
| Route: Byp |  | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,800 | 0 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | | 44 | 0 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 0 | | | 23 | 0 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 0 | | | 22 | 0 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 0 | | | 9 | 0 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 0 | | | 30 | 0 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 0 | | | 80 | 0 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 0 | | | 196 | 0 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 0 | | | 304 | 0 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 0 | | | 287 | 0 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 0 | | | 220 | 0 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 0 | | | 251 | 0 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 0 | | | 252 | 0 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 0 | | | 296 | 0 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 0 | | | 271 | 0 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 0 | | | 323 | 0 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 0 | | | 367 | 0 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 0 | | | 408 | 0 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 0 | | | 449 | 0 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 0 | | | 342 | 0 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 0 | | | 267 | 0 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 0 | | | 189 | 0 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 0 | | | 144 | 0 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 0 | | | 98 | 0 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 0 | | | 52 | 0 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 0 | | | 2 | 0 | 0 | | | 17 | 0 |
| 1:00 | 0 | | | 1 | 0 | 0 | | | 23 | 0 |
| 2:00 | 0 | | | 0 | 0 | 0 | | | 29 | 0 |
| 3:00 | 0 | | | 1 | 0 | 0 | | | 28 | 0 |
| 4:00 | 0 | | | 3 | 0 | 0 | | | 34 | 0 |
| 5:00 | 0 | | | 2 | 0 | 0 | | | 38 | 0 |
| 6:00 | 0 | | | 10 | 0 | 0 | | | 59 | 0 |
| 7:00 | 0 | | | 17 | 0 | 0 | | | 72 | 0 |
| 8:00 | 0 | | | 10 | 0 | 0 | | | 68 | 0 |
| 9:00 | 0 | | | 22 | 0 | 0 | | | 76 | 0 |
| 10:00 | 0 | | | 11 | 0 | 0 | | | 93 | 0 |
| 11:00 | 0 | | | 7 | 0 | 0 | | | 80 | 0 |
| 12:00 | 0 | | | 9 | 0 | 0 | | | 89 | 0 |
| 13:00 | 0 | | | 14 | 0 | 0 | | | 73 | 0 |
| 14:00 | 0 | | | 10 | 0 | 0 | | | 69 | 0 |
| 15:00 | 0 | | | 12 | 0 | 0 | | | 73 | 0 |
| 16:00 | 0 | | | 8 | 0 | 0 | | | 59 | 0 |
| 17:00 | 0 | | | 5 | 0 | 0 | | | 49 | 0 |
| 18:00 | 0 | | | 3 | 0 | 0 | | | 37 | 0 |
| 19:00 | 0 | | | 6 | 0 | 0 | | | 28 | 0 |
| 20:00 | 0 | | | 3 | 0 | 0 | | | 23 | 0 |
| 21:00 | 0 | | | 4 | 0 | 0 | | | 31 | 0 |
| 22:00 | 0 | | | 1 | 0 | 0 | | | 30 | 0 |
| 23:00 | 0 | | | 1 | 0 | 0 | | | 20 | 0 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | |
|--|--|--|
| Route: Byp | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,800 0 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-1a Hwy Spd 60 mph | | | |
|---------------|------------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|--|--|--|----------|
| Route: Byp | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange (| | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 12,800 | 0 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|--|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | 32 | 0 | | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 0 | | 26 | 0 | | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 0 | | 20 | 0 | | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 0 | | 21 | 0 | | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 0 | | 58 | 0 | | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 0 | | 181 | 0 | | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 0 | | 309 | 0 | | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 0 | | 288 | 0 | | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 0 | | 260 | 0 | | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 0 | | 225 | 0 | | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 0 | | 250 | 0 | | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 0 | | 262 | 0 | | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 0 | | 284 | 0 | | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 0 | | 299 | 0 | | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 0 | | 329 | 0 | | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 0 | | 373 | 0 | | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 0 | | 358 | 0 | | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 0 | | 396 | 0 | | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 0 | | 290 | 0 | | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 0 | | 214 | 0 | | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 0 | | 184 | 0 | | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 0 | | 138 | 0 | | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 0 | | 109 | 0 | | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 0 | | 66 | 0 | | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|------------|--|------------------------|--|--------|------------|---|
| | Existing | | Design | Design Nbl | | Existing | | Design | Design Nbl | |
| 0:00 | 0 | | 2 | 0 | | 0 | | | 26 | 0 |
| 1:00 | 0 | | 3 | 0 | | 0 | | | 15 | 0 |
| 2:00 | 0 | | 2 | 0 | | 0 | | | 22 | 0 |
| 3:00 | 0 | | 3 | 0 | | 0 | | | 33 | 0 |
| 4:00 | 0 | | 3 | 0 | | 0 | | | 41 | 0 |
| 5:00 | 0 | | 2 | 0 | | 0 | | | 48 | 0 |
| 6:00 | 0 | | 5 | 0 | | 0 | | | 57 | 0 |
| 7:00 | 0 | | 12 | 0 | | 0 | | | 62 | 0 |
| 8:00 | 0 | | 5 | 0 | | 0 | | | 79 | 0 |
| 9:00 | 0 | | 10 | 0 | | 0 | | | 83 | 0 |
| 10:00 | 0 | | 14 | 0 | | 0 | | | 97 | 0 |
| 11:00 | 0 | | 11 | 0 | | 0 | | | 97 | 0 |
| 12:00 | 0 | | 10 | 0 | | 0 | | | 87 | 0 |
| 13:00 | 0 | | 13 | 0 | | 0 | | | 94 | 0 |
| 14:00 | 0 | | 10 | 0 | | 0 | | | 83 | 0 |
| 15:00 | 0 | | 11 | 0 | | 0 | | | 73 | 0 |
| 16:00 | 0 | | 10 | 0 | | 0 | | | 80 | 0 |
| 17:00 | 0 | | 7 | 0 | | 0 | | | 56 | 0 |
| 18:00 | 0 | | 10 | 0 | | 0 | | | 60 | 0 |
| 19:00 | 0 | | 7 | 0 | | 0 | | | 56 | 0 |
| 20:00 | 0 | | 3 | 0 | | 0 | | | 30 | 0 |
| 21:00 | 0 | | 1 | 0 | | 0 | | | 43 | 0 |
| 22:00 | 0 | | 1 | 0 | | 0 | | | 35 | 0 |
| 23:00 | 0 | | 3 | 0 | | 0 | | | 28 | 0 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|---|---------------------------|--|----------|
| Route: Byp | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,800 | 0 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-ls Hwy Spd 60 mph | | | |
|---------------|------------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nblld (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

Route: Byp

Area Type: Exurban

From: Soapstone Rd (Rte 687)

Traffic Assignment: Constrained - Noise Study

To: Proposed Route 58/Bypass Interchange

Existing Year: 2018 ADT: 0

No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 hrs.

Design Year: 2040 ADT: 12,800

0

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 0 | | | 76 | 0 | 1.0% | 100% | 0 | 0 | 47 |
| 1:00 | 0 | | | 50 | 0 | 0.7% | 100% | 0 | 0 | 42 |
| 2:00 | 0 | | | 42 | 0 | 0.7% | 100% | 0 | 0 | 53 |
| 3:00 | 0 | | | 30 | 0 | 0.7% | 100% | 0 | 0 | 64 |
| 4:00 | 0 | | | 88 | 0 | 1.3% | 100% | 0 | 0 | 81 |
| 5:00 | 0 | | | 261 | 0 | 2.7% | 100% | 0 | 0 | 90 |
| 6:00 | 0 | | | 505 | 0 | 5.0% | 100% | 0 | 0 | 131 |
| 7:00 | 0 | | | 593 | 0 | 5.9% | 100% | 0 | 0 | 163 |
| 8:00 | 0 | | | 547 | 0 | 5.5% | 100% | 0 | 0 | 161 |
| 9:00 | 0 | | | 445 | 0 | 5.0% | 100% | 0 | 0 | 191 |
| 10:00 | 0 | | | 502 | 0 | 5.6% | 100% | 0 | 0 | 215 |
| 11:00 | 0 | | | 515 | 0 | 5.5% | 100% | 0 | 0 | 195 |
| 12:00 | 0 | | | 580 | 0 | 6.1% | 100% | 0 | 0 | 196 |
| 13:00 | 0 | | | 570 | 0 | 6.0% | 100% | 0 | 0 | 193 |
| 14:00 | 0 | | | 651 | 0 | 6.4% | 100% | 0 | 0 | 173 |
| 15:00 | 0 | | | 740 | 0 | 7.1% | 100% | 0 | 0 | 168 |
| 16:00 | 0 | | | 766 | 0 | 7.2% | 100% | 0 | 0 | 157 |
| 17:00 | 0 | | | 845 | 0 | 7.5% | 100% | 0 | 0 | 117 |
| 18:00 | 0 | | | 633 | 0 | 5.8% | 100% | 0 | 0 | 110 |
| 19:00 | 0 | | | 481 | 0 | 4.5% | 100% | 0 | 0 | 96 |
| 20:00 | 0 | | | 372 | 0 | 3.4% | 100% | 0 | 0 | 60 |
| 21:00 | 0 | | | 282 | 0 | 2.8% | 100% | 0 | 0 | 79 |
| 22:00 | 0 | | | 207 | 0 | 2.1% | 100% | 0 | 0 | 67 |
| 23:00 | 0 | | | 118 | 0 | 1.3% | 100% | 0 | 0 | 52 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 65 | 65 | | | 115 | 115 | 65 | 65 |
| 1:00 | 65 | 65 | | | 132 | 132 | 65 | 65 |
| 2:00 | 65 | 65 | | | 161 | 161 | 65 | 65 |
| 3:00 | 65 | 65 | | | 226 | 226 | 65 | 65 |
| 4:00 | 65 | 65 | | | 137 | 137 | 65 | 65 |
| 5:00 | 65 | 65 | | | 96 | 96 | 65 | 65 |
| 6:00 | 65 | 65 | | | 89 | 89 | 65 | 65 |
| 7:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 8:00 | 65 | 65 | | | 92 | 92 | 65 | 65 |
| 9:00 | 65 | 65 | | | 101 | 101 | 65 | 65 |
| 10:00 | 65 | 65 | | | 101 | 101 | 65 | 65 |
| 11:00 | 65 | 65 | | | 98 | 98 | 65 | 65 |
| 12:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 13:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 14:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 15:00 | 65 | 65 | | | 87 | 87 | 65 | 65 |
| 16:00 | 65 | 65 | | | 85 | 85 | 65 | 65 |
| 17:00 | 65 | 65 | | | 80 | 80 | 65 | 65 |
| 18:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 19:00 | 65 | 65 | | | 85 | 85 | 65 | 65 |
| 20:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 21:00 | 65 | 65 | | | 91 | 91 | 65 | 65 |
| 22:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 23:00 | 65 | 65 | | | 103 | 103 | 65 | 65 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beging: North Carolina Border 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

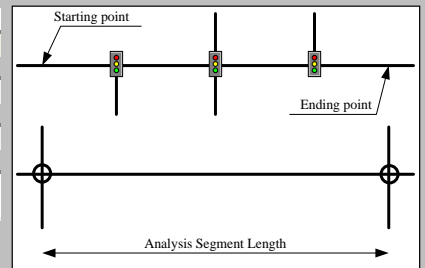
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 3 | | 4 | |
| 17. Analysis Segment No. of Signals: | 0 | | 0 | |
| 18. Average Cycle Length (sec.): | 0 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 0 | | 0 | |
| 20. Signal Coordination: | 0.00 | | 0.00 | |
| Delay caused by signal, mph: | #N/A | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

Existing Year 2018 Design Year 2040

21. Truck Input Type: Hourly

22. Two-way ADT or AADT: 11,900 17,200

ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 17,200

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: North Carolina Border
 To: Proposed Rte 220/Bypass Interchange (south of
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 11,900 No-build
 Design Year: 2040 ADT: 17,200 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.03 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.06 | A | 0.06 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.19 | A | 0.19 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.25 | A | 0.25 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.26 | A | 0.26 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.28 | A | 0.28 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.25 | A | 0.25 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.30 | A | 0.30 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.30 | A | 0.30 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.30 | B | 0.30 | B | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.23 | A | 0.23 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.18 | A | 0.18 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.13 | A | 0.13 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.12 | A | 0.12 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.06 | A | 0.06 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.16 | A | 0.16 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.28 | A | 0.28 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.27 | A | 0.27 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.29 | A | 0.29 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.29 | A | 0.29 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.30 | B | 0.30 | B | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.30 | B | 0.30 | B | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.29 | A | 0.29 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.24 | A | 0.24 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.19 | A | 0.19 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.14 | A | 0.14 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.13 | A | 0.13 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.10 | A | 0.10 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.07 | A | 0.07 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | | 59 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | | 31 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | | 30 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | | 12 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | | 40 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | | 107 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | | 264 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | | 409 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | | 385 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | | 296 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | | 338 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | | 339 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | | 398 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | | 364 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | | 434 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | | 493 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | | 548 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | | 603 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | | 460 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | | 359 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | | 253 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | | 193 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | | 131 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | | 70 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 2 | 16 | | | 23 | 23 |
| 1:00 | 1 | | | 1 | 1 | 22 | | | 31 | 31 |
| 2:00 | 0 | | | 0 | 0 | 27 | | | 39 | 39 |
| 3:00 | 1 | | | 1 | 1 | 26 | | | 38 | 38 |
| 4:00 | 3 | | | 4 | 4 | 31 | | | 45 | 45 |
| 5:00 | 2 | | | 3 | 3 | 35 | | | 51 | 51 |
| 6:00 | 9 | | | 13 | 13 | 55 | | | 79 | 79 |
| 7:00 | 16 | | | 23 | 23 | 67 | | | 97 | 97 |
| 8:00 | 9 | | | 13 | 13 | 63 | | | 91 | 91 |
| 9:00 | 20 | | | 30 | 30 | 70 | | | 101 | 101 |
| 10:00 | 10 | | | 15 | 15 | 87 | | | 125 | 125 |
| 11:00 | 7 | | | 10 | 10 | 74 | | | 107 | 107 |
| 12:00 | 9 | | | 13 | 13 | 83 | | | 120 | 120 |
| 13:00 | 13 | | | 19 | 19 | 68 | | | 98 | 98 |
| 14:00 | 10 | | | 14 | 14 | 64 | | | 93 | 93 |
| 15:00 | 11 | | | 16 | 16 | 68 | | | 98 | 98 |
| 16:00 | 7 | | | 10 | 10 | 55 | | | 79 | 79 |
| 17:00 | 5 | | | 7 | 7 | 46 | | | 66 | 66 |
| 18:00 | 3 | | | 4 | 4 | 34 | | | 50 | 50 |
| 19:00 | 5 | | | 7 | 7 | 26 | | | 38 | 38 |
| 20:00 | 3 | | | 4 | 4 | 22 | | | 31 | 31 |
| 21:00 | 4 | | | 6 | 6 | 29 | | | 42 | 42 |
| 22:00 | 1 | | | 1 | 1 | 28 | | | 41 | 41 |
| 23:00 | 1 | | | 1 | 1 | 19 | | | 27 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 17,200 | 17,200 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | | 43 | 43 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | | 36 | 36 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | | 27 | 27 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | | 28 | 28 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | | 78 | 78 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | | 244 | 244 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | | 415 | 415 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | | 387 | 387 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | | 350 | 350 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | | 303 | 303 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | | 336 | 336 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | | 353 | 353 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | | 382 | 382 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | | 402 | 402 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | | 441 | 441 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | | 501 | 501 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | | 481 | 481 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | | 533 | 533 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | | 390 | 390 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | | 287 | 287 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | | 247 | 247 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | | 186 | 186 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | | 147 | 147 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | | 88 | 88 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 2 | | | 2 | 2 | 25 | | | 36 | 36 |
| 1:00 | 3 | | | 4 | 4 | 14 | | | 20 | 20 |
| 2:00 | 2 | | | 3 | 3 | 20 | | | 30 | 30 |
| 3:00 | 3 | | | 4 | 4 | 30 | | | 44 | 44 |
| 4:00 | 3 | | | 4 | 4 | 38 | | | 56 | 56 |
| 5:00 | 2 | | | 2 | 2 | 45 | | | 64 | 64 |
| 6:00 | 5 | | | 7 | 7 | 53 | | | 76 | 76 |
| 7:00 | 11 | | | 16 | 16 | 57 | | | 83 | 83 |
| 8:00 | 5 | | | 7 | 7 | 73 | | | 106 | 106 |
| 9:00 | 9 | | | 13 | 13 | 77 | | | 112 | 112 |
| 10:00 | 13 | | | 19 | 19 | 90 | | | 130 | 130 |
| 11:00 | 10 | | | 15 | 15 | 90 | | | 130 | 130 |
| 12:00 | 10 | | | 14 | 14 | 80 | | | 116 | 116 |
| 13:00 | 12 | | | 18 | 18 | 87 | | | 126 | 126 |
| 14:00 | 10 | | | 14 | 14 | 77 | | | 112 | 112 |
| 15:00 | 10 | | | 15 | 15 | 68 | | | 98 | 98 |
| 16:00 | 9 | | | 13 | 13 | 74 | | | 107 | 107 |
| 17:00 | 7 | | | 10 | 10 | 52 | | | 75 | 75 |
| 18:00 | 9 | | | 13 | 13 | 55 | | | 80 | 80 |
| 19:00 | 6 | | | 9 | 9 | 52 | | | 76 | 76 |
| 20:00 | 3 | | | 4 | 4 | 28 | | | 40 | 40 |
| 21:00 | 1 | | | 1 | 1 | 40 | | | 58 | 58 |
| 22:00 | 1 | | | 1 | 1 | 32 | | | 47 | 47 |
| 23:00 | 3 | | | 4 | 4 | 26 | | | 37 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 17,200 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | Travel-Time Model: BPR Updated Arterial | | | | | |
|---------------|------------------------------|-----------|---|--|-----------------|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | |
|---|--|--|----------|--|
| Route: 220 | | Area Type: Exurban | | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | | |
| To: Proposed Rte 220/Bypass Interchange (S) | | Existing Year: 2018 ADT: 11,900 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 17,200 | 17,200 | |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 71 | | | 102 | 102 | 1.0% | 100% | 44 | 0 | 63 |
| 1:00 | 46 | | | 67 | 67 | 0.7% | 100% | 39 | 0 | 56 |
| 2:00 | 39 | | | 57 | 57 | 0.7% | 100% | 50 | 0 | 72 |
| 3:00 | 28 | | | 40 | 40 | 0.7% | 100% | 60 | 0 | 87 |
| 4:00 | 81 | | | 118 | 118 | 1.3% | 100% | 75 | 0 | 109 |
| 5:00 | 243 | | | 351 | 351 | 2.7% | 100% | 84 | 0 | 121 |
| 6:00 | 469 | | | 678 | 678 | 5.0% | 100% | 121 | 0 | 176 |
| 7:00 | 551 | | | 796 | 796 | 5.9% | 100% | 152 | 0 | 219 |
| 8:00 | 508 | | | 735 | 735 | 5.5% | 100% | 150 | 0 | 217 |
| 9:00 | 414 | | | 598 | 598 | 5.0% | 100% | 177 | 0 | 256 |
| 10:00 | 466 | | | 674 | 674 | 5.6% | 100% | 200 | 0 | 289 |
| 11:00 | 479 | | | 692 | 692 | 5.5% | 100% | 181 | 0 | 262 |
| 12:00 | 540 | | | 780 | 780 | 6.1% | 100% | 182 | 0 | 263 |
| 13:00 | 530 | | | 767 | 767 | 6.0% | 100% | 180 | 0 | 260 |
| 14:00 | 606 | | | 875 | 875 | 6.4% | 100% | 161 | 0 | 233 |
| 15:00 | 688 | | | 994 | 994 | 7.1% | 100% | 156 | 0 | 226 |
| 16:00 | 712 | | | 1,029 | 1,029 | 7.2% | 100% | 146 | 0 | 210 |
| 17:00 | 786 | | | 1,135 | 1,135 | 7.5% | 100% | 109 | 0 | 157 |
| 18:00 | 588 | | | 850 | 850 | 5.8% | 100% | 102 | 0 | 147 |
| 19:00 | 447 | | | 647 | 647 | 4.5% | 100% | 90 | 0 | 130 |
| 20:00 | 346 | | | 500 | 500 | 3.4% | 100% | 55 | 0 | 80 |
| 21:00 | 262 | | | 379 | 379 | 2.8% | 100% | 74 | 0 | 107 |
| 22:00 | 192 | | | 278 | 278 | 2.1% | 100% | 63 | 0 | 90 |
| 23:00 | 110 | | | 158 | 158 | 1.3% | 100% | 48 | 0 | 70 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 85 | | | 90 | 85 | 90 | 85 |
| 1:00 | 102 | 98 | | | 102 | 97 | 102 | 98 |
| 2:00 | 125 | 120 | | | 125 | 119 | 125 | 120 |
| 3:00 | 176 | 168 | | | 176 | 167 | 176 | 168 |
| 4:00 | 107 | 102 | | | 107 | 101 | 107 | 102 |
| 5:00 | 75 | 71 | | | 75 | 71 | 75 | 71 |
| 6:00 | 70 | 67 | | | 70 | 66 | 70 | 67 |
| 7:00 | 71 | 67 | | | 71 | 67 | 71 | 67 |
| 8:00 | 72 | 69 | | | 72 | 68 | 72 | 69 |
| 9:00 | 79 | 76 | | | 79 | 75 | 79 | 76 |
| 10:00 | 79 | 76 | | | 79 | 75 | 79 | 76 |
| 11:00 | 76 | 73 | | | 76 | 73 | 76 | 73 |
| 12:00 | 74 | 71 | | | 74 | 70 | 74 | 71 |
| 13:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 14:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 15:00 | 68 | 65 | | | 68 | 65 | 68 | 65 |
| 16:00 | 67 | 64 | | | 67 | 63 | 67 | 64 |
| 17:00 | 63 | 60 | | | 63 | 60 | 63 | 60 |
| 18:00 | 65 | 62 | | | 65 | 62 | 65 | 62 |
| 19:00 | 67 | 64 | | | 67 | 63 | 67 | 64 |
| 20:00 | 64 | 61 | | | 64 | 61 | 64 | 61 |
| 21:00 | 71 | 68 | | | 71 | 67 | 71 | 68 |
| 22:00 | 73 | 70 | | | 73 | 70 | 73 | 70 |
| 23:00 | 80 | 76 | | | 80 | 76 | 80 | 76 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 3.10

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Morehead Ave (Ridgeway 87) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

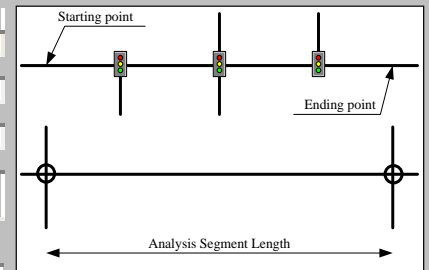
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 6 | | 6 | |
| 17. Analysis Segment No. of Signals: | 1 | | 1 | |
| 18. Average Cycle Length (sec.): | 130 | | 75 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 51 | |
| 20. Signal Coordination: | No Coord. | | No Coord. | |
| Delay caused by signal, mph: | 1 | | 1 | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 11,900 7,900 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 17,200

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220

Area Type: Exurban

From: Proposed Rte 220/Bypass Interchange (south of

To: Morehead Ave (Ridgeway 87)



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: 11,900 No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 Hours

Design Year: 2040 ADT: 7,900 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.09 | A | 0.09 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.12 | A | 0.12 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.12 | A | 0.12 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.12 | A | 0.12 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.11 | A | 0.11 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.08 | A | 0.08 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.06 | A | 0.06 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.02 | A | 0.02 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.07 | A | 0.07 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.13 | A | 0.13 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.13 | A | 0.13 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.13 | A | 0.13 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.14 | A | 0.14 | A | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.13 | A | 0.13 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.11 | A | 0.11 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.09 | A | 0.09 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.06 | A | 0.06 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.06 | A | 0.06 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.05 | A | 0.05 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.03 | A | 0.03 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 7,900 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | 27 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | 14 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | 14 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | 5 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | 18 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | 49 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | 121 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | 188 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | 177 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | 136 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | 155 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | 156 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | 183 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | 167 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | 199 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | 226 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | 252 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | 277 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | 211 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | 165 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | 116 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | 89 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | 60 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | 32 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 2 | | 1 | 2 | 16 | | | 11 | 23 |
| 1:00 | 1 | | 1 | 1 | 22 | | | 14 | 31 |
| 2:00 | 0 | | 0 | 0 | 27 | | | 18 | 39 |
| 3:00 | 1 | | 1 | 1 | 26 | | | 17 | 38 |
| 4:00 | 3 | | 2 | 4 | 31 | | | 21 | 45 |
| 5:00 | 2 | | 1 | 3 | 35 | | | 23 | 51 |
| 6:00 | 9 | | 6 | 13 | 55 | | | 36 | 79 |
| 7:00 | 16 | | 11 | 23 | 67 | | | 45 | 97 |
| 8:00 | 9 | | 6 | 13 | 63 | | | 42 | 91 |
| 9:00 | 20 | | 14 | 30 | 70 | | | 47 | 101 |
| 10:00 | 10 | | 7 | 15 | 87 | | | 57 | 125 |
| 11:00 | 7 | | 4 | 10 | 74 | | | 49 | 107 |
| 12:00 | 9 | | 6 | 13 | 83 | | | 55 | 120 |
| 13:00 | 13 | | 9 | 19 | 68 | | | 45 | 98 |
| 14:00 | 10 | | 6 | 14 | 64 | | | 43 | 93 |
| 15:00 | 11 | | 7 | 16 | 68 | | | 45 | 98 |
| 16:00 | 7 | | 5 | 10 | 55 | | | 36 | 79 |
| 17:00 | 5 | | 3 | 7 | 46 | | | 30 | 66 |
| 18:00 | 3 | | 2 | 4 | 34 | | | 23 | 50 |
| 19:00 | 5 | | 3 | 7 | 26 | | | 17 | 38 |
| 20:00 | 3 | | 2 | 4 | 22 | | | 14 | 31 |
| 21:00 | 4 | | 3 | 6 | 29 | | | 19 | 42 |
| 22:00 | 1 | | 1 | 1 | 28 | | | 19 | 41 |
| 23:00 | 1 | | 1 | 1 | 19 | | | 13 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | | | | | |
|--|-------------------------------------|-----------|--|---------------|--|-----------|-----------------------|-----------|
| Route: 220 | | | Area Type: Exurban | | | | | |
| From: Proposed Rte 220/Bypass Interchange (s | | | Traffic Assignment: Constrained - Noise Study | | | | | |
| To: Morehead Ave (Ridgeway 87) | | | Existing Year: 2018 ADT: 11,900 | No-build | | | | |
| Jurisdiction: 2. Salem/Henry Co | | | Design Year: 2040 ADT: 7,900 | 17,200 | | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |




ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|---|--|----------|
| Route: 220 |  | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 7,900 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | | 20 | 43 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | | 16 | 36 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | | 13 | 27 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | | 13 | 28 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | | 36 | 78 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | | 112 | 244 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | | 191 | 415 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | | 178 | 387 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | | 161 | 350 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | | 139 | 303 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | | 154 | 336 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | | 162 | 353 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | | 176 | 382 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | | 185 | 402 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | | 203 | 441 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | | 230 | 501 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | | 221 | 481 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | | 245 | 533 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | | 179 | 390 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | | 132 | 287 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | | 113 | 247 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | | 85 | 186 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | | 67 | 147 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | | 40 | 88 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 1 | 2 | 25 | | | 16 | 36 |
| 1:00 | 3 | | | 2 | 4 | 14 | | | 9 | 20 |
| 2:00 | 2 | | | 1 | 3 | 20 | | | 14 | 30 |
| 3:00 | 3 | | | 2 | 4 | 30 | | | 20 | 44 |
| 4:00 | 3 | | | 2 | 4 | 38 | | | 26 | 56 |
| 5:00 | 2 | | | 1 | 2 | 45 | | | 30 | 64 |
| 6:00 | 5 | | | 3 | 7 | 53 | | | 35 | 76 |
| 7:00 | 11 | | | 7 | 16 | 57 | | | 38 | 83 |
| 8:00 | 5 | | | 3 | 7 | 73 | | | 49 | 106 |
| 9:00 | 9 | | | 6 | 13 | 77 | | | 51 | 112 |
| 10:00 | 13 | | | 9 | 19 | 90 | | | 60 | 130 |
| 11:00 | 10 | | | 7 | 15 | 90 | | | 60 | 130 |
| 12:00 | 10 | | | 6 | 14 | 80 | | | 53 | 116 |
| 13:00 | 12 | | | 8 | 18 | 87 | | | 58 | 126 |
| 14:00 | 10 | | | 6 | 14 | 77 | | | 51 | 112 |
| 15:00 | 10 | | | 7 | 15 | 68 | | | 45 | 98 |
| 16:00 | 9 | | | 6 | 13 | 74 | | | 49 | 107 |
| 17:00 | 7 | | | 4 | 10 | 52 | | | 34 | 75 |
| 18:00 | 9 | | | 6 | 13 | 55 | | | 37 | 80 |
| 19:00 | 6 | | | 4 | 9 | 52 | | | 35 | 76 |
| 20:00 | 3 | | | 2 | 4 | 28 | | | 18 | 40 |
| 21:00 | 1 | | | 0 | 1 | 40 | | | 27 | 58 |
| 22:00 | 1 | | | 1 | 1 | 32 | | | 21 | 47 |
| 23:00 | 3 | | | 2 | 4 | 26 | | | 17 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--------------------|---|
| Route: 220 | | Area Type: Exurban |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 7,900 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

Route: 220

Area Type: Exurban

From: Proposed Rte 220/Bypass Interchange (s

Traffic Assignment: Constrained - Noise Study

To: Morehead Ave (Ridgeway 87)

Existing Year: 2018 ADT: 11,900

No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 hrs.

Design Year: 2040 ADT: 7,900

17,200

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 71 | | 47 | 102 | 1.0% | 100% | | 44 | 0 | 29 |
| 1:00 | 46 | | 31 | 67 | 0.7% | 100% | | 39 | 0 | 26 |
| 2:00 | 39 | | 26 | 57 | 0.7% | 100% | | 50 | 0 | 33 |
| 3:00 | 28 | | 18 | 40 | 0.7% | 100% | | 60 | 0 | 40 |
| 4:00 | 81 | | 54 | 118 | 1.3% | 100% | | 75 | 0 | 50 |
| 5:00 | 243 | | 161 | 351 | 2.7% | 100% | | 84 | 0 | 55 |
| 6:00 | 469 | | 312 | 678 | 5.0% | 100% | | 121 | 0 | 81 |
| 7:00 | 551 | | 366 | 796 | 5.9% | 100% | | 152 | 0 | 101 |
| 8:00 | 508 | | 337 | 735 | 5.5% | 100% | | 150 | 0 | 100 |
| 9:00 | 414 | | 275 | 598 | 5.0% | 100% | | 177 | 0 | 118 |
| 10:00 | 466 | | 310 | 674 | 5.6% | 100% | | 200 | 0 | 133 |
| 11:00 | 479 | | 318 | 692 | 5.5% | 100% | | 181 | 0 | 120 |
| 12:00 | 540 | | 358 | 780 | 6.1% | 100% | | 182 | 0 | 121 |
| 13:00 | 530 | | 352 | 767 | 6.0% | 100% | | 180 | 0 | 119 |
| 14:00 | 606 | | 402 | 875 | 6.4% | 100% | | 161 | 0 | 107 |
| 15:00 | 688 | | 457 | 994 | 7.1% | 100% | | 156 | 0 | 104 |
| 16:00 | 712 | | 473 | 1,029 | 7.2% | 100% | | 146 | 0 | 97 |
| 17:00 | 786 | | 521 | 1,135 | 7.5% | 100% | | 109 | 0 | 72 |
| 18:00 | 588 | | 391 | 850 | 5.8% | 100% | | 102 | 0 | 68 |
| 19:00 | 447 | | 297 | 647 | 4.5% | 100% | | 90 | 0 | 60 |
| 20:00 | 346 | | 230 | 500 | 3.4% | 100% | | 55 | 0 | 37 |
| 21:00 | 262 | | 174 | 379 | 2.8% | 100% | | 74 | 0 | 49 |
| 22:00 | 192 | | 128 | 278 | 2.1% | 100% | | 63 | 0 | 42 |
| 23:00 | 110 | | 73 | 158 | 1.3% | 100% | | 48 | 0 | 32 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 86 | | | 90 | 86 | 90 | 86 |
| 1:00 | 102 | 98 | | | 102 | 98 | 102 | 98 |
| 2:00 | 125 | 120 | | | 125 | 120 | 125 | 120 |
| 3:00 | 176 | 168 | | | 176 | 168 | 176 | 168 |
| 4:00 | 107 | 102 | | | 107 | 102 | 107 | 102 |
| 5:00 | 75 | 71 | | | 75 | 71 | 75 | 71 |
| 6:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 7:00 | 71 | 68 | | | 71 | 67 | 71 | 68 |
| 8:00 | 72 | 69 | | | 72 | 69 | 72 | 69 |
| 9:00 | 79 | 76 | | | 79 | 76 | 79 | 76 |
| 10:00 | 79 | 76 | | | 79 | 76 | 79 | 76 |
| 11:00 | 76 | 73 | | | 76 | 73 | 76 | 73 |
| 12:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 13:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 14:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 15:00 | 68 | 65 | | | 68 | 65 | 68 | 65 |
| 16:00 | 67 | 64 | | | 67 | 64 | 67 | 64 |
| 17:00 | 63 | 61 | | | 63 | 60 | 63 | 61 |
| 18:00 | 65 | 62 | | | 65 | 62 | 65 | 62 |
| 19:00 | 67 | 64 | | | 67 | 64 | 67 | 64 |
| 20:00 | 64 | 62 | | | 64 | 61 | 64 | 62 |
| 21:00 | 71 | 68 | | | 71 | 68 | 71 | 68 |
| 22:00 | 73 | 70 | | | 73 | 70 | 73 | 70 |
| 23:00 | 80 | 77 | | | 80 | 76 | 80 | 77 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Morehead Ave (Ridgeway 87) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Soapstone Rd (Rte 687) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

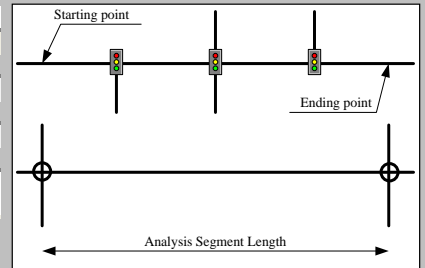
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 1 | | 1 | |
| 17. Analysis Segment No. of Signals: | 1 | | 1 | |
| 18. Average Cycle Length (sec.): | 180 | | 120 | |
| 19. Average Green Time per Cycle (sec.): | 148 | | 88 | |
| 20. Signal Coordination: | No Coord. | | No Coord. | |
| Delay caused by signal, mph: | 4 | | 5 | |

Note:

[Empty box for notes]

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 15,600 12,000 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 21,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

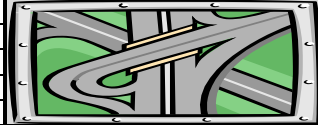
220
TBA

V 2018-0

Route: 220

From: Morehead Ave (Ridgeway 87)

To: Soapstone Rd (Rte 687)



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: 15,600 No-build

Design Year: 2040 ADT: 12,000 21,400

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 1:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 3:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 4:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.08 | A | 0.08 |
| 5:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.12 | A | 0.12 |
| 6:00 | 0.17 | A | | | | | 0.13 | A | 0.13 | A | 0.24 | A | 0.24 |
| 7:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 8:00 | 0.23 | A | | | | | 0.17 | A | 0.17 | A | 0.31 | B | 0.31 |
| 9:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | A | 0.30 |
| 10:00 | 0.24 | A | | | | | 0.18 | A | 0.18 | A | 0.33 | B | 0.33 |
| 11:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | B | 0.30 |
| 12:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.35 | B | 0.35 |
| 13:00 | 0.23 | A | | | | | 0.18 | A | 0.18 | A | 0.31 | B | 0.31 |
| 14:00 | 0.24 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 15:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 17:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.38 | B | 0.38 |
| 18:00 | 0.21 | A | | | | | 0.16 | A | 0.16 | A | 0.28 | A | 0.28 |
| 19:00 | 0.16 | A | | | | | 0.13 | A | 0.13 | A | 0.23 | A | 0.23 |
| 20:00 | 0.12 | A | | | | | 0.09 | A | 0.09 | A | 0.16 | A | 0.16 |
| 21:00 | 0.11 | A | | | | | 0.08 | A | 0.08 | A | 0.15 | A | 0.15 |
| 22:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.11 | A | 0.11 |
| 23:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 1:00 | 0.03 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 3:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 4:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.11 | A | 0.11 |
| 5:00 | 0.14 | A | | | | | 0.11 | A | 0.11 | A | 0.20 | A | 0.20 |
| 6:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | A | 0.30 |
| 7:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | B | 0.30 |
| 8:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | B | 0.30 |
| 9:00 | 0.21 | A | | | | | 0.17 | A | 0.17 | A | 0.29 | A | 0.29 |
| 10:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 11:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 12:00 | 0.25 | A | | | | | 0.19 | A | 0.19 | A | 0.34 | B | 0.34 |
| 13:00 | 0.27 | A | | | | | 0.20 | A | 0.20 | A | 0.36 | B | 0.36 |
| 14:00 | 0.26 | A | | | | | 0.20 | A | 0.20 | A | 0.36 | B | 0.36 |
| 15:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.21 | A | 0.21 | A | 0.37 | B | 0.37 |
| 17:00 | 0.26 | A | | | | | 0.20 | A | 0.20 | A | 0.36 | B | 0.36 |
| 18:00 | 0.22 | A | | | | | 0.17 | A | 0.17 | A | 0.30 | A | 0.30 |
| 19:00 | 0.17 | A | | | | | 0.13 | A | 0.13 | A | 0.24 | A | 0.24 |
| 20:00 | 0.12 | A | | | | | 0.10 | A | 0.10 | A | 0.17 | A | 0.17 |
| 21:00 | 0.12 | A | | | | | 0.09 | A | 0.09 | A | 0.16 | A | 0.16 |
| 22:00 | 0.09 | A | | | | | 0.07 | A | 0.07 | A | 0.13 | A | 0.13 |
| 23:00 | 0.07 | A | | | | | 0.05 | A | 0.05 | A | 0.09 | A | 0.09 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



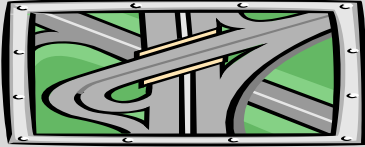
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---|---|--|---------------|
| Route: 220 |  | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,000 | 21,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 54 | | | 41 | 74 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 28 | | | 22 | 39 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 27 | | | 21 | 37 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 11 | | | 8 | 15 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 36 | | | 28 | 50 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 97 | | | 75 | 134 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 239 | | | 184 | 328 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 371 | | | 285 | 509 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 349 | | | 269 | 479 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 268 | | | 206 | 368 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 306 | | | 236 | 420 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 308 | | | 237 | 422 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 361 | | | 277 | 495 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 330 | | | 254 | 453 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 394 | | | 303 | 540 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 447 | | | 344 | 613 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 497 | | | 382 | 682 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 547 | | | 421 | 750 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 417 | | | 321 | 572 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 326 | | | 251 | 447 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 230 | | | 177 | 315 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 175 | | | 135 | 241 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 119 | | | 91 | 163 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 64 | | | 49 | 88 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 21 | | | 16 | 29 |
| 1:00 | 1 | | | 1 | 2 | 28 | | | 22 | 39 |
| 2:00 | 0 | | | 0 | 0 | 36 | | | 27 | 49 |
| 3:00 | 1 | | | 1 | 2 | 34 | | | 26 | 47 |
| 4:00 | 3 | | | 3 | 5 | 41 | | | 32 | 56 |
| 5:00 | 3 | | | 2 | 4 | 46 | | | 36 | 64 |
| 6:00 | 12 | | | 9 | 17 | 72 | | | 55 | 99 |
| 7:00 | 21 | | | 16 | 29 | 88 | | | 68 | 121 |
| 8:00 | 12 | | | 9 | 17 | 83 | | | 64 | 113 |
| 9:00 | 27 | | | 21 | 37 | 92 | | | 71 | 126 |
| 10:00 | 13 | | | 10 | 18 | 114 | | | 87 | 156 |
| 11:00 | 9 | | | 7 | 12 | 97 | | | 75 | 134 |
| 12:00 | 11 | | | 9 | 16 | 109 | | | 84 | 149 |
| 13:00 | 17 | | | 13 | 23 | 89 | | | 68 | 122 |
| 14:00 | 13 | | | 10 | 18 | 84 | | | 65 | 115 |
| 15:00 | 14 | | | 11 | 19 | 89 | | | 68 | 122 |
| 16:00 | 9 | | | 7 | 13 | 72 | | | 55 | 99 |
| 17:00 | 6 | | | 5 | 8 | 60 | | | 46 | 82 |
| 18:00 | 4 | | | 3 | 6 | 45 | | | 35 | 62 |
| 19:00 | 7 | | | 5 | 9 | 34 | | | 26 | 47 |
| 20:00 | 4 | | | 3 | 6 | 28 | | | 22 | 39 |
| 21:00 | 5 | | | 4 | 7 | 38 | | | 29 | 53 |
| 22:00 | 1 | | | 1 | 2 | 37 | | | 28 | 51 |
| 23:00 | 1 | | | 1 | 2 | 25 | | | 19 | 34 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | | | | | |
|--|------------------------------|--------------------|--------------------------------|---|---|------------|-----------------------|------------|
| Route: 220 | | | | Area Type: Exurban | | | | |
| From: Morehead Ave (Ridgeway 87) | | | | Traffic Assignment: Constrained - Noise Study | | | | |
| To: Soapstone Rd (Rte 687) | | | | Existing Year: 2018 ADT: 15,600 | No-build | | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 12,000 | 21,400 | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--|--|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 12,000 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 39 | | | 30 | 53 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 32 | | | 25 | 44 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 25 | | | 19 | 34 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 26 | | | 20 | 35 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 71 | | | 54 | 97 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 221 | | | 170 | 303 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 376 | | | 289 | 516 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 351 | | | 270 | 482 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 317 | | | 244 | 435 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 275 | | | 211 | 377 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 305 | | | 235 | 418 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 320 | | | 246 | 439 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 347 | | | 267 | 475 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 365 | | | 281 | 500 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 400 | | | 308 | 549 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 455 | | | 350 | 624 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 437 | | | 336 | 599 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 483 | | | 372 | 663 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 354 | | | 272 | 486 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 261 | | | 200 | 358 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 224 | | | 172 | 307 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 169 | | | 130 | 231 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 133 | | | 102 | 182 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 80 | | | 61 | 110 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 32 | | | 25 | 44 |
| 1:00 | 3 | | | 3 | 5 | 18 | | | 14 | 25 |
| 2:00 | 3 | | | 2 | 4 | 27 | | | 21 | 37 |
| 3:00 | 3 | | | 3 | 5 | 40 | | | 30 | 54 |
| 4:00 | 4 | | | 3 | 6 | 50 | | | 39 | 69 |
| 5:00 | 2 | | | 2 | 3 | 58 | | | 45 | 80 |
| 6:00 | 6 | | | 5 | 8 | 69 | | | 53 | 95 |
| 7:00 | 15 | | | 11 | 20 | 75 | | | 58 | 103 |
| 8:00 | 6 | | | 5 | 8 | 96 | | | 74 | 132 |
| 9:00 | 12 | | | 9 | 17 | 101 | | | 78 | 139 |
| 10:00 | 17 | | | 13 | 23 | 118 | | | 91 | 162 |
| 11:00 | 13 | | | 10 | 18 | 118 | | | 91 | 162 |
| 12:00 | 13 | | | 10 | 18 | 105 | | | 81 | 145 |
| 13:00 | 16 | | | 12 | 22 | 114 | | | 88 | 157 |
| 14:00 | 13 | | | 10 | 18 | 101 | | | 78 | 139 |
| 15:00 | 13 | | | 10 | 18 | 89 | | | 68 | 122 |
| 16:00 | 12 | | | 9 | 17 | 97 | | | 75 | 134 |
| 17:00 | 9 | | | 7 | 12 | 68 | | | 52 | 93 |
| 18:00 | 12 | | | 9 | 17 | 73 | | | 56 | 100 |
| 19:00 | 8 | | | 6 | 11 | 69 | | | 53 | 94 |
| 20:00 | 4 | | | 3 | 6 | 36 | | | 28 | 50 |
| 21:00 | 1 | | | 1 | 1 | 52 | | | 40 | 72 |
| 22:00 | 1 | | | 1 | 2 | 42 | | | 33 | 58 |
| 23:00 | 3 | | | 3 | 5 | 34 | | | 26 | 46 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---|---------------------------|--|
| Route: 220 | | Area Type: Exurban |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,000 21,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 12,000 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 93 | | 71 | 127 | 1.0% | 100% | | 57 | 0 | 44 |
| 1:00 | 60 | | 47 | 83 | 0.7% | 100% | | 51 | 0 | 39 |
| 2:00 | 52 | | 40 | 71 | 0.7% | 100% | | 65 | 0 | 50 |
| 3:00 | 36 | | 28 | 50 | 0.7% | 100% | | 79 | 0 | 60 |
| 4:00 | 107 | | 82 | 147 | 1.3% | 100% | | 99 | 0 | 76 |
| 5:00 | 318 | | 245 | 437 | 2.7% | 100% | | 109 | 0 | 84 |
| 6:00 | 615 | | 473 | 844 | 5.0% | 100% | | 159 | 0 | 122 |
| 7:00 | 722 | | 555 | 991 | 5.9% | 100% | | 199 | 0 | 153 |
| 8:00 | 666 | | 513 | 914 | 5.5% | 100% | | 197 | 0 | 151 |
| 9:00 | 543 | | 418 | 745 | 5.0% | 100% | | 232 | 0 | 179 |
| 10:00 | 611 | | 470 | 839 | 5.6% | 100% | | 262 | 0 | 202 |
| 11:00 | 627 | | 483 | 861 | 5.5% | 100% | | 238 | 0 | 183 |
| 12:00 | 707 | | 544 | 970 | 6.1% | 100% | | 238 | 0 | 183 |
| 13:00 | 695 | | 535 | 954 | 6.0% | 100% | | 236 | 0 | 181 |
| 14:00 | 794 | | 611 | 1,089 | 6.4% | 100% | | 211 | 0 | 162 |
| 15:00 | 901 | | 693 | 1,237 | 7.1% | 100% | | 205 | 0 | 158 |
| 16:00 | 934 | | 718 | 1,281 | 7.2% | 100% | | 191 | 0 | 147 |
| 17:00 | 1,030 | | 792 | 1,413 | 7.5% | 100% | | 142 | 0 | 110 |
| 18:00 | 771 | | 593 | 1,058 | 5.8% | 100% | | 134 | 0 | 103 |
| 19:00 | 586 | | 451 | 804 | 4.5% | 100% | | 118 | 0 | 90 |
| 20:00 | 453 | | 349 | 622 | 3.4% | 100% | | 73 | 0 | 56 |
| 21:00 | 344 | | 265 | 472 | 2.8% | 100% | | 97 | 0 | 74 |
| 22:00 | 252 | | 194 | 346 | 2.1% | 100% | | 82 | 0 | 63 |
| 23:00 | 144 | | 111 | 197 | 1.3% | 100% | | 63 | 0 | 49 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 83 | | | 90 | 80 | 90 | 83 |
| 1:00 | 102 | 95 | | | 102 | 92 | 102 | 95 |
| 2:00 | 125 | 116 | | | 125 | 112 | 125 | 116 |
| 3:00 | 176 | 163 | | | 176 | 157 | 176 | 163 |
| 4:00 | 107 | 99 | | | 107 | 96 | 107 | 99 |
| 5:00 | 75 | 69 | | | 75 | 67 | 75 | 69 |
| 6:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 7:00 | 71 | 66 | | | 71 | 63 | 71 | 66 |
| 8:00 | 72 | 67 | | | 72 | 64 | 72 | 67 |
| 9:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 10:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 11:00 | 76 | 71 | | | 76 | 69 | 76 | 71 |
| 12:00 | 74 | 69 | | | 74 | 66 | 74 | 69 |
| 13:00 | 74 | 69 | | | 74 | 67 | 74 | 69 |
| 14:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 15:00 | 68 | 63 | | | 68 | 61 | 68 | 63 |
| 16:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 17:00 | 63 | 59 | | | 63 | 57 | 63 | 59 |
| 18:00 | 65 | 60 | | | 65 | 58 | 65 | 60 |
| 19:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 20:00 | 64 | 60 | | | 64 | 58 | 64 | 60 |
| 21:00 | 71 | 66 | | | 71 | 64 | 71 | 66 |
| 22:00 | 73 | 68 | | | 73 | 66 | 73 | 68 |
| 23:00 | 80 | 74 | | | 80 | 72 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.90

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beging: Soapstone Rd (Rte 687) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Water Plant Rd 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

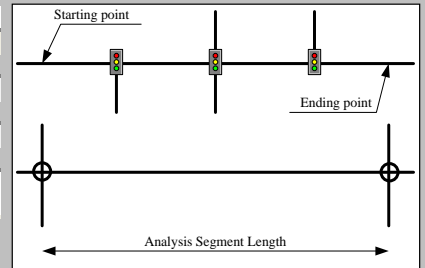
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 3 | | 3 | |
| 17. Analysis Segment No. of Signals: | 1 | | 1 | |
| 18. Average Cycle Length (sec.): | 135 | | 90 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 58 | |
| 20. Signal Coordination: | No Coord. | | No Coord. | |
| Delay caused by signal, mph: | 3 | | 5 | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 18,000 14,300 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 23,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
From: Soapstone Rd (Rte 687)
To: Water Plant Rd
Jurisdiction: 2. Salem/Henry Co
Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
Existing Year: 2018 ADT: 18,000 No-build
Design Year: 2040 ADT: 14,300 23,400

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 1:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 2:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 3:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 4:00 | 0.07 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 5:00 | 0.10 | A | | | | | 0.08 | A | 0.08 | A | 0.13 | A | 0.13 |
| 6:00 | 0.20 | A | | | | | 0.16 | A | 0.16 | A | 0.26 | A | 0.26 |
| 7:00 | 0.29 | A | | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 8:00 | 0.26 | A | | | | | 0.21 | A | 0.21 | A | 0.34 | B | 0.34 |
| 9:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 10:00 | 0.28 | A | | | | | 0.22 | A | 0.22 | A | 0.36 | B | 0.36 |
| 11:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 12:00 | 0.29 | A | | | | | 0.23 | A | 0.23 | A | 0.38 | B | 0.38 |
| 13:00 | 0.26 | A | | | | | 0.21 | A | 0.21 | A | 0.34 | B | 0.34 |
| 14:00 | 0.28 | A | | | | | 0.22 | A | 0.22 | A | 0.37 | B | 0.37 |
| 15:00 | 0.31 | B | | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 16:00 | 0.31 | B | | | | | 0.25 | A | 0.25 | A | 0.40 | B | 0.40 |
| 17:00 | 0.32 | B | | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 18:00 | 0.24 | A | | | | | 0.19 | A | 0.19 | A | 0.31 | B | 0.31 |
| 19:00 | 0.19 | A | | | | | 0.15 | A | 0.15 | A | 0.25 | A | 0.25 |
| 20:00 | 0.14 | A | | | | | 0.11 | A | 0.11 | A | 0.18 | A | 0.18 |
| 21:00 | 0.13 | A | | | | | 0.10 | A | 0.10 | A | 0.16 | A | 0.16 |
| 22:00 | 0.10 | A | | | | | 0.08 | A | 0.08 | A | 0.12 | A | 0.12 |
| 23:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 1:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 3:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | | 0.07 | A | 0.07 | A | 0.12 | A | 0.12 |
| 5:00 | 0.17 | A | | | | | 0.13 | A | 0.13 | A | 0.21 | A | 0.21 |
| 6:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 7:00 | 0.26 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 8:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 9:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.32 | B | 0.32 |
| 10:00 | 0.29 | A | | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 11:00 | 0.29 | A | | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 12:00 | 0.28 | A | | | | | 0.23 | A | 0.23 | A | 0.37 | B | 0.37 |
| 13:00 | 0.31 | B | | | | | 0.24 | A | 0.24 | A | 0.40 | B | 0.40 |
| 14:00 | 0.30 | B | | | | | 0.24 | A | 0.24 | A | 0.40 | B | 0.40 |
| 15:00 | 0.32 | B | | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 16:00 | 0.32 | B | | | | | 0.25 | A | 0.25 | A | 0.41 | B | 0.41 |
| 17:00 | 0.30 | A | | | | | 0.24 | A | 0.24 | A | 0.39 | B | 0.39 |
| 18:00 | 0.25 | A | | | | | 0.20 | A | 0.20 | A | 0.33 | B | 0.33 |
| 19:00 | 0.20 | A | | | | | 0.16 | A | 0.16 | A | 0.26 | A | 0.26 |
| 20:00 | 0.14 | A | | | | | 0.11 | A | 0.11 | A | 0.19 | A | 0.19 |
| 21:00 | 0.13 | A | | | | | 0.11 | A | 0.11 | A | 0.17 | A | 0.17 |
| 22:00 | 0.11 | A | | | | | 0.09 | A | 0.09 | A | 0.14 | A | 0.14 |
| 23:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.10 | A | 0.10 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | |
|--|---------------------------|--|---------------|--|
| Route: 220 | | Area Type: Exurban | | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,300 | 23,400 | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 62 | | | 49 | 81 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 33 | | | 26 | 42 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 31 | | | 25 | 40 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 12 | | | 10 | 16 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 42 | | | 33 | 54 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 112 | | | 89 | 146 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 276 | | | 219 | 359 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 428 | | | 340 | 556 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 403 | | | 320 | 524 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 309 | | | 246 | 402 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 353 | | | 281 | 459 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 355 | | | 282 | 461 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 416 | | | 331 | 541 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 381 | | | 303 | 496 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 454 | | | 361 | 590 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 515 | | | 409 | 670 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 574 | | | 456 | 746 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 631 | | | 501 | 820 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 481 | | | 382 | 626 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 376 | | | 299 | 489 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 265 | | | 211 | 345 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 202 | | | 161 | 263 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 137 | | | 109 | 178 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 74 | | | 58 | 96 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 24 | | | 19 | 31 |
| 1:00 | 2 | | | 1 | 2 | 33 | | | 26 | 42 |
| 2:00 | 0 | | | 0 | 0 | 41 | | | 33 | 53 |
| 3:00 | 2 | | | 1 | 2 | 40 | | | 31 | 51 |
| 4:00 | 4 | | | 3 | 5 | 47 | | | 38 | 61 |
| 5:00 | 3 | | | 2 | 4 | 53 | | | 42 | 70 |
| 6:00 | 14 | | | 11 | 18 | 83 | | | 66 | 108 |
| 7:00 | 24 | | | 19 | 31 | 102 | | | 81 | 132 |
| 8:00 | 14 | | | 11 | 18 | 95 | | | 76 | 124 |
| 9:00 | 31 | | | 25 | 40 | 106 | | | 84 | 138 |
| 10:00 | 16 | | | 12 | 20 | 131 | | | 104 | 170 |
| 11:00 | 10 | | | 8 | 13 | 112 | | | 89 | 146 |
| 12:00 | 13 | | | 10 | 17 | 126 | | | 100 | 163 |
| 13:00 | 19 | | | 15 | 25 | 102 | | | 81 | 133 |
| 14:00 | 15 | | | 12 | 19 | 97 | | | 77 | 126 |
| 15:00 | 16 | | | 13 | 21 | 102 | | | 81 | 133 |
| 16:00 | 11 | | | 9 | 14 | 83 | | | 66 | 108 |
| 17:00 | 7 | | | 6 | 9 | 69 | | | 55 | 90 |
| 18:00 | 5 | | | 4 | 6 | 52 | | | 41 | 68 |
| 19:00 | 8 | | | 6 | 10 | 40 | | | 31 | 51 |
| 20:00 | 5 | | | 4 | 6 | 33 | | | 26 | 42 |
| 21:00 | 6 | | | 5 | 8 | 44 | | | 35 | 57 |
| 22:00 | 2 | | | 1 | 2 | 43 | | | 34 | 55 |
| 23:00 | 2 | | | 1 | 2 | 29 | | | 23 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,300 23,400 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|------------|--|--|---|------------|-----------------------|------------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 14,300 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 45 | | | 36 | 58 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 37 | | | 30 | 48 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 29 | | | 23 | 37 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 29 | | | 23 | 38 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 81 | | | 65 | 106 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 255 | | | 203 | 332 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 434 | | | 345 | 564 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 405 | | | 322 | 527 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 366 | | | 291 | 476 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 317 | | | 252 | 412 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 352 | | | 280 | 457 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 369 | | | 293 | 480 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 400 | | | 318 | 520 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 421 | | | 334 | 547 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 462 | | | 367 | 601 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 525 | | | 417 | 682 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 504 | | | 400 | 655 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 557 | | | 443 | 724 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 408 | | | 325 | 531 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 301 | | | 239 | 391 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 258 | | | 205 | 336 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 195 | | | 155 | 253 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 153 | | | 122 | 200 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 92 | | | 73 | 120 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 37 | | | 30 | 48 |
| 1:00 | 4 | | | 3 | 5 | 21 | | | 17 | 27 |
| 2:00 | 3 | | | 2 | 4 | 31 | | | 25 | 40 |
| 3:00 | 4 | | | 3 | 5 | 46 | | | 36 | 59 |
| 4:00 | 5 | | | 4 | 6 | 58 | | | 46 | 76 |
| 5:00 | 2 | | | 2 | 3 | 67 | | | 54 | 88 |
| 6:00 | 7 | | | 6 | 9 | 80 | | | 63 | 104 |
| 7:00 | 17 | | | 14 | 22 | 87 | | | 69 | 113 |
| 8:00 | 7 | | | 6 | 9 | 111 | | | 88 | 144 |
| 9:00 | 14 | | | 11 | 18 | 117 | | | 93 | 152 |
| 10:00 | 19 | | | 15 | 25 | 136 | | | 108 | 177 |
| 11:00 | 16 | | | 12 | 20 | 136 | | | 108 | 177 |
| 12:00 | 15 | | | 12 | 19 | 122 | | | 97 | 158 |
| 13:00 | 19 | | | 15 | 24 | 132 | | | 105 | 171 |
| 14:00 | 15 | | | 12 | 19 | 117 | | | 93 | 152 |
| 15:00 | 16 | | | 12 | 20 | 102 | | | 81 | 133 |
| 16:00 | 14 | | | 11 | 18 | 112 | | | 89 | 146 |
| 17:00 | 10 | | | 8 | 13 | 78 | | | 62 | 102 |
| 18:00 | 14 | | | 11 | 18 | 84 | | | 67 | 109 |
| 19:00 | 9 | | | 7 | 12 | 79 | | | 63 | 103 |
| 20:00 | 5 | | | 4 | 6 | 42 | | | 33 | 54 |
| 21:00 | 1 | | | 1 | 1 | 60 | | | 48 | 79 |
| 22:00 | 2 | | | 1 | 2 | 49 | | | 39 | 63 |
| 23:00 | 4 | | | 3 | 5 | 39 | | | 31 | 50 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,300 23,400 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 50 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|--|---------------|
| Route: 220 | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 14,300 | 23,400 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 107 | | | 85 | 139 | 1.0% | 100% | 66 | 0 | 52 |
| 1:00 | 70 | | | 55 | 91 | 0.7% | 100% | 59 | 0 | 47 |
| 2:00 | 60 | | | 47 | 78 | 0.7% | 100% | 75 | 0 | 60 |
| 3:00 | 42 | | | 33 | 54 | 0.7% | 100% | 91 | 0 | 72 |
| 4:00 | 123 | | | 98 | 160 | 1.3% | 100% | 114 | 0 | 91 |
| 5:00 | 367 | | | 292 | 478 | 2.7% | 100% | 126 | 0 | 100 |
| 6:00 | 710 | | | 564 | 923 | 5.0% | 100% | 184 | 0 | 146 |
| 7:00 | 833 | | | 662 | 1,083 | 5.9% | 100% | 229 | 0 | 182 |
| 8:00 | 769 | | | 611 | 1,000 | 5.5% | 100% | 227 | 0 | 180 |
| 9:00 | 626 | | | 498 | 814 | 5.0% | 100% | 268 | 0 | 213 |
| 10:00 | 705 | | | 560 | 917 | 5.6% | 100% | 302 | 0 | 240 |
| 11:00 | 724 | | | 575 | 941 | 5.5% | 100% | 274 | 0 | 218 |
| 12:00 | 816 | | | 648 | 1,061 | 6.1% | 100% | 275 | 0 | 219 |
| 13:00 | 802 | | | 637 | 1,043 | 6.0% | 100% | 272 | 0 | 216 |
| 14:00 | 916 | | | 728 | 1,191 | 6.4% | 100% | 243 | 0 | 193 |
| 15:00 | 1,040 | | | 826 | 1,352 | 7.1% | 100% | 236 | 0 | 188 |
| 16:00 | 1,077 | | | 856 | 1,401 | 7.2% | 100% | 220 | 0 | 175 |
| 17:00 | 1,188 | | | 944 | 1,545 | 7.5% | 100% | 164 | 0 | 131 |
| 18:00 | 890 | | | 707 | 1,157 | 5.8% | 100% | 154 | 0 | 123 |
| 19:00 | 677 | | | 538 | 880 | 4.5% | 100% | 136 | 0 | 108 |
| 20:00 | 523 | | | 416 | 680 | 3.4% | 100% | 84 | 0 | 67 |
| 21:00 | 397 | | | 315 | 516 | 2.8% | 100% | 112 | 0 | 89 |
| 22:00 | 291 | | | 231 | 378 | 2.1% | 100% | 95 | 0 | 75 |
| 23:00 | 166 | | | 132 | 216 | 1.3% | 100% | 73 | 0 | 58 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 83 | | | 90 | 80 | 90 | 83 |
| 1:00 | 102 | 95 | | | 102 | 92 | 102 | 95 |
| 2:00 | 125 | 116 | | | 125 | 112 | 125 | 116 |
| 3:00 | 176 | 163 | | | 176 | 158 | 176 | 163 |
| 4:00 | 107 | 99 | | | 107 | 96 | 107 | 99 |
| 5:00 | 75 | 69 | | | 75 | 67 | 75 | 69 |
| 6:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 7:00 | 71 | 65 | | | 71 | 63 | 71 | 65 |
| 8:00 | 72 | 66 | | | 72 | 64 | 72 | 66 |
| 9:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 10:00 | 79 | 73 | | | 79 | 71 | 79 | 73 |
| 11:00 | 76 | 71 | | | 76 | 69 | 76 | 71 |
| 12:00 | 74 | 69 | | | 74 | 67 | 74 | 69 |
| 13:00 | 74 | 69 | | | 74 | 67 | 74 | 69 |
| 14:00 | 70 | 65 | | | 70 | 63 | 70 | 65 |
| 15:00 | 68 | 63 | | | 68 | 61 | 68 | 63 |
| 16:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 17:00 | 63 | 58 | | | 63 | 57 | 63 | 58 |
| 18:00 | 65 | 60 | | | 65 | 58 | 65 | 60 |
| 19:00 | 67 | 62 | | | 67 | 60 | 67 | 62 |
| 20:00 | 64 | 60 | | | 64 | 58 | 64 | 60 |
| 21:00 | 71 | 66 | | | 71 | 64 | 71 | 66 |
| 22:00 | 73 | 68 | | | 73 | 66 | 73 | 68 |
| 23:00 | 80 | 74 | | | 80 | 72 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 1.50

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Water Plant Rd 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Rte 58/Rte 220 Interchange 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

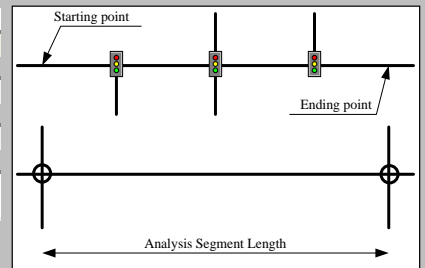
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 45 | 45 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 48 | 48 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------------|------------|------------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 10 | | 10 | |
| 17. Analysis Segment No. of Signals: | 2 | | 2 | |
| 18. Average Cycle Length (sec.): | 108 | | 108 | |
| 19. Average Green Time per Cycle (sec.): | 93 | | 93 | |
| 20. Signal Coordination: | Excellent Coord. | | Excellent Coord. | |
| Delay caused by signal, mph: | 0 | | 0 | |

Note:

[Empty box for notes]

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 25,300 22,000 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 31,900

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

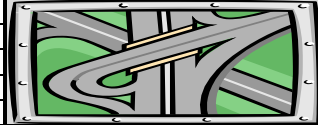
220
TBA

V 2018-0

Route: 220

From: Water Plant Rd

To: Rte 58/Rte 220 Interchange



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: 25,300 No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 Hours

Design Year: 2040 ADT: 22,000 31,900

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 1:00 | 0.06 | A | | | | | 0.06 | A | 0.06 | A | 0.08 | A | 0.08 |
| 2:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 3:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | | 0.08 | A | 0.08 | A | 0.12 | A | 0.12 |
| 5:00 | 0.14 | A | | | | | 0.12 | A | 0.12 | A | 0.17 | A | 0.17 |
| 6:00 | 0.28 | A | | | | | 0.24 | A | 0.24 | A | 0.35 | B | 0.35 |
| 7:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 8:00 | 0.37 | B | | | | | 0.32 | B | 0.32 | B | 0.46 | B | 0.46 |
| 9:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 10:00 | 0.39 | B | | | | | 0.34 | B | 0.34 | B | 0.49 | B | 0.49 |
| 11:00 | 0.36 | B | | | | | 0.31 | B | 0.31 | B | 0.45 | B | 0.45 |
| 12:00 | 0.41 | B | | | | | 0.36 | B | 0.36 | B | 0.52 | C | 0.52 |
| 13:00 | 0.37 | B | | | | | 0.32 | B | 0.32 | B | 0.47 | B | 0.47 |
| 14:00 | 0.40 | B | | | | | 0.34 | B | 0.34 | B | 0.50 | B | 0.50 |
| 15:00 | 0.44 | B | | | | | 0.38 | B | 0.38 | B | 0.55 | C | 0.55 |
| 16:00 | 0.44 | B | | | | | 0.38 | B | 0.38 | B | 0.55 | C | 0.55 |
| 17:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 18:00 | 0.34 | B | | | | | 0.29 | A | 0.29 | A | 0.42 | B | 0.42 |
| 19:00 | 0.27 | A | | | | | 0.23 | A | 0.23 | A | 0.34 | B | 0.34 |
| 20:00 | 0.19 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 21:00 | 0.18 | A | | | | | 0.15 | A | 0.15 | A | 0.22 | A | 0.22 |
| 22:00 | 0.13 | A | | | | | 0.12 | A | 0.12 | A | 0.17 | A | 0.17 |
| 23:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |
| 1:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |
| 2:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 3:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |
| 4:00 | 0.13 | A | | | | | 0.11 | A | 0.11 | A | 0.16 | A | 0.16 |
| 5:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.29 | A | 0.29 |
| 6:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 7:00 | 0.36 | B | | | | | 0.31 | B | 0.31 | B | 0.45 | B | 0.45 |
| 8:00 | 0.36 | B | | | | | 0.31 | B | 0.31 | B | 0.45 | B | 0.45 |
| 9:00 | 0.35 | B | | | | | 0.30 | B | 0.30 | B | 0.44 | B | 0.44 |
| 10:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 11:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 12:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.51 | C | 0.51 |
| 13:00 | 0.43 | B | | | | | 0.37 | B | 0.37 | B | 0.54 | C | 0.54 |
| 14:00 | 0.43 | B | | | | | 0.37 | B | 0.37 | B | 0.54 | C | 0.54 |
| 15:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 16:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 17:00 | 0.42 | B | | | | | 0.37 | B | 0.37 | B | 0.53 | C | 0.53 |
| 18:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 19:00 | 0.28 | A | | | | | 0.25 | A | 0.25 | A | 0.36 | B | 0.36 |
| 20:00 | 0.20 | A | | | | | 0.18 | A | 0.18 | A | 0.26 | A | 0.26 |
| 21:00 | 0.19 | A | | | | | 0.16 | A | 0.16 | A | 0.24 | A | 0.24 |
| 22:00 | 0.15 | A | | | | | 0.13 | A | 0.13 | A | 0.19 | A | 0.19 |
| 23:00 | 0.11 | A | | | | | 0.09 | A | 0.09 | A | 0.14 | A | 0.14 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--------------------|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 22,000 | 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 87 | | 76 | 110 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 46 | | 40 | 58 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 44 | | 38 | 55 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 17 | | 15 | 22 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 59 | | 51 | 74 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 158 | | 137 | 199 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 388 | | 337 | 489 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 601 | | 523 | 758 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 567 | | 493 | 714 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 435 | | 378 | 548 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 497 | | 432 | 626 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 499 | | 434 | 629 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 585 | | 509 | 738 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 536 | | 466 | 676 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 638 | | 555 | 805 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 724 | | 630 | 913 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 806 | | 701 | 1,016 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 887 | | 771 | 1,118 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 677 | | 588 | 853 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 528 | | 459 | 666 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 373 | | 324 | 470 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 284 | | 247 | 359 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 193 | | 168 | 243 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 103 | | 90 | 130 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 3 | | 3 | 4 | 34 | | | 29 | 43 |
| 1:00 | 2 | | 2 | 3 | 46 | | | 40 | 58 |
| 2:00 | 0 | | 0 | 0 | 58 | | | 50 | 73 |
| 3:00 | 2 | | 2 | 3 | 56 | | | 48 | 70 |
| 4:00 | 5 | | 5 | 7 | 66 | | | 58 | 84 |
| 5:00 | 4 | | 4 | 5 | 75 | | | 65 | 95 |
| 6:00 | 20 | | 17 | 25 | 117 | | | 101 | 147 |
| 7:00 | 34 | | 29 | 43 | 143 | | | 124 | 180 |
| 8:00 | 20 | | 17 | 25 | 134 | | | 117 | 169 |
| 9:00 | 44 | | 38 | 55 | 149 | | | 130 | 188 |
| 10:00 | 22 | | 19 | 27 | 184 | | | 160 | 232 |
| 11:00 | 14 | | 12 | 18 | 158 | | | 137 | 199 |
| 12:00 | 19 | | 16 | 23 | 176 | | | 153 | 223 |
| 13:00 | 27 | | 24 | 34 | 144 | | | 125 | 181 |
| 14:00 | 21 | | 18 | 26 | 136 | | | 118 | 172 |
| 15:00 | 23 | | 20 | 29 | 144 | | | 125 | 181 |
| 16:00 | 15 | | 13 | 19 | 117 | | | 101 | 147 |
| 17:00 | 10 | | 9 | 12 | 97 | | | 84 | 122 |
| 18:00 | 7 | | 6 | 8 | 73 | | | 63 | 92 |
| 19:00 | 11 | | 9 | 14 | 56 | | | 48 | 70 |
| 20:00 | 7 | | 6 | 8 | 46 | | | 40 | 58 |
| 21:00 | 9 | | 8 | 11 | 62 | | | 54 | 78 |
| 22:00 | 2 | | 2 | 3 | 60 | | | 52 | 76 |
| 23:00 | 2 | | 2 | 3 | 40 | | | 35 | 51 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | | | | | |
|--|------------------------------|--------------------|--------------------------------|---|---|-----------|-----------------------|-----------|
| Route: 220 | | | | Area Type: Exurban | | | | |
| From: Water Plant Rd | | | | Traffic Assignment: Constrained - Noise Study | | | | |
| To: Rte 58/Rte 220 Interchange | | | | Existing Year: 2018 ADT: 25,300 | | No-build | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 22,000 | | 31,900 | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
| | Calc. Existing (PS= 45) | | | | Design (PS= 45) | | Design Nbl'd (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 1:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 2:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 3:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 4:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 5:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 6:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 7:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 8:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 9:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 10:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 11:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 12:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 13:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 14:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 15:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 16:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 17:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 18:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 19:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 20:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 21:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 22:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 23:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--|--|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 22,000 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 63 | | | 55 | 80 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 52 | | | 45 | 66 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 40 | | | 35 | 51 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 41 | | | 36 | 52 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 114 | | | 99 | 144 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 358 | | | 312 | 452 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 610 | | | 531 | 769 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 570 | | | 495 | 718 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 514 | | | 447 | 648 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 446 | | | 387 | 562 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 495 | | | 430 | 624 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 519 | | | 451 | 654 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 562 | | | 489 | 709 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 592 | | | 514 | 746 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 649 | | | 565 | 819 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 738 | | | 641 | 930 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 708 | | | 616 | 893 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 783 | | | 681 | 988 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 574 | | | 499 | 724 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 423 | | | 368 | 533 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 363 | | | 315 | 457 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 273 | | | 238 | 345 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 216 | | | 188 | 272 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 130 | | | 113 | 163 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 3 | | | 3 | 4 | 52 | | | 45 | 66 |
| 1:00 | 5 | | | 5 | 7 | 29 | | | 26 | 37 |
| 2:00 | 4 | | | 4 | 5 | 44 | | | 38 | 55 |
| 3:00 | 5 | | | 5 | 7 | 64 | | | 56 | 81 |
| 4:00 | 7 | | | 6 | 8 | 82 | | | 71 | 103 |
| 5:00 | 3 | | | 3 | 4 | 95 | | | 82 | 120 |
| 6:00 | 10 | | | 9 | 12 | 112 | | | 98 | 141 |
| 7:00 | 24 | | | 21 | 30 | 122 | | | 106 | 154 |
| 8:00 | 10 | | | 9 | 12 | 156 | | | 135 | 196 |
| 9:00 | 20 | | | 17 | 25 | 165 | | | 143 | 207 |
| 10:00 | 27 | | | 24 | 34 | 192 | | | 167 | 242 |
| 11:00 | 22 | | | 19 | 27 | 192 | | | 167 | 242 |
| 12:00 | 21 | | | 18 | 26 | 171 | | | 149 | 216 |
| 13:00 | 26 | | | 23 | 33 | 185 | | | 161 | 234 |
| 14:00 | 21 | | | 18 | 26 | 165 | | | 143 | 207 |
| 15:00 | 22 | | | 19 | 27 | 144 | | | 125 | 181 |
| 16:00 | 20 | | | 17 | 25 | 158 | | | 137 | 199 |
| 17:00 | 14 | | | 12 | 18 | 110 | | | 96 | 139 |
| 18:00 | 20 | | | 17 | 25 | 118 | | | 102 | 148 |
| 19:00 | 13 | | | 11 | 16 | 111 | | | 97 | 140 |
| 20:00 | 7 | | | 6 | 8 | 59 | | | 51 | 74 |
| 21:00 | 1 | | | 1 | 1 | 85 | | | 74 | 107 |
| 22:00 | 2 | | | 2 | 3 | 69 | | | 60 | 87 |
| 23:00 | 5 | | | 5 | 7 | 54 | | | 47 | 69 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--------------------|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 22,000 | 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|----------------------|-----------|
| | Calc. Existing (PS= 45) | | | | Design (PS= 45) | | Design Nbfd (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 1:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 2:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 3:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 4:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 5:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 6:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 7:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 8:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 9:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 10:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 11:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 12:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 13:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 14:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 15:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 16:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 17:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 18:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 19:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 20:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 21:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 22:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 23:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | |
|--|--|--|---------------|--|
| Route: 220 | | Area Type: Exurban | | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 22,000 | 31,900 | |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 150 | | | 131 | 190 | 1.0% | 100% | | 93 | 0 | 81 |
| 1:00 | 98 | | | 85 | 124 | 0.7% | 100% | | 83 | 0 | 72 |
| 2:00 | 84 | | | 73 | 106 | 0.7% | 100% | | 106 | 0 | 92 |
| 3:00 | 59 | | | 51 | 74 | 0.7% | 100% | | 127 | 0 | 111 |
| 4:00 | 173 | | | 151 | 218 | 1.3% | 100% | | 160 | 0 | 139 |
| 5:00 | 516 | | | 449 | 651 | 2.7% | 100% | | 178 | 0 | 154 |
| 6:00 | 998 | | | 868 | 1,258 | 5.0% | 100% | | 258 | 0 | 225 |
| 7:00 | 1,171 | | | 1,018 | 1,477 | 5.9% | 100% | | 322 | 0 | 280 |
| 8:00 | 1,081 | | | 940 | 1,363 | 5.5% | 100% | | 319 | 0 | 278 |
| 9:00 | 880 | | | 765 | 1,110 | 5.0% | 100% | | 377 | 0 | 328 |
| 10:00 | 991 | | | 862 | 1,250 | 5.6% | 100% | | 425 | 0 | 369 |
| 11:00 | 1,018 | | | 885 | 1,283 | 5.5% | 100% | | 386 | 0 | 335 |
| 12:00 | 1,147 | | | 998 | 1,446 | 6.1% | 100% | | 387 | 0 | 336 |
| 13:00 | 1,128 | | | 980 | 1,422 | 6.0% | 100% | | 382 | 0 | 333 |
| 14:00 | 1,288 | | | 1,120 | 1,624 | 6.4% | 100% | | 342 | 0 | 297 |
| 15:00 | 1,462 | | | 1,271 | 1,843 | 7.1% | 100% | | 332 | 0 | 289 |
| 16:00 | 1,514 | | | 1,317 | 1,909 | 7.2% | 100% | | 309 | 0 | 269 |
| 17:00 | 1,670 | | | 1,452 | 2,106 | 7.5% | 100% | | 231 | 0 | 201 |
| 18:00 | 1,251 | | | 1,088 | 1,577 | 5.8% | 100% | | 217 | 0 | 189 |
| 19:00 | 951 | | | 827 | 1,199 | 4.5% | 100% | | 191 | 0 | 166 |
| 20:00 | 735 | | | 639 | 927 | 3.4% | 100% | | 118 | 0 | 102 |
| 21:00 | 558 | | | 485 | 703 | 2.8% | 100% | | 157 | 0 | 136 |
| 22:00 | 409 | | | 355 | 515 | 2.1% | 100% | | 133 | 0 | 116 |
| 23:00 | 233 | | | 203 | 294 | 1.3% | 100% | | 102 | 0 | 89 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Two-way Weighted Average Hourly Speed, mph | | | | | | | | | |
|---------------|--|-----------|--|--|-----------------|-----------|--|--|---------------------|-----------|
| | Calc. Existing (PS= 45) | | | | Design (PS= 45) | | | | Design Nbl (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. |
| 0:00 | 77 | 72 | | | 77 | 72 | | | 77 | 72 |
| 1:00 | 88 | 82 | | | 88 | 82 | | | 88 | 82 |
| 2:00 | 107 | 101 | | | 107 | 101 | | | 107 | 101 |
| 3:00 | 151 | 141 | | | 151 | 141 | | | 151 | 141 |
| 4:00 | 92 | 86 | | | 92 | 86 | | | 92 | 86 |
| 5:00 | 64 | 60 | | | 64 | 60 | | | 64 | 60 |
| 6:00 | 60 | 56 | | | 60 | 56 | | | 60 | 56 |
| 7:00 | 61 | 57 | | | 61 | 57 | | | 61 | 57 |
| 8:00 | 62 | 58 | | | 62 | 58 | | | 62 | 58 |
| 9:00 | 68 | 64 | | | 68 | 64 | | | 68 | 64 |
| 10:00 | 68 | 64 | | | 68 | 64 | | | 68 | 64 |
| 11:00 | 66 | 61 | | | 66 | 61 | | | 66 | 61 |
| 12:00 | 64 | 60 | | | 64 | 60 | | | 64 | 60 |
| 13:00 | 64 | 60 | | | 64 | 60 | | | 64 | 60 |
| 14:00 | 60 | 56 | | | 60 | 56 | | | 60 | 56 |
| 15:00 | 58 | 55 | | | 58 | 55 | | | 58 | 55 |
| 16:00 | 57 | 54 | | | 57 | 54 | | | 57 | 54 |
| 17:00 | 54 | 51 | | | 54 | 51 | | | 54 | 51 |
| 18:00 | 56 | 52 | | | 56 | 52 | | | 56 | 52 |
| 19:00 | 57 | 54 | | | 57 | 54 | | | 57 | 54 |
| 20:00 | 55 | 52 | | | 55 | 52 | | | 55 | 52 |
| 21:00 | 61 | 57 | | | 61 | 57 | | | 61 | 57 |
| 22:00 | 63 | 59 | | | 63 | 59 | | | 63 | 59 |
| 23:00 | 68 | 64 | | | 68 | 64 | | | 68 | 64 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.50

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: 58 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Rte 58/Rte 220 Interchange 4b. Facility Direction: East-West

4c. Analysis Segment Ending: Proposed Route 58/Bypass Interchange (near Trinity Terrace) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

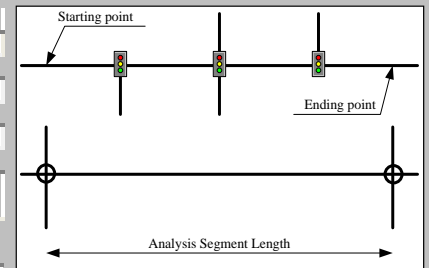
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Eastbound | | Westbound | |
|--|-----------|---------|-----------|---------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | 6.0 | 6.0 | 6.0 | 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 16,900 14,500 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 20,000

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|-----------|-------------------|---------|-------------------|---------|--|--|--|--|
| | Tow-way | Eastbound | Eastbound % Truck | | Westbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

58
TBA

V 2018-0

Route: 58
 From: Rte 58/Rte 220 Interchange
 To: Proposed Route 58/Bypass Interchange (near Tr
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 16,900 No-build
 Design Year: 2040 ADT: 14,500 20,000

Eastbound

| Starting Time | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | | | |
|---------------|----------------------|---|----------------------|--|----------------------|--|----------------------|-------------|----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nbfd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 1:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 2:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 3:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 4:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 5:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.09 | A | 0.09 |
| 6:00 | 0.16 | A | | | | | 0.14 | A | 0.14 | A | 0.19 | A | 0.19 |
| 7:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.27 | A | 0.27 |
| 8:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.25 | A | 0.25 |
| 9:00 | 0.20 | A | | | | | 0.18 | A | 0.18 | A | 0.24 | A | 0.24 |
| 10:00 | 0.23 | A | | | | | 0.19 | A | 0.19 | A | 0.27 | A | 0.27 |
| 11:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.24 | A | 0.24 |
| 12:00 | 0.24 | A | | | | | 0.20 | A | 0.20 | A | 0.28 | A | 0.28 |
| 13:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.25 | A | 0.25 |
| 14:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.27 | A | 0.27 |
| 15:00 | 0.25 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 16:00 | 0.25 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 17:00 | 0.26 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 18:00 | 0.19 | A | | | | | 0.17 | A | 0.17 | A | 0.23 | A | 0.23 |
| 19:00 | 0.15 | A | | | | | 0.13 | A | 0.13 | A | 0.18 | A | 0.18 |
| 20:00 | 0.11 | A | | | | | 0.10 | A | 0.10 | A | 0.13 | A | 0.13 |
| 21:00 | 0.10 | A | | | | | 0.09 | A | 0.09 | A | 0.12 | A | 0.12 |
| 22:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.09 | A | 0.09 |
| 23:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |

Westbound

| Starting Time | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | | | |
|---------------|----------------------|---|----------------------|--|----------------------|--|----------------------|-------------|----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nbfd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 3:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 4:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 5:00 | 0.13 | A | | | | | 0.12 | A | 0.12 | A | 0.16 | A | 0.16 |
| 6:00 | 0.20 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 7:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.25 | A | 0.25 |
| 8:00 | 0.21 | A | | | | | 0.18 | A | 0.18 | A | 0.24 | A | 0.24 |
| 9:00 | 0.20 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 10:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.27 | A | 0.27 |
| 11:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.28 | A | 0.28 |
| 12:00 | 0.23 | A | | | | | 0.20 | A | 0.20 | A | 0.27 | A | 0.27 |
| 13:00 | 0.25 | A | | | | | 0.21 | A | 0.21 | A | 0.30 | A | 0.30 |
| 14:00 | 0.25 | A | | | | | 0.21 | A | 0.21 | A | 0.29 | A | 0.29 |
| 15:00 | 0.26 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 16:00 | 0.26 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 17:00 | 0.24 | A | | | | | 0.21 | A | 0.21 | A | 0.29 | A | 0.29 |
| 18:00 | 0.20 | A | | | | | 0.18 | A | 0.18 | A | 0.24 | A | 0.24 |
| 19:00 | 0.16 | A | | | | | 0.14 | A | 0.14 | A | 0.19 | A | 0.19 |
| 20:00 | 0.12 | A | | | | | 0.10 | A | 0.10 | A | 0.14 | A | 0.14 |
| 21:00 | 0.11 | A | | | | | 0.09 | A | 0.09 | A | 0.13 | A | 0.13 |
| 22:00 | 0.09 | A | | | | | 0.08 | A | 0.08 | A | 0.10 | A | 0.10 |
| 23:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,500 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Eastbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|------------------|-------------------------|-------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Eastbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 58 | | | 50 | 69 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 31 | | | 26 | 36 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 29 | | | 25 | 34 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 12 | | | 10 | 14 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 39 | | | 34 | 47 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 106 | | | 91 | 125 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 259 | | | 222 | 307 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 402 | | | 345 | 475 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 378 | | | 325 | 448 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 290 | | | 249 | 344 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 332 | | | 285 | 393 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 333 | | | 286 | 394 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 391 | | | 335 | 462 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 358 | | | 307 | 424 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 426 | | | 366 | 505 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 484 | | | 415 | 573 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 539 | | | 462 | 637 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 592 | | | 508 | 701 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 452 | | | 388 | 535 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 353 | | | 303 | 418 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 249 | | | 214 | 295 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 190 | | | 163 | 225 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 129 | | | 111 | 152 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 69 | | | 59 | 82 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Eastbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | | | |
|---------------|-------------------|--|--|--------|------------------------|----------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 23 | | | 19 | 27 |
| 1:00 | 1 | | | 1 | 2 | 31 | | | 26 | 36 |
| 2:00 | 0 | | | 0 | 0 | 39 | | | 33 | 46 |
| 3:00 | 1 | | | 1 | 2 | 37 | | | 32 | 44 |
| 4:00 | 4 | | | 3 | 4 | 44 | | | 38 | 53 |
| 5:00 | 3 | | | 2 | 3 | 50 | | | 43 | 59 |
| 6:00 | 13 | | | 11 | 16 | 78 | | | 67 | 92 |
| 7:00 | 23 | | | 19 | 27 | 95 | | | 82 | 113 |
| 8:00 | 13 | | | 11 | 16 | 90 | | | 77 | 106 |
| 9:00 | 29 | | | 25 | 34 | 100 | | | 86 | 118 |
| 10:00 | 15 | | | 12 | 17 | 123 | | | 106 | 146 |
| 11:00 | 9 | | | 8 | 11 | 106 | | | 91 | 125 |
| 12:00 | 12 | | | 11 | 15 | 118 | | | 101 | 140 |
| 13:00 | 18 | | | 16 | 22 | 96 | | | 82 | 114 |
| 14:00 | 14 | | | 12 | 16 | 91 | | | 78 | 108 |
| 15:00 | 15 | | | 13 | 18 | 96 | | | 82 | 114 |
| 16:00 | 10 | | | 9 | 12 | 78 | | | 67 | 92 |
| 17:00 | 7 | | | 6 | 8 | 65 | | | 56 | 77 |
| 18:00 | 4 | | | 4 | 5 | 49 | | | 42 | 58 |
| 19:00 | 7 | | | 6 | 9 | 37 | | | 32 | 44 |
| 20:00 | 4 | | | 4 | 5 | 31 | | | 26 | 36 |
| 21:00 | 6 | | | 5 | 7 | 41 | | | 36 | 49 |
| 22:00 | 1 | | | 1 | 2 | 40 | | | 34 | 47 |
| 23:00 | 1 | | | 1 | 2 | 27 | | | 23 | 32 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 58 | | Area Type: Exurban |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,500 20,000 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Eastbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-la Hwy Spd 60 mph | | | |
|---------------|-----------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 1:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 2:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 3:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 4:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 5:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 6:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 7:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 8:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 9:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 10:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 11:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 12:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 13:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 14:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 15:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 16:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 17:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 18:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 19:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 20:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 21:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 22:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 23:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange (| | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,500 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Westbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|--------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Westbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 42 | | | 36 | 50 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 35 | | | 30 | 41 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 27 | | | 23 | 32 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 28 | | | 24 | 33 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 76 | | | 66 | 90 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 239 | | | 205 | 283 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 408 | | | 350 | 482 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 381 | | | 327 | 450 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 343 | | | 295 | 406 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 298 | | | 255 | 352 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 330 | | | 283 | 391 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 346 | | | 297 | 410 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 376 | | | 322 | 444 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 395 | | | 339 | 468 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 434 | | | 372 | 513 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 493 | | | 423 | 583 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 473 | | | 406 | 560 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 523 | | | 449 | 619 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 384 | | | 329 | 454 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 282 | | | 242 | 334 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 242 | | | 208 | 287 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 183 | | | 157 | 216 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 144 | | | 124 | 171 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 87 | | | 74 | 102 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Westbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 35 | | | 30 | 41 |
| 1:00 | 4 | | | 3 | 4 | 20 | | | 17 | 23 |
| 2:00 | 3 | | | 2 | 3 | 29 | | | 25 | 34 |
| 3:00 | 4 | | | 3 | 4 | 43 | | | 37 | 51 |
| 4:00 | 4 | | | 4 | 5 | 55 | | | 47 | 65 |
| 5:00 | 2 | | | 2 | 3 | 63 | | | 54 | 75 |
| 6:00 | 7 | | | 6 | 8 | 75 | | | 64 | 89 |
| 7:00 | 16 | | | 14 | 19 | 82 | | | 70 | 96 |
| 8:00 | 7 | | | 6 | 8 | 104 | | | 89 | 123 |
| 9:00 | 13 | | | 11 | 16 | 110 | | | 94 | 130 |
| 10:00 | 18 | | | 16 | 22 | 128 | | | 110 | 152 |
| 11:00 | 15 | | | 12 | 17 | 128 | | | 110 | 152 |
| 12:00 | 14 | | | 12 | 16 | 114 | | | 98 | 135 |
| 13:00 | 17 | | | 15 | 21 | 124 | | | 106 | 146 |
| 14:00 | 14 | | | 12 | 16 | 110 | | | 94 | 130 |
| 15:00 | 15 | | | 12 | 17 | 96 | | | 82 | 114 |
| 16:00 | 13 | | | 11 | 16 | 106 | | | 91 | 125 |
| 17:00 | 9 | | | 8 | 11 | 74 | | | 63 | 87 |
| 18:00 | 13 | | | 11 | 16 | 79 | | | 67 | 93 |
| 19:00 | 9 | | | 7 | 10 | 74 | | | 64 | 88 |
| 20:00 | 4 | | | 4 | 5 | 39 | | | 34 | 47 |
| 21:00 | 1 | | | 1 | 1 | 57 | | | 49 | 67 |
| 22:00 | 1 | | | 1 | 2 | 46 | | | 39 | 54 |
| 23:00 | 4 | | | 3 | 4 | 36 | | | 31 | 43 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,500 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Westbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-ls Hwy Spd 60 mph | | | |
|---------------|-----------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 1:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 2:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 3:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 4:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 5:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 6:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 7:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 8:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 9:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 10:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 11:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 12:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 13:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 14:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 15:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 16:00 | 70 | 70 | | | 70 | 70 | 69 | 69 |
| 17:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 18:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 19:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 20:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 21:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 22:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 23:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



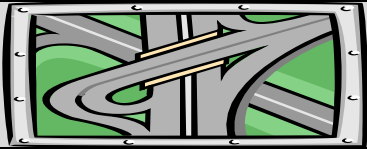
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | | |
|---|---|--|---------------|--|
| Route: 58 |  | Area Type: Exurban | | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 14,500 | 20,000 | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | | |

| Two-way Traffic and Weighted Speed Data, mph | | | | | | | | | | |
|--|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | Total Truck Volume (Class 4-13) | | |
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 100 | | | 86 | 119 | 1.0% | 100% | 62 | 0 | 53 |
| 1:00 | 65 | | | 56 | 78 | 0.7% | 100% | 55 | 0 | 47 |
| 2:00 | 56 | | | 48 | 66 | 0.7% | 100% | 71 | 0 | 61 |
| 3:00 | 39 | | | 34 | 47 | 0.7% | 100% | 85 | 0 | 73 |
| 4:00 | 116 | | | 99 | 137 | 1.3% | 100% | 107 | 0 | 92 |
| 5:00 | 345 | | | 296 | 408 | 2.7% | 100% | 119 | 0 | 102 |
| 6:00 | 667 | | | 572 | 789 | 5.0% | 100% | 172 | 0 | 148 |
| 7:00 | 782 | | | 671 | 926 | 5.9% | 100% | 215 | 0 | 185 |
| 8:00 | 722 | | | 619 | 854 | 5.5% | 100% | 213 | 0 | 183 |
| 9:00 | 588 | | | 504 | 696 | 5.0% | 100% | 252 | 0 | 216 |
| 10:00 | 662 | | | 568 | 784 | 5.6% | 100% | 284 | 0 | 244 |
| 11:00 | 680 | | | 583 | 804 | 5.5% | 100% | 258 | 0 | 221 |
| 12:00 | 766 | | | 657 | 907 | 6.1% | 100% | 258 | 0 | 222 |
| 13:00 | 753 | | | 646 | 891 | 6.0% | 100% | 255 | 0 | 219 |
| 14:00 | 860 | | | 738 | 1,018 | 6.4% | 100% | 229 | 0 | 196 |
| 15:00 | 977 | | | 838 | 1,156 | 7.1% | 100% | 222 | 0 | 190 |
| 16:00 | 1,012 | | | 868 | 1,197 | 7.2% | 100% | 207 | 0 | 177 |
| 17:00 | 1,116 | | | 957 | 1,320 | 7.5% | 100% | 154 | 0 | 132 |
| 18:00 | 835 | | | 717 | 989 | 5.8% | 100% | 145 | 0 | 124 |
| 19:00 | 635 | | | 545 | 752 | 4.5% | 100% | 127 | 0 | 109 |
| 20:00 | 491 | | | 421 | 581 | 3.4% | 100% | 79 | 0 | 67 |
| 21:00 | 373 | | | 320 | 441 | 2.8% | 100% | 105 | 0 | 90 |
| 22:00 | 273 | | | 234 | 323 | 2.1% | 100% | 89 | 0 | 76 |
| 23:00 | 156 | | | 134 | 184 | 1.3% | 100% | 68 | 0 | 59 |

| Two-way Weighted Average Hourly Speed, mph | | | | | | | | |
|--|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 115 | 115 | | | 115 | 115 | 115 | 115 |
| 1:00 | 132 | 132 | | | 132 | 132 | 132 | 132 |
| 2:00 | 161 | 161 | | | 161 | 161 | 161 | 161 |
| 3:00 | 226 | 226 | | | 226 | 226 | 226 | 226 |
| 4:00 | 137 | 137 | | | 137 | 137 | 137 | 137 |
| 5:00 | 96 | 96 | | | 96 | 96 | 96 | 96 |
| 6:00 | 89 | 89 | | | 89 | 89 | 89 | 89 |
| 7:00 | 90 | 90 | | | 90 | 90 | 89 | 89 |
| 8:00 | 91 | 91 | | | 92 | 92 | 91 | 91 |
| 9:00 | 101 | 101 | | | 101 | 101 | 100 | 100 |
| 10:00 | 100 | 100 | | | 101 | 101 | 100 | 100 |
| 11:00 | 97 | 97 | | | 98 | 98 | 96 | 96 |
| 12:00 | 94 | 94 | | | 94 | 94 | 93 | 93 |
| 13:00 | 94 | 94 | | | 95 | 95 | 93 | 93 |
| 14:00 | 89 | 89 | | | 89 | 89 | 88 | 88 |
| 15:00 | 86 | 86 | | | 86 | 86 | 85 | 85 |
| 16:00 | 84 | 84 | | | 85 | 85 | 83 | 83 |
| 17:00 | 80 | 80 | | | 80 | 80 | 79 | 79 |
| 18:00 | 83 | 83 | | | 83 | 83 | 82 | 82 |
| 19:00 | 85 | 85 | | | 85 | 85 | 85 | 85 |
| 20:00 | 83 | 83 | | | 83 | 83 | 82 | 82 |
| 21:00 | 91 | 91 | | | 91 | 91 | 91 | 91 |
| 22:00 | 95 | 95 | | | 95 | 95 | 94 | 94 |
| 23:00 | 103 | 103 | | | 103 | 103 | 103 | 103 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 3.60

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: Byp 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Proposed Rte 220/Bypass Interchange 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Soapstone Rd (Rte 687) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

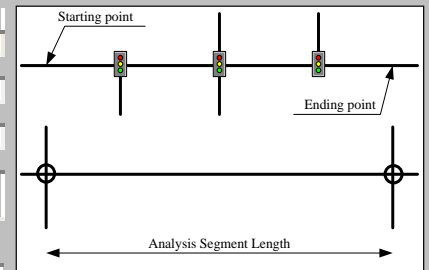
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | 6.0 | 6.0 | 6.0 | 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 0 11,300 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 0

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

Byp
TBA

V 2018-09

Route: **Byp**

From: **Proposed Rte 220/Bypass Interchange**

To: **Soapstone Rd (Rte 687)**



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: **Exurban**

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: **0** No-build

Design Year: 2040 ADT: **11,300** **0**

Northbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | | | |
|---------------|-----------------------|--|-----------------------|--|-----------------------|--|-----------------------|-------------|--------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.11 | A | 0.11 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.13 | A | 0.13 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.10 | A | 0.10 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |

Southbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | | | |
|---------------|-----------------------|--|-----------------------|--|-----------------------|--|-----------------------|-------------|--------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.09 | A | 0.09 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.13 | A | 0.13 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.14 | A | 0.14 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.11 | A | 0.11 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VD0T



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | |
|--|--|--|
| Route: Byp | | Area Type: Exurban |
| From: Proposed Rte 220/Bypass Interchange | | Traffic Assignment: Constrained - Noise Study |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 0 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 11,300 0 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | 39 | 0 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 0 | | 20 | 0 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 0 | | 19 | 0 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 0 | | 8 | 0 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 0 | | 26 | 0 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 0 | | 71 | 0 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 0 | | 173 | 0 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 0 | | 269 | 0 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 0 | | 253 | 0 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 0 | | 194 | 0 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 0 | | 222 | 0 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 0 | | 223 | 0 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 0 | | 261 | 0 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 0 | | 239 | 0 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 0 | | 285 | 0 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 0 | | 324 | 0 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 0 | | 360 | 0 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 0 | | 396 | 0 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 0 | | 302 | 0 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 0 | | 236 | 0 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 0 | | 166 | 0 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 0 | | 127 | 0 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 0 | | 86 | 0 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 0 | | 46 | 0 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|------------|------------------------|--|--------|------------|
| | Existing | | Design | Design Nbl | Existing | | Design | Design Nbl |
| 0:00 | 0 | | 1 | 0 | 0 | | 15 | 0 |
| 1:00 | 0 | | 1 | 0 | 0 | | 20 | 0 |
| 2:00 | 0 | | 0 | 0 | 0 | | 26 | 0 |
| 3:00 | 0 | | 1 | 0 | 0 | | 25 | 0 |
| 4:00 | 0 | | 2 | 0 | 0 | | 30 | 0 |
| 5:00 | 0 | | 2 | 0 | 0 | | 34 | 0 |
| 6:00 | 0 | | 9 | 0 | 0 | | 52 | 0 |
| 7:00 | 0 | | 15 | 0 | 0 | | 64 | 0 |
| 8:00 | 0 | | 9 | 0 | 0 | | 60 | 0 |
| 9:00 | 0 | | 19 | 0 | 0 | | 67 | 0 |
| 10:00 | 0 | | 10 | 0 | 0 | | 82 | 0 |
| 11:00 | 0 | | 6 | 0 | 0 | | 71 | 0 |
| 12:00 | 0 | | 8 | 0 | 0 | | 79 | 0 |
| 13:00 | 0 | | 12 | 0 | 0 | | 64 | 0 |
| 14:00 | 0 | | 9 | 0 | 0 | | 61 | 0 |
| 15:00 | 0 | | 10 | 0 | 0 | | 64 | 0 |
| 16:00 | 0 | | 7 | 0 | 0 | | 52 | 0 |
| 17:00 | 0 | | 4 | 0 | 0 | | 43 | 0 |
| 18:00 | 0 | | 3 | 0 | 0 | | 33 | 0 |
| 19:00 | 0 | | 5 | 0 | 0 | | 25 | 0 |
| 20:00 | 0 | | 3 | 0 | 0 | | 20 | 0 |
| 21:00 | 0 | | 4 | 0 | 0 | | 28 | 0 |
| 22:00 | 0 | | 1 | 0 | 0 | | 27 | 0 |
| 23:00 | 0 | | 1 | 0 | 0 | | 18 | 0 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | | | | | | |
|--|-------------------------------------|---------------------------|--|----------|---|-----------|------------------------------|-----------|
| Route: Byp | | | Area Type: Exurban | | | | | |
| From: Proposed Rte 220/Bypass Interchange | | | Traffic Assignment: Constrained - Noise Study | | | | | |
| To: Soapstone Rd (Rte 687) | | | Existing Year: 2018 ADT: 0 | No-build | | | | |
| Jurisdiction: 2. Salem/Henry Co | | | Design Year: 2040 ADT: 11,300 | 0 | | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-1a Hwy Spd 60 mph | | | |
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



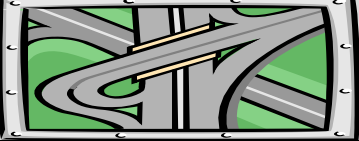
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | | |
|--|---------------------------|---|--|----------|
| Route: Byp | |  | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange | | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | Design Year: 2040 ADT: 11,300 | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | | |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|------------------|---------------------|--|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Southbound D-factor | | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | 28 | 0 | 1.0% | 49% | | 2.8% | 44.0% | 46.8% |
| 1:00 | 0 | | 23 | 0 | 0.7% | 48% | | 6.3% | 33.8% | 40.0% |
| 2:00 | 0 | | 18 | 0 | 0.7% | 47% | | 4.9% | 49.4% | 54.3% |
| 3:00 | 0 | | 18 | 0 | 0.7% | 60% | | 4.9% | 57.8% | 62.7% |
| 4:00 | 0 | | 51 | 0 | 1.3% | 61% | | 3.2% | 40.3% | 43.5% |
| 5:00 | 0 | | 160 | 0 | 2.7% | 66% | | 0.7% | 20.8% | 21.5% |
| 6:00 | 0 | | 272 | 0 | 5.0% | 58% | | 1.3% | 15.3% | 16.7% |
| 7:00 | 0 | | 254 | 0 | 5.9% | 48% | | 3.3% | 17.0% | 20.4% |
| 8:00 | 0 | | 230 | 0 | 5.5% | 49% | | 1.4% | 22.9% | 24.4% |
| 9:00 | 0 | | 199 | 0 | 5.0% | 50% | | 3.1% | 26.1% | 29.2% |
| 10:00 | 0 | | 221 | 0 | 5.6% | 50% | | 3.8% | 26.9% | 30.7% |
| 11:00 | 0 | | 232 | 0 | 5.5% | 52% | | 3.0% | 26.2% | 29.2% |
| 12:00 | 0 | | 251 | 0 | 6.1% | 49% | | 2.7% | 22.7% | 25.4% |
| 13:00 | 0 | | 264 | 0 | 6.0% | 53% | | 3.3% | 23.1% | 26.3% |
| 14:00 | 0 | | 290 | 0 | 6.4% | 51% | | 2.5% | 19.7% | 22.2% |
| 15:00 | 0 | | 329 | 0 | 7.1% | 50% | | 2.4% | 15.9% | 18.3% |
| 16:00 | 0 | | 316 | 0 | 7.2% | 49% | | 2.2% | 17.8% | 20.0% |
| 17:00 | 0 | | 350 | 0 | 7.5% | 48% | | 1.6% | 12.1% | 13.7% |
| 18:00 | 0 | | 256 | 0 | 5.8% | 48% | | 2.8% | 16.5% | 19.3% |
| 19:00 | 0 | | 189 | 0 | 4.5% | 48% | | 2.4% | 20.3% | 22.7% |
| 20:00 | 0 | | 162 | 0 | 3.4% | 50% | | 1.5% | 13.7% | 15.3% |
| 21:00 | 0 | | 122 | 0 | 2.8% | 50% | | 0.3% | 23.6% | 23.9% |
| 22:00 | 0 | | 96 | 0 | 2.1% | 53% | | 0.8% | 24.0% | 24.7% |
| 23:00 | 0 | | 58 | 0 | 1.3% | 56% | | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|------------|------------------------|--|--------|------------|
| | Existing | | Design | Design Nbl | Existing | | Design | Design Nbl |
| 0:00 | 0 | | 1 | 0 | 0 | | 23 | 0 |
| 1:00 | 0 | | 2 | 0 | 0 | | 13 | 0 |
| 2:00 | 0 | | 2 | 0 | 0 | | 19 | 0 |
| 3:00 | 0 | | 2 | 0 | 0 | | 29 | 0 |
| 4:00 | 0 | | 3 | 0 | 0 | | 36 | 0 |
| 5:00 | 0 | | 1 | 0 | 0 | | 42 | 0 |
| 6:00 | 0 | | 4 | 0 | 0 | | 50 | 0 |
| 7:00 | 0 | | 11 | 0 | 0 | | 54 | 0 |
| 8:00 | 0 | | 4 | 0 | 0 | | 70 | 0 |
| 9:00 | 0 | | 9 | 0 | 0 | | 73 | 0 |
| 10:00 | 0 | | 12 | 0 | 0 | | 86 | 0 |
| 11:00 | 0 | | 10 | 0 | 0 | | 86 | 0 |
| 12:00 | 0 | | 9 | 0 | 0 | | 76 | 0 |
| 13:00 | 0 | | 12 | 0 | 0 | | 83 | 0 |
| 14:00 | 0 | | 9 | 0 | 0 | | 73 | 0 |
| 15:00 | 0 | | 10 | 0 | 0 | | 64 | 0 |
| 16:00 | 0 | | 9 | 0 | 0 | | 71 | 0 |
| 17:00 | 0 | | 6 | 0 | 0 | | 49 | 0 |
| 18:00 | 0 | | 9 | 0 | 0 | | 53 | 0 |
| 19:00 | 0 | | 6 | 0 | 0 | | 50 | 0 |
| 20:00 | 0 | | 3 | 0 | 0 | | 26 | 0 |
| 21:00 | 0 | | 0 | 0 | 0 | | 38 | 0 |
| 22:00 | 0 | | 1 | 0 | 0 | | 31 | 0 |
| 23:00 | 0 | | 2 | 0 | 0 | | 24 | 0 |



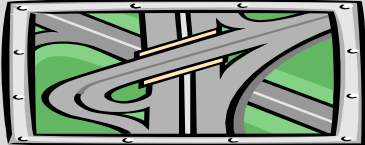
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|--|---|--|----------|
| Route: Byp |  | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 11,300 | 0 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-ls Hwy Spd 60 mph | | | |
|---------------|------------------------------|------------|--|--|--|------------|-----------------------|------------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nblld (PS= 65) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

Route: Byp

Area Type: Exurban

From: Proposed Rte 220/Bypass Interchange

Traffic Assignment: Constrained - Noise Study

To: Soapstone Rd (Rte 687)

Existing Year: 2018 ADT: 0

No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 hrs.

Design Year: 2040 ADT: 11,300

0

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 0 | | 67 | 0 | 1.0% | 100% | | 0 | 0 | 41 |
| 1:00 | 0 | | 44 | 0 | 0.7% | 100% | | 0 | 0 | 37 |
| 2:00 | 0 | | 37 | 0 | 0.7% | 100% | | 0 | 0 | 47 |
| 3:00 | 0 | | 26 | 0 | 0.7% | 100% | | 0 | 0 | 57 |
| 4:00 | 0 | | 77 | 0 | 1.3% | 100% | | 0 | 0 | 72 |
| 5:00 | 0 | | 231 | 0 | 2.7% | 100% | | 0 | 0 | 79 |
| 6:00 | 0 | | 446 | 0 | 5.0% | 100% | | 0 | 0 | 115 |
| 7:00 | 0 | | 523 | 0 | 5.9% | 100% | | 0 | 0 | 144 |
| 8:00 | 0 | | 483 | 0 | 5.5% | 100% | | 0 | 0 | 143 |
| 9:00 | 0 | | 393 | 0 | 5.0% | 100% | | 0 | 0 | 168 |
| 10:00 | 0 | | 443 | 0 | 5.6% | 100% | | 0 | 0 | 190 |
| 11:00 | 0 | | 454 | 0 | 5.5% | 100% | | 0 | 0 | 172 |
| 12:00 | 0 | | 512 | 0 | 6.1% | 100% | | 0 | 0 | 173 |
| 13:00 | 0 | | 504 | 0 | 6.0% | 100% | | 0 | 0 | 171 |
| 14:00 | 0 | | 575 | 0 | 6.4% | 100% | | 0 | 0 | 153 |
| 15:00 | 0 | | 653 | 0 | 7.1% | 100% | | 0 | 0 | 148 |
| 16:00 | 0 | | 676 | 0 | 7.2% | 100% | | 0 | 0 | 138 |
| 17:00 | 0 | | 746 | 0 | 7.5% | 100% | | 0 | 0 | 103 |
| 18:00 | 0 | | 559 | 0 | 5.8% | 100% | | 0 | 0 | 97 |
| 19:00 | 0 | | 425 | 0 | 4.5% | 100% | | 0 | 0 | 85 |
| 20:00 | 0 | | 328 | 0 | 3.4% | 100% | | 0 | 0 | 53 |
| 21:00 | 0 | | 249 | 0 | 2.8% | 100% | | 0 | 0 | 70 |
| 22:00 | 0 | | 182 | 0 | 2.1% | 100% | | 0 | 0 | 59 |
| 23:00 | 0 | | 104 | 0 | 1.3% | 100% | | 0 | 0 | 46 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 65 | 65 | | | 115 | 115 | 65 | 65 |
| 1:00 | 65 | 65 | | | 132 | 132 | 65 | 65 |
| 2:00 | 65 | 65 | | | 161 | 161 | 65 | 65 |
| 3:00 | 65 | 65 | | | 226 | 226 | 65 | 65 |
| 4:00 | 65 | 65 | | | 137 | 137 | 65 | 65 |
| 5:00 | 65 | 65 | | | 96 | 96 | 65 | 65 |
| 6:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 7:00 | 65 | 65 | | | 91 | 91 | 65 | 65 |
| 8:00 | 65 | 65 | | | 92 | 92 | 65 | 65 |
| 9:00 | 65 | 65 | | | 102 | 102 | 65 | 65 |
| 10:00 | 65 | 65 | | | 101 | 101 | 65 | 65 |
| 11:00 | 65 | 65 | | | 98 | 98 | 65 | 65 |
| 12:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 13:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 14:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 15:00 | 65 | 65 | | | 87 | 87 | 65 | 65 |
| 16:00 | 65 | 65 | | | 85 | 85 | 65 | 65 |
| 17:00 | 65 | 65 | | | 81 | 81 | 65 | 65 |
| 18:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 19:00 | 65 | 65 | | | 86 | 86 | 65 | 65 |
| 20:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 21:00 | 65 | 65 | | | 91 | 91 | 65 | 65 |
| 22:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 23:00 | 65 | 65 | | | 103 | 103 | 65 | 65 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 2.00

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: Byp 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Soapstone Rd (Rte 687) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Proposed Route 58/Bypass Interchange (near Trinity Terrace) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

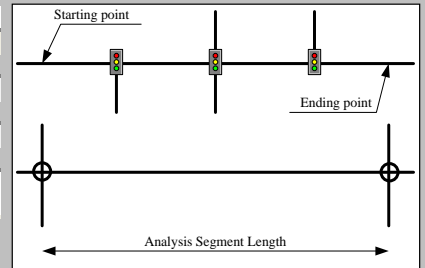
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | 6.0 | 6.0 | 6.0 | 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 0 12,800 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 0

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

V 2018-09

Byp
TBA

Route: **Byp**

From: **Soapstone Rd (Rte 687)**

To: **Proposed Route 58/Bypass Interchange (near Tr**



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: **Exurban**

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: **0** No-build

Design Year: 2040 ADT: **12,800** **0**

Northbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | | | |
|---------------|-----------------------|--|-----------------------|--|-----------------------|--|-----------------------|-------------|--------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.12 | A | 0.12 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.12 | A | 0.12 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |

Southbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | | | |
|---------------|-----------------------|--|-----------------------|--|-----------------------|--|-----------------------|-------------|--------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.10 | A | 0.10 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.12 | A | 0.12 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.09 | A | 0.09 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VD0T



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|---|---------------------------|--|----------|
| Route: Byp | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange (| | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,800 | 0 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | | 44 | 0 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 0 | | | 23 | 0 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 0 | | | 22 | 0 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 0 | | | 9 | 0 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 0 | | | 30 | 0 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 0 | | | 80 | 0 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 0 | | | 196 | 0 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 0 | | | 304 | 0 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 0 | | | 287 | 0 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 0 | | | 220 | 0 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 0 | | | 251 | 0 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 0 | | | 252 | 0 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 0 | | | 296 | 0 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 0 | | | 271 | 0 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 0 | | | 323 | 0 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 0 | | | 367 | 0 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 0 | | | 408 | 0 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 0 | | | 449 | 0 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 0 | | | 342 | 0 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 0 | | | 267 | 0 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 0 | | | 189 | 0 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 0 | | | 144 | 0 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 0 | | | 98 | 0 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 0 | | | 52 | 0 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 0 | | | 2 | 0 | 0 | | | 17 | 0 |
| 1:00 | 0 | | | 1 | 0 | 0 | | | 23 | 0 |
| 2:00 | 0 | | | 0 | 0 | 0 | | | 29 | 0 |
| 3:00 | 0 | | | 1 | 0 | 0 | | | 28 | 0 |
| 4:00 | 0 | | | 3 | 0 | 0 | | | 34 | 0 |
| 5:00 | 0 | | | 2 | 0 | 0 | | | 38 | 0 |
| 6:00 | 0 | | | 10 | 0 | 0 | | | 59 | 0 |
| 7:00 | 0 | | | 17 | 0 | 0 | | | 72 | 0 |
| 8:00 | 0 | | | 10 | 0 | 0 | | | 68 | 0 |
| 9:00 | 0 | | | 22 | 0 | 0 | | | 76 | 0 |
| 10:00 | 0 | | | 11 | 0 | 0 | | | 93 | 0 |
| 11:00 | 0 | | | 7 | 0 | 0 | | | 80 | 0 |
| 12:00 | 0 | | | 9 | 0 | 0 | | | 89 | 0 |
| 13:00 | 0 | | | 14 | 0 | 0 | | | 73 | 0 |
| 14:00 | 0 | | | 10 | 0 | 0 | | | 69 | 0 |
| 15:00 | 0 | | | 12 | 0 | 0 | | | 73 | 0 |
| 16:00 | 0 | | | 8 | 0 | 0 | | | 59 | 0 |
| 17:00 | 0 | | | 5 | 0 | 0 | | | 49 | 0 |
| 18:00 | 0 | | | 3 | 0 | 0 | | | 37 | 0 |
| 19:00 | 0 | | | 6 | 0 | 0 | | | 28 | 0 |
| 20:00 | 0 | | | 3 | 0 | 0 | | | 23 | 0 |
| 21:00 | 0 | | | 4 | 0 | 0 | | | 31 | 0 |
| 22:00 | 0 | | | 1 | 0 | 0 | | | 30 | 0 |
| 23:00 | 0 | | | 1 | 0 | 0 | | | 20 | 0 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | | | | | | |
|---|-------------------------------------|---------------------------|--|--|---|-----------|------------------------------|-----------|
| Route: Byp | | | | Area Type: Exurban | | | | |
| From: Soapstone Rd (Rte 687) | | | | Traffic Assignment: Constrained - Noise Study | | | | |
| To: Proposed Route 58/Bypass Interchange | | | | Existing Year: 2018 ADT: 0 | No-build | | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 12,800 0 | | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-1a Hwy Spd 60 mph | | | |
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | | |
|---|---------------------------|---|--|----------|
| Route: Byp | | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | Design Year: 2040 ADT: 12,800 | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | 0 | | |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|------------------|---------------------|--|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Southbound D-factor | | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | 32 | 0 | 1.0% | 49% | | 2.8% | 44.0% | 46.8% |
| 1:00 | 0 | | 26 | 0 | 0.7% | 48% | | 6.3% | 33.8% | 40.0% |
| 2:00 | 0 | | 20 | 0 | 0.7% | 47% | | 4.9% | 49.4% | 54.3% |
| 3:00 | 0 | | 21 | 0 | 0.7% | 60% | | 4.9% | 57.8% | 62.7% |
| 4:00 | 0 | | 58 | 0 | 1.3% | 61% | | 3.2% | 40.3% | 43.5% |
| 5:00 | 0 | | 181 | 0 | 2.7% | 66% | | 0.7% | 20.8% | 21.5% |
| 6:00 | 0 | | 309 | 0 | 5.0% | 58% | | 1.3% | 15.3% | 16.7% |
| 7:00 | 0 | | 288 | 0 | 5.9% | 48% | | 3.3% | 17.0% | 20.4% |
| 8:00 | 0 | | 260 | 0 | 5.5% | 49% | | 1.4% | 22.9% | 24.4% |
| 9:00 | 0 | | 225 | 0 | 5.0% | 50% | | 3.1% | 26.1% | 29.2% |
| 10:00 | 0 | | 250 | 0 | 5.6% | 50% | | 3.8% | 26.9% | 30.7% |
| 11:00 | 0 | | 262 | 0 | 5.5% | 52% | | 3.0% | 26.2% | 29.2% |
| 12:00 | 0 | | 284 | 0 | 6.1% | 49% | | 2.7% | 22.7% | 25.4% |
| 13:00 | 0 | | 299 | 0 | 6.0% | 53% | | 3.3% | 23.1% | 26.3% |
| 14:00 | 0 | | 329 | 0 | 6.4% | 51% | | 2.5% | 19.7% | 22.2% |
| 15:00 | 0 | | 373 | 0 | 7.1% | 50% | | 2.4% | 15.9% | 18.3% |
| 16:00 | 0 | | 358 | 0 | 7.2% | 49% | | 2.2% | 17.8% | 20.0% |
| 17:00 | 0 | | 396 | 0 | 7.5% | 48% | | 1.6% | 12.1% | 13.7% |
| 18:00 | 0 | | 290 | 0 | 5.8% | 48% | | 2.8% | 16.5% | 19.3% |
| 19:00 | 0 | | 214 | 0 | 4.5% | 48% | | 2.4% | 20.3% | 22.7% |
| 20:00 | 0 | | 184 | 0 | 3.4% | 50% | | 1.5% | 13.7% | 15.3% |
| 21:00 | 0 | | 138 | 0 | 2.8% | 50% | | 0.3% | 23.6% | 23.9% |
| 22:00 | 0 | | 109 | 0 | 2.1% | 53% | | 0.8% | 24.0% | 24.7% |
| 23:00 | 0 | | 66 | 0 | 1.3% | 56% | | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|------------|------------------------|--|--------|------------|
| | Existing | | Design | Design Nbl | Existing | | Design | Design Nbl |
| 0:00 | 0 | | 2 | 0 | 0 | | 26 | 0 |
| 1:00 | 0 | | 3 | 0 | 0 | | 15 | 0 |
| 2:00 | 0 | | 2 | 0 | 0 | | 22 | 0 |
| 3:00 | 0 | | 3 | 0 | 0 | | 33 | 0 |
| 4:00 | 0 | | 3 | 0 | 0 | | 41 | 0 |
| 5:00 | 0 | | 2 | 0 | 0 | | 48 | 0 |
| 6:00 | 0 | | 5 | 0 | 0 | | 57 | 0 |
| 7:00 | 0 | | 12 | 0 | 0 | | 62 | 0 |
| 8:00 | 0 | | 5 | 0 | 0 | | 79 | 0 |
| 9:00 | 0 | | 10 | 0 | 0 | | 83 | 0 |
| 10:00 | 0 | | 14 | 0 | 0 | | 97 | 0 |
| 11:00 | 0 | | 11 | 0 | 0 | | 97 | 0 |
| 12:00 | 0 | | 10 | 0 | 0 | | 87 | 0 |
| 13:00 | 0 | | 13 | 0 | 0 | | 94 | 0 |
| 14:00 | 0 | | 10 | 0 | 0 | | 83 | 0 |
| 15:00 | 0 | | 11 | 0 | 0 | | 73 | 0 |
| 16:00 | 0 | | 10 | 0 | 0 | | 80 | 0 |
| 17:00 | 0 | | 7 | 0 | 0 | | 56 | 0 |
| 18:00 | 0 | | 10 | 0 | 0 | | 60 | 0 |
| 19:00 | 0 | | 7 | 0 | 0 | | 56 | 0 |
| 20:00 | 0 | | 3 | 0 | 0 | | 30 | 0 |
| 21:00 | 0 | | 1 | 0 | 0 | | 43 | 0 |
| 22:00 | 0 | | 1 | 0 | 0 | | 35 | 0 |
| 23:00 | 0 | | 3 | 0 | 0 | | 28 | 0 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|---|---------------------------|--|----------|
| Route: Byp | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,800 | 0 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-ls Hwy Spd 60 mph | | | |
|---------------|------------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nblld (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



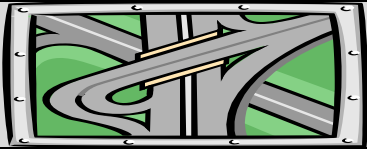
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | |
|--|---|--|
| Route: Byp |  | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 No-build |
| Jurisdiction: 2. Salem/Henry Co | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 12,800 0 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 0 | | | 76 | 0 | 1.0% | 100% | 0 | 0 | 47 |
| 1:00 | 0 | | | 50 | 0 | 0.7% | 100% | 0 | 0 | 42 |
| 2:00 | 0 | | | 42 | 0 | 0.7% | 100% | 0 | 0 | 53 |
| 3:00 | 0 | | | 30 | 0 | 0.7% | 100% | 0 | 0 | 64 |
| 4:00 | 0 | | | 88 | 0 | 1.3% | 100% | 0 | 0 | 81 |
| 5:00 | 0 | | | 261 | 0 | 2.7% | 100% | 0 | 0 | 90 |
| 6:00 | 0 | | | 505 | 0 | 5.0% | 100% | 0 | 0 | 131 |
| 7:00 | 0 | | | 593 | 0 | 5.9% | 100% | 0 | 0 | 163 |
| 8:00 | 0 | | | 547 | 0 | 5.5% | 100% | 0 | 0 | 161 |
| 9:00 | 0 | | | 445 | 0 | 5.0% | 100% | 0 | 0 | 191 |
| 10:00 | 0 | | | 502 | 0 | 5.6% | 100% | 0 | 0 | 215 |
| 11:00 | 0 | | | 515 | 0 | 5.5% | 100% | 0 | 0 | 195 |
| 12:00 | 0 | | | 580 | 0 | 6.1% | 100% | 0 | 0 | 196 |
| 13:00 | 0 | | | 570 | 0 | 6.0% | 100% | 0 | 0 | 193 |
| 14:00 | 0 | | | 651 | 0 | 6.4% | 100% | 0 | 0 | 173 |
| 15:00 | 0 | | | 740 | 0 | 7.1% | 100% | 0 | 0 | 168 |
| 16:00 | 0 | | | 766 | 0 | 7.2% | 100% | 0 | 0 | 157 |
| 17:00 | 0 | | | 845 | 0 | 7.5% | 100% | 0 | 0 | 117 |
| 18:00 | 0 | | | 633 | 0 | 5.8% | 100% | 0 | 0 | 110 |
| 19:00 | 0 | | | 481 | 0 | 4.5% | 100% | 0 | 0 | 96 |
| 20:00 | 0 | | | 372 | 0 | 3.4% | 100% | 0 | 0 | 60 |
| 21:00 | 0 | | | 282 | 0 | 2.8% | 100% | 0 | 0 | 79 |
| 22:00 | 0 | | | 207 | 0 | 2.1% | 100% | 0 | 0 | 67 |
| 23:00 | 0 | | | 118 | 0 | 1.3% | 100% | 0 | 0 | 52 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 65 | 65 | | | 115 | 115 | 65 | 65 |
| 1:00 | 65 | 65 | | | 132 | 132 | 65 | 65 |
| 2:00 | 65 | 65 | | | 161 | 161 | 65 | 65 |
| 3:00 | 65 | 65 | | | 226 | 226 | 65 | 65 |
| 4:00 | 65 | 65 | | | 137 | 137 | 65 | 65 |
| 5:00 | 65 | 65 | | | 96 | 96 | 65 | 65 |
| 6:00 | 65 | 65 | | | 89 | 89 | 65 | 65 |
| 7:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 8:00 | 65 | 65 | | | 92 | 92 | 65 | 65 |
| 9:00 | 65 | 65 | | | 101 | 101 | 65 | 65 |
| 10:00 | 65 | 65 | | | 101 | 101 | 65 | 65 |
| 11:00 | 65 | 65 | | | 98 | 98 | 65 | 65 |
| 12:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 13:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 14:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 15:00 | 65 | 65 | | | 87 | 87 | 65 | 65 |
| 16:00 | 65 | 65 | | | 85 | 85 | 65 | 65 |
| 17:00 | 65 | 65 | | | 80 | 80 | 65 | 65 |
| 18:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 19:00 | 65 | 65 | | | 85 | 85 | 65 | 65 |
| 20:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 21:00 | 65 | 65 | | | 91 | 91 | 65 | 65 |
| 22:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 23:00 | 65 | 65 | | | 103 | 103 | 65 | 65 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beging: North Carolina Border 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

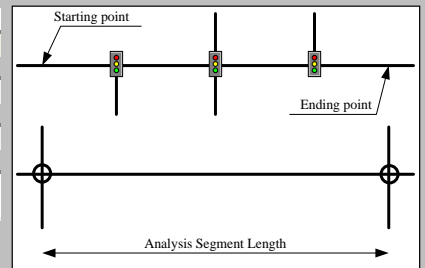
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Principal Art/X-way/Pk-way |
| Capacity: | 1,300 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 63 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Existing Year 2018 | | Design Year 2040 | |
|--|--------------------|------------|------------------|------------|
| | Northbound | Southbound | Northbound | Southbound |
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 3 | | 2 | |
| 17. Analysis Segment No. of Signals: | 0 | | 0 | |
| 18. Average Cycle Length (sec.): | 0 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 0 | | 0 | |
| 20. Signal Coordination: | 0.00 | | 0.00 | |
| Delay caused by signal, mph: | #N/A | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 11,900 17,200 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 17,200

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: North Carolina Border
 To: Proposed Rte 220/Bypass Interchange (south of
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 11,900 No-build
 Design Year: 2040 ADT: 17,200 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.17 | A | 0.17 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.23 | A | 0.23 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.23 | A | 0.23 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.20 | A | 0.20 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.16 | A | 0.16 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.11 | A | 0.11 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.10 | A | 0.10 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.14 | A | 0.14 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.25 | A | 0.25 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.25 | A | 0.25 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.25 | A | 0.25 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.17 | A | 0.17 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.12 | A | 0.12 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.11 | A | 0.11 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.09 | A | 0.09 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.06 | A | 0.06 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | 59 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | 31 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | 30 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | 12 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | 40 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | 107 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | 264 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | 409 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | 385 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | 296 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | 338 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | 339 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | 398 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | 364 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | 434 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | 493 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | 548 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | 603 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | 460 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | 359 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | 253 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | 193 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | 131 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | 70 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|------------|------------------------|--|--------|------------|
| | Existing | | Design | Design Nbl | Existing | | Design | Design Nbl |
| 0:00 | 2 | | 2 | 2 | 16 | | 23 | 23 |
| 1:00 | 1 | | 1 | 1 | 22 | | 31 | 31 |
| 2:00 | 0 | | 0 | 0 | 27 | | 39 | 39 |
| 3:00 | 1 | | 1 | 1 | 26 | | 38 | 38 |
| 4:00 | 3 | | 4 | 4 | 31 | | 45 | 45 |
| 5:00 | 2 | | 3 | 3 | 35 | | 51 | 51 |
| 6:00 | 9 | | 13 | 13 | 55 | | 79 | 79 |
| 7:00 | 16 | | 23 | 23 | 67 | | 97 | 97 |
| 8:00 | 9 | | 13 | 13 | 63 | | 91 | 91 |
| 9:00 | 20 | | 30 | 30 | 70 | | 101 | 101 |
| 10:00 | 10 | | 15 | 15 | 87 | | 125 | 125 |
| 11:00 | 7 | | 10 | 10 | 74 | | 107 | 107 |
| 12:00 | 9 | | 13 | 13 | 83 | | 120 | 120 |
| 13:00 | 13 | | 19 | 19 | 68 | | 98 | 98 |
| 14:00 | 10 | | 14 | 14 | 64 | | 93 | 93 |
| 15:00 | 11 | | 16 | 16 | 68 | | 98 | 98 |
| 16:00 | 7 | | 10 | 10 | 55 | | 79 | 79 |
| 17:00 | 5 | | 7 | 7 | 46 | | 66 | 66 |
| 18:00 | 3 | | 4 | 4 | 34 | | 50 | 50 |
| 19:00 | 5 | | 7 | 7 | 26 | | 38 | 38 |
| 20:00 | 3 | | 4 | 4 | 22 | | 31 | 31 |
| 21:00 | 4 | | 6 | 6 | 29 | | 42 | 42 |
| 22:00 | 1 | | 1 | 1 | 28 | | 41 | 41 |
| 23:00 | 1 | | 1 | 1 | 19 | | 27 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | | | | | |
|--|-------------------------------------|--------------------|--|--|--|-----------|------------------------------|-----------|
| Route: 220 | | | | Area Type: Exurban | | | | |
| From: North Carolina Border | | | | Traffic Assignment: Constrained - Noise Study | | | | |
| To: Proposed Rte 220/Bypass Interchange (s | | | | Existing Year: 2018 ADT: 11,900 | No-build | | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 17,200 | 17,200 | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
| | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 1:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 2:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 3:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 4:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 5:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 6:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 7:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 8:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 9:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 10:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 11:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 12:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 13:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 14:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 15:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 16:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 17:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 18:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 19:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 20:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 21:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 22:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 23:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 17,200 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | | 43 | 43 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | | 36 | 36 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | | 27 | 27 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | | 28 | 28 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | | 78 | 78 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | | 244 | 244 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | | 415 | 415 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | | 387 | 387 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | | 350 | 350 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | | 303 | 303 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | | 336 | 336 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | | 353 | 353 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | | 382 | 382 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | | 402 | 402 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | | 441 | 441 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | | 501 | 501 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | | 481 | 481 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | | 533 | 533 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | | 390 | 390 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | | 287 | 287 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | | 247 | 247 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | | 186 | 186 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | | 147 | 147 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | | 88 | 88 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 2 | | | 2 | 2 | 25 | | | 36 | 36 |
| 1:00 | 3 | | | 4 | 4 | 14 | | | 20 | 20 |
| 2:00 | 2 | | | 3 | 3 | 20 | | | 30 | 30 |
| 3:00 | 3 | | | 4 | 4 | 30 | | | 44 | 44 |
| 4:00 | 3 | | | 4 | 4 | 38 | | | 56 | 56 |
| 5:00 | 2 | | | 2 | 2 | 45 | | | 64 | 64 |
| 6:00 | 5 | | | 7 | 7 | 53 | | | 76 | 76 |
| 7:00 | 11 | | | 16 | 16 | 57 | | | 83 | 83 |
| 8:00 | 5 | | | 7 | 7 | 73 | | | 106 | 106 |
| 9:00 | 9 | | | 13 | 13 | 77 | | | 112 | 112 |
| 10:00 | 13 | | | 19 | 19 | 90 | | | 130 | 130 |
| 11:00 | 10 | | | 15 | 15 | 90 | | | 130 | 130 |
| 12:00 | 10 | | | 14 | 14 | 80 | | | 116 | 116 |
| 13:00 | 12 | | | 18 | 18 | 87 | | | 126 | 126 |
| 14:00 | 10 | | | 14 | 14 | 77 | | | 112 | 112 |
| 15:00 | 10 | | | 15 | 15 | 68 | | | 98 | 98 |
| 16:00 | 9 | | | 13 | 13 | 74 | | | 107 | 107 |
| 17:00 | 7 | | | 10 | 10 | 52 | | | 75 | 75 |
| 18:00 | 9 | | | 13 | 13 | 55 | | | 80 | 80 |
| 19:00 | 6 | | | 9 | 9 | 52 | | | 76 | 76 |
| 20:00 | 3 | | | 4 | 4 | 28 | | | 40 | 40 |
| 21:00 | 1 | | | 1 | 1 | 40 | | | 58 | 58 |
| 22:00 | 1 | | | 1 | 1 | 32 | | | 47 | 47 |
| 23:00 | 3 | | | 4 | 4 | 26 | | | 37 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---|---------------------------|--|
| Route: 220 | | Area Type: Exurban |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,200 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 1:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 2:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 3:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 4:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 5:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 6:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 7:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 8:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 9:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 10:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 11:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 12:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 13:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 14:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 15:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 16:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 17:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 18:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 19:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 20:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 21:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 22:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 23:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 17,200 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 71 | | 102 | 102 | 1.0% | 100% | 44 | 0 | 63 |
| 1:00 | 46 | | 67 | 67 | 0.7% | 100% | 39 | 0 | 56 |
| 2:00 | 39 | | 57 | 57 | 0.7% | 100% | 50 | 0 | 72 |
| 3:00 | 28 | | 40 | 40 | 0.7% | 100% | 60 | 0 | 87 |
| 4:00 | 81 | | 118 | 118 | 1.3% | 100% | 75 | 0 | 109 |
| 5:00 | 243 | | 351 | 351 | 2.7% | 100% | 84 | 0 | 121 |
| 6:00 | 469 | | 678 | 678 | 5.0% | 100% | 121 | 0 | 176 |
| 7:00 | 551 | | 796 | 796 | 5.9% | 100% | 152 | 0 | 219 |
| 8:00 | 508 | | 735 | 735 | 5.5% | 100% | 150 | 0 | 217 |
| 9:00 | 414 | | 598 | 598 | 5.0% | 100% | 177 | 0 | 256 |
| 10:00 | 466 | | 674 | 674 | 5.6% | 100% | 200 | 0 | 289 |
| 11:00 | 479 | | 692 | 692 | 5.5% | 100% | 181 | 0 | 262 |
| 12:00 | 540 | | 780 | 780 | 6.1% | 100% | 182 | 0 | 263 |
| 13:00 | 530 | | 767 | 767 | 6.0% | 100% | 180 | 0 | 260 |
| 14:00 | 606 | | 875 | 875 | 6.4% | 100% | 161 | 0 | 233 |
| 15:00 | 688 | | 994 | 994 | 7.1% | 100% | 156 | 0 | 226 |
| 16:00 | 712 | | 1,029 | 1,029 | 7.2% | 100% | 146 | 0 | 210 |
| 17:00 | 786 | | 1,135 | 1,135 | 7.5% | 100% | 109 | 0 | 157 |
| 18:00 | 588 | | 850 | 850 | 5.8% | 100% | 102 | 0 | 147 |
| 19:00 | 447 | | 647 | 647 | 4.5% | 100% | 90 | 0 | 130 |
| 20:00 | 346 | | 500 | 500 | 3.4% | 100% | 55 | 0 | 80 |
| 21:00 | 262 | | 379 | 379 | 2.8% | 100% | 74 | 0 | 107 |
| 22:00 | 192 | | 278 | 278 | 2.1% | 100% | 63 | 0 | 90 |
| 23:00 | 110 | | 158 | 158 | 1.3% | 100% | 48 | 0 | 70 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 85 | | | 102 | 99 | 90 | 85 |
| 1:00 | 102 | 98 | | | 117 | 113 | 102 | 98 |
| 2:00 | 125 | 120 | | | 143 | 138 | 125 | 120 |
| 3:00 | 176 | 168 | | | 201 | 193 | 176 | 168 |
| 4:00 | 107 | 102 | | | 122 | 117 | 107 | 102 |
| 5:00 | 75 | 71 | | | 85 | 82 | 75 | 71 |
| 6:00 | 70 | 67 | | | 80 | 77 | 70 | 67 |
| 7:00 | 71 | 67 | | | 81 | 78 | 71 | 67 |
| 8:00 | 72 | 69 | | | 82 | 79 | 72 | 69 |
| 9:00 | 79 | 76 | | | 90 | 87 | 79 | 76 |
| 10:00 | 79 | 76 | | | 90 | 87 | 79 | 76 |
| 11:00 | 76 | 73 | | | 87 | 84 | 76 | 73 |
| 12:00 | 74 | 71 | | | 85 | 82 | 74 | 71 |
| 13:00 | 74 | 71 | | | 85 | 82 | 74 | 71 |
| 14:00 | 70 | 67 | | | 80 | 77 | 70 | 67 |
| 15:00 | 68 | 65 | | | 78 | 75 | 68 | 65 |
| 16:00 | 67 | 64 | | | 76 | 74 | 67 | 64 |
| 17:00 | 63 | 60 | | | 72 | 69 | 63 | 60 |
| 18:00 | 65 | 62 | | | 74 | 72 | 65 | 62 |
| 19:00 | 67 | 64 | | | 76 | 73 | 67 | 64 |
| 20:00 | 64 | 61 | | | 73 | 71 | 64 | 61 |
| 21:00 | 71 | 68 | | | 81 | 78 | 71 | 68 |
| 22:00 | 73 | 70 | | | 84 | 81 | 73 | 70 |
| 23:00 | 80 | 76 | | | 91 | 88 | 80 | 76 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 3.10

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Morehead Ave (Ridgeway 87) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

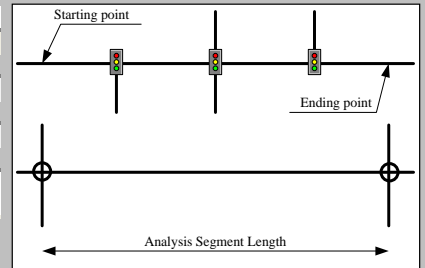
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Principal Art/X-way/Pk-way |
| Capacity: | 1,300 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 63 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Existing Year 2018 | | Design Year 2040 | |
|--|--------------------|------------|------------------|------------|
| | Northbound | Southbound | Northbound | Southbound |
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 6 | | 3 | |
| 17. Analysis Segment No. of Signals: | 1 | | 0 | |
| 18. Average Cycle Length (sec.): | 130 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 0 | |
| 20. Signal Coordination: | No Coord. | | 0.00 | |
| Delay caused by signal, mph: | 1 | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 11,900 18,100 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 17,200

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-09

Route: 220

From: Proposed Rte 220/Bypass Interchange (south of

To: Morehead Ave (Ridgeway 87)



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: 11,900 No-build

Design Year: 2040 ADT: 18,100 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.06 | A | 0.06 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.17 | A | 0.17 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.25 | A | 0.25 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.23 | A | 0.23 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.24 | A | 0.24 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.26 | A | 0.26 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.23 | A | 0.23 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.25 | A | 0.25 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.27 | A | 0.27 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.27 | A | 0.27 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.28 | A | 0.28 | A | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.21 | A | 0.21 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.17 | A | 0.17 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.12 | A | 0.12 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.11 | A | 0.11 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.14 | A | 0.14 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.22 | A | 0.22 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.25 | A | 0.25 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.25 | A | 0.25 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.25 | A | 0.25 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.27 | A | 0.27 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.27 | A | 0.27 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.27 | A | 0.27 | A | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.27 | A | 0.27 | A | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.26 | A | 0.26 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.17 | A | 0.17 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.13 | A | 0.13 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.12 | A | 0.12 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.09 | A | 0.09 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.07 | A | 0.07 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 18,100 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | 62 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | 33 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | 31 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | 12 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | 42 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | 113 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | 277 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | 430 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | 405 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | 311 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | 355 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | 357 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | 419 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | 383 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | 457 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | 518 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | 577 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | 634 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | 484 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | 378 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | 267 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | 203 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | 138 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | 74 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 2 | | 2 | 2 | 16 | | | 24 | 23 |
| 1:00 | 1 | | 2 | 1 | 22 | | | 33 | 31 |
| 2:00 | 0 | | 0 | 0 | 27 | | | 41 | 39 |
| 3:00 | 1 | | 2 | 1 | 26 | | | 40 | 38 |
| 4:00 | 3 | | 4 | 4 | 31 | | | 48 | 45 |
| 5:00 | 2 | | 3 | 3 | 35 | | | 54 | 51 |
| 6:00 | 9 | | 14 | 13 | 55 | | | 83 | 79 |
| 7:00 | 16 | | 24 | 23 | 67 | | | 102 | 97 |
| 8:00 | 9 | | 14 | 13 | 63 | | | 96 | 91 |
| 9:00 | 20 | | 31 | 30 | 70 | | | 107 | 101 |
| 10:00 | 10 | | 16 | 15 | 87 | | | 132 | 125 |
| 11:00 | 7 | | 10 | 10 | 74 | | | 113 | 107 |
| 12:00 | 9 | | 13 | 13 | 83 | | | 126 | 120 |
| 13:00 | 13 | | 19 | 19 | 68 | | | 103 | 98 |
| 14:00 | 10 | | 15 | 14 | 64 | | | 97 | 93 |
| 15:00 | 11 | | 16 | 16 | 68 | | | 103 | 98 |
| 16:00 | 7 | | 11 | 10 | 55 | | | 83 | 79 |
| 17:00 | 5 | | 7 | 7 | 46 | | | 69 | 66 |
| 18:00 | 3 | | 5 | 4 | 34 | | | 52 | 50 |
| 19:00 | 5 | | 8 | 7 | 26 | | | 40 | 38 |
| 20:00 | 3 | | 5 | 4 | 22 | | | 33 | 31 |
| 21:00 | 4 | | 6 | 6 | 29 | | | 44 | 42 |
| 22:00 | 1 | | 2 | 1 | 28 | | | 43 | 41 |
| 23:00 | 1 | | 2 | 1 | 19 | | | 29 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|---|
| Route: 220 | | Area Type: Exurban |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 18,100 17,200 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 1:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 2:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 3:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 4:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 5:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 6:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 7:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 8:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 9:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 10:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 11:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 12:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 13:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 14:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 15:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 16:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 17:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 18:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 19:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 20:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 21:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 22:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 23:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 18,100 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | | 45 | 43 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | | 37 | 36 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | | 29 | 27 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | | 30 | 28 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | | 82 | 78 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | | 256 | 244 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | | 436 | 415 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | | 408 | 387 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | | 368 | 350 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | | 319 | 303 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | | 354 | 336 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | | 371 | 353 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | | 402 | 382 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | | 423 | 402 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | | 465 | 441 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | | 528 | 501 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | | 507 | 481 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | | 560 | 533 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | | 411 | 390 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | | 302 | 287 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | | 260 | 247 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | | 196 | 186 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | | 154 | 147 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | | 93 | 88 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 2 | | | 2 | 2 | 25 | | | 37 | 36 |
| 1:00 | 3 | | | 4 | 4 | 14 | | | 21 | 20 |
| 2:00 | 2 | | | 3 | 3 | 20 | | | 31 | 30 |
| 3:00 | 3 | | | 4 | 4 | 30 | | | 46 | 44 |
| 4:00 | 3 | | | 5 | 4 | 38 | | | 58 | 56 |
| 5:00 | 2 | | | 2 | 2 | 45 | | | 68 | 64 |
| 6:00 | 5 | | | 7 | 7 | 53 | | | 80 | 76 |
| 7:00 | 11 | | | 17 | 16 | 57 | | | 87 | 83 |
| 8:00 | 5 | | | 7 | 7 | 73 | | | 111 | 106 |
| 9:00 | 9 | | | 14 | 13 | 77 | | | 118 | 112 |
| 10:00 | 13 | | | 19 | 19 | 90 | | | 137 | 130 |
| 11:00 | 10 | | | 16 | 15 | 90 | | | 137 | 130 |
| 12:00 | 10 | | | 15 | 14 | 80 | | | 122 | 116 |
| 13:00 | 12 | | | 19 | 18 | 87 | | | 132 | 126 |
| 14:00 | 10 | | | 15 | 14 | 77 | | | 118 | 112 |
| 15:00 | 10 | | | 16 | 15 | 68 | | | 103 | 98 |
| 16:00 | 9 | | | 14 | 13 | 74 | | | 113 | 107 |
| 17:00 | 7 | | | 10 | 10 | 52 | | | 79 | 75 |
| 18:00 | 9 | | | 14 | 13 | 55 | | | 84 | 80 |
| 19:00 | 6 | | | 9 | 9 | 52 | | | 79 | 76 |
| 20:00 | 3 | | | 5 | 4 | 28 | | | 42 | 40 |
| 21:00 | 1 | | | 1 | 1 | 40 | | | 61 | 58 |
| 22:00 | 1 | | | 2 | 1 | 32 | | | 49 | 47 |
| 23:00 | 3 | | | 4 | 4 | 26 | | | 39 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--------------------|---|
| Route: 220 | | Area Type: Exurban |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 18,100 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 1:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 2:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 3:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 4:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 5:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 6:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 7:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 8:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 9:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 10:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 11:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 12:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 13:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 14:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 15:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 16:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 17:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 18:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 19:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 20:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 21:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 22:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |
| 23:00 | 55 | 53 | | | 63 | 61 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

Route: 220

Area Type: Exurban

From: Proposed Rte 220/Bypass Interchange (s

Traffic Assignment: Constrained - Noise Study

To: Morehead Ave (Ridgeway 87)

Existing Year: 2018 ADT: 11,900

No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 hrs.

Design Year: 2040 ADT: 18,100

17,200

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 71 | | 108 | 102 | 1.0% | 100% | | 44 | 0 | 66 |
| 1:00 | 46 | | 70 | 67 | 0.7% | 100% | | 39 | 0 | 59 |
| 2:00 | 39 | | 60 | 57 | 0.7% | 100% | | 50 | 0 | 76 |
| 3:00 | 28 | | 42 | 40 | 0.7% | 100% | | 60 | 0 | 91 |
| 4:00 | 81 | | 124 | 118 | 1.3% | 100% | | 75 | 0 | 115 |
| 5:00 | 243 | | 369 | 351 | 2.7% | 100% | | 84 | 0 | 127 |
| 6:00 | 469 | | 714 | 678 | 5.0% | 100% | | 121 | 0 | 185 |
| 7:00 | 551 | | 838 | 796 | 5.9% | 100% | | 152 | 0 | 231 |
| 8:00 | 508 | | 773 | 735 | 5.5% | 100% | | 150 | 0 | 228 |
| 9:00 | 414 | | 630 | 598 | 5.0% | 100% | | 177 | 0 | 270 |
| 10:00 | 466 | | 709 | 674 | 5.6% | 100% | | 200 | 0 | 304 |
| 11:00 | 479 | | 728 | 692 | 5.5% | 100% | | 181 | 0 | 276 |
| 12:00 | 540 | | 821 | 780 | 6.1% | 100% | | 182 | 0 | 277 |
| 13:00 | 530 | | 807 | 767 | 6.0% | 100% | | 180 | 0 | 274 |
| 14:00 | 606 | | 921 | 875 | 6.4% | 100% | | 161 | 0 | 245 |
| 15:00 | 688 | | 1,046 | 994 | 7.1% | 100% | | 156 | 0 | 238 |
| 16:00 | 712 | | 1,083 | 1,029 | 7.2% | 100% | | 146 | 0 | 221 |
| 17:00 | 786 | | 1,195 | 1,135 | 7.5% | 100% | | 109 | 0 | 165 |
| 18:00 | 588 | | 895 | 850 | 5.8% | 100% | | 102 | 0 | 155 |
| 19:00 | 447 | | 680 | 647 | 4.5% | 100% | | 90 | 0 | 136 |
| 20:00 | 346 | | 526 | 500 | 3.4% | 100% | | 55 | 0 | 84 |
| 21:00 | 262 | | 399 | 379 | 2.8% | 100% | | 74 | 0 | 112 |
| 22:00 | 192 | | 292 | 278 | 2.1% | 100% | | 63 | 0 | 95 |
| 23:00 | 110 | | 167 | 158 | 1.3% | 100% | | 48 | 0 | 73 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 86 | | | 102 | 98 | 90 | 86 |
| 1:00 | 102 | 98 | | | 117 | 112 | 102 | 98 |
| 2:00 | 125 | 120 | | | 143 | 137 | 125 | 120 |
| 3:00 | 176 | 168 | | | 201 | 193 | 176 | 168 |
| 4:00 | 107 | 102 | | | 122 | 117 | 107 | 102 |
| 5:00 | 75 | 71 | | | 85 | 82 | 75 | 71 |
| 6:00 | 70 | 67 | | | 80 | 77 | 70 | 67 |
| 7:00 | 71 | 68 | | | 81 | 78 | 71 | 68 |
| 8:00 | 72 | 69 | | | 82 | 79 | 72 | 69 |
| 9:00 | 79 | 76 | | | 90 | 87 | 79 | 76 |
| 10:00 | 79 | 76 | | | 90 | 87 | 79 | 76 |
| 11:00 | 76 | 73 | | | 87 | 84 | 76 | 73 |
| 12:00 | 74 | 71 | | | 85 | 81 | 74 | 71 |
| 13:00 | 74 | 71 | | | 85 | 81 | 74 | 71 |
| 14:00 | 70 | 67 | | | 80 | 77 | 70 | 67 |
| 15:00 | 68 | 65 | | | 78 | 75 | 68 | 65 |
| 16:00 | 67 | 64 | | | 76 | 73 | 67 | 64 |
| 17:00 | 63 | 61 | | | 72 | 69 | 63 | 61 |
| 18:00 | 65 | 62 | | | 74 | 71 | 65 | 62 |
| 19:00 | 67 | 64 | | | 76 | 73 | 67 | 64 |
| 20:00 | 64 | 62 | | | 73 | 71 | 64 | 62 |
| 21:00 | 71 | 68 | | | 81 | 78 | 71 | 68 |
| 22:00 | 73 | 70 | | | 84 | 81 | 73 | 70 |
| 23:00 | 80 | 77 | | | 91 | 88 | 80 | 77 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Morehead Ave (Ridgeway 87) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Soapstone Rd (Rte 687) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

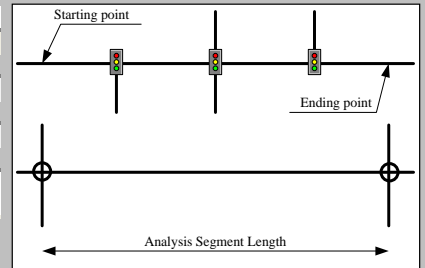
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Principal Art/X-way/Pk-way |
| Capacity: | 1,300 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 63 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 1 | | 3 | |
| 17. Analysis Segment No. of Signals: | 1 | | 0 | |
| 18. Average Cycle Length (sec.): | 180 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 148 | | 0 | |
| 20. Signal Coordination: | No Coord. | | 0.00 | |
| Delay caused by signal, mph: | 4 | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 15,600 18,100 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 21,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-09

Route: **220**
 From: **Morehead Ave (Ridgeway 87)**
 To: **Soapstone Rd (Rte 687)**
 Jurisdiction: **2. Salem/Henry Co**
 Run Date: **4/29/2019** Time Span: **24 Hours**



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: **Exurban**
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: **15,600** No-build
 Design Year: 2040 ADT: **18,100** **21,400**

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 1:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 3:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 4:00 | 0.06 | A | | | | | 0.06 | A | 0.06 | A | 0.08 | A | 0.08 |
| 5:00 | 0.08 | A | | | | | 0.09 | A | 0.09 | A | 0.12 | A | 0.12 |
| 6:00 | 0.17 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 7:00 | 0.25 | A | | | | | 0.25 | A | 0.25 | A | 0.34 | B | 0.34 |
| 8:00 | 0.23 | A | | | | | 0.23 | A | 0.23 | A | 0.31 | B | 0.31 |
| 9:00 | 0.22 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 10:00 | 0.24 | A | | | | | 0.24 | A | 0.24 | A | 0.33 | B | 0.33 |
| 11:00 | 0.22 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | B | 0.30 |
| 12:00 | 0.25 | A | | | | | 0.26 | A | 0.26 | A | 0.35 | B | 0.35 |
| 13:00 | 0.23 | A | | | | | 0.23 | A | 0.23 | A | 0.31 | B | 0.31 |
| 14:00 | 0.24 | A | | | | | 0.25 | A | 0.25 | A | 0.34 | B | 0.34 |
| 15:00 | 0.27 | A | | | | | 0.27 | A | 0.27 | A | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.27 | A | 0.27 | A | 0.37 | B | 0.37 |
| 17:00 | 0.27 | A | | | | | 0.28 | A | 0.28 | A | 0.38 | B | 0.38 |
| 18:00 | 0.21 | A | | | | | 0.21 | A | 0.21 | A | 0.28 | A | 0.28 |
| 19:00 | 0.16 | A | | | | | 0.17 | A | 0.17 | A | 0.23 | A | 0.23 |
| 20:00 | 0.12 | A | | | | | 0.12 | A | 0.12 | A | 0.16 | A | 0.16 |
| 21:00 | 0.11 | A | | | | | 0.11 | A | 0.11 | A | 0.15 | A | 0.15 |
| 22:00 | 0.08 | A | | | | | 0.08 | A | 0.08 | A | 0.11 | A | 0.11 |
| 23:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |
| 1:00 | 0.03 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 3:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |
| 4:00 | 0.08 | A | | | | | 0.08 | A | 0.08 | A | 0.11 | A | 0.11 |
| 5:00 | 0.14 | A | | | | | 0.14 | A | 0.14 | A | 0.20 | A | 0.20 |
| 6:00 | 0.22 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 7:00 | 0.22 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | B | 0.30 |
| 8:00 | 0.22 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | B | 0.30 |
| 9:00 | 0.21 | A | | | | | 0.22 | A | 0.22 | A | 0.29 | A | 0.29 |
| 10:00 | 0.25 | A | | | | | 0.25 | A | 0.25 | A | 0.34 | B | 0.34 |
| 11:00 | 0.25 | A | | | | | 0.25 | A | 0.25 | A | 0.34 | B | 0.34 |
| 12:00 | 0.25 | A | | | | | 0.25 | A | 0.25 | A | 0.34 | B | 0.34 |
| 13:00 | 0.27 | A | | | | | 0.27 | A | 0.27 | A | 0.36 | B | 0.36 |
| 14:00 | 0.26 | A | | | | | 0.27 | A | 0.27 | A | 0.36 | B | 0.36 |
| 15:00 | 0.27 | A | | | | | 0.27 | A | 0.27 | A | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.27 | A | 0.27 | A | 0.37 | B | 0.37 |
| 17:00 | 0.26 | A | | | | | 0.26 | A | 0.26 | A | 0.36 | B | 0.36 |
| 18:00 | 0.22 | A | | | | | 0.22 | A | 0.22 | A | 0.30 | A | 0.30 |
| 19:00 | 0.17 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 20:00 | 0.12 | A | | | | | 0.13 | A | 0.13 | A | 0.17 | A | 0.17 |
| 21:00 | 0.12 | A | | | | | 0.12 | A | 0.12 | A | 0.16 | A | 0.16 |
| 22:00 | 0.09 | A | | | | | 0.09 | A | 0.09 | A | 0.13 | A | 0.13 |
| 23:00 | 0.07 | A | | | | | 0.07 | A | 0.07 | A | 0.09 | A | 0.09 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 18,100 | 21,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 54 | | | 62 | 74 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 28 | | | 33 | 39 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 27 | | | 31 | 37 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 11 | | | 12 | 15 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 36 | | | 42 | 50 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 97 | | | 113 | 134 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 239 | | | 277 | 328 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 371 | | | 430 | 509 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 349 | | | 405 | 479 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 268 | | | 311 | 368 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 306 | | | 355 | 420 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 308 | | | 357 | 422 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 361 | | | 419 | 495 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 330 | | | 383 | 453 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 394 | | | 457 | 540 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 447 | | | 518 | 613 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 497 | | | 577 | 682 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 547 | | | 634 | 750 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 417 | | | 484 | 572 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 326 | | | 378 | 447 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 230 | | | 267 | 315 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 175 | | | 203 | 241 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 119 | | | 138 | 163 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 64 | | | 74 | 88 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 2 | | | 2 | 3 | 21 | | | 24 | 29 |
| 1:00 | 1 | | | 2 | 2 | 28 | | | 33 | 39 |
| 2:00 | 0 | | | 0 | 0 | 36 | | | 41 | 49 |
| 3:00 | 1 | | | 2 | 2 | 34 | | | 40 | 47 |
| 4:00 | 3 | | | 4 | 5 | 41 | | | 48 | 56 |
| 5:00 | 3 | | | 3 | 4 | 46 | | | 54 | 64 |
| 6:00 | 12 | | | 14 | 17 | 72 | | | 83 | 99 |
| 7:00 | 21 | | | 24 | 29 | 88 | | | 102 | 121 |
| 8:00 | 12 | | | 14 | 17 | 83 | | | 96 | 113 |
| 9:00 | 27 | | | 31 | 37 | 92 | | | 107 | 126 |
| 10:00 | 13 | | | 16 | 18 | 114 | | | 132 | 156 |
| 11:00 | 9 | | | 10 | 12 | 97 | | | 113 | 134 |
| 12:00 | 11 | | | 13 | 16 | 109 | | | 126 | 149 |
| 13:00 | 17 | | | 19 | 23 | 89 | | | 103 | 122 |
| 14:00 | 13 | | | 15 | 18 | 84 | | | 97 | 115 |
| 15:00 | 14 | | | 16 | 19 | 89 | | | 103 | 122 |
| 16:00 | 9 | | | 11 | 13 | 72 | | | 83 | 99 |
| 17:00 | 6 | | | 7 | 8 | 60 | | | 69 | 82 |
| 18:00 | 4 | | | 5 | 6 | 45 | | | 52 | 62 |
| 19:00 | 7 | | | 8 | 9 | 34 | | | 40 | 47 |
| 20:00 | 4 | | | 5 | 6 | 28 | | | 33 | 39 |
| 21:00 | 5 | | | 6 | 7 | 38 | | | 44 | 53 |
| 22:00 | 1 | | | 2 | 2 | 37 | | | 43 | 51 |
| 23:00 | 1 | | | 2 | 2 | 25 | | | 29 | 34 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 18,100 21,400 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|------------|--|--|---|------------|-----------------------|------------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl'd (PS= 55) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 1:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 2:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 3:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 4:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 5:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 6:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 7:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 8:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 9:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 10:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 11:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 12:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 13:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 14:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 15:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 16:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 17:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 18:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 19:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 20:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 21:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 22:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 23:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 18,100 | 21,400 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 39 | | | 45 | 53 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 32 | | | 37 | 44 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 25 | | | 29 | 34 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 26 | | | 30 | 35 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 71 | | | 82 | 97 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 221 | | | 256 | 303 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 376 | | | 436 | 516 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 351 | | | 408 | 482 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 317 | | | 368 | 435 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 275 | | | 319 | 377 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 305 | | | 354 | 418 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 320 | | | 371 | 439 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 347 | | | 402 | 475 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 365 | | | 423 | 500 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 400 | | | 465 | 549 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 455 | | | 528 | 624 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 437 | | | 507 | 599 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 483 | | | 560 | 663 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 354 | | | 411 | 486 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 261 | | | 302 | 358 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 224 | | | 260 | 307 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 169 | | | 196 | 231 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 133 | | | 154 | 182 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 80 | | | 93 | 110 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 32 | | | 37 | 44 |
| 1:00 | 3 | | | 4 | 5 | 18 | | | 21 | 25 |
| 2:00 | 3 | | | 3 | 4 | 27 | | | 31 | 37 |
| 3:00 | 3 | | | 4 | 5 | 40 | | | 46 | 54 |
| 4:00 | 4 | | | 5 | 6 | 50 | | | 58 | 69 |
| 5:00 | 2 | | | 2 | 3 | 58 | | | 68 | 80 |
| 6:00 | 6 | | | 7 | 8 | 69 | | | 80 | 95 |
| 7:00 | 15 | | | 17 | 20 | 75 | | | 87 | 103 |
| 8:00 | 6 | | | 7 | 8 | 96 | | | 111 | 132 |
| 9:00 | 12 | | | 14 | 17 | 101 | | | 118 | 139 |
| 10:00 | 17 | | | 19 | 23 | 118 | | | 137 | 162 |
| 11:00 | 13 | | | 16 | 18 | 118 | | | 137 | 162 |
| 12:00 | 13 | | | 15 | 18 | 105 | | | 122 | 145 |
| 13:00 | 16 | | | 19 | 22 | 114 | | | 132 | 157 |
| 14:00 | 13 | | | 15 | 18 | 101 | | | 118 | 139 |
| 15:00 | 13 | | | 16 | 18 | 89 | | | 103 | 122 |
| 16:00 | 12 | | | 14 | 17 | 97 | | | 113 | 134 |
| 17:00 | 9 | | | 10 | 12 | 68 | | | 79 | 93 |
| 18:00 | 12 | | | 14 | 17 | 73 | | | 84 | 100 |
| 19:00 | 8 | | | 9 | 11 | 69 | | | 79 | 94 |
| 20:00 | 4 | | | 5 | 6 | 36 | | | 42 | 50 |
| 21:00 | 1 | | | 1 | 1 | 52 | | | 61 | 72 |
| 22:00 | 1 | | | 2 | 2 | 42 | | | 49 | 58 |
| 23:00 | 3 | | | 4 | 5 | 34 | | | 39 | 46 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 18,100 21,400 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 1:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 2:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 3:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 4:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 5:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 6:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 7:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 8:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 9:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 10:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 11:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 12:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 13:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 14:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 15:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 16:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 17:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 18:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 19:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 20:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 21:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 22:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 23:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 18,100 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 93 | | 108 | 127 | 1.0% | 100% | | 57 | 0 | 66 |
| 1:00 | 60 | | 70 | 83 | 0.7% | 100% | | 51 | 0 | 59 |
| 2:00 | 52 | | 60 | 71 | 0.7% | 100% | | 65 | 0 | 76 |
| 3:00 | 36 | | 42 | 50 | 0.7% | 100% | | 79 | 0 | 91 |
| 4:00 | 107 | | 124 | 147 | 1.3% | 100% | | 99 | 0 | 115 |
| 5:00 | 318 | | 369 | 437 | 2.7% | 100% | | 109 | 0 | 127 |
| 6:00 | 615 | | 714 | 844 | 5.0% | 100% | | 159 | 0 | 185 |
| 7:00 | 722 | | 838 | 991 | 5.9% | 100% | | 199 | 0 | 231 |
| 8:00 | 666 | | 773 | 914 | 5.5% | 100% | | 197 | 0 | 228 |
| 9:00 | 543 | | 630 | 745 | 5.0% | 100% | | 232 | 0 | 270 |
| 10:00 | 611 | | 709 | 839 | 5.6% | 100% | | 262 | 0 | 304 |
| 11:00 | 627 | | 728 | 861 | 5.5% | 100% | | 238 | 0 | 276 |
| 12:00 | 707 | | 821 | 970 | 6.1% | 100% | | 238 | 0 | 277 |
| 13:00 | 695 | | 807 | 954 | 6.0% | 100% | | 236 | 0 | 274 |
| 14:00 | 794 | | 921 | 1,089 | 6.4% | 100% | | 211 | 0 | 245 |
| 15:00 | 901 | | 1,046 | 1,237 | 7.1% | 100% | | 205 | 0 | 238 |
| 16:00 | 934 | | 1,083 | 1,281 | 7.2% | 100% | | 191 | 0 | 221 |
| 17:00 | 1,030 | | 1,195 | 1,413 | 7.5% | 100% | | 142 | 0 | 165 |
| 18:00 | 771 | | 895 | 1,058 | 5.8% | 100% | | 134 | 0 | 155 |
| 19:00 | 586 | | 680 | 804 | 4.5% | 100% | | 118 | 0 | 136 |
| 20:00 | 453 | | 526 | 622 | 3.4% | 100% | | 73 | 0 | 84 |
| 21:00 | 344 | | 399 | 472 | 2.8% | 100% | | 97 | 0 | 112 |
| 22:00 | 252 | | 292 | 346 | 2.1% | 100% | | 82 | 0 | 95 |
| 23:00 | 144 | | 167 | 197 | 1.3% | 100% | | 63 | 0 | 73 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 83 | | | 102 | 98 | 90 | 83 |
| 1:00 | 102 | 95 | | | 117 | 112 | 102 | 95 |
| 2:00 | 125 | 116 | | | 143 | 137 | 125 | 116 |
| 3:00 | 176 | 163 | | | 201 | 193 | 176 | 163 |
| 4:00 | 107 | 99 | | | 122 | 117 | 107 | 99 |
| 5:00 | 75 | 69 | | | 85 | 82 | 75 | 69 |
| 6:00 | 70 | 65 | | | 80 | 77 | 70 | 65 |
| 7:00 | 71 | 66 | | | 81 | 78 | 71 | 66 |
| 8:00 | 72 | 67 | | | 82 | 79 | 72 | 67 |
| 9:00 | 79 | 73 | | | 90 | 87 | 79 | 73 |
| 10:00 | 79 | 73 | | | 90 | 87 | 79 | 73 |
| 11:00 | 76 | 71 | | | 87 | 84 | 76 | 71 |
| 12:00 | 74 | 69 | | | 85 | 81 | 74 | 69 |
| 13:00 | 74 | 69 | | | 85 | 81 | 74 | 69 |
| 14:00 | 70 | 65 | | | 80 | 77 | 70 | 65 |
| 15:00 | 68 | 63 | | | 78 | 75 | 68 | 63 |
| 16:00 | 67 | 62 | | | 76 | 73 | 67 | 62 |
| 17:00 | 63 | 59 | | | 72 | 69 | 63 | 59 |
| 18:00 | 65 | 60 | | | 74 | 71 | 65 | 60 |
| 19:00 | 67 | 62 | | | 76 | 73 | 67 | 62 |
| 20:00 | 64 | 60 | | | 73 | 71 | 64 | 60 |
| 21:00 | 71 | 66 | | | 81 | 78 | 71 | 66 |
| 22:00 | 73 | 68 | | | 84 | 81 | 73 | 68 |
| 23:00 | 80 | 74 | | | 91 | 88 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.90

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Soapstone Rd (Rte 687) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Water Plant Rd 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

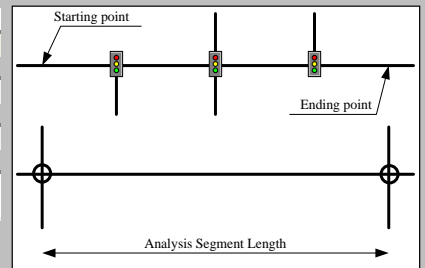
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Principal Art/X-way/Pk-way |
| Capacity: | 1,300 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 63 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Existing Year 2018 | | Design Year 2040 | |
|--|--------------------|------------|------------------|------------|
| | Northbound | Southbound | Northbound | Southbound |
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 3 | | 3 | |
| 17. Analysis Segment No. of Signals: | 1 | | 0 | |
| 18. Average Cycle Length (sec.): | 135 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 0 | |
| 20. Signal Coordination: | No Coord. | | 0.00 | |
| Delay caused by signal, mph: | 3 | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 18,000 18,100 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 23,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-09

Route: 220
From: Soapstone Rd (Rte 687)
To: Water Plant Rd
Jurisdiction: 2. Salem/Henry Co
Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
Existing Year: 2018 ADT: 18,000 No-build
Design Year: 2040 ADT: 18,100 23,400

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 1:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 2:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 3:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 4:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.08 | A | 0.08 |
| 5:00 | 0.10 | A | | | | | 0.09 | A | 0.09 | A | 0.13 | A | 0.13 |
| 6:00 | 0.20 | A | | | | | 0.17 | A | 0.17 | A | 0.26 | A | 0.26 |
| 7:00 | 0.29 | A | | | | | 0.25 | A | 0.25 | A | 0.37 | B | 0.37 |
| 8:00 | 0.26 | A | | | | | 0.23 | A | 0.23 | A | 0.34 | B | 0.34 |
| 9:00 | 0.25 | A | | | | | 0.22 | A | 0.22 | A | 0.33 | B | 0.33 |
| 10:00 | 0.28 | A | | | | | 0.24 | A | 0.24 | A | 0.36 | B | 0.36 |
| 11:00 | 0.25 | A | | | | | 0.22 | A | 0.22 | A | 0.33 | B | 0.33 |
| 12:00 | 0.29 | A | | | | | 0.26 | A | 0.26 | A | 0.38 | B | 0.38 |
| 13:00 | 0.26 | A | | | | | 0.23 | A | 0.23 | A | 0.34 | B | 0.34 |
| 14:00 | 0.28 | A | | | | | 0.25 | A | 0.25 | A | 0.37 | B | 0.37 |
| 15:00 | 0.31 | B | | | | | 0.27 | A | 0.27 | A | 0.41 | B | 0.41 |
| 16:00 | 0.31 | B | | | | | 0.27 | A | 0.27 | A | 0.40 | B | 0.40 |
| 17:00 | 0.32 | B | | | | | 0.28 | A | 0.28 | A | 0.41 | B | 0.41 |
| 18:00 | 0.24 | A | | | | | 0.21 | A | 0.21 | A | 0.31 | B | 0.31 |
| 19:00 | 0.19 | A | | | | | 0.17 | A | 0.17 | A | 0.25 | A | 0.25 |
| 20:00 | 0.14 | A | | | | | 0.12 | A | 0.12 | A | 0.18 | A | 0.18 |
| 21:00 | 0.13 | A | | | | | 0.11 | A | 0.11 | A | 0.16 | A | 0.16 |
| 22:00 | 0.10 | A | | | | | 0.08 | A | 0.08 | A | 0.12 | A | 0.12 |
| 23:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |
| 1:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 3:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | | 0.08 | A | 0.08 | A | 0.12 | A | 0.12 |
| 5:00 | 0.17 | A | | | | | 0.14 | A | 0.14 | A | 0.21 | A | 0.21 |
| 6:00 | 0.25 | A | | | | | 0.22 | A | 0.22 | A | 0.33 | B | 0.33 |
| 7:00 | 0.26 | A | | | | | 0.22 | A | 0.22 | A | 0.33 | B | 0.33 |
| 8:00 | 0.25 | A | | | | | 0.22 | A | 0.22 | A | 0.33 | B | 0.33 |
| 9:00 | 0.25 | A | | | | | 0.22 | A | 0.22 | A | 0.32 | B | 0.32 |
| 10:00 | 0.29 | A | | | | | 0.25 | A | 0.25 | A | 0.37 | B | 0.37 |
| 11:00 | 0.29 | A | | | | | 0.25 | A | 0.25 | A | 0.37 | B | 0.37 |
| 12:00 | 0.28 | A | | | | | 0.25 | A | 0.25 | A | 0.37 | B | 0.37 |
| 13:00 | 0.31 | B | | | | | 0.27 | A | 0.27 | A | 0.40 | B | 0.40 |
| 14:00 | 0.30 | B | | | | | 0.27 | A | 0.27 | A | 0.40 | B | 0.40 |
| 15:00 | 0.32 | B | | | | | 0.27 | A | 0.27 | A | 0.41 | B | 0.41 |
| 16:00 | 0.32 | B | | | | | 0.27 | A | 0.27 | A | 0.41 | B | 0.41 |
| 17:00 | 0.30 | A | | | | | 0.26 | A | 0.26 | A | 0.39 | B | 0.39 |
| 18:00 | 0.25 | A | | | | | 0.22 | A | 0.22 | A | 0.33 | B | 0.33 |
| 19:00 | 0.20 | A | | | | | 0.17 | A | 0.17 | A | 0.26 | A | 0.26 |
| 20:00 | 0.14 | A | | | | | 0.13 | A | 0.13 | A | 0.19 | A | 0.19 |
| 21:00 | 0.13 | A | | | | | 0.12 | A | 0.12 | A | 0.17 | A | 0.17 |
| 22:00 | 0.11 | A | | | | | 0.09 | A | 0.09 | A | 0.14 | A | 0.14 |
| 23:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem: [Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 18,100 | 23,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 62 | | | 62 | 81 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 33 | | | 33 | 42 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 31 | | | 31 | 40 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 12 | | | 12 | 16 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 42 | | | 42 | 54 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 112 | | | 113 | 146 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 276 | | | 277 | 359 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 428 | | | 430 | 556 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 403 | | | 405 | 524 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 309 | | | 311 | 402 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 353 | | | 355 | 459 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 355 | | | 357 | 461 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 416 | | | 419 | 541 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 381 | | | 383 | 496 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 454 | | | 457 | 590 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 515 | | | 518 | 670 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 574 | | | 577 | 746 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 631 | | | 634 | 820 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 481 | | | 484 | 626 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 376 | | | 378 | 489 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 265 | | | 267 | 345 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 202 | | | 203 | 263 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 137 | | | 138 | 178 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 74 | | | 74 | 96 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 24 | | | 24 | 31 |
| 1:00 | 2 | | | 2 | 2 | 33 | | | 33 | 42 |
| 2:00 | 0 | | | 0 | 0 | 41 | | | 41 | 53 |
| 3:00 | 2 | | | 2 | 2 | 40 | | | 40 | 51 |
| 4:00 | 4 | | | 4 | 5 | 47 | | | 48 | 61 |
| 5:00 | 3 | | | 3 | 4 | 53 | | | 54 | 70 |
| 6:00 | 14 | | | 14 | 18 | 83 | | | 83 | 108 |
| 7:00 | 24 | | | 24 | 31 | 102 | | | 102 | 132 |
| 8:00 | 14 | | | 14 | 18 | 95 | | | 96 | 124 |
| 9:00 | 31 | | | 31 | 40 | 106 | | | 107 | 138 |
| 10:00 | 16 | | | 16 | 20 | 131 | | | 132 | 170 |
| 11:00 | 10 | | | 10 | 13 | 112 | | | 113 | 146 |
| 12:00 | 13 | | | 13 | 17 | 126 | | | 126 | 163 |
| 13:00 | 19 | | | 19 | 25 | 102 | | | 103 | 133 |
| 14:00 | 15 | | | 15 | 19 | 97 | | | 97 | 126 |
| 15:00 | 16 | | | 16 | 21 | 102 | | | 103 | 133 |
| 16:00 | 11 | | | 11 | 14 | 83 | | | 83 | 108 |
| 17:00 | 7 | | | 7 | 9 | 69 | | | 69 | 90 |
| 18:00 | 5 | | | 5 | 6 | 52 | | | 52 | 68 |
| 19:00 | 8 | | | 8 | 10 | 40 | | | 40 | 51 |
| 20:00 | 5 | | | 5 | 6 | 33 | | | 33 | 42 |
| 21:00 | 6 | | | 6 | 8 | 44 | | | 44 | 57 |
| 22:00 | 2 | | | 2 | 2 | 43 | | | 43 | 55 |
| 23:00 | 2 | | | 2 | 2 | 29 | | | 29 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---------------------------------|--------------------|---|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 18,100 23,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|------------|--|--|---|------------|-----------------------|------------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl'd (PS= 55) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 1:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 2:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 3:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 4:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 5:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 6:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 7:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 8:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 9:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 10:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 11:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 12:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 13:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 14:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 15:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 16:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 17:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 18:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 19:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 20:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 21:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 22:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 23:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--|--|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 18,100 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 45 | | | 45 | 58 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 37 | | | 37 | 48 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 29 | | | 29 | 37 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 29 | | | 30 | 38 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 81 | | | 82 | 106 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 255 | | | 256 | 332 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 434 | | | 436 | 564 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 405 | | | 408 | 527 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 366 | | | 368 | 476 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 317 | | | 319 | 412 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 352 | | | 354 | 457 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 369 | | | 371 | 480 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 400 | | | 402 | 520 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 421 | | | 423 | 547 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 462 | | | 465 | 601 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 525 | | | 528 | 682 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 504 | | | 507 | 655 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 557 | | | 560 | 724 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 408 | | | 411 | 531 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 301 | | | 302 | 391 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 258 | | | 260 | 336 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 195 | | | 196 | 253 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 153 | | | 154 | 200 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 92 | | | 93 | 120 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 37 | | | 37 | 48 |
| 1:00 | 4 | | | 4 | 5 | 21 | | | 21 | 27 |
| 2:00 | 3 | | | 3 | 4 | 31 | | | 31 | 40 |
| 3:00 | 4 | | | 4 | 5 | 46 | | | 46 | 59 |
| 4:00 | 5 | | | 5 | 6 | 58 | | | 58 | 76 |
| 5:00 | 2 | | | 2 | 3 | 67 | | | 68 | 88 |
| 6:00 | 7 | | | 7 | 9 | 80 | | | 80 | 104 |
| 7:00 | 17 | | | 17 | 22 | 87 | | | 87 | 113 |
| 8:00 | 7 | | | 7 | 9 | 111 | | | 111 | 144 |
| 9:00 | 14 | | | 14 | 18 | 117 | | | 118 | 152 |
| 10:00 | 19 | | | 19 | 25 | 136 | | | 137 | 177 |
| 11:00 | 16 | | | 16 | 20 | 136 | | | 137 | 177 |
| 12:00 | 15 | | | 15 | 19 | 122 | | | 122 | 158 |
| 13:00 | 19 | | | 19 | 24 | 132 | | | 132 | 171 |
| 14:00 | 15 | | | 15 | 19 | 117 | | | 118 | 152 |
| 15:00 | 16 | | | 16 | 20 | 102 | | | 103 | 133 |
| 16:00 | 14 | | | 14 | 18 | 112 | | | 113 | 146 |
| 17:00 | 10 | | | 10 | 13 | 78 | | | 79 | 102 |
| 18:00 | 14 | | | 14 | 18 | 84 | | | 84 | 109 |
| 19:00 | 9 | | | 9 | 12 | 79 | | | 79 | 103 |
| 20:00 | 5 | | | 5 | 6 | 42 | | | 42 | 54 |
| 21:00 | 1 | | | 1 | 1 | 60 | | | 61 | 79 |
| 22:00 | 2 | | | 2 | 2 | 49 | | | 49 | 63 |
| 23:00 | 4 | | | 4 | 5 | 39 | | | 39 | 50 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---------------------------------|--------------------|---|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 |
| Jurisdiction: 2. Salem/Henry Co | | No-build |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | Design Year: 2040 ADT: 18,100 |
| | | 23,400 |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 1:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 2:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 3:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 4:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 5:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 6:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 7:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 8:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 9:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 10:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 11:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 12:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 13:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 14:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 15:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 16:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 17:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 18:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 19:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 20:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 21:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 22:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |
| 23:00 | 55 | 51 | | | 63 | 61 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|---|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 |
| Jurisdiction: 2. Salem/Henry Co | | No-build |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 18,100 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 107 | | 108 | 139 | 1.0% | 100% | | 66 | 0 | 66 |
| 1:00 | 70 | | 70 | 91 | 0.7% | 100% | | 59 | 0 | 59 |
| 2:00 | 60 | | 60 | 78 | 0.7% | 100% | | 75 | 0 | 76 |
| 3:00 | 42 | | 42 | 54 | 0.7% | 100% | | 91 | 0 | 91 |
| 4:00 | 123 | | 124 | 160 | 1.3% | 100% | | 114 | 0 | 115 |
| 5:00 | 367 | | 369 | 478 | 2.7% | 100% | | 126 | 0 | 127 |
| 6:00 | 710 | | 714 | 923 | 5.0% | 100% | | 184 | 0 | 185 |
| 7:00 | 833 | | 838 | 1,083 | 5.9% | 100% | | 229 | 0 | 231 |
| 8:00 | 769 | | 773 | 1,000 | 5.5% | 100% | | 227 | 0 | 228 |
| 9:00 | 626 | | 630 | 814 | 5.0% | 100% | | 268 | 0 | 270 |
| 10:00 | 705 | | 709 | 917 | 5.6% | 100% | | 302 | 0 | 304 |
| 11:00 | 724 | | 728 | 941 | 5.5% | 100% | | 274 | 0 | 276 |
| 12:00 | 816 | | 821 | 1,061 | 6.1% | 100% | | 275 | 0 | 277 |
| 13:00 | 802 | | 807 | 1,043 | 6.0% | 100% | | 272 | 0 | 274 |
| 14:00 | 916 | | 921 | 1,191 | 6.4% | 100% | | 243 | 0 | 245 |
| 15:00 | 1,040 | | 1,046 | 1,352 | 7.1% | 100% | | 236 | 0 | 238 |
| 16:00 | 1,077 | | 1,083 | 1,401 | 7.2% | 100% | | 220 | 0 | 221 |
| 17:00 | 1,188 | | 1,195 | 1,545 | 7.5% | 100% | | 164 | 0 | 165 |
| 18:00 | 890 | | 895 | 1,157 | 5.8% | 100% | | 154 | 0 | 155 |
| 19:00 | 677 | | 680 | 880 | 4.5% | 100% | | 136 | 0 | 136 |
| 20:00 | 523 | | 526 | 680 | 3.4% | 100% | | 84 | 0 | 84 |
| 21:00 | 397 | | 399 | 516 | 2.8% | 100% | | 112 | 0 | 112 |
| 22:00 | 291 | | 292 | 378 | 2.1% | 100% | | 95 | 0 | 95 |
| 23:00 | 166 | | 167 | 216 | 1.3% | 100% | | 73 | 0 | 73 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 65) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|------------|--|--|-----------------|------------|---------------------|------------|
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 90 | 83 | | | 102 | 98 | 90 | 83 |
| 1:00 | 102 | 95 | | | 117 | 112 | 102 | 95 |
| 2:00 | 125 | 116 | | | 143 | 137 | 125 | 116 |
| 3:00 | 176 | 163 | | | 201 | 193 | 176 | 163 |
| 4:00 | 107 | 99 | | | 122 | 117 | 107 | 99 |
| 5:00 | 75 | 69 | | | 85 | 82 | 75 | 69 |
| 6:00 | 70 | 65 | | | 80 | 77 | 70 | 65 |
| 7:00 | 71 | 65 | | | 81 | 78 | 71 | 65 |
| 8:00 | 72 | 66 | | | 82 | 79 | 72 | 66 |
| 9:00 | 79 | 73 | | | 90 | 87 | 79 | 73 |
| 10:00 | 79 | 73 | | | 90 | 87 | 79 | 73 |
| 11:00 | 76 | 71 | | | 87 | 84 | 76 | 71 |
| 12:00 | 74 | 69 | | | 85 | 81 | 74 | 69 |
| 13:00 | 74 | 69 | | | 85 | 81 | 74 | 69 |
| 14:00 | 70 | 65 | | | 80 | 77 | 70 | 65 |
| 15:00 | 68 | 63 | | | 78 | 75 | 68 | 63 |
| 16:00 | 67 | 62 | | | 76 | 73 | 67 | 62 |
| 17:00 | 63 | 58 | | | 72 | 69 | 63 | 58 |
| 18:00 | 65 | 60 | | | 74 | 71 | 65 | 60 |
| 19:00 | 67 | 62 | | | 76 | 73 | 67 | 62 |
| 20:00 | 64 | 60 | | | 73 | 71 | 64 | 60 |
| 21:00 | 71 | 66 | | | 81 | 78 | 71 | 66 |
| 22:00 | 73 | 68 | | | 84 | 81 | 73 | 68 |
| 23:00 | 80 | 74 | | | 91 | 88 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 1.50

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Water Plant Rd 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Rte 58/Rte 220 Interchange 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

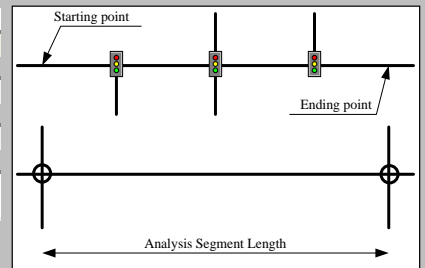
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|-------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Major Arterial with PS>50 mph |
| Capacity: | 1,300 pcphpl | 1,300 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 45 | 45 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 48 | 48 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------------|------------|------------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 10 | | 10 | |
| 17. Analysis Segment No. of Signals: | 2 | | 2 | |
| 18. Average Cycle Length (sec.): | 108 | | 108 | |
| 19. Average Green Time per Cycle (sec.): | 93 | | 93 | |
| 20. Signal Coordination: | Excellent Coord. | | Excellent Coord. | |
| Delay caused by signal, mph: | 0 | | 0 | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 25,300 20,500 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 31,900

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: **220**
From: **Water Plant Rd**
To: **Rte 58/Rte 220 Interchange**
Jurisdiction: **2. Salem/Henry Co**
Run Date: **4/29/2019** Time Span: **24 Hours**



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: **Exurban**
Traffic Assignment: Constrained - Noise Study
Existing Year: 2018 ADT: **25,300** No-build
Design Year: 2040 ADT: **20,500** **31,900**

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblld | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 1:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 2:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 3:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | | 0.07 | A | 0.07 | A | 0.12 | A | 0.12 |
| 5:00 | 0.14 | A | | | | | 0.11 | A | 0.11 | A | 0.17 | A | 0.17 |
| 6:00 | 0.28 | A | | | | | 0.23 | A | 0.23 | A | 0.35 | B | 0.35 |
| 7:00 | 0.40 | B | | | | | 0.32 | B | 0.32 | B | 0.51 | C | 0.51 |
| 8:00 | 0.37 | B | | | | | 0.30 | A | 0.30 | A | 0.46 | B | 0.46 |
| 9:00 | 0.35 | B | | | | | 0.29 | A | 0.29 | A | 0.44 | B | 0.44 |
| 10:00 | 0.39 | B | | | | | 0.32 | B | 0.32 | B | 0.49 | B | 0.49 |
| 11:00 | 0.36 | B | | | | | 0.29 | A | 0.29 | A | 0.45 | B | 0.45 |
| 12:00 | 0.41 | B | | | | | 0.33 | B | 0.33 | B | 0.52 | C | 0.52 |
| 13:00 | 0.37 | B | | | | | 0.30 | B | 0.30 | B | 0.47 | B | 0.47 |
| 14:00 | 0.40 | B | | | | | 0.32 | B | 0.32 | B | 0.50 | B | 0.50 |
| 15:00 | 0.44 | B | | | | | 0.36 | B | 0.36 | B | 0.55 | C | 0.55 |
| 16:00 | 0.44 | B | | | | | 0.35 | B | 0.35 | B | 0.55 | C | 0.55 |
| 17:00 | 0.44 | B | | | | | 0.36 | B | 0.36 | B | 0.56 | C | 0.56 |
| 18:00 | 0.34 | B | | | | | 0.27 | A | 0.27 | A | 0.42 | B | 0.42 |
| 19:00 | 0.27 | A | | | | | 0.22 | A | 0.22 | A | 0.34 | B | 0.34 |
| 20:00 | 0.19 | A | | | | | 0.16 | A | 0.16 | A | 0.24 | A | 0.24 |
| 21:00 | 0.18 | A | | | | | 0.14 | A | 0.14 | A | 0.22 | A | 0.22 |
| 22:00 | 0.13 | A | | | | | 0.11 | A | 0.11 | A | 0.17 | A | 0.17 |
| 23:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblld | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.10 | A | 0.10 |
| 1:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |
| 2:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 3:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |
| 4:00 | 0.13 | A | | | | | 0.10 | A | 0.10 | A | 0.16 | A | 0.16 |
| 5:00 | 0.23 | A | | | | | 0.19 | A | 0.19 | A | 0.29 | A | 0.29 |
| 6:00 | 0.35 | B | | | | | 0.29 | A | 0.29 | A | 0.44 | B | 0.44 |
| 7:00 | 0.36 | B | | | | | 0.29 | A | 0.29 | A | 0.45 | B | 0.45 |
| 8:00 | 0.36 | B | | | | | 0.29 | A | 0.29 | A | 0.45 | B | 0.45 |
| 9:00 | 0.35 | B | | | | | 0.28 | A | 0.28 | A | 0.44 | B | 0.44 |
| 10:00 | 0.40 | B | | | | | 0.32 | B | 0.32 | B | 0.51 | C | 0.51 |
| 11:00 | 0.40 | B | | | | | 0.33 | B | 0.33 | B | 0.51 | C | 0.51 |
| 12:00 | 0.40 | B | | | | | 0.32 | B | 0.32 | B | 0.51 | C | 0.51 |
| 13:00 | 0.43 | B | | | | | 0.35 | B | 0.35 | B | 0.54 | C | 0.54 |
| 14:00 | 0.43 | B | | | | | 0.35 | B | 0.35 | B | 0.54 | C | 0.54 |
| 15:00 | 0.44 | B | | | | | 0.36 | B | 0.36 | B | 0.56 | C | 0.56 |
| 16:00 | 0.44 | B | | | | | 0.36 | B | 0.36 | B | 0.56 | C | 0.56 |
| 17:00 | 0.42 | B | | | | | 0.34 | B | 0.34 | B | 0.53 | C | 0.53 |
| 18:00 | 0.35 | B | | | | | 0.29 | A | 0.29 | A | 0.44 | B | 0.44 |
| 19:00 | 0.28 | A | | | | | 0.23 | A | 0.23 | A | 0.36 | B | 0.36 |
| 20:00 | 0.20 | A | | | | | 0.16 | A | 0.16 | A | 0.26 | A | 0.26 |
| 21:00 | 0.19 | A | | | | | 0.15 | A | 0.15 | A | 0.24 | A | 0.24 |
| 22:00 | 0.15 | A | | | | | 0.12 | A | 0.12 | A | 0.19 | A | 0.19 |
| 23:00 | 0.11 | A | | | | | 0.09 | A | 0.09 | A | 0.14 | A | 0.14 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--------------------|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,500 | 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 87 | | 71 | 110 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 46 | | 37 | 58 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 44 | | 35 | 55 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 17 | | 14 | 22 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 59 | | 48 | 74 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 158 | | 128 | 199 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 388 | | 314 | 489 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 601 | | 487 | 758 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 567 | | 459 | 714 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 435 | | 352 | 548 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 497 | | 403 | 626 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 499 | | 404 | 629 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 585 | | 474 | 738 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 536 | | 434 | 676 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 638 | | 517 | 805 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 724 | | 587 | 913 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 806 | | 653 | 1,016 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 887 | | 719 | 1,118 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 677 | | 548 | 853 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 528 | | 428 | 666 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 373 | | 302 | 470 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 284 | | 230 | 359 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 193 | | 156 | 243 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 103 | | 84 | 130 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|--------------|------------------------|--|--------|--------------|
| | Existing | | Design | Design Nbl'd | Existing | | Design | Design Nbl'd |
| 0:00 | 3 | | 3 | 4 | 34 | | 27 | 43 |
| 1:00 | 2 | | 2 | 3 | 46 | | 37 | 58 |
| 2:00 | 0 | | 0 | 0 | 58 | | 47 | 73 |
| 3:00 | 2 | | 2 | 3 | 56 | | 45 | 70 |
| 4:00 | 5 | | 4 | 7 | 66 | | 54 | 84 |
| 5:00 | 4 | | 4 | 5 | 75 | | 61 | 95 |
| 6:00 | 20 | | 16 | 25 | 117 | | 94 | 147 |
| 7:00 | 34 | | 27 | 43 | 143 | | 116 | 180 |
| 8:00 | 20 | | 16 | 25 | 134 | | 109 | 169 |
| 9:00 | 44 | | 35 | 55 | 149 | | 121 | 188 |
| 10:00 | 22 | | 18 | 27 | 184 | | 149 | 232 |
| 11:00 | 14 | | 11 | 18 | 158 | | 128 | 199 |
| 12:00 | 19 | | 15 | 23 | 176 | | 143 | 223 |
| 13:00 | 27 | | 22 | 34 | 144 | | 117 | 181 |
| 14:00 | 21 | | 17 | 26 | 136 | | 110 | 172 |
| 15:00 | 23 | | 19 | 29 | 144 | | 117 | 181 |
| 16:00 | 15 | | 12 | 19 | 117 | | 94 | 147 |
| 17:00 | 10 | | 8 | 12 | 97 | | 79 | 122 |
| 18:00 | 7 | | 5 | 8 | 73 | | 59 | 92 |
| 19:00 | 11 | | 9 | 14 | 56 | | 45 | 70 |
| 20:00 | 7 | | 5 | 8 | 46 | | 37 | 58 |
| 21:00 | 9 | | 7 | 11 | 62 | | 50 | 78 |
| 22:00 | 2 | | 2 | 3 | 60 | | 49 | 76 |
| 23:00 | 2 | | 2 | 3 | 40 | | 33 | 51 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | | | | | |
|--|------------------------------|--------------------|--------------------------------|---|---|-----------|-----------------------|-----------|
| Route: 220 | | | | Area Type: Exurban | | | | |
| From: Water Plant Rd | | | | Traffic Assignment: Constrained - Noise Study | | | | |
| To: Rte 58/Rte 220 Interchange | | | | Existing Year: 2018 ADT: 25,300 | | No-build | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 20,500 | | 31,900 | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
| | Calc. Existing (PS= 45) | | | | Design (PS= 45) | | Design Nbl'd (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 1:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 2:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 3:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 4:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 5:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 6:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 7:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 8:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 9:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 10:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 11:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 12:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 13:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 14:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 15:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 16:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 17:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 18:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 19:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 20:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 21:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 22:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 23:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 20,500 | 31,900 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 63 | | | 51 | 80 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 52 | | | 42 | 66 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 40 | | | 33 | 51 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 41 | | | 34 | 52 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 114 | | | 93 | 144 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 358 | | | 290 | 452 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 610 | | | 494 | 769 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 570 | | | 462 | 718 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 514 | | | 417 | 648 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 446 | | | 361 | 562 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 495 | | | 401 | 624 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 519 | | | 420 | 654 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 562 | | | 455 | 709 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 592 | | | 479 | 746 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 649 | | | 526 | 819 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 738 | | | 598 | 930 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 708 | | | 574 | 893 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 783 | | | 635 | 988 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 574 | | | 465 | 724 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 423 | | | 343 | 533 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 363 | | | 294 | 457 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 273 | | | 222 | 345 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 216 | | | 175 | 272 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 130 | | | 105 | 163 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 3 | | | 3 | 4 | 52 | | | 42 | 66 |
| 1:00 | 5 | | | 4 | 7 | 29 | | | 24 | 37 |
| 2:00 | 4 | | | 4 | 5 | 44 | | | 35 | 55 |
| 3:00 | 5 | | | 4 | 7 | 64 | | | 52 | 81 |
| 4:00 | 7 | | | 5 | 8 | 82 | | | 66 | 103 |
| 5:00 | 3 | | | 3 | 4 | 95 | | | 77 | 120 |
| 6:00 | 10 | | | 8 | 12 | 112 | | | 91 | 141 |
| 7:00 | 24 | | | 19 | 30 | 122 | | | 99 | 154 |
| 8:00 | 10 | | | 8 | 12 | 156 | | | 126 | 196 |
| 9:00 | 20 | | | 16 | 25 | 165 | | | 133 | 207 |
| 10:00 | 27 | | | 22 | 34 | 192 | | | 155 | 242 |
| 11:00 | 22 | | | 18 | 27 | 192 | | | 155 | 242 |
| 12:00 | 21 | | | 17 | 26 | 171 | | | 139 | 216 |
| 13:00 | 26 | | | 21 | 33 | 185 | | | 150 | 234 |
| 14:00 | 21 | | | 17 | 26 | 165 | | | 133 | 207 |
| 15:00 | 22 | | | 18 | 27 | 144 | | | 117 | 181 |
| 16:00 | 20 | | | 16 | 25 | 158 | | | 128 | 199 |
| 17:00 | 14 | | | 11 | 18 | 110 | | | 89 | 139 |
| 18:00 | 20 | | | 16 | 25 | 118 | | | 95 | 148 |
| 19:00 | 13 | | | 11 | 16 | 111 | | | 90 | 140 |
| 20:00 | 7 | | | 5 | 8 | 59 | | | 48 | 74 |
| 21:00 | 1 | | | 1 | 1 | 85 | | | 69 | 107 |
| 22:00 | 2 | | | 2 | 3 | 69 | | | 56 | 87 |
| 23:00 | 5 | | | 4 | 7 | 54 | | | 44 | 69 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---------------------------------|--------------------|---|
| Route: 220 | | Area Type: Exurban |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,500 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|----------------------|-----------|
| | Calc. Existing (PS= 45) | | | | Design (PS= 45) | | Design Nbfd (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 1:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 2:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 3:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 4:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 5:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 6:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 7:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 8:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 9:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 10:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 11:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 12:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 13:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 14:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 15:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 16:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 17:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 18:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 19:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 20:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 21:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 22:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |
| 23:00 | 48 | 45 | | | 48 | 45 | 48 | 45 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 20,500 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 150 | | 122 | 190 | 1.0% | 100% | | 93 | 0 | 75 |
| 1:00 | 98 | | 79 | 124 | 0.7% | 100% | | 83 | 0 | 67 |
| 2:00 | 84 | | 68 | 106 | 0.7% | 100% | | 106 | 0 | 86 |
| 3:00 | 59 | | 48 | 74 | 0.7% | 100% | | 127 | 0 | 103 |
| 4:00 | 173 | | 140 | 218 | 1.3% | 100% | | 160 | 0 | 130 |
| 5:00 | 516 | | 418 | 651 | 2.7% | 100% | | 178 | 0 | 144 |
| 6:00 | 998 | | 809 | 1,258 | 5.0% | 100% | | 258 | 0 | 209 |
| 7:00 | 1,171 | | 949 | 1,477 | 5.9% | 100% | | 322 | 0 | 261 |
| 8:00 | 1,081 | | 876 | 1,363 | 5.5% | 100% | | 319 | 0 | 259 |
| 9:00 | 880 | | 713 | 1,110 | 5.0% | 100% | | 377 | 0 | 305 |
| 10:00 | 991 | | 803 | 1,250 | 5.6% | 100% | | 425 | 0 | 344 |
| 11:00 | 1,018 | | 824 | 1,283 | 5.5% | 100% | | 386 | 0 | 312 |
| 12:00 | 1,147 | | 930 | 1,446 | 6.1% | 100% | | 387 | 0 | 313 |
| 13:00 | 1,128 | | 914 | 1,422 | 6.0% | 100% | | 382 | 0 | 310 |
| 14:00 | 1,288 | | 1,043 | 1,624 | 6.4% | 100% | | 342 | 0 | 277 |
| 15:00 | 1,462 | | 1,185 | 1,843 | 7.1% | 100% | | 332 | 0 | 269 |
| 16:00 | 1,514 | | 1,227 | 1,909 | 7.2% | 100% | | 309 | 0 | 251 |
| 17:00 | 1,670 | | 1,353 | 2,106 | 7.5% | 100% | | 231 | 0 | 187 |
| 18:00 | 1,251 | | 1,013 | 1,577 | 5.8% | 100% | | 217 | 0 | 176 |
| 19:00 | 951 | | 771 | 1,199 | 4.5% | 100% | | 191 | 0 | 154 |
| 20:00 | 735 | | 596 | 927 | 3.4% | 100% | | 118 | 0 | 95 |
| 21:00 | 558 | | 452 | 703 | 2.8% | 100% | | 157 | 0 | 127 |
| 22:00 | 409 | | 331 | 515 | 2.1% | 100% | | 133 | 0 | 108 |
| 23:00 | 233 | | 189 | 294 | 1.3% | 100% | | 102 | 0 | 83 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 45) | | | | Design (PS= 45) | | Design Nbl (PS= 45) | |
|---------------|-------------------------|------------|--|--|-----------------|------------|---------------------|------------|
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 77 | 72 | | | 77 | 72 | 77 | 72 |
| 1:00 | 88 | 82 | | | 88 | 82 | 88 | 82 |
| 2:00 | 107 | 101 | | | 107 | 101 | 107 | 101 |
| 3:00 | 151 | 141 | | | 151 | 141 | 151 | 141 |
| 4:00 | 92 | 86 | | | 92 | 86 | 92 | 86 |
| 5:00 | 64 | 60 | | | 64 | 60 | 64 | 60 |
| 6:00 | 60 | 56 | | | 60 | 56 | 60 | 56 |
| 7:00 | 61 | 57 | | | 61 | 57 | 61 | 57 |
| 8:00 | 62 | 58 | | | 62 | 58 | 62 | 58 |
| 9:00 | 68 | 64 | | | 68 | 64 | 68 | 64 |
| 10:00 | 68 | 64 | | | 68 | 64 | 68 | 64 |
| 11:00 | 66 | 61 | | | 66 | 61 | 66 | 61 |
| 12:00 | 64 | 60 | | | 64 | 60 | 64 | 60 |
| 13:00 | 64 | 60 | | | 64 | 60 | 64 | 60 |
| 14:00 | 60 | 56 | | | 60 | 56 | 60 | 56 |
| 15:00 | 58 | 55 | | | 58 | 55 | 58 | 55 |
| 16:00 | 57 | 54 | | | 57 | 54 | 57 | 54 |
| 17:00 | 54 | 51 | | | 54 | 51 | 54 | 51 |
| 18:00 | 56 | 52 | | | 56 | 52 | 56 | 52 |
| 19:00 | 57 | 54 | | | 57 | 54 | 57 | 54 |
| 20:00 | 55 | 52 | | | 55 | 52 | 55 | 52 |
| 21:00 | 61 | 57 | | | 61 | 57 | 61 | 57 |
| 22:00 | 63 | 59 | | | 63 | 59 | 63 | 59 |
| 23:00 | 68 | 64 | | | 68 | 64 | 68 | 64 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.50

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: 58 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Rte 58/Rte 220 Interchange 4b. Facility Direction: East-West

4c. Analysis Segment Ending: Proposed Route 58/Bypass Interchange (near Trinity Terrace) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

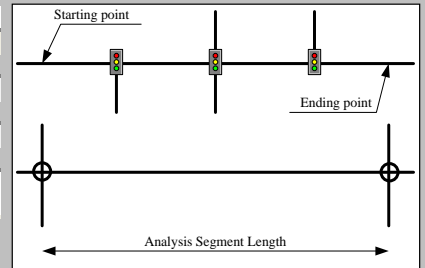
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Eastbound | Westbound | Eastbound | Westbound |
|--|-----------|-----------|-----------|-----------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | 6.0 | 6.0 | 6.0 | 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 16,900 12,100 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 20,000

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|-----------|-------------------|---------|-------------------|---------|--|--|--|--|
| | Tow-way | Eastbound | Eastbound % Truck | | Westbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |
| 100% | | | | | | | | | | |

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

58
TBA

V 2018-0

Route: 58

From: Rte 58/Rte 220 Interchange

To: Proposed Route 58/Bypass Interchange (near Tr



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: 16,900 No-build

Design Year: 2040 ADT: 12,100 20,000

Eastbound

| Starting Time | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | | | |
|---------------|----------------------|---|----------------------|--|----------------------|--|----------------------|-------------|----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblld | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 1:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 3:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 4:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 5:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 6:00 | 0.16 | A | | | | | 0.12 | A | 0.12 | A | 0.19 | A | 0.19 |
| 7:00 | 0.23 | A | | | | | 0.17 | A | 0.17 | A | 0.27 | A | 0.27 |
| 8:00 | 0.21 | A | | | | | 0.15 | A | 0.15 | A | 0.25 | A | 0.25 |
| 9:00 | 0.20 | A | | | | | 0.15 | A | 0.15 | A | 0.24 | A | 0.24 |
| 10:00 | 0.23 | A | | | | | 0.16 | A | 0.16 | A | 0.27 | A | 0.27 |
| 11:00 | 0.21 | A | | | | | 0.15 | A | 0.15 | A | 0.24 | A | 0.24 |
| 12:00 | 0.24 | A | | | | | 0.17 | A | 0.17 | A | 0.28 | A | 0.28 |
| 13:00 | 0.21 | A | | | | | 0.15 | A | 0.15 | A | 0.25 | A | 0.25 |
| 14:00 | 0.23 | A | | | | | 0.16 | A | 0.16 | A | 0.27 | A | 0.27 |
| 15:00 | 0.25 | A | | | | | 0.18 | A | 0.18 | A | 0.30 | A | 0.30 |
| 16:00 | 0.25 | A | | | | | 0.18 | A | 0.18 | A | 0.30 | A | 0.30 |
| 17:00 | 0.26 | A | | | | | 0.18 | A | 0.18 | A | 0.30 | A | 0.30 |
| 18:00 | 0.19 | A | | | | | 0.14 | A | 0.14 | A | 0.23 | A | 0.23 |
| 19:00 | 0.15 | A | | | | | 0.11 | A | 0.11 | A | 0.18 | A | 0.18 |
| 20:00 | 0.11 | A | | | | | 0.08 | A | 0.08 | A | 0.13 | A | 0.13 |
| 21:00 | 0.10 | A | | | | | 0.07 | A | 0.07 | A | 0.12 | A | 0.12 |
| 22:00 | 0.08 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 23:00 | 0.05 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |

Westbound

| Starting Time | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | Capacity= 1500 pchpl | | | | |
|---------------|----------------------|---|----------------------|--|----------------------|--|----------------------|-------------|----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblld | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.02 | A | 0.02 | A | 0.04 | A | 0.04 |
| 2:00 | 0.04 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 3:00 | 0.05 | A | | | | | 0.03 | A | 0.03 | A | 0.06 | A | 0.06 |
| 4:00 | 0.07 | A | | | | | 0.05 | A | 0.05 | A | 0.09 | A | 0.09 |
| 5:00 | 0.13 | A | | | | | 0.10 | A | 0.10 | A | 0.16 | A | 0.16 |
| 6:00 | 0.20 | A | | | | | 0.15 | A | 0.15 | A | 0.24 | A | 0.24 |
| 7:00 | 0.21 | A | | | | | 0.15 | A | 0.15 | A | 0.25 | A | 0.25 |
| 8:00 | 0.21 | A | | | | | 0.15 | A | 0.15 | A | 0.24 | A | 0.24 |
| 9:00 | 0.20 | A | | | | | 0.14 | A | 0.14 | A | 0.24 | A | 0.24 |
| 10:00 | 0.23 | A | | | | | 0.17 | A | 0.17 | A | 0.27 | A | 0.27 |
| 11:00 | 0.23 | A | | | | | 0.17 | A | 0.17 | A | 0.28 | A | 0.28 |
| 12:00 | 0.23 | A | | | | | 0.17 | A | 0.17 | A | 0.27 | A | 0.27 |
| 13:00 | 0.25 | A | | | | | 0.18 | A | 0.18 | A | 0.30 | A | 0.30 |
| 14:00 | 0.25 | A | | | | | 0.18 | A | 0.18 | A | 0.29 | A | 0.29 |
| 15:00 | 0.26 | A | | | | | 0.18 | A | 0.18 | A | 0.30 | A | 0.30 |
| 16:00 | 0.26 | A | | | | | 0.18 | A | 0.18 | A | 0.30 | A | 0.30 |
| 17:00 | 0.24 | A | | | | | 0.17 | A | 0.17 | A | 0.29 | A | 0.29 |
| 18:00 | 0.20 | A | | | | | 0.15 | A | 0.15 | A | 0.24 | A | 0.24 |
| 19:00 | 0.16 | A | | | | | 0.12 | A | 0.12 | A | 0.19 | A | 0.19 |
| 20:00 | 0.12 | A | | | | | 0.08 | A | 0.08 | A | 0.14 | A | 0.14 |
| 21:00 | 0.11 | A | | | | | 0.08 | A | 0.08 | A | 0.13 | A | 0.13 |
| 22:00 | 0.09 | A | | | | | 0.06 | A | 0.06 | A | 0.10 | A | 0.10 |
| 23:00 | 0.06 | A | | | | | 0.04 | A | 0.04 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,100 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Eastbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Eastbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 58 | | | 42 | 69 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 31 | | | 22 | 36 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 29 | | | 21 | 34 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 12 | | | 8 | 14 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 39 | | | 28 | 47 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 106 | | | 76 | 125 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 259 | | | 185 | 307 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 402 | | | 288 | 475 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 378 | | | 271 | 448 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 290 | | | 208 | 344 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 332 | | | 238 | 393 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 333 | | | 239 | 394 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 391 | | | 280 | 462 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 358 | | | 256 | 424 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 426 | | | 305 | 505 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 484 | | | 346 | 573 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 539 | | | 386 | 637 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 592 | | | 424 | 701 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 452 | | | 324 | 535 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 353 | | | 253 | 418 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 249 | | | 178 | 295 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 190 | | | 136 | 225 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 129 | | | 92 | 152 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 69 | | | 49 | 82 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Eastbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 23 | | | 16 | 27 |
| 1:00 | 1 | | | 1 | 2 | 31 | | | 22 | 36 |
| 2:00 | 0 | | | 0 | 0 | 39 | | | 28 | 46 |
| 3:00 | 1 | | | 1 | 2 | 37 | | | 27 | 44 |
| 4:00 | 4 | | | 3 | 4 | 44 | | | 32 | 53 |
| 5:00 | 3 | | | 2 | 3 | 50 | | | 36 | 59 |
| 6:00 | 13 | | | 9 | 16 | 78 | | | 56 | 92 |
| 7:00 | 23 | | | 16 | 27 | 95 | | | 68 | 113 |
| 8:00 | 13 | | | 9 | 16 | 90 | | | 64 | 106 |
| 9:00 | 29 | | | 21 | 34 | 100 | | | 71 | 118 |
| 10:00 | 15 | | | 10 | 17 | 123 | | | 88 | 146 |
| 11:00 | 9 | | | 7 | 11 | 106 | | | 76 | 125 |
| 12:00 | 12 | | | 9 | 15 | 118 | | | 84 | 140 |
| 13:00 | 18 | | | 13 | 22 | 96 | | | 69 | 114 |
| 14:00 | 14 | | | 10 | 16 | 91 | | | 65 | 108 |
| 15:00 | 15 | | | 11 | 18 | 96 | | | 69 | 114 |
| 16:00 | 10 | | | 7 | 12 | 78 | | | 56 | 92 |
| 17:00 | 7 | | | 5 | 8 | 65 | | | 46 | 77 |
| 18:00 | 4 | | | 3 | 5 | 49 | | | 35 | 58 |
| 19:00 | 7 | | | 5 | 9 | 37 | | | 27 | 44 |
| 20:00 | 4 | | | 3 | 5 | 31 | | | 22 | 36 |
| 21:00 | 6 | | | 4 | 7 | 41 | | | 30 | 49 |
| 22:00 | 1 | | | 1 | 2 | 40 | | | 29 | 47 |
| 23:00 | 1 | | | 1 | 2 | 27 | | | 19 | 32 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 58 | | Area Type: Exurban |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,100 20,000 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Eastbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-1a Hwy Spd 60 mph | | | |
|---------------|-----------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 1:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 2:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 3:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 4:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 5:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 6:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 7:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 8:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 9:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 10:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 11:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 12:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 13:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 14:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 15:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 16:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 17:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 18:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 19:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 20:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 21:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 22:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 23:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,100 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Westbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|--------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Westbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 42 | | | 30 | 50 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 35 | | | 25 | 41 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 27 | | | 19 | 32 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 28 | | | 20 | 33 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 76 | | | 55 | 90 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 239 | | | 171 | 283 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 408 | | | 292 | 482 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 381 | | | 273 | 450 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 343 | | | 246 | 406 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 298 | | | 213 | 352 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 330 | | | 237 | 391 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 346 | | | 248 | 410 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 376 | | | 269 | 444 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 395 | | | 283 | 468 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 434 | | | 311 | 513 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 493 | | | 353 | 583 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 473 | | | 339 | 560 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 523 | | | 375 | 619 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 384 | | | 275 | 454 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 282 | | | 202 | 334 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 242 | | | 174 | 287 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 183 | | | 131 | 216 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 144 | | | 103 | 171 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 87 | | | 62 | 102 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Westbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 3 | 35 | | | 25 | 41 |
| 1:00 | 4 | | | 3 | 4 | 20 | | | 14 | 23 |
| 2:00 | 3 | | | 2 | 3 | 29 | | | 21 | 34 |
| 3:00 | 4 | | | 3 | 4 | 43 | | | 31 | 51 |
| 4:00 | 4 | | | 3 | 5 | 55 | | | 39 | 65 |
| 5:00 | 2 | | | 2 | 3 | 63 | | | 45 | 75 |
| 6:00 | 7 | | | 5 | 8 | 75 | | | 54 | 89 |
| 7:00 | 16 | | | 11 | 19 | 82 | | | 58 | 96 |
| 8:00 | 7 | | | 5 | 8 | 104 | | | 75 | 123 |
| 9:00 | 13 | | | 9 | 16 | 110 | | | 79 | 130 |
| 10:00 | 18 | | | 13 | 22 | 128 | | | 92 | 152 |
| 11:00 | 15 | | | 10 | 17 | 128 | | | 92 | 152 |
| 12:00 | 14 | | | 10 | 16 | 114 | | | 82 | 135 |
| 13:00 | 17 | | | 13 | 21 | 124 | | | 89 | 146 |
| 14:00 | 14 | | | 10 | 16 | 110 | | | 79 | 130 |
| 15:00 | 15 | | | 10 | 17 | 96 | | | 69 | 114 |
| 16:00 | 13 | | | 9 | 16 | 106 | | | 76 | 125 |
| 17:00 | 9 | | | 7 | 11 | 74 | | | 53 | 87 |
| 18:00 | 13 | | | 9 | 16 | 79 | | | 56 | 93 |
| 19:00 | 9 | | | 6 | 10 | 74 | | | 53 | 88 |
| 20:00 | 4 | | | 3 | 5 | 39 | | | 28 | 47 |
| 21:00 | 1 | | | 1 | 1 | 57 | | | 41 | 67 |
| 22:00 | 1 | | | 1 | 2 | 46 | | | 33 | 54 |
| 23:00 | 4 | | | 3 | 4 | 36 | | | 26 | 43 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 12,100 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Westbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-lr Hwy Spd 60 mph | | | |
|---------------|-----------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 1:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 2:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 3:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 4:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 5:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 6:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 7:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 8:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 9:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 10:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 11:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 12:00 | 70 | 70 | | | 71 | 71 | 70 | 70 |
| 13:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 14:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 15:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 16:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 17:00 | 70 | 70 | | | 71 | 71 | 69 | 69 |
| 18:00 | 71 | 71 | | | 71 | 71 | 70 | 70 |
| 19:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 20:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 21:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 22:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 23:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

Route: 58

Area Type: Exurban

From: Rte 58/Rte 220 Interchange

Traffic Assignment: Constrained - Noise Study

To: Proposed Route 58/Bypass Interchange

Existing Year: 2018 ADT: 16,900

No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 hrs.

Design Year: 2040 ADT: 12,100

20,000

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 100 | | | 72 | 119 | 1.0% | 100% | | 62 | 0 | 44 |
| 1:00 | 65 | | | 47 | 78 | 0.7% | 100% | | 55 | 0 | 40 |
| 2:00 | 56 | | | 40 | 66 | 0.7% | 100% | | 71 | 0 | 51 |
| 3:00 | 39 | | | 28 | 47 | 0.7% | 100% | | 85 | 0 | 61 |
| 4:00 | 116 | | | 83 | 137 | 1.3% | 100% | | 107 | 0 | 77 |
| 5:00 | 345 | | | 247 | 408 | 2.7% | 100% | | 119 | 0 | 85 |
| 6:00 | 667 | | | 477 | 789 | 5.0% | 100% | | 172 | 0 | 123 |
| 7:00 | 782 | | | 560 | 926 | 5.9% | 100% | | 215 | 0 | 154 |
| 8:00 | 722 | | | 517 | 854 | 5.5% | 100% | | 213 | 0 | 153 |
| 9:00 | 588 | | | 421 | 696 | 5.0% | 100% | | 252 | 0 | 180 |
| 10:00 | 662 | | | 474 | 784 | 5.6% | 100% | | 284 | 0 | 203 |
| 11:00 | 680 | | | 487 | 804 | 5.5% | 100% | | 258 | 0 | 184 |
| 12:00 | 766 | | | 549 | 907 | 6.1% | 100% | | 258 | 0 | 185 |
| 13:00 | 753 | | | 539 | 891 | 6.0% | 100% | | 255 | 0 | 183 |
| 14:00 | 860 | | | 616 | 1,018 | 6.4% | 100% | | 229 | 0 | 164 |
| 15:00 | 977 | | | 699 | 1,156 | 7.1% | 100% | | 222 | 0 | 159 |
| 16:00 | 1,012 | | | 724 | 1,197 | 7.2% | 100% | | 207 | 0 | 148 |
| 17:00 | 1,116 | | | 799 | 1,320 | 7.5% | 100% | | 154 | 0 | 110 |
| 18:00 | 835 | | | 598 | 989 | 5.8% | 100% | | 145 | 0 | 104 |
| 19:00 | 635 | | | 455 | 752 | 4.5% | 100% | | 127 | 0 | 91 |
| 20:00 | 491 | | | 352 | 581 | 3.4% | 100% | | 79 | 0 | 56 |
| 21:00 | 373 | | | 267 | 441 | 2.8% | 100% | | 105 | 0 | 75 |
| 22:00 | 273 | | | 195 | 323 | 2.1% | 100% | | 89 | 0 | 64 |
| 23:00 | 156 | | | 112 | 184 | 1.3% | 100% | | 68 | 0 | 49 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 115 | 115 | | | 115 | 115 | 115 | 115 |
| 1:00 | 132 | 132 | | | 132 | 132 | 132 | 132 |
| 2:00 | 161 | 161 | | | 161 | 161 | 161 | 161 |
| 3:00 | 226 | 226 | | | 226 | 226 | 226 | 226 |
| 4:00 | 137 | 137 | | | 137 | 137 | 137 | 137 |
| 5:00 | 96 | 96 | | | 96 | 96 | 96 | 96 |
| 6:00 | 89 | 89 | | | 90 | 90 | 89 | 89 |
| 7:00 | 90 | 90 | | | 91 | 91 | 89 | 89 |
| 8:00 | 91 | 91 | | | 92 | 92 | 91 | 91 |
| 9:00 | 101 | 101 | | | 101 | 101 | 100 | 100 |
| 10:00 | 100 | 100 | | | 101 | 101 | 100 | 100 |
| 11:00 | 97 | 97 | | | 98 | 98 | 96 | 96 |
| 12:00 | 94 | 94 | | | 95 | 95 | 93 | 93 |
| 13:00 | 94 | 94 | | | 95 | 95 | 93 | 93 |
| 14:00 | 89 | 89 | | | 90 | 90 | 88 | 88 |
| 15:00 | 86 | 86 | | | 87 | 87 | 85 | 85 |
| 16:00 | 84 | 84 | | | 85 | 85 | 83 | 83 |
| 17:00 | 80 | 80 | | | 81 | 81 | 79 | 79 |
| 18:00 | 83 | 83 | | | 83 | 83 | 82 | 82 |
| 19:00 | 85 | 85 | | | 85 | 85 | 85 | 85 |
| 20:00 | 83 | 83 | | | 83 | 83 | 82 | 82 |
| 21:00 | 91 | 91 | | | 91 | 91 | 91 | 91 |
| 22:00 | 95 | 95 | | | 95 | 95 | 94 | 94 |
| 23:00 | 103 | 103 | | | 103 | 103 | 103 | 103 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 2.00

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: Byp 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Water Plant Rd 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Proposed Route 58/Bypass Interchange (near Trinity Terrace) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

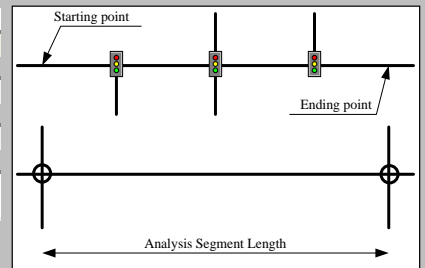
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | 6.0 | 6.0 | 6.0 | 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 0 13,000 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 0

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

V 2018-0

Byp
TBA

Route: **Byp**
 From: **Water Plant Rd**
 To: **Proposed Route 58/Bypass Interchange (near Tr**
 Jurisdiction: **2. Salem/Henry Co**
 Run Date: **4/29/2019** Time Span: **24 Hours**



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: **Exurban**
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: **0** No-build
 Design Year: 2040 ADT: **13,000** **0**

Northbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | |
|---------------|-----------------------|--|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.12 | A | 0.12 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.17 | A | 0.17 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.20 | A | 0.20 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.20 | A | 0.20 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.15 | A | 0.15 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.12 | A | 0.12 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.09 | A | 0.09 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |

Southbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | |
|---------------|-----------------------|--|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|-----|-----|
| | Existing | | | | | | Design | | Design Nblnd | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | |
| 0:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 1:00 | N/A | | | | | | 0.02 | A | 0.02 | A | N/A | N/A |
| 2:00 | N/A | | | | | | 0.03 | A | 0.03 | A | N/A | N/A |
| 3:00 | N/A | | | | | | 0.04 | A | 0.04 | A | N/A | N/A |
| 4:00 | N/A | | | | | | 0.06 | A | 0.06 | A | N/A | N/A |
| 5:00 | N/A | | | | | | 0.10 | A | 0.10 | A | N/A | N/A |
| 6:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 7:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 8:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 9:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 10:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 11:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 12:00 | N/A | | | | | | 0.18 | A | 0.18 | A | N/A | N/A |
| 13:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 14:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 15:00 | N/A | | | | | | 0.20 | A | 0.20 | A | N/A | N/A |
| 16:00 | N/A | | | | | | 0.20 | A | 0.20 | A | N/A | N/A |
| 17:00 | N/A | | | | | | 0.19 | A | 0.19 | A | N/A | N/A |
| 18:00 | N/A | | | | | | 0.16 | A | 0.16 | A | N/A | N/A |
| 19:00 | N/A | | | | | | 0.13 | A | 0.13 | A | N/A | N/A |
| 20:00 | N/A | | | | | | 0.09 | A | 0.09 | A | N/A | N/A |
| 21:00 | N/A | | | | | | 0.08 | A | 0.08 | A | N/A | N/A |
| 22:00 | N/A | | | | | | 0.07 | A | 0.07 | A | N/A | N/A |
| 23:00 | N/A | | | | | | 0.05 | A | 0.05 | A | N/A | N/A |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | | |
|---|---------------------------|--|----------|--|
| Route: Byp | | Area Type: Exurban | | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 13,000 | 0 | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | | 45 | 0 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 0 | | | 24 | 0 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 0 | | | 22 | 0 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 0 | | | 9 | 0 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 0 | | | 30 | 0 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 0 | | | 81 | 0 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 0 | | | 199 | 0 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 0 | | | 309 | 0 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 0 | | | 291 | 0 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 0 | | | 223 | 0 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 0 | | | 255 | 0 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 0 | | | 256 | 0 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 0 | | | 301 | 0 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 0 | | | 275 | 0 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 0 | | | 328 | 0 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 0 | | | 372 | 0 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 0 | | | 414 | 0 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 0 | | | 456 | 0 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 0 | | | 348 | 0 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 0 | | | 271 | 0 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 0 | | | 191 | 0 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 0 | | | 146 | 0 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 0 | | | 99 | 0 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 0 | | | 53 | 0 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 0 | | | 2 | 0 | 0 | | | 17 | 0 |
| 1:00 | 0 | | | 1 | 0 | 0 | | | 24 | 0 |
| 2:00 | 0 | | | 0 | 0 | 0 | | | 30 | 0 |
| 3:00 | 0 | | | 1 | 0 | 0 | | | 29 | 0 |
| 4:00 | 0 | | | 3 | 0 | 0 | | | 34 | 0 |
| 5:00 | 0 | | | 2 | 0 | 0 | | | 39 | 0 |
| 6:00 | 0 | | | 10 | 0 | 0 | | | 60 | 0 |
| 7:00 | 0 | | | 17 | 0 | 0 | | | 73 | 0 |
| 8:00 | 0 | | | 10 | 0 | 0 | | | 69 | 0 |
| 9:00 | 0 | | | 22 | 0 | 0 | | | 77 | 0 |
| 10:00 | 0 | | | 11 | 0 | 0 | | | 95 | 0 |
| 11:00 | 0 | | | 7 | 0 | 0 | | | 81 | 0 |
| 12:00 | 0 | | | 10 | 0 | 0 | | | 91 | 0 |
| 13:00 | 0 | | | 14 | 0 | 0 | | | 74 | 0 |
| 14:00 | 0 | | | 11 | 0 | 0 | | | 70 | 0 |
| 15:00 | 0 | | | 12 | 0 | 0 | | | 74 | 0 |
| 16:00 | 0 | | | 8 | 0 | 0 | | | 60 | 0 |
| 17:00 | 0 | | | 5 | 0 | 0 | | | 50 | 0 |
| 18:00 | 0 | | | 3 | 0 | 0 | | | 38 | 0 |
| 19:00 | 0 | | | 6 | 0 | 0 | | | 29 | 0 |
| 20:00 | 0 | | | 3 | 0 | 0 | | | 24 | 0 |
| 21:00 | 0 | | | 4 | 0 | 0 | | | 32 | 0 |
| 22:00 | 0 | | | 1 | 0 | 0 | | | 31 | 0 |
| 23:00 | 0 | | | 1 | 0 | 0 | | | 21 | 0 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

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V 2018-09

| | | | | | | | | |
|---|-------------------------------------|---------------------------|--|----------|---|-----------|------------------------------|-----------|
| Route: Byp | | | Area Type: Exurban | | | | | |
| From: Water Plant Rd | | | Traffic Assignment: Constrained - Noise Study | | | | | |
| To: Proposed Route 58/Bypass Interchange | | | Existing Year: 2018 ADT: 0 | No-build | | | | |
| Jurisdiction: 2. Salem/Henry Co | | | Design Year: 2040 ADT: 13,000 | | 0 | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-1a Hwy Spd 60 mph | | | |
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | |
|--|--|--|
| Route: Byp | | Area Type: Exurban |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 No-build |
| Jurisdiction: 2. Salem/Henry Co | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 13,000 0 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|--|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 0 | | 32 | 0 | | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 0 | | 27 | 0 | | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 0 | | 21 | 0 | | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 0 | | 21 | 0 | | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 0 | | 59 | 0 | | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 0 | | 184 | 0 | | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 0 | | 313 | 0 | | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 0 | | 293 | 0 | | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 0 | | 264 | 0 | | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 0 | | 229 | 0 | | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 0 | | 254 | 0 | | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 0 | | 266 | 0 | | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 0 | | 289 | 0 | | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 0 | | 304 | 0 | | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 0 | | 334 | 0 | | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 0 | | 379 | 0 | | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 0 | | 364 | 0 | | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 0 | | 402 | 0 | | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 0 | | 295 | 0 | | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 0 | | 217 | 0 | | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 0 | | 186 | 0 | | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 0 | | 141 | 0 | | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 0 | | 111 | 0 | | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 0 | | 67 | 0 | | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|------------|--|------------------------|--|--------|------------|---|
| | Existing | | Design | Design Nbl | | Existing | | Design | Design Nbl | |
| 0:00 | 0 | | 2 | 0 | | 0 | | | 27 | 0 |
| 1:00 | 0 | | 3 | 0 | | 0 | | | 15 | 0 |
| 2:00 | 0 | | 2 | 0 | | 0 | | | 22 | 0 |
| 3:00 | 0 | | 3 | 0 | | 0 | | | 33 | 0 |
| 4:00 | 0 | | 3 | 0 | | 0 | | | 42 | 0 |
| 5:00 | 0 | | 2 | 0 | | 0 | | | 49 | 0 |
| 6:00 | 0 | | 5 | 0 | | 0 | | | 58 | 0 |
| 7:00 | 0 | | 12 | 0 | | 0 | | | 63 | 0 |
| 8:00 | 0 | | 5 | 0 | | 0 | | | 80 | 0 |
| 9:00 | 0 | | 10 | 0 | | 0 | | | 85 | 0 |
| 10:00 | 0 | | 14 | 0 | | 0 | | | 99 | 0 |
| 11:00 | 0 | | 11 | 0 | | 0 | | | 99 | 0 |
| 12:00 | 0 | | 11 | 0 | | 0 | | | 88 | 0 |
| 13:00 | 0 | | 13 | 0 | | 0 | | | 95 | 0 |
| 14:00 | 0 | | 11 | 0 | | 0 | | | 85 | 0 |
| 15:00 | 0 | | 11 | 0 | | 0 | | | 74 | 0 |
| 16:00 | 0 | | 10 | 0 | | 0 | | | 81 | 0 |
| 17:00 | 0 | | 7 | 0 | | 0 | | | 57 | 0 |
| 18:00 | 0 | | 10 | 0 | | 0 | | | 60 | 0 |
| 19:00 | 0 | | 7 | 0 | | 0 | | | 57 | 0 |
| 20:00 | 0 | | 3 | 0 | | 0 | | | 30 | 0 |
| 21:00 | 0 | | 1 | 0 | | 0 | | | 44 | 0 |
| 22:00 | 0 | | 1 | 0 | | 0 | | | 35 | 0 |
| 23:00 | 0 | | 3 | 0 | | 0 | | | 28 | 0 |



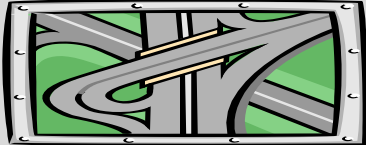
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | |
|---|---|--|----------|
| Route: Byp |  | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 13,000 | 0 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-ls Hwy Spd 60 mph | | | |
|---------------|------------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 1:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 2:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 3:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 4:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 5:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 6:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 7:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 8:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 9:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 10:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 11:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 12:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 13:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 14:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 15:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 16:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 17:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 18:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 19:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 20:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 21:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 22:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |
| 23:00 | 0 | 0 | | | 71 | 71 | 0 | 0 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

Byp
TBA

V 2018-09

| | | | | |
|---|---------------------------|--|----------|--|
| Route: Byp | | Area Type: Exurban | | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 0 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 13,000 | 0 | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | | |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 0 | | 77 | 0 | 1.0% | 100% | | 0 | 0 | 48 |
| 1:00 | 0 | | 50 | 0 | 0.7% | 100% | | 0 | 0 | 43 |
| 2:00 | 0 | | 43 | 0 | 0.7% | 100% | | 0 | 0 | 54 |
| 3:00 | 0 | | 30 | 0 | 0.7% | 100% | | 0 | 0 | 65 |
| 4:00 | 0 | | 89 | 0 | 1.3% | 100% | | 0 | 0 | 82 |
| 5:00 | 0 | | 265 | 0 | 2.7% | 100% | | 0 | 0 | 91 |
| 6:00 | 0 | | 513 | 0 | 5.0% | 100% | | 0 | 0 | 133 |
| 7:00 | 0 | | 602 | 0 | 5.9% | 100% | | 0 | 0 | 166 |
| 8:00 | 0 | | 555 | 0 | 5.5% | 100% | | 0 | 0 | 164 |
| 9:00 | 0 | | 452 | 0 | 5.0% | 100% | | 0 | 0 | 194 |
| 10:00 | 0 | | 509 | 0 | 5.6% | 100% | | 0 | 0 | 218 |
| 11:00 | 0 | | 523 | 0 | 5.5% | 100% | | 0 | 0 | 198 |
| 12:00 | 0 | | 589 | 0 | 6.1% | 100% | | 0 | 0 | 199 |
| 13:00 | 0 | | 579 | 0 | 6.0% | 100% | | 0 | 0 | 196 |
| 14:00 | 0 | | 662 | 0 | 6.4% | 100% | | 0 | 0 | 176 |
| 15:00 | 0 | | 751 | 0 | 7.1% | 100% | | 0 | 0 | 171 |
| 16:00 | 0 | | 778 | 0 | 7.2% | 100% | | 0 | 0 | 159 |
| 17:00 | 0 | | 858 | 0 | 7.5% | 100% | | 0 | 0 | 119 |
| 18:00 | 0 | | 643 | 0 | 5.8% | 100% | | 0 | 0 | 111 |
| 19:00 | 0 | | 489 | 0 | 4.5% | 100% | | 0 | 0 | 98 |
| 20:00 | 0 | | 378 | 0 | 3.4% | 100% | | 0 | 0 | 60 |
| 21:00 | 0 | | 287 | 0 | 2.8% | 100% | | 0 | 0 | 81 |
| 22:00 | 0 | | 210 | 0 | 2.1% | 100% | | 0 | 0 | 68 |
| 23:00 | 0 | | 120 | 0 | 1.3% | 100% | | 0 | 0 | 53 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 65 | 65 | | | 115 | 115 | 65 | 65 |
| 1:00 | 65 | 65 | | | 132 | 132 | 65 | 65 |
| 2:00 | 65 | 65 | | | 161 | 161 | 65 | 65 |
| 3:00 | 65 | 65 | | | 226 | 226 | 65 | 65 |
| 4:00 | 65 | 65 | | | 137 | 137 | 65 | 65 |
| 5:00 | 65 | 65 | | | 96 | 96 | 65 | 65 |
| 6:00 | 65 | 65 | | | 89 | 89 | 65 | 65 |
| 7:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 8:00 | 65 | 65 | | | 92 | 92 | 65 | 65 |
| 9:00 | 65 | 65 | | | 101 | 101 | 65 | 65 |
| 10:00 | 65 | 65 | | | 101 | 101 | 65 | 65 |
| 11:00 | 65 | 65 | | | 98 | 98 | 65 | 65 |
| 12:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 13:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 14:00 | 65 | 65 | | | 90 | 90 | 65 | 65 |
| 15:00 | 65 | 65 | | | 87 | 87 | 65 | 65 |
| 16:00 | 65 | 65 | | | 85 | 85 | 65 | 65 |
| 17:00 | 65 | 65 | | | 80 | 80 | 65 | 65 |
| 18:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 19:00 | 65 | 65 | | | 85 | 85 | 65 | 65 |
| 20:00 | 65 | 65 | | | 83 | 83 | 65 | 65 |
| 21:00 | 65 | 65 | | | 91 | 91 | 65 | 65 |
| 22:00 | 65 | 65 | | | 95 | 95 | 65 | 65 |
| 23:00 | 65 | 65 | | | 103 | 103 | 65 | 65 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beging: North Carolina Border 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

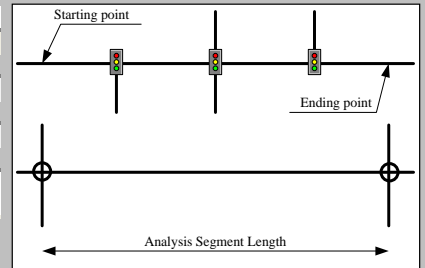
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|--------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Minor Collector with PS<35 mph |
| Capacity: | 1,300 pcphpl | 850 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 35 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 40 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 1 | 1 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 3 | | 6 | |
| 17. Analysis Segment No. of Signals: | 0 | | 0 | |
| 18. Average Cycle Length (sec.): | 0 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 0 | | 0 | |
| 20. Signal Coordination: | 0.00 | | 0.00 | |
| Delay caused by signal, mph: | #N/A | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 11,900 100 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 17,200

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: North Carolina Border
 To: Proposed Rte 220/Bypass Interchange (south of
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 11,900 No-build
 Design Year: 2040 ADT: 100 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 850 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|----------------------|-------------|--------|-------------|-----------------------|-------------|------|
| | Existing | | | | | | Design | | | | Design Nblnd | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | Demand | Constrained | |
| 0:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.00 | A | 0.00 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.00 | A | 0.00 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.00 | A | 0.00 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.00 | A | 0.00 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.00 | A | 0.00 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.00 | A | 0.00 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.00 | A | 0.00 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.00 | A | 0.00 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.00 | A | 0.00 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.00 | A | 0.00 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.00 | A | 0.00 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.01 | A | 0.01 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.01 | A | 0.01 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.01 | A | 0.01 | A | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.00 | A | 0.00 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.00 | A | 0.00 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.00 | A | 0.00 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.00 | A | 0.00 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.00 | A | 0.00 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 850 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|----------------------|-------------|--------|-------------|-----------------------|-------------|------|
| | Existing | | | | | | Design | | | | Design Nblnd | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | Demand | Constrained | |
| 0:00 | 0.04 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.00 | A | 0.00 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.00 | A | 0.00 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.00 | A | 0.00 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.00 | A | 0.00 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.00 | A | 0.00 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.00 | A | 0.00 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.00 | A | 0.00 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.00 | A | 0.00 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.00 | A | 0.00 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.00 | A | 0.00 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.01 | A | 0.01 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.01 | A | 0.01 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.01 | A | 0.01 | A | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.01 | A | 0.01 | A | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.01 | A | 0.01 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.00 | A | 0.00 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.00 | A | 0.00 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.00 | A | 0.00 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.00 | A | 0.00 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.00 | A | 0.00 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.00 | A | 0.00 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 100 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | | 0 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | | 0 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | | 0 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | | 0 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | | 0 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | | 1 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | | 2 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | | 2 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | | 2 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | | 2 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | | 2 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | | 2 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | | 2 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | | 2 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | | 3 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | | 3 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | | 3 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | | 4 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | | 3 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | | 2 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | | 1 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | | 1 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | | 1 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | | 0 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 0 | 2 | 16 | | | 0 | 23 |
| 1:00 | 1 | | | 0 | 1 | 22 | | | 0 | 31 |
| 2:00 | 0 | | | 0 | 0 | 27 | | | 0 | 39 |
| 3:00 | 1 | | | 0 | 1 | 26 | | | 0 | 38 |
| 4:00 | 3 | | | 0 | 4 | 31 | | | 0 | 45 |
| 5:00 | 2 | | | 0 | 3 | 35 | | | 0 | 51 |
| 6:00 | 9 | | | 0 | 13 | 55 | | | 0 | 79 |
| 7:00 | 16 | | | 0 | 23 | 67 | | | 1 | 97 |
| 8:00 | 9 | | | 0 | 13 | 63 | | | 1 | 91 |
| 9:00 | 20 | | | 0 | 30 | 70 | | | 1 | 101 |
| 10:00 | 10 | | | 0 | 15 | 87 | | | 1 | 125 |
| 11:00 | 7 | | | 0 | 10 | 74 | | | 1 | 107 |
| 12:00 | 9 | | | 0 | 13 | 83 | | | 1 | 120 |
| 13:00 | 13 | | | 0 | 19 | 68 | | | 1 | 98 |
| 14:00 | 10 | | | 0 | 14 | 64 | | | 1 | 93 |
| 15:00 | 11 | | | 0 | 16 | 68 | | | 1 | 98 |
| 16:00 | 7 | | | 0 | 10 | 55 | | | 0 | 79 |
| 17:00 | 5 | | | 0 | 7 | 46 | | | 0 | 66 |
| 18:00 | 3 | | | 0 | 4 | 34 | | | 0 | 50 |
| 19:00 | 5 | | | 0 | 7 | 26 | | | 0 | 38 |
| 20:00 | 3 | | | 0 | 4 | 22 | | | 0 | 31 |
| 21:00 | 4 | | | 0 | 6 | 29 | | | 0 | 42 |
| 22:00 | 1 | | | 0 | 1 | 28 | | | 0 | 41 |
| 23:00 | 1 | | | 0 | 1 | 19 | | | 0 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 100 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 1:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 2:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 3:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 4:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 5:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 6:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 7:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 8:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 9:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 10:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 11:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 12:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 13:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 14:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 15:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 16:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 17:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 18:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 19:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 20:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 21:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 22:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 23:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|---|----------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 100 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | | 0 | 43 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | | 0 | 36 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | | 0 | 27 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | | 0 | 28 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | | 0 | 78 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | | 1 | 244 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | | 2 | 415 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | | 2 | 387 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | | 2 | 350 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | | 2 | 303 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | | 2 | 336 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | | 2 | 353 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | | 2 | 382 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | | 2 | 402 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | | 3 | 441 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | | 3 | 501 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | | 3 | 481 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | | 3 | 533 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | | 2 | 390 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | | 2 | 287 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | | 1 | 247 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | | 1 | 186 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | | 1 | 147 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | | 1 | 88 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 0 | 2 | 25 | | | 0 | 36 |
| 1:00 | 3 | | | 0 | 4 | 14 | | | 0 | 20 |
| 2:00 | 2 | | | 0 | 3 | 20 | | | 0 | 30 |
| 3:00 | 3 | | | 0 | 4 | 30 | | | 0 | 44 |
| 4:00 | 3 | | | 0 | 4 | 38 | | | 0 | 56 |
| 5:00 | 2 | | | 0 | 2 | 45 | | | 0 | 64 |
| 6:00 | 5 | | | 0 | 7 | 53 | | | 0 | 76 |
| 7:00 | 11 | | | 0 | 16 | 57 | | | 0 | 83 |
| 8:00 | 5 | | | 0 | 7 | 73 | | | 1 | 106 |
| 9:00 | 9 | | | 0 | 13 | 77 | | | 1 | 112 |
| 10:00 | 13 | | | 0 | 19 | 90 | | | 1 | 130 |
| 11:00 | 10 | | | 0 | 15 | 90 | | | 1 | 130 |
| 12:00 | 10 | | | 0 | 14 | 80 | | | 1 | 116 |
| 13:00 | 12 | | | 0 | 18 | 87 | | | 1 | 126 |
| 14:00 | 10 | | | 0 | 14 | 77 | | | 1 | 112 |
| 15:00 | 10 | | | 0 | 15 | 68 | | | 1 | 98 |
| 16:00 | 9 | | | 0 | 13 | 74 | | | 1 | 107 |
| 17:00 | 7 | | | 0 | 10 | 52 | | | 0 | 75 |
| 18:00 | 9 | | | 0 | 13 | 55 | | | 0 | 80 |
| 19:00 | 6 | | | 0 | 9 | 52 | | | 0 | 76 |
| 20:00 | 3 | | | 0 | 4 | 28 | | | 0 | 40 |
| 21:00 | 1 | | | 0 | 1 | 40 | | | 0 | 58 |
| 22:00 | 1 | | | 0 | 1 | 32 | | | 0 | 47 |
| 23:00 | 3 | | | 0 | 4 | 26 | | | 0 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 100 17,200 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 1:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 2:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 3:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 4:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 5:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 6:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 7:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 8:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 9:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 10:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 11:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 12:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 13:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 14:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 15:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 16:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 17:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 18:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 19:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 20:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 21:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 22:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |
| 23:00 | 55 | 53 | | | 40 | 33 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---|--|---|----------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (S) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 100 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 71 | | | 1 | 102 | 1.0% | 100% | 44 | 0 | 0 |
| 1:00 | 46 | | | 0 | 67 | 0.7% | 100% | 39 | 0 | 0 |
| 2:00 | 39 | | | 0 | 57 | 0.7% | 100% | 50 | 0 | 0 |
| 3:00 | 28 | | | 0 | 40 | 0.7% | 100% | 60 | 0 | 1 |
| 4:00 | 81 | | | 1 | 118 | 1.3% | 100% | 75 | 0 | 1 |
| 5:00 | 243 | | | 2 | 351 | 2.7% | 100% | 84 | 0 | 1 |
| 6:00 | 469 | | | 4 | 678 | 5.0% | 100% | 121 | 0 | 1 |
| 7:00 | 551 | | | 5 | 796 | 5.9% | 100% | 152 | 0 | 1 |
| 8:00 | 508 | | | 4 | 735 | 5.5% | 100% | 150 | 0 | 1 |
| 9:00 | 414 | | | 3 | 598 | 5.0% | 100% | 177 | 0 | 1 |
| 10:00 | 466 | | | 4 | 674 | 5.6% | 100% | 200 | 0 | 2 |
| 11:00 | 479 | | | 4 | 692 | 5.5% | 100% | 181 | 0 | 2 |
| 12:00 | 540 | | | 5 | 780 | 6.1% | 100% | 182 | 0 | 2 |
| 13:00 | 530 | | | 4 | 767 | 6.0% | 100% | 180 | 0 | 2 |
| 14:00 | 606 | | | 5 | 875 | 6.4% | 100% | 161 | 0 | 1 |
| 15:00 | 688 | | | 6 | 994 | 7.1% | 100% | 156 | 0 | 1 |
| 16:00 | 712 | | | 6 | 1,029 | 7.2% | 100% | 146 | 0 | 1 |
| 17:00 | 786 | | | 7 | 1,135 | 7.5% | 100% | 109 | 0 | 1 |
| 18:00 | 588 | | | 5 | 850 | 5.8% | 100% | 102 | 0 | 1 |
| 19:00 | 447 | | | 4 | 647 | 4.5% | 100% | 90 | 0 | 1 |
| 20:00 | 346 | | | 3 | 500 | 3.4% | 100% | 55 | 0 | 0 |
| 21:00 | 262 | | | 2 | 379 | 2.8% | 100% | 74 | 0 | 1 |
| 22:00 | 192 | | | 2 | 278 | 2.1% | 100% | 63 | 0 | 1 |
| 23:00 | 110 | | | 1 | 158 | 1.3% | 100% | 48 | 0 | 0 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 85 | | | 64 | 53 | 90 | 85 |
| 1:00 | 102 | 98 | | | 73 | 60 | 102 | 98 |
| 2:00 | 125 | 120 | | | 90 | 74 | 125 | 120 |
| 3:00 | 176 | 168 | | | 126 | 104 | 176 | 168 |
| 4:00 | 107 | 102 | | | 76 | 63 | 107 | 102 |
| 5:00 | 75 | 71 | | | 53 | 44 | 75 | 71 |
| 6:00 | 70 | 67 | | | 50 | 41 | 70 | 67 |
| 7:00 | 71 | 67 | | | 51 | 42 | 71 | 67 |
| 8:00 | 72 | 69 | | | 51 | 42 | 72 | 69 |
| 9:00 | 79 | 76 | | | 57 | 47 | 79 | 76 |
| 10:00 | 79 | 76 | | | 57 | 47 | 79 | 76 |
| 11:00 | 76 | 73 | | | 55 | 45 | 76 | 73 |
| 12:00 | 74 | 71 | | | 53 | 44 | 74 | 71 |
| 13:00 | 74 | 71 | | | 53 | 44 | 74 | 71 |
| 14:00 | 70 | 67 | | | 50 | 41 | 70 | 67 |
| 15:00 | 68 | 65 | | | 49 | 40 | 68 | 65 |
| 16:00 | 67 | 64 | | | 48 | 39 | 67 | 64 |
| 17:00 | 63 | 60 | | | 45 | 37 | 63 | 60 |
| 18:00 | 65 | 62 | | | 47 | 38 | 65 | 62 |
| 19:00 | 67 | 64 | | | 48 | 39 | 67 | 64 |
| 20:00 | 64 | 61 | | | 46 | 38 | 64 | 61 |
| 21:00 | 71 | 68 | | | 51 | 42 | 71 | 68 |
| 22:00 | 73 | 70 | | | 53 | 43 | 73 | 70 |
| 23:00 | 80 | 76 | | | 57 | 47 | 80 | 76 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 3.10

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Morehead Ave (Ridgeway 87) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

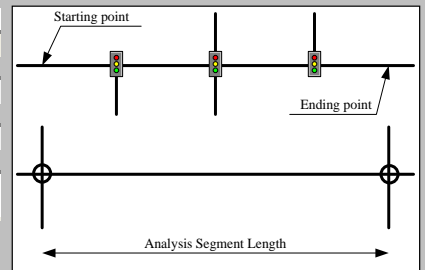
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|--------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Minor Collector with PS<35 mph |
| Capacity: | 1,300 pcphpl | 850 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 35 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 40 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 1 | 1 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 6 | | 8 | |
| 17. Analysis Segment No. of Signals: | 1 | | 0 | |
| 18. Average Cycle Length (sec.): | 130 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 0 | |
| 20. Signal Coordination: | No Coord. | | 0.00 | |
| Delay caused by signal, mph: | 1 | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 11,900 500 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 17,200

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |
| 100% | | | | | | | | | | |

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220

From: Proposed Rte 220/Bypass Interchange (south of

To: Morehead Ave (Ridgeway 87)



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: 11,900 No-build

Design Year: 2040 ADT: 500 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 850 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|----------------------|-------------|--------------|-------------|-----------------------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.01 | A | 0.01 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.01 | A | 0.01 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.02 | A | 0.02 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.02 | A | 0.02 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.02 | A | 0.02 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.02 | A | 0.02 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.02 | A | 0.02 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.02 | A | 0.02 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.02 | A | 0.02 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.02 | A | 0.02 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.02 | A | 0.02 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.03 | A | 0.03 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.03 | A | 0.03 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.03 | A | 0.03 | A | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.02 | A | 0.02 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.02 | A | 0.02 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.01 | A | 0.01 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.01 | A | 0.01 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.01 | A | 0.01 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 850 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|----------------------|-------------|--------------|-------------|-----------------------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.01 | A | 0.01 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.01 | A | 0.01 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.01 | A | 0.01 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.02 | A | 0.02 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.02 | A | 0.02 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.02 | A | 0.02 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.02 | A | 0.02 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.02 | A | 0.02 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.02 | A | 0.02 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.02 | A | 0.02 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.03 | A | 0.03 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.03 | A | 0.03 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.03 | A | 0.03 | A | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.03 | A | 0.03 | A | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.03 | A | 0.03 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.02 | A | 0.02 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.02 | A | 0.02 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.01 | A | 0.01 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.01 | A | 0.01 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.01 | A | 0.01 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.01 | A | 0.01 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 500 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | 2 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | 1 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | 1 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | 0 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | 1 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | 3 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | 8 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | 12 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | 11 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | 9 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | 10 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | 10 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | 12 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | 11 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | 13 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | 14 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | 16 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | 18 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | 13 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | 10 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | 7 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | 6 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | 4 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | 2 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | 0 | 2 | 16 | | | 1 | 23 |
| 1:00 | 1 | | 0 | 1 | 22 | | | 1 | 31 |
| 2:00 | 0 | | 0 | 0 | 27 | | | 1 | 39 |
| 3:00 | 1 | | 0 | 1 | 26 | | | 1 | 38 |
| 4:00 | 3 | | 0 | 4 | 31 | | | 1 | 45 |
| 5:00 | 2 | | 0 | 3 | 35 | | | 1 | 51 |
| 6:00 | 9 | | 0 | 13 | 55 | | | 2 | 79 |
| 7:00 | 16 | | 1 | 23 | 67 | | | 3 | 97 |
| 8:00 | 9 | | 0 | 13 | 63 | | | 3 | 91 |
| 9:00 | 20 | | 1 | 30 | 70 | | | 3 | 101 |
| 10:00 | 10 | | 0 | 15 | 87 | | | 4 | 125 |
| 11:00 | 7 | | 0 | 10 | 74 | | | 3 | 107 |
| 12:00 | 9 | | 0 | 13 | 83 | | | 3 | 120 |
| 13:00 | 13 | | 1 | 19 | 68 | | | 3 | 98 |
| 14:00 | 10 | | 0 | 14 | 64 | | | 3 | 93 |
| 15:00 | 11 | | 0 | 16 | 68 | | | 3 | 98 |
| 16:00 | 7 | | 0 | 10 | 55 | | | 2 | 79 |
| 17:00 | 5 | | 0 | 7 | 46 | | | 2 | 66 |
| 18:00 | 3 | | 0 | 4 | 34 | | | 1 | 50 |
| 19:00 | 5 | | 0 | 7 | 26 | | | 1 | 38 |
| 20:00 | 3 | | 0 | 4 | 22 | | | 1 | 31 |
| 21:00 | 4 | | 0 | 6 | 29 | | | 1 | 42 |
| 22:00 | 1 | | 0 | 1 | 28 | | | 1 | 41 |
| 23:00 | 1 | | 0 | 1 | 19 | | | 1 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|---|
| Route: 220 | | Area Type: Exurban |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 500 17,200 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|------------|--|--|---|------------|-----------------------|------------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl'd (PS= 55) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 1:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 2:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 3:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 4:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 5:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 6:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 7:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 8:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 9:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 10:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 11:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 12:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 13:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 14:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 15:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 16:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 17:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 18:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 19:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 20:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 21:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 22:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 23:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|---|----------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 500 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | | 1 | 43 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | | 1 | 36 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | | 1 | 27 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | | 1 | 28 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | | 2 | 78 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | | 7 | 244 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | | 12 | 415 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | | 11 | 387 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | | 10 | 350 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | | 9 | 303 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | | 10 | 336 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | | 10 | 353 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | | 11 | 382 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | | 12 | 402 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | | 13 | 441 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | | 15 | 501 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | | 14 | 481 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | | 15 | 533 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | | 11 | 390 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | | 8 | 287 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | | 7 | 247 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | | 5 | 186 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | | 4 | 147 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | | 3 | 88 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 2 | | | 0 | 2 | 25 | | | 1 | 36 |
| 1:00 | 3 | | | 0 | 4 | 14 | | | 1 | 20 |
| 2:00 | 2 | | | 0 | 3 | 20 | | | 1 | 30 |
| 3:00 | 3 | | | 0 | 4 | 30 | | | 1 | 44 |
| 4:00 | 3 | | | 0 | 4 | 38 | | | 2 | 56 |
| 5:00 | 2 | | | 0 | 2 | 45 | | | 2 | 64 |
| 6:00 | 5 | | | 0 | 7 | 53 | | | 2 | 76 |
| 7:00 | 11 | | | 0 | 16 | 57 | | | 2 | 83 |
| 8:00 | 5 | | | 0 | 7 | 73 | | | 3 | 106 |
| 9:00 | 9 | | | 0 | 13 | 77 | | | 3 | 112 |
| 10:00 | 13 | | | 1 | 19 | 90 | | | 4 | 130 |
| 11:00 | 10 | | | 0 | 15 | 90 | | | 4 | 130 |
| 12:00 | 10 | | | 0 | 14 | 80 | | | 3 | 116 |
| 13:00 | 12 | | | 1 | 18 | 87 | | | 4 | 126 |
| 14:00 | 10 | | | 0 | 14 | 77 | | | 3 | 112 |
| 15:00 | 10 | | | 0 | 15 | 68 | | | 3 | 98 |
| 16:00 | 9 | | | 0 | 13 | 74 | | | 3 | 107 |
| 17:00 | 7 | | | 0 | 10 | 52 | | | 2 | 75 |
| 18:00 | 9 | | | 0 | 13 | 55 | | | 2 | 80 |
| 19:00 | 6 | | | 0 | 9 | 52 | | | 2 | 76 |
| 20:00 | 3 | | | 0 | 4 | 28 | | | 1 | 40 |
| 21:00 | 1 | | | 0 | 1 | 40 | | | 2 | 58 |
| 22:00 | 1 | | | 0 | 1 | 32 | | | 1 | 47 |
| 23:00 | 3 | | | 0 | 4 | 26 | | | 1 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 500 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 1:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 2:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 3:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 4:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 5:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 6:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 7:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 8:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 9:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 10:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 11:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 12:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 13:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 14:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 15:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 16:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 17:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 18:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 19:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 20:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 21:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 22:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |
| 23:00 | 55 | 53 | | | 40 | 32 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



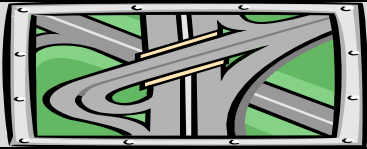
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|---|--|
| Route: 220 |  | Area Type: Exurban |
| From: Proposed Rte 220/Bypass Interchange (S) | | Traffic Assignment: Constrained - Noise Study |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 500 17,200 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|--------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 71 | | | 3 | 102 | 1.0% | 100% | 44 | 0 | 2 |
| 1:00 | 46 | | | 2 | 67 | 0.7% | 100% | 39 | 0 | 2 |
| 2:00 | 39 | | | 2 | 57 | 0.7% | 100% | 50 | 0 | 2 |
| 3:00 | 28 | | | 1 | 40 | 0.7% | 100% | 60 | 0 | 3 |
| 4:00 | 81 | | | 3 | 118 | 1.3% | 100% | 75 | 0 | 3 |
| 5:00 | 243 | | | 10 | 351 | 2.7% | 100% | 84 | 0 | 4 |
| 6:00 | 469 | | | 20 | 678 | 5.0% | 100% | 121 | 0 | 5 |
| 7:00 | 551 | | | 23 | 796 | 5.9% | 100% | 152 | 0 | 6 |
| 8:00 | 508 | | | 21 | 735 | 5.5% | 100% | 150 | 0 | 6 |
| 9:00 | 414 | | | 17 | 598 | 5.0% | 100% | 177 | 0 | 7 |
| 10:00 | 466 | | | 20 | 674 | 5.6% | 100% | 200 | 0 | 8 |
| 11:00 | 479 | | | 20 | 692 | 5.5% | 100% | 181 | 0 | 8 |
| 12:00 | 540 | | | 23 | 780 | 6.1% | 100% | 182 | 0 | 8 |
| 13:00 | 530 | | | 22 | 767 | 6.0% | 100% | 180 | 0 | 8 |
| 14:00 | 606 | | | 25 | 875 | 6.4% | 100% | 161 | 0 | 7 |
| 15:00 | 688 | | | 29 | 994 | 7.1% | 100% | 156 | 0 | 7 |
| 16:00 | 712 | | | 30 | 1,029 | 7.2% | 100% | 146 | 0 | 6 |
| 17:00 | 786 | | | 33 | 1,135 | 7.5% | 100% | 109 | 0 | 5 |
| 18:00 | 588 | | | 25 | 850 | 5.8% | 100% | 102 | 0 | 4 |
| 19:00 | 447 | | | 19 | 647 | 4.5% | 100% | 90 | 0 | 4 |
| 20:00 | 346 | | | 15 | 500 | 3.4% | 100% | 55 | 0 | 2 |
| 21:00 | 262 | | | 11 | 379 | 2.8% | 100% | 74 | 0 | 3 |
| 22:00 | 192 | | | 8 | 278 | 2.1% | 100% | 63 | 0 | 3 |
| 23:00 | 110 | | | 5 | 158 | 1.3% | 100% | 48 | 0 | 2 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl'd (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|-----------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 86 | | | 64 | 52 | 90 | 86 |
| 1:00 | 102 | 98 | | | 73 | 59 | 102 | 98 |
| 2:00 | 125 | 120 | | | 90 | 73 | 125 | 120 |
| 3:00 | 176 | 168 | | | 126 | 102 | 176 | 168 |
| 4:00 | 107 | 102 | | | 76 | 62 | 107 | 102 |
| 5:00 | 75 | 71 | | | 53 | 43 | 75 | 71 |
| 6:00 | 70 | 67 | | | 50 | 41 | 70 | 67 |
| 7:00 | 71 | 68 | | | 51 | 41 | 71 | 68 |
| 8:00 | 72 | 69 | | | 51 | 42 | 72 | 69 |
| 9:00 | 79 | 76 | | | 57 | 46 | 79 | 76 |
| 10:00 | 79 | 76 | | | 57 | 46 | 79 | 76 |
| 11:00 | 76 | 73 | | | 55 | 44 | 76 | 73 |
| 12:00 | 74 | 71 | | | 53 | 43 | 74 | 71 |
| 13:00 | 74 | 71 | | | 53 | 43 | 74 | 71 |
| 14:00 | 70 | 67 | | | 50 | 41 | 70 | 67 |
| 15:00 | 68 | 65 | | | 49 | 40 | 68 | 65 |
| 16:00 | 67 | 64 | | | 48 | 39 | 67 | 64 |
| 17:00 | 63 | 61 | | | 45 | 37 | 63 | 61 |
| 18:00 | 65 | 62 | | | 47 | 38 | 65 | 62 |
| 19:00 | 67 | 64 | | | 48 | 39 | 67 | 64 |
| 20:00 | 64 | 62 | | | 46 | 37 | 64 | 62 |
| 21:00 | 71 | 68 | | | 51 | 41 | 71 | 68 |
| 22:00 | 73 | 70 | | | 53 | 43 | 73 | 70 |
| 23:00 | 80 | 77 | | | 57 | 46 | 80 | 77 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

[Ed Azimi](#)

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Morehead Ave (Ridgeway 87) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Soapstone Rd (Rte 687) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

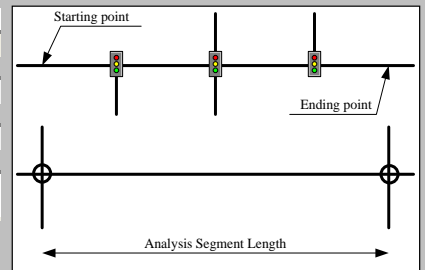
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|--------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Minor Collector with PS<35 mph |
| Capacity: | 1,300 pcphpl | 850 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 35 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 40 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 1 | 1 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 1 | | 3 | |
| 17. Analysis Segment No. of Signals: | 1 | | 0 | |
| 18. Average Cycle Length (sec.): | 180 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 148 | | 0 | |
| 20. Signal Coordination: | No Coord. | | 0.00 | |
| Delay caused by signal, mph: | 4 | | #N/A | |

Note:

[Empty box for notes]

Analysis Segment Truck Input Type and Daily Traffic Volume

Existing Year 2018 Design Year 2040

21. Truck Input Type: Hourly

22. Two-way ADT or AADT: 15,600 500

ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 21,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: Morehead Ave (Ridgeway 87)
 To: Soapstone Rd (Rte 687)
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 15,600 No-build
 Design Year: 2040 ADT: 500 21,400

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 850 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|----------------------|-------------|--------|-------------|-----------------------|-------------|------|
| | Existing | | | | | | Design | | | | Design Nblnd | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | Demand | Constrained | |
| 0:00 | 0.04 | A | | | | | 0.00 | A | 0.00 | A | 0.06 | A | 0.06 |
| 1:00 | 0.04 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.00 | A | 0.00 | A | 0.06 | A | 0.06 |
| 3:00 | 0.04 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |
| 4:00 | 0.06 | A | | | | | 0.01 | A | 0.01 | A | 0.08 | A | 0.08 |
| 5:00 | 0.08 | A | | | | | 0.01 | A | 0.01 | A | 0.12 | A | 0.12 |
| 6:00 | 0.17 | A | | | | | 0.02 | A | 0.02 | A | 0.24 | A | 0.24 |
| 7:00 | 0.25 | A | | | | | 0.02 | A | 0.02 | A | 0.34 | B | 0.34 |
| 8:00 | 0.23 | A | | | | | 0.02 | A | 0.02 | A | 0.31 | B | 0.31 |
| 9:00 | 0.22 | A | | | | | 0.02 | A | 0.02 | A | 0.30 | A | 0.30 |
| 10:00 | 0.24 | A | | | | | 0.02 | A | 0.02 | A | 0.33 | B | 0.33 |
| 11:00 | 0.22 | A | | | | | 0.02 | A | 0.02 | A | 0.30 | B | 0.30 |
| 12:00 | 0.25 | A | | | | | 0.02 | A | 0.02 | A | 0.35 | B | 0.35 |
| 13:00 | 0.23 | A | | | | | 0.02 | A | 0.02 | A | 0.31 | B | 0.31 |
| 14:00 | 0.24 | A | | | | | 0.02 | A | 0.02 | A | 0.34 | B | 0.34 |
| 15:00 | 0.27 | A | | | | | 0.03 | A | 0.03 | A | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.03 | A | 0.03 | A | 0.37 | B | 0.37 |
| 17:00 | 0.27 | A | | | | | 0.03 | A | 0.03 | A | 0.38 | B | 0.38 |
| 18:00 | 0.21 | A | | | | | 0.02 | A | 0.02 | A | 0.28 | A | 0.28 |
| 19:00 | 0.16 | A | | | | | 0.02 | A | 0.02 | A | 0.23 | A | 0.23 |
| 20:00 | 0.12 | A | | | | | 0.01 | A | 0.01 | A | 0.16 | A | 0.16 |
| 21:00 | 0.11 | A | | | | | 0.01 | A | 0.01 | A | 0.15 | A | 0.15 |
| 22:00 | 0.08 | A | | | | | 0.01 | A | 0.01 | A | 0.11 | A | 0.11 |
| 23:00 | 0.05 | A | | | | | 0.00 | A | 0.00 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 850 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|----------------------|-------------|--------|-------------|-----------------------|-------------|------|
| | Existing | | | | | | Design | | | | Design Nblnd | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | Demand | Constrained | |
| 0:00 | 0.05 | A | | | | | 0.00 | A | 0.00 | A | 0.07 | A | 0.07 |
| 1:00 | 0.03 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.00 | A | 0.00 | A | 0.05 | A | 0.05 |
| 3:00 | 0.05 | A | | | | | 0.01 | A | 0.01 | A | 0.07 | A | 0.07 |
| 4:00 | 0.08 | A | | | | | 0.01 | A | 0.01 | A | 0.11 | A | 0.11 |
| 5:00 | 0.14 | A | | | | | 0.01 | A | 0.01 | A | 0.20 | A | 0.20 |
| 6:00 | 0.22 | A | | | | | 0.02 | A | 0.02 | A | 0.30 | A | 0.30 |
| 7:00 | 0.22 | A | | | | | 0.02 | A | 0.02 | A | 0.30 | B | 0.30 |
| 8:00 | 0.22 | A | | | | | 0.02 | A | 0.02 | A | 0.30 | B | 0.30 |
| 9:00 | 0.21 | A | | | | | 0.02 | A | 0.02 | A | 0.29 | A | 0.29 |
| 10:00 | 0.25 | A | | | | | 0.02 | A | 0.02 | A | 0.34 | B | 0.34 |
| 11:00 | 0.25 | A | | | | | 0.02 | A | 0.02 | A | 0.34 | B | 0.34 |
| 12:00 | 0.25 | A | | | | | 0.02 | A | 0.02 | A | 0.34 | B | 0.34 |
| 13:00 | 0.27 | A | | | | | 0.03 | A | 0.03 | A | 0.36 | B | 0.36 |
| 14:00 | 0.26 | A | | | | | 0.03 | A | 0.03 | A | 0.36 | B | 0.36 |
| 15:00 | 0.27 | A | | | | | 0.03 | A | 0.03 | A | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.03 | A | 0.03 | A | 0.37 | B | 0.37 |
| 17:00 | 0.26 | A | | | | | 0.03 | A | 0.03 | A | 0.36 | B | 0.36 |
| 18:00 | 0.22 | A | | | | | 0.02 | A | 0.02 | A | 0.30 | A | 0.30 |
| 19:00 | 0.17 | A | | | | | 0.02 | A | 0.02 | A | 0.24 | A | 0.24 |
| 20:00 | 0.12 | A | | | | | 0.01 | A | 0.01 | A | 0.17 | A | 0.17 |
| 21:00 | 0.12 | A | | | | | 0.01 | A | 0.01 | A | 0.16 | A | 0.16 |
| 22:00 | 0.09 | A | | | | | 0.01 | A | 0.01 | A | 0.13 | A | 0.13 |
| 23:00 | 0.07 | A | | | | | 0.01 | A | 0.01 | A | 0.09 | A | 0.09 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 500 | 21,400 |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 54 | | | 2 | 74 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 28 | | | 1 | 39 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 27 | | | 1 | 37 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 11 | | | 0 | 15 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 36 | | | 1 | 50 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 97 | | | 3 | 134 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 239 | | | 8 | 328 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 371 | | | 12 | 509 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 349 | | | 11 | 479 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 268 | | | 9 | 368 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 306 | | | 10 | 420 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 308 | | | 10 | 422 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 361 | | | 12 | 495 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 330 | | | 11 | 453 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 394 | | | 13 | 540 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 447 | | | 14 | 613 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 497 | | | 16 | 682 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 547 | | | 18 | 750 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 417 | | | 13 | 572 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 326 | | | 10 | 447 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 230 | | | 7 | 315 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 175 | | | 6 | 241 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 119 | | | 4 | 163 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 64 | | | 2 | 88 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|------------|------------------------|--|--|--------|------------|
| | Existing | | | Design | Design Nbl | Existing | | | Design | Design Nbl |
| 0:00 | 2 | | | 0 | 3 | 21 | | | 1 | 29 |
| 1:00 | 1 | | | 0 | 2 | 28 | | | 1 | 39 |
| 2:00 | 0 | | | 0 | 0 | 36 | | | 1 | 49 |
| 3:00 | 1 | | | 0 | 2 | 34 | | | 1 | 47 |
| 4:00 | 3 | | | 0 | 5 | 41 | | | 1 | 56 |
| 5:00 | 3 | | | 0 | 4 | 46 | | | 1 | 64 |
| 6:00 | 12 | | | 0 | 17 | 72 | | | 2 | 99 |
| 7:00 | 21 | | | 1 | 29 | 88 | | | 3 | 121 |
| 8:00 | 12 | | | 0 | 17 | 83 | | | 3 | 113 |
| 9:00 | 27 | | | 1 | 37 | 92 | | | 3 | 126 |
| 10:00 | 13 | | | 0 | 18 | 114 | | | 4 | 156 |
| 11:00 | 9 | | | 0 | 12 | 97 | | | 3 | 134 |
| 12:00 | 11 | | | 0 | 16 | 109 | | | 3 | 149 |
| 13:00 | 17 | | | 1 | 23 | 89 | | | 3 | 122 |
| 14:00 | 13 | | | 0 | 18 | 84 | | | 3 | 115 |
| 15:00 | 14 | | | 0 | 19 | 89 | | | 3 | 122 |
| 16:00 | 9 | | | 0 | 13 | 72 | | | 2 | 99 |
| 17:00 | 6 | | | 0 | 8 | 60 | | | 2 | 82 |
| 18:00 | 4 | | | 0 | 6 | 45 | | | 1 | 62 |
| 19:00 | 7 | | | 0 | 9 | 34 | | | 1 | 47 |
| 20:00 | 4 | | | 0 | 6 | 28 | | | 1 | 39 |
| 21:00 | 5 | | | 0 | 7 | 38 | | | 1 | 53 |
| 22:00 | 1 | | | 0 | 2 | 37 | | | 1 | 51 |
| 23:00 | 1 | | | 0 | 2 | 25 | | | 1 | 34 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 500 | 21,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|------------|--|--|---|------------|-----------------------|------------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl'd (PS= 55) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 1:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 2:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 3:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 4:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 5:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 6:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 7:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 8:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 9:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 10:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 11:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 12:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 13:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 14:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 15:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 16:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 17:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 18:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 19:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 20:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 21:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 22:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 23:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--|---|----------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 500 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 39 | | | 1 | 53 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 32 | | | 1 | 44 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 25 | | | 1 | 34 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 26 | | | 1 | 35 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 71 | | | 2 | 97 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 221 | | | 7 | 303 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 376 | | | 12 | 516 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 351 | | | 11 | 482 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 317 | | | 10 | 435 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 275 | | | 9 | 377 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 305 | | | 10 | 418 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 320 | | | 10 | 439 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 347 | | | 11 | 475 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 365 | | | 12 | 500 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 400 | | | 13 | 549 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 455 | | | 15 | 624 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 437 | | | 14 | 599 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 483 | | | 15 | 663 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 354 | | | 11 | 486 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 261 | | | 8 | 358 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 224 | | | 7 | 307 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 169 | | | 5 | 231 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 133 | | | 4 | 182 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 80 | | | 3 | 110 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 0 | 3 | 32 | | | 1 | 44 |
| 1:00 | 3 | | | 0 | 5 | 18 | | | 1 | 25 |
| 2:00 | 3 | | | 0 | 4 | 27 | | | 1 | 37 |
| 3:00 | 3 | | | 0 | 5 | 40 | | | 1 | 54 |
| 4:00 | 4 | | | 0 | 6 | 50 | | | 2 | 69 |
| 5:00 | 2 | | | 0 | 3 | 58 | | | 2 | 80 |
| 6:00 | 6 | | | 0 | 8 | 69 | | | 2 | 95 |
| 7:00 | 15 | | | 0 | 20 | 75 | | | 2 | 103 |
| 8:00 | 6 | | | 0 | 8 | 96 | | | 3 | 132 |
| 9:00 | 12 | | | 0 | 17 | 101 | | | 3 | 139 |
| 10:00 | 17 | | | 1 | 23 | 118 | | | 4 | 162 |
| 11:00 | 13 | | | 0 | 18 | 118 | | | 4 | 162 |
| 12:00 | 13 | | | 0 | 18 | 105 | | | 3 | 145 |
| 13:00 | 16 | | | 1 | 22 | 114 | | | 4 | 157 |
| 14:00 | 13 | | | 0 | 18 | 101 | | | 3 | 139 |
| 15:00 | 13 | | | 0 | 18 | 89 | | | 3 | 122 |
| 16:00 | 12 | | | 0 | 17 | 97 | | | 3 | 134 |
| 17:00 | 9 | | | 0 | 12 | 68 | | | 2 | 93 |
| 18:00 | 12 | | | 0 | 17 | 73 | | | 2 | 100 |
| 19:00 | 8 | | | 0 | 11 | 69 | | | 2 | 94 |
| 20:00 | 4 | | | 0 | 6 | 36 | | | 1 | 50 |
| 21:00 | 1 | | | 0 | 1 | 52 | | | 2 | 72 |
| 22:00 | 1 | | | 0 | 2 | 42 | | | 1 | 58 |
| 23:00 | 3 | | | 0 | 5 | 34 | | | 1 | 46 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---|---------------------------|--|
| Route: 220 | | Area Type: Exurban |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 500 21,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 1:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 2:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 3:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 4:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 5:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 6:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 7:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 8:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 9:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 10:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 11:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 12:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 13:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 14:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 15:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 16:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 17:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 18:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 19:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 20:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 21:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 22:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |
| 23:00 | 55 | 51 | | | 40 | 34 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



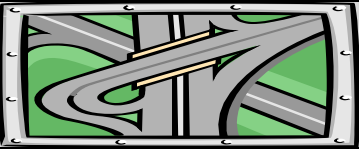
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---|---|--|----------|
| Route: 220 |  | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 500 | 21,400 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|------------------|----------|---------------------------------|--------|--|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design | |
| 0:00 | 93 | | 3 | 127 | 1.0% | 100% | 57 | 0 | 2 | |
| 1:00 | 60 | | 2 | 83 | 0.7% | 100% | 51 | 0 | 2 | |
| 2:00 | 52 | | 2 | 71 | 0.7% | 100% | 65 | 0 | 2 | |
| 3:00 | 36 | | 1 | 50 | 0.7% | 100% | 79 | 0 | 3 | |
| 4:00 | 107 | | 3 | 147 | 1.3% | 100% | 99 | 0 | 3 | |
| 5:00 | 318 | | 10 | 437 | 2.7% | 100% | 109 | 0 | 4 | |
| 6:00 | 615 | | 20 | 844 | 5.0% | 100% | 159 | 0 | 5 | |
| 7:00 | 722 | | 23 | 991 | 5.9% | 100% | 199 | 0 | 6 | |
| 8:00 | 666 | | 21 | 914 | 5.5% | 100% | 197 | 0 | 6 | |
| 9:00 | 543 | | 17 | 745 | 5.0% | 100% | 232 | 0 | 7 | |
| 10:00 | 611 | | 20 | 839 | 5.6% | 100% | 262 | 0 | 8 | |
| 11:00 | 627 | | 20 | 861 | 5.5% | 100% | 238 | 0 | 8 | |
| 12:00 | 707 | | 23 | 970 | 6.1% | 100% | 238 | 0 | 8 | |
| 13:00 | 695 | | 22 | 954 | 6.0% | 100% | 236 | 0 | 8 | |
| 14:00 | 794 | | 25 | 1,089 | 6.4% | 100% | 211 | 0 | 7 | |
| 15:00 | 901 | | 29 | 1,237 | 7.1% | 100% | 205 | 0 | 7 | |
| 16:00 | 934 | | 30 | 1,281 | 7.2% | 100% | 191 | 0 | 6 | |
| 17:00 | 1,030 | | 33 | 1,413 | 7.5% | 100% | 142 | 0 | 5 | |
| 18:00 | 771 | | 25 | 1,058 | 5.8% | 100% | 134 | 0 | 4 | |
| 19:00 | 586 | | 19 | 804 | 4.5% | 100% | 118 | 0 | 4 | |
| 20:00 | 453 | | 15 | 622 | 3.4% | 100% | 73 | 0 | 2 | |
| 21:00 | 344 | | 11 | 472 | 2.8% | 100% | 97 | 0 | 3 | |
| 22:00 | 252 | | 8 | 346 | 2.1% | 100% | 82 | 0 | 3 | |
| 23:00 | 144 | | 5 | 197 | 1.3% | 100% | 63 | 0 | 2 | |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 83 | | | 64 | 54 | 90 | 83 |
| 1:00 | 102 | 95 | | | 73 | 62 | 102 | 95 |
| 2:00 | 125 | 116 | | | 90 | 76 | 125 | 116 |
| 3:00 | 176 | 163 | | | 126 | 106 | 176 | 163 |
| 4:00 | 107 | 99 | | | 76 | 64 | 107 | 99 |
| 5:00 | 75 | 69 | | | 53 | 45 | 75 | 69 |
| 6:00 | 70 | 65 | | | 50 | 42 | 70 | 65 |
| 7:00 | 71 | 66 | | | 51 | 43 | 71 | 66 |
| 8:00 | 72 | 67 | | | 51 | 43 | 72 | 67 |
| 9:00 | 79 | 73 | | | 57 | 48 | 79 | 73 |
| 10:00 | 79 | 73 | | | 57 | 48 | 79 | 73 |
| 11:00 | 76 | 71 | | | 55 | 46 | 76 | 71 |
| 12:00 | 74 | 69 | | | 53 | 45 | 74 | 69 |
| 13:00 | 74 | 69 | | | 53 | 45 | 74 | 69 |
| 14:00 | 70 | 65 | | | 50 | 42 | 70 | 65 |
| 15:00 | 68 | 63 | | | 49 | 41 | 68 | 63 |
| 16:00 | 67 | 62 | | | 48 | 40 | 67 | 62 |
| 17:00 | 63 | 59 | | | 45 | 38 | 63 | 59 |
| 18:00 | 65 | 60 | | | 47 | 39 | 65 | 60 |
| 19:00 | 67 | 62 | | | 48 | 40 | 67 | 62 |
| 20:00 | 64 | 60 | | | 46 | 39 | 64 | 60 |
| 21:00 | 71 | 66 | | | 51 | 43 | 71 | 66 |
| 22:00 | 73 | 68 | | | 53 | 44 | 73 | 68 |
| 23:00 | 80 | 74 | | | 57 | 48 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.90

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Soapstone Rd (Rte 687) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Water Plant Rd 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

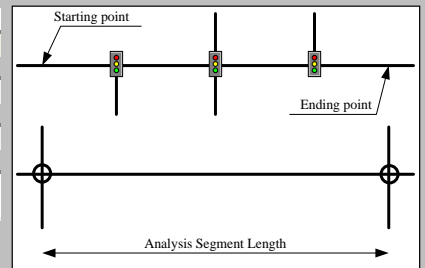
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|--------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Minor Collector with PS<35 mph |
| Capacity: | 1,300 pcphpl | 850 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 35 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 40 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 1 | 1 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| | Inside | Outside | Inside | Outside |
| 15. Shoulder Width (ft.): | | | | |
| 16. Access Density (# of access/mi.): | 3 | | 5 | |
| 17. Analysis Segment No. of Signals: | 1 | | 0 | |
| 18. Average Cycle Length (sec.): | 135 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 0 | |
| 20. Signal Coordination: | No Coord. | | 0.00 | |
| Delay caused by signal, mph: | 3 | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 18,000 6,500 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 23,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: Soapstone Rd (Rte 687)
 To: Water Plant Rd
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 18,000 No-build
 Design Year: 2040 ADT: 6,500 23,400

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 850 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|----------------------|-------------|--------------|-------------|-----------------------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 1:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 2:00 | 0.05 | A | | | | | 0.06 | A | 0.06 | A | 0.07 | A | 0.07 |
| 3:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 4:00 | 0.07 | A | | | | | 0.07 | A | 0.07 | A | 0.08 | A | 0.08 |
| 5:00 | 0.10 | A | | | | | 0.11 | A | 0.11 | A | 0.13 | A | 0.13 |
| 6:00 | 0.20 | A | | | | | 0.22 | A | 0.22 | A | 0.26 | A | 0.26 |
| 7:00 | 0.29 | A | | | | | 0.32 | B | 0.32 | B | 0.37 | B | 0.37 |
| 8:00 | 0.26 | A | | | | | 0.29 | A | 0.29 | A | 0.34 | B | 0.34 |
| 9:00 | 0.25 | A | | | | | 0.28 | A | 0.28 | A | 0.33 | B | 0.33 |
| 10:00 | 0.28 | A | | | | | 0.31 | B | 0.31 | B | 0.36 | B | 0.36 |
| 11:00 | 0.25 | A | | | | | 0.28 | A | 0.28 | A | 0.33 | B | 0.33 |
| 12:00 | 0.29 | A | | | | | 0.32 | B | 0.32 | B | 0.38 | B | 0.38 |
| 13:00 | 0.26 | A | | | | | 0.29 | A | 0.29 | A | 0.34 | B | 0.34 |
| 14:00 | 0.28 | A | | | | | 0.31 | B | 0.31 | B | 0.37 | B | 0.37 |
| 15:00 | 0.31 | B | | | | | 0.34 | B | 0.34 | B | 0.41 | B | 0.41 |
| 16:00 | 0.31 | B | | | | | 0.34 | B | 0.34 | B | 0.40 | B | 0.40 |
| 17:00 | 0.32 | B | | | | | 0.35 | B | 0.35 | B | 0.41 | B | 0.41 |
| 18:00 | 0.24 | A | | | | | 0.26 | A | 0.26 | A | 0.31 | B | 0.31 |
| 19:00 | 0.19 | A | | | | | 0.21 | A | 0.21 | A | 0.25 | A | 0.25 |
| 20:00 | 0.14 | A | | | | | 0.15 | A | 0.15 | A | 0.18 | A | 0.18 |
| 21:00 | 0.13 | A | | | | | 0.14 | A | 0.14 | A | 0.16 | A | 0.16 |
| 22:00 | 0.10 | A | | | | | 0.11 | A | 0.11 | A | 0.12 | A | 0.12 |
| 23:00 | 0.06 | A | | | | | 0.06 | A | 0.06 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 850 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|----------------------|-------------|--------------|-------------|-----------------------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.06 | A | | | | | 0.06 | A | 0.06 | A | 0.07 | A | 0.07 |
| 1:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 3:00 | 0.06 | A | | | | | 0.07 | A | 0.07 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | | 0.10 | A | 0.10 | A | 0.12 | A | 0.12 |
| 5:00 | 0.17 | A | | | | | 0.18 | A | 0.18 | A | 0.21 | A | 0.21 |
| 6:00 | 0.25 | A | | | | | 0.28 | A | 0.28 | A | 0.33 | B | 0.33 |
| 7:00 | 0.26 | A | | | | | 0.28 | A | 0.28 | A | 0.33 | B | 0.33 |
| 8:00 | 0.25 | A | | | | | 0.28 | A | 0.28 | A | 0.33 | B | 0.33 |
| 9:00 | 0.25 | A | | | | | 0.27 | A | 0.27 | A | 0.32 | B | 0.32 |
| 10:00 | 0.29 | A | | | | | 0.31 | B | 0.31 | B | 0.37 | B | 0.37 |
| 11:00 | 0.29 | A | | | | | 0.32 | B | 0.32 | B | 0.37 | B | 0.37 |
| 12:00 | 0.28 | A | | | | | 0.31 | B | 0.31 | B | 0.37 | B | 0.37 |
| 13:00 | 0.31 | B | | | | | 0.34 | B | 0.34 | B | 0.40 | B | 0.40 |
| 14:00 | 0.30 | B | | | | | 0.34 | B | 0.34 | B | 0.40 | B | 0.40 |
| 15:00 | 0.32 | B | | | | | 0.35 | B | 0.35 | B | 0.41 | B | 0.41 |
| 16:00 | 0.32 | B | | | | | 0.35 | B | 0.35 | B | 0.41 | B | 0.41 |
| 17:00 | 0.30 | A | | | | | 0.33 | B | 0.33 | B | 0.39 | B | 0.39 |
| 18:00 | 0.25 | A | | | | | 0.28 | A | 0.28 | A | 0.33 | B | 0.33 |
| 19:00 | 0.20 | A | | | | | 0.22 | A | 0.22 | A | 0.26 | A | 0.26 |
| 20:00 | 0.14 | A | | | | | 0.16 | A | 0.16 | A | 0.19 | A | 0.19 |
| 21:00 | 0.13 | A | | | | | 0.15 | A | 0.15 | A | 0.17 | A | 0.17 |
| 22:00 | 0.11 | A | | | | | 0.12 | A | 0.12 | A | 0.14 | A | 0.14 |
| 23:00 | 0.08 | A | | | | | 0.08 | A | 0.08 | A | 0.10 | A | 0.10 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---------------------------------|--------------------|---|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 |
| Jurisdiction: 2. Salem/Henry Co | | No-build |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | Design Year: 2040 ADT: 6,500 |
| | | 23,400 |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 62 | | | 22 | 81 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 33 | | | 12 | 42 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 31 | | | 11 | 40 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 12 | | | 4 | 16 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 42 | | | 15 | 54 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 112 | | | 41 | 146 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 276 | | | 100 | 359 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 428 | | | 155 | 556 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 403 | | | 146 | 524 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 309 | | | 112 | 402 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 353 | | | 128 | 459 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 355 | | | 128 | 461 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 416 | | | 150 | 541 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 381 | | | 138 | 496 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 454 | | | 164 | 590 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 515 | | | 186 | 670 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 574 | | | 207 | 746 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 631 | | | 228 | 820 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 481 | | | 174 | 626 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 376 | | | 136 | 489 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 265 | | | 96 | 345 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 202 | | | 73 | 263 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 137 | | | 50 | 178 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 74 | | | 27 | 96 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 1 | 3 | 24 | | | 9 | 31 |
| 1:00 | 2 | | | 1 | 2 | 33 | | | 12 | 42 |
| 2:00 | 0 | | | 0 | 0 | 41 | | | 15 | 53 |
| 3:00 | 2 | | | 1 | 2 | 40 | | | 14 | 51 |
| 4:00 | 4 | | | 1 | 5 | 47 | | | 17 | 61 |
| 5:00 | 3 | | | 1 | 4 | 53 | | | 19 | 70 |
| 6:00 | 14 | | | 5 | 18 | 83 | | | 30 | 108 |
| 7:00 | 24 | | | 9 | 31 | 102 | | | 37 | 132 |
| 8:00 | 14 | | | 5 | 18 | 95 | | | 34 | 124 |
| 9:00 | 31 | | | 11 | 40 | 106 | | | 38 | 138 |
| 10:00 | 16 | | | 6 | 20 | 131 | | | 47 | 170 |
| 11:00 | 10 | | | 4 | 13 | 112 | | | 41 | 146 |
| 12:00 | 13 | | | 5 | 17 | 126 | | | 45 | 163 |
| 13:00 | 19 | | | 7 | 25 | 102 | | | 37 | 133 |
| 14:00 | 15 | | | 5 | 19 | 97 | | | 35 | 126 |
| 15:00 | 16 | | | 6 | 21 | 102 | | | 37 | 133 |
| 16:00 | 11 | | | 4 | 14 | 83 | | | 30 | 108 |
| 17:00 | 7 | | | 3 | 9 | 69 | | | 25 | 90 |
| 18:00 | 5 | | | 2 | 6 | 52 | | | 19 | 68 |
| 19:00 | 8 | | | 3 | 10 | 40 | | | 14 | 51 |
| 20:00 | 5 | | | 2 | 6 | 33 | | | 12 | 42 |
| 21:00 | 6 | | | 2 | 8 | 44 | | | 16 | 57 |
| 22:00 | 2 | | | 1 | 2 | 43 | | | 15 | 55 |
| 23:00 | 2 | | | 1 | 2 | 29 | | | 10 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 6,500 23,400 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|------------|--|--|---|------------|-----------------------|------------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl'd (PS= 55) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 1:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 2:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 3:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 4:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 5:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 6:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 7:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 8:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 9:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 10:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 11:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 12:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 13:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 14:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 15:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 16:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 17:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 18:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 19:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 20:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 21:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 22:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 23:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 6,500 | 23,400 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 45 | | | 16 | 58 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 37 | | | 13 | 48 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 29 | | | 10 | 37 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 29 | | | 11 | 38 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 81 | | | 29 | 106 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 255 | | | 92 | 332 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 434 | | | 157 | 564 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 405 | | | 146 | 527 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 366 | | | 132 | 476 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 317 | | | 114 | 412 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 352 | | | 127 | 457 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 369 | | | 133 | 480 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 400 | | | 144 | 520 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 421 | | | 152 | 547 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 462 | | | 167 | 601 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 525 | | | 189 | 682 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 504 | | | 182 | 655 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 557 | | | 201 | 724 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 408 | | | 148 | 531 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 301 | | | 109 | 391 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 258 | | | 93 | 336 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 195 | | | 70 | 253 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 153 | | | 55 | 200 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 92 | | | 33 | 120 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 1 | 3 | 37 | | | 13 | 48 |
| 1:00 | 4 | | | 1 | 5 | 21 | | | 8 | 27 |
| 2:00 | 3 | | | 1 | 4 | 31 | | | 11 | 40 |
| 3:00 | 4 | | | 1 | 5 | 46 | | | 17 | 59 |
| 4:00 | 5 | | | 2 | 6 | 58 | | | 21 | 76 |
| 5:00 | 2 | | | 1 | 3 | 67 | | | 24 | 88 |
| 6:00 | 7 | | | 3 | 9 | 80 | | | 29 | 104 |
| 7:00 | 17 | | | 6 | 22 | 87 | | | 31 | 113 |
| 8:00 | 7 | | | 3 | 9 | 111 | | | 40 | 144 |
| 9:00 | 14 | | | 5 | 18 | 117 | | | 42 | 152 |
| 10:00 | 19 | | | 7 | 25 | 136 | | | 49 | 177 |
| 11:00 | 16 | | | 6 | 20 | 136 | | | 49 | 177 |
| 12:00 | 15 | | | 5 | 19 | 122 | | | 44 | 158 |
| 13:00 | 19 | | | 7 | 24 | 132 | | | 48 | 171 |
| 14:00 | 15 | | | 5 | 19 | 117 | | | 42 | 152 |
| 15:00 | 16 | | | 6 | 20 | 102 | | | 37 | 133 |
| 16:00 | 14 | | | 5 | 18 | 112 | | | 41 | 146 |
| 17:00 | 10 | | | 4 | 13 | 78 | | | 28 | 102 |
| 18:00 | 14 | | | 5 | 18 | 84 | | | 30 | 109 |
| 19:00 | 9 | | | 3 | 12 | 79 | | | 29 | 103 |
| 20:00 | 5 | | | 2 | 6 | 42 | | | 15 | 54 |
| 21:00 | 1 | | | 0 | 1 | 60 | | | 22 | 79 |
| 22:00 | 2 | | | 1 | 2 | 49 | | | 18 | 63 |
| 23:00 | 4 | | | 1 | 5 | 39 | | | 14 | 50 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 6,500 23,400 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 1:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 2:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 3:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 4:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 5:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 6:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 7:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 8:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 9:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 10:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 11:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 12:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 13:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 14:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 15:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 16:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 17:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 18:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 19:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 20:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 21:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 22:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |
| 23:00 | 55 | 51 | | | 40 | 33 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--|---|------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 6,500 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 107 | | 39 | 139 | 1.0% | 100% | | 66 | 0 | 24 |
| 1:00 | 70 | | 25 | 91 | 0.7% | 100% | | 59 | 0 | 21 |
| 2:00 | 60 | | 22 | 78 | 0.7% | 100% | | 75 | 0 | 27 |
| 3:00 | 42 | | 15 | 54 | 0.7% | 100% | | 91 | 0 | 33 |
| 4:00 | 123 | | 45 | 160 | 1.3% | 100% | | 114 | 0 | 41 |
| 5:00 | 367 | | 133 | 478 | 2.7% | 100% | | 126 | 0 | 46 |
| 6:00 | 710 | | 256 | 923 | 5.0% | 100% | | 184 | 0 | 66 |
| 7:00 | 833 | | 301 | 1,083 | 5.9% | 100% | | 229 | 0 | 83 |
| 8:00 | 769 | | 278 | 1,000 | 5.5% | 100% | | 227 | 0 | 82 |
| 9:00 | 626 | | 226 | 814 | 5.0% | 100% | | 268 | 0 | 97 |
| 10:00 | 705 | | 255 | 917 | 5.6% | 100% | | 302 | 0 | 109 |
| 11:00 | 724 | | 261 | 941 | 5.5% | 100% | | 274 | 0 | 99 |
| 12:00 | 816 | | 295 | 1,061 | 6.1% | 100% | | 275 | 0 | 99 |
| 13:00 | 802 | | 290 | 1,043 | 6.0% | 100% | | 272 | 0 | 98 |
| 14:00 | 916 | | 331 | 1,191 | 6.4% | 100% | | 243 | 0 | 88 |
| 15:00 | 1,040 | | 376 | 1,352 | 7.1% | 100% | | 236 | 0 | 85 |
| 16:00 | 1,077 | | 389 | 1,401 | 7.2% | 100% | | 220 | 0 | 79 |
| 17:00 | 1,188 | | 429 | 1,545 | 7.5% | 100% | | 164 | 0 | 59 |
| 18:00 | 890 | | 321 | 1,157 | 5.8% | 100% | | 154 | 0 | 56 |
| 19:00 | 677 | | 244 | 880 | 4.5% | 100% | | 136 | 0 | 49 |
| 20:00 | 523 | | 189 | 680 | 3.4% | 100% | | 84 | 0 | 30 |
| 21:00 | 397 | | 143 | 516 | 2.8% | 100% | | 112 | 0 | 40 |
| 22:00 | 291 | | 105 | 378 | 2.1% | 100% | | 95 | 0 | 34 |
| 23:00 | 166 | | 60 | 216 | 1.3% | 100% | | 73 | 0 | 26 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 35) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 83 | | | 64 | 53 | 90 | 83 |
| 1:00 | 102 | 95 | | | 73 | 61 | 102 | 95 |
| 2:00 | 125 | 116 | | | 90 | 75 | 125 | 116 |
| 3:00 | 176 | 163 | | | 126 | 104 | 176 | 163 |
| 4:00 | 107 | 99 | | | 76 | 64 | 107 | 99 |
| 5:00 | 75 | 69 | | | 53 | 44 | 75 | 69 |
| 6:00 | 70 | 65 | | | 50 | 42 | 70 | 65 |
| 7:00 | 71 | 65 | | | 51 | 42 | 71 | 65 |
| 8:00 | 72 | 66 | | | 51 | 43 | 72 | 66 |
| 9:00 | 79 | 73 | | | 57 | 47 | 79 | 73 |
| 10:00 | 79 | 73 | | | 57 | 47 | 79 | 73 |
| 11:00 | 76 | 71 | | | 55 | 46 | 76 | 71 |
| 12:00 | 74 | 69 | | | 53 | 44 | 74 | 69 |
| 13:00 | 74 | 69 | | | 53 | 44 | 74 | 69 |
| 14:00 | 70 | 65 | | | 50 | 42 | 70 | 65 |
| 15:00 | 68 | 63 | | | 49 | 40 | 68 | 63 |
| 16:00 | 67 | 62 | | | 48 | 40 | 67 | 62 |
| 17:00 | 63 | 58 | | | 45 | 38 | 63 | 58 |
| 18:00 | 65 | 60 | | | 47 | 39 | 65 | 60 |
| 19:00 | 67 | 62 | | | 48 | 40 | 67 | 62 |
| 20:00 | 64 | 60 | | | 46 | 38 | 64 | 60 |
| 21:00 | 71 | 66 | | | 51 | 42 | 71 | 66 |
| 22:00 | 73 | 68 | | | 53 | 44 | 73 | 68 |
| 23:00 | 80 | 74 | | | 57 | 47 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 1.50

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beging: Water Plant Rd 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Rte 58/Rte 220 Interchange 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

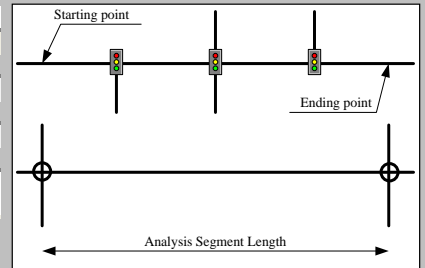
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|--------------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Minor Collector with PS<35 mph |
| Capacity: | 1,300 pcphpl | 850 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 45 | 35 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 48 | 40 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 1 | 1 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 10 | | 12 | |
| 17. Analysis Segment No. of Signals: | 2 | | 0 | |
| 18. Average Cycle Length (sec.): | 108 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 93 | | 0 | |
| 20. Signal Coordination: | Excellent Coord. | | 0.00 | |
| Delay caused by signal, mph: | 0 | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly

22. Two-way ADT or AADT: Existing Year 2018 25,300 Design Year 2040 10,000

ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 31,900

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220

From: Water Plant Rd

To: Rte 58/Rte 220 Interchange



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: 25,300 No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 Hours

Design Year: 2040 ADT: 10,000 31,900

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 850 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|----------------------|-------------|--------------|-------------|-----------------------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.07 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 1:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.08 | A | 0.08 |
| 2:00 | 0.07 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 3:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | | 0.11 | A | 0.11 | A | 0.12 | A | 0.12 |
| 5:00 | 0.14 | A | | | | | 0.17 | A | 0.17 | A | 0.17 | A | 0.17 |
| 6:00 | 0.28 | A | | | | | 0.34 | B | 0.34 | B | 0.35 | B | 0.35 |
| 7:00 | 0.40 | B | | | | | 0.48 | B | 0.48 | B | 0.51 | C | 0.51 |
| 8:00 | 0.37 | B | | | | | 0.44 | B | 0.44 | B | 0.46 | B | 0.46 |
| 9:00 | 0.35 | B | | | | | 0.43 | B | 0.43 | B | 0.44 | B | 0.44 |
| 10:00 | 0.39 | B | | | | | 0.47 | B | 0.47 | B | 0.49 | B | 0.49 |
| 11:00 | 0.36 | B | | | | | 0.43 | B | 0.43 | B | 0.45 | B | 0.45 |
| 12:00 | 0.41 | B | | | | | 0.50 | B | 0.50 | B | 0.52 | C | 0.52 |
| 13:00 | 0.37 | B | | | | | 0.45 | B | 0.45 | B | 0.47 | B | 0.47 |
| 14:00 | 0.40 | B | | | | | 0.48 | B | 0.48 | B | 0.50 | B | 0.50 |
| 15:00 | 0.44 | B | | | | | 0.53 | C | 0.53 | C | 0.55 | C | 0.55 |
| 16:00 | 0.44 | B | | | | | 0.53 | C | 0.53 | C | 0.55 | C | 0.55 |
| 17:00 | 0.44 | B | | | | | 0.54 | C | 0.54 | C | 0.56 | C | 0.56 |
| 18:00 | 0.34 | B | | | | | 0.41 | B | 0.41 | B | 0.42 | B | 0.42 |
| 19:00 | 0.27 | A | | | | | 0.32 | B | 0.32 | B | 0.34 | B | 0.34 |
| 20:00 | 0.19 | A | | | | | 0.23 | A | 0.23 | A | 0.24 | A | 0.24 |
| 21:00 | 0.18 | A | | | | | 0.21 | A | 0.21 | A | 0.22 | A | 0.22 |
| 22:00 | 0.13 | A | | | | | 0.16 | A | 0.16 | A | 0.17 | A | 0.17 |
| 23:00 | 0.08 | A | | | | | 0.10 | A | 0.10 | A | 0.10 | A | 0.10 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 850 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|----------------------|-------------|--------------|-------------|-----------------------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.08 | A | | | | | 0.09 | A | 0.09 | A | 0.10 | A | 0.10 |
| 1:00 | 0.05 | A | | | | | 0.06 | A | 0.06 | A | 0.07 | A | 0.07 |
| 2:00 | 0.06 | A | | | | | 0.07 | A | 0.07 | A | 0.08 | A | 0.08 |
| 3:00 | 0.08 | A | | | | | 0.10 | A | 0.10 | A | 0.10 | A | 0.10 |
| 4:00 | 0.13 | A | | | | | 0.16 | A | 0.16 | A | 0.16 | A | 0.16 |
| 5:00 | 0.23 | A | | | | | 0.28 | A | 0.28 | A | 0.29 | A | 0.29 |
| 6:00 | 0.35 | B | | | | | 0.43 | B | 0.43 | B | 0.44 | B | 0.44 |
| 7:00 | 0.36 | B | | | | | 0.43 | B | 0.43 | B | 0.45 | B | 0.45 |
| 8:00 | 0.36 | B | | | | | 0.43 | B | 0.43 | B | 0.45 | B | 0.45 |
| 9:00 | 0.35 | B | | | | | 0.42 | B | 0.42 | B | 0.44 | B | 0.44 |
| 10:00 | 0.40 | B | | | | | 0.48 | B | 0.48 | B | 0.51 | C | 0.51 |
| 11:00 | 0.40 | B | | | | | 0.49 | B | 0.49 | B | 0.51 | C | 0.51 |
| 12:00 | 0.40 | B | | | | | 0.48 | B | 0.48 | B | 0.51 | C | 0.51 |
| 13:00 | 0.43 | B | | | | | 0.52 | C | 0.52 | C | 0.54 | C | 0.54 |
| 14:00 | 0.43 | B | | | | | 0.52 | C | 0.52 | C | 0.54 | C | 0.54 |
| 15:00 | 0.44 | B | | | | | 0.54 | C | 0.54 | C | 0.56 | C | 0.56 |
| 16:00 | 0.44 | B | | | | | 0.54 | C | 0.54 | C | 0.56 | C | 0.56 |
| 17:00 | 0.42 | B | | | | | 0.51 | C | 0.51 | C | 0.53 | C | 0.53 |
| 18:00 | 0.35 | B | | | | | 0.43 | B | 0.43 | B | 0.44 | B | 0.44 |
| 19:00 | 0.28 | A | | | | | 0.34 | B | 0.34 | B | 0.36 | B | 0.36 |
| 20:00 | 0.20 | A | | | | | 0.24 | A | 0.24 | A | 0.26 | A | 0.26 |
| 21:00 | 0.19 | A | | | | | 0.23 | A | 0.23 | A | 0.24 | A | 0.24 |
| 22:00 | 0.15 | A | | | | | 0.18 | A | 0.18 | A | 0.19 | A | 0.19 |
| 23:00 | 0.11 | A | | | | | 0.13 | A | 0.13 | A | 0.14 | A | 0.14 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|---------------------------|--|---------------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 10,000 | 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 87 | | | 34 | 110 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 46 | | | 18 | 58 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 44 | | | 17 | 55 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 17 | | | 7 | 22 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 59 | | | 23 | 74 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 158 | | | 62 | 199 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 388 | | | 153 | 489 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 601 | | | 238 | 758 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 567 | | | 224 | 714 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 435 | | | 172 | 548 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 497 | | | 196 | 626 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 499 | | | 197 | 629 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 585 | | | 231 | 738 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 536 | | | 212 | 676 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 638 | | | 252 | 805 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 724 | | | 286 | 913 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 806 | | | 319 | 1,016 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 887 | | | 351 | 1,118 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 677 | | | 267 | 853 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 528 | | | 209 | 666 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 373 | | | 147 | 470 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 284 | | | 112 | 359 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 193 | | | 76 | 243 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 103 | | | 41 | 130 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 3 | | | 1 | 4 | 34 | | | 13 | 43 |
| 1:00 | 2 | | | 1 | 3 | 46 | | | 18 | 58 |
| 2:00 | 0 | | | 0 | 0 | 58 | | | 23 | 73 |
| 3:00 | 2 | | | 1 | 3 | 56 | | | 22 | 70 |
| 4:00 | 5 | | | 2 | 7 | 66 | | | 26 | 84 |
| 5:00 | 4 | | | 2 | 5 | 75 | | | 30 | 95 |
| 6:00 | 20 | | | 8 | 25 | 117 | | | 46 | 147 |
| 7:00 | 34 | | | 13 | 43 | 143 | | | 56 | 180 |
| 8:00 | 20 | | | 8 | 25 | 134 | | | 53 | 169 |
| 9:00 | 44 | | | 17 | 55 | 149 | | | 59 | 188 |
| 10:00 | 22 | | | 9 | 27 | 184 | | | 73 | 232 |
| 11:00 | 14 | | | 6 | 18 | 158 | | | 62 | 199 |
| 12:00 | 19 | | | 7 | 23 | 176 | | | 70 | 223 |
| 13:00 | 27 | | | 11 | 34 | 144 | | | 57 | 181 |
| 14:00 | 21 | | | 8 | 26 | 136 | | | 54 | 172 |
| 15:00 | 23 | | | 9 | 29 | 144 | | | 57 | 181 |
| 16:00 | 15 | | | 6 | 19 | 117 | | | 46 | 147 |
| 17:00 | 10 | | | 4 | 12 | 97 | | | 38 | 122 |
| 18:00 | 7 | | | 3 | 8 | 73 | | | 29 | 92 |
| 19:00 | 11 | | | 4 | 14 | 56 | | | 22 | 70 |
| 20:00 | 7 | | | 3 | 8 | 46 | | | 18 | 58 |
| 21:00 | 9 | | | 3 | 11 | 62 | | | 25 | 78 |
| 22:00 | 2 | | | 1 | 3 | 60 | | | 24 | 76 |
| 23:00 | 2 | | | 1 | 3 | 40 | | | 16 | 51 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | | | | | |
|--|------------------------------|--------------------|--------------------------------|---|---|-----------|-----------------------|-----------|
| Route: 220 | | | | Area Type: Exurban | | | | |
| From: Water Plant Rd | | | | Traffic Assignment: Constrained - Noise Study | | | | |
| To: Rte 58/Rte 220 Interchange | | | | Existing Year: 2018 ADT: 25,300 | | No-build | | |
| Jurisdiction: 2. Salem/Henry Co | | | | Design Year: 2040 ADT: 10,000 | | 31,900 | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
| | Calc. Existing (PS= 45) | | | | Design (PS= 35) | | Design Nbl'd (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 1:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 2:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 3:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 4:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 5:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 6:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 7:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 8:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 9:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 10:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 11:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 12:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 13:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 14:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 15:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 16:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 17:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 18:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 19:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 20:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 21:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 22:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 23:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | | V 2018-09 | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--|--|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 10,000 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 63 | | | 25 | 80 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 52 | | | 21 | 66 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 40 | | | 16 | 51 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 41 | | | 16 | 52 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 114 | | | 45 | 144 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 358 | | | 142 | 452 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 610 | | | 241 | 769 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 570 | | | 225 | 718 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 514 | | | 203 | 648 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 446 | | | 176 | 562 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 495 | | | 195 | 624 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 519 | | | 205 | 654 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 562 | | | 222 | 709 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 592 | | | 234 | 746 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 649 | | | 257 | 819 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 738 | | | 292 | 930 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 708 | | | 280 | 893 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 783 | | | 310 | 988 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 574 | | | 227 | 724 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 423 | | | 167 | 533 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 363 | | | 143 | 457 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 273 | | | 108 | 345 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 216 | | | 85 | 272 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 130 | | | 51 | 163 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 3 | | | 1 | 4 | 52 | | | 21 | 66 |
| 1:00 | 5 | | | 2 | 7 | 29 | | | 12 | 37 |
| 2:00 | 4 | | | 2 | 5 | 44 | | | 17 | 55 |
| 3:00 | 5 | | | 2 | 7 | 64 | | | 25 | 81 |
| 4:00 | 7 | | | 3 | 8 | 82 | | | 32 | 103 |
| 5:00 | 3 | | | 1 | 4 | 95 | | | 37 | 120 |
| 6:00 | 10 | | | 4 | 12 | 112 | | | 44 | 141 |
| 7:00 | 24 | | | 9 | 30 | 122 | | | 48 | 154 |
| 8:00 | 10 | | | 4 | 12 | 156 | | | 62 | 196 |
| 9:00 | 20 | | | 8 | 25 | 165 | | | 65 | 207 |
| 10:00 | 27 | | | 11 | 34 | 192 | | | 76 | 242 |
| 11:00 | 22 | | | 9 | 27 | 192 | | | 76 | 242 |
| 12:00 | 21 | | | 8 | 26 | 171 | | | 68 | 216 |
| 13:00 | 26 | | | 10 | 33 | 185 | | | 73 | 234 |
| 14:00 | 21 | | | 8 | 26 | 165 | | | 65 | 207 |
| 15:00 | 22 | | | 9 | 27 | 144 | | | 57 | 181 |
| 16:00 | 20 | | | 8 | 25 | 158 | | | 62 | 199 |
| 17:00 | 14 | | | 6 | 18 | 110 | | | 43 | 139 |
| 18:00 | 20 | | | 8 | 25 | 118 | | | 47 | 148 |
| 19:00 | 13 | | | 5 | 16 | 111 | | | 44 | 140 |
| 20:00 | 7 | | | 3 | 8 | 59 | | | 23 | 74 |
| 21:00 | 1 | | | 0 | 1 | 85 | | | 34 | 107 |
| 22:00 | 2 | | | 1 | 3 | 69 | | | 27 | 87 |
| 23:00 | 5 | | | 2 | 7 | 54 | | | 22 | 69 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 10,000 | 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 45) | | | | Design (PS= 35) | | Design Nbl'd (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 1:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 2:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 3:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 4:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 5:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 6:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 7:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 8:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 9:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 10:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 11:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 12:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 13:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 14:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 15:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 16:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 17:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 18:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 19:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 20:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 21:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 22:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |
| 23:00 | 48 | 45 | | | 40 | 31 | 48 | 45 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | |
|--|--|--|---------------|--|
| Route: 220 | | Area Type: Exurban | | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 10,000 | 31,900 | |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 150 | | 59 | 190 | 1.0% | 100% | | 93 | 0 | 37 |
| 1:00 | 98 | | 39 | 124 | 0.7% | 100% | | 83 | 0 | 33 |
| 2:00 | 84 | | 33 | 106 | 0.7% | 100% | | 106 | 0 | 42 |
| 3:00 | 59 | | 23 | 74 | 0.7% | 100% | | 127 | 0 | 50 |
| 4:00 | 173 | | 68 | 218 | 1.3% | 100% | | 160 | 0 | 63 |
| 5:00 | 516 | | 204 | 651 | 2.7% | 100% | | 178 | 0 | 70 |
| 6:00 | 998 | | 394 | 1,258 | 5.0% | 100% | | 258 | 0 | 102 |
| 7:00 | 1,171 | | 463 | 1,477 | 5.9% | 100% | | 322 | 0 | 127 |
| 8:00 | 1,081 | | 427 | 1,363 | 5.5% | 100% | | 319 | 0 | 126 |
| 9:00 | 880 | | 348 | 1,110 | 5.0% | 100% | | 377 | 0 | 149 |
| 10:00 | 991 | | 392 | 1,250 | 5.6% | 100% | | 425 | 0 | 168 |
| 11:00 | 1,018 | | 402 | 1,283 | 5.5% | 100% | | 386 | 0 | 152 |
| 12:00 | 1,147 | | 453 | 1,446 | 6.1% | 100% | | 387 | 0 | 153 |
| 13:00 | 1,128 | | 446 | 1,422 | 6.0% | 100% | | 382 | 0 | 151 |
| 14:00 | 1,288 | | 509 | 1,624 | 6.4% | 100% | | 342 | 0 | 135 |
| 15:00 | 1,462 | | 578 | 1,843 | 7.1% | 100% | | 332 | 0 | 131 |
| 16:00 | 1,514 | | 599 | 1,909 | 7.2% | 100% | | 309 | 0 | 122 |
| 17:00 | 1,670 | | 660 | 2,106 | 7.5% | 100% | | 231 | 0 | 91 |
| 18:00 | 1,251 | | 494 | 1,577 | 5.8% | 100% | | 217 | 0 | 86 |
| 19:00 | 951 | | 376 | 1,199 | 4.5% | 100% | | 191 | 0 | 75 |
| 20:00 | 735 | | 291 | 927 | 3.4% | 100% | | 118 | 0 | 47 |
| 21:00 | 558 | | 220 | 703 | 2.8% | 100% | | 157 | 0 | 62 |
| 22:00 | 409 | | 161 | 515 | 2.1% | 100% | | 133 | 0 | 53 |
| 23:00 | 233 | | 92 | 294 | 1.3% | 100% | | 102 | 0 | 40 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 45) | | | | Design (PS= 35) | | Design Nbl (PS= 45) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 77 | 72 | | | 64 | 50 | 77 | 72 |
| 1:00 | 88 | 82 | | | 73 | 58 | 88 | 82 |
| 2:00 | 107 | 101 | | | 90 | 71 | 107 | 101 |
| 3:00 | 151 | 141 | | | 126 | 99 | 151 | 141 |
| 4:00 | 92 | 86 | | | 76 | 60 | 92 | 86 |
| 5:00 | 64 | 60 | | | 53 | 42 | 64 | 60 |
| 6:00 | 60 | 56 | | | 50 | 39 | 60 | 56 |
| 7:00 | 61 | 57 | | | 51 | 40 | 61 | 57 |
| 8:00 | 62 | 58 | | | 51 | 40 | 62 | 58 |
| 9:00 | 68 | 64 | | | 57 | 45 | 68 | 64 |
| 10:00 | 68 | 64 | | | 57 | 45 | 68 | 64 |
| 11:00 | 66 | 61 | | | 55 | 43 | 66 | 61 |
| 12:00 | 64 | 60 | | | 53 | 42 | 64 | 60 |
| 13:00 | 64 | 60 | | | 53 | 42 | 64 | 60 |
| 14:00 | 60 | 56 | | | 50 | 40 | 60 | 56 |
| 15:00 | 58 | 55 | | | 49 | 38 | 58 | 55 |
| 16:00 | 57 | 54 | | | 48 | 38 | 57 | 54 |
| 17:00 | 54 | 51 | | | 45 | 36 | 54 | 51 |
| 18:00 | 56 | 52 | | | 47 | 37 | 56 | 52 |
| 19:00 | 57 | 54 | | | 48 | 38 | 57 | 54 |
| 20:00 | 55 | 52 | | | 46 | 36 | 55 | 52 |
| 21:00 | 61 | 57 | | | 51 | 40 | 61 | 57 |
| 22:00 | 63 | 59 | | | 53 | 41 | 63 | 59 |
| 23:00 | 68 | 64 | | | 57 | 45 | 68 | 64 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA® - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: North Carolina Border 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

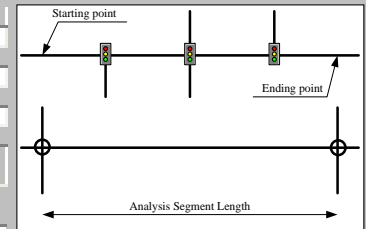
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 | | |
|--|-------------------------------|----------------------------|------------|------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Principal Art/X-way/Pk-way | | |
| Capacity: | 1,300 pcphpl | 1,500 pcphpl | | |
| 10. Facility Cross Section: | Divided | Divided | | |
| 11. Posted Speed (PS, mph): | 55 | 55 | | |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 | | |
| 12a. Free-Flow Speed, mph: | 55 | 55 | | |
| 13. Number of Lane: | Northbound | Southbound | Northbound | Southbound |
| | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | Inside | Outside | Inside | Outside |
| | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | | | | |
| 16. Access Density (# of access/mi.): | 3 | | 1 | |
| 17. Analysis Segment No. of Signals: | 0 | | 0 | |
| 18. Average Cycle Length (sec.): | 0 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 0 | | 0 | |
| 20. Signal Coordination: | 0.00 | | 0.00 | |
| | #N/A | | #N/A | |



Smb= Mid-block F-F Speed (Signalized Facility)

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly

| | Existing Year 2018 | Design Year 2040 |
|---|--------------------|--------------------|
| 22. Two-way ADT or AADT: | 11,900 | 17,800 |
| 22a. Is No-build Condition ADT or AADT Available: | Yes | No-Bld ADT: 17,200 |

ADT: Average Daily Traffic, AADT: Annual ADT

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | |
|---------------|--|---------------------|--------------------|---------|--------------------|---------|--|
| | Tow-way K-factor | Northbound D-factor | Northbound % Truck | | Southbound % Truck | | |
| | | | 2X-6T | 3X & up | 2X-6T | 3X & up | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | |
| 100% | | | | | | | |



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: North Carolina Border
 To: Proposed Rte 220/Bypass Interchange (south of
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 11,900 No-build
 Design Year: 2040 ADT: 17,800 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.06 | A | 0.06 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.17 | A | 0.17 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.24 | A | 0.24 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.25 | A | 0.25 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.23 | A | 0.23 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.27 | A | 0.27 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.27 | A | 0.27 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.27 | A | 0.27 | A | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.21 | A | 0.21 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.16 | A | 0.16 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.12 | A | 0.12 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.11 | A | 0.11 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.14 | A | 0.14 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.25 | A | 0.25 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.26 | A | 0.26 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.26 | A | 0.26 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.27 | A | 0.27 | A | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.27 | A | 0.27 | A | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.26 | A | 0.26 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.17 | A | 0.17 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.12 | A | 0.12 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.11 | A | 0.11 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.09 | A | 0.09 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.07 | A | 0.07 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem: [Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | | |
|---|---------------------------|--|---------------|--|
| Route: 220 | | Area Type: Exurban | | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build | |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,800 | 17,200 | |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | | 61 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | | 32 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | | 31 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | | 12 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | | 41 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | | 111 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | | 273 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | | 423 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | | 399 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | | 306 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | | 350 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | | 351 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | | 412 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | | 377 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | | 449 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | | 510 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | | 567 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | | 624 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | | 476 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | | 372 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | | 262 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | | 200 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | | 136 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | | 73 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 2 | 16 | | | 24 | 23 |
| 1:00 | 1 | | | 2 | 1 | 22 | | | 32 | 31 |
| 2:00 | 0 | | | 0 | 0 | 27 | | | 41 | 39 |
| 3:00 | 1 | | | 2 | 1 | 26 | | | 39 | 38 |
| 4:00 | 3 | | | 4 | 4 | 31 | | | 47 | 45 |
| 5:00 | 2 | | | 3 | 3 | 35 | | | 53 | 51 |
| 6:00 | 9 | | | 14 | 13 | 55 | | | 82 | 79 |
| 7:00 | 16 | | | 24 | 23 | 67 | | | 100 | 97 |
| 8:00 | 9 | | | 14 | 13 | 63 | | | 94 | 91 |
| 9:00 | 20 | | | 31 | 30 | 70 | | | 105 | 101 |
| 10:00 | 10 | | | 15 | 15 | 87 | | | 130 | 125 |
| 11:00 | 7 | | | 10 | 10 | 74 | | | 111 | 107 |
| 12:00 | 9 | | | 13 | 13 | 83 | | | 124 | 120 |
| 13:00 | 13 | | | 19 | 19 | 68 | | | 101 | 98 |
| 14:00 | 10 | | | 15 | 14 | 64 | | | 96 | 93 |
| 15:00 | 11 | | | 16 | 16 | 68 | | | 101 | 98 |
| 16:00 | 7 | | | 11 | 10 | 55 | | | 82 | 79 |
| 17:00 | 5 | | | 7 | 7 | 46 | | | 68 | 66 |
| 18:00 | 3 | | | 5 | 4 | 34 | | | 51 | 50 |
| 19:00 | 5 | | | 8 | 7 | 26 | | | 39 | 38 |
| 20:00 | 3 | | | 5 | 4 | 22 | | | 32 | 31 |
| 21:00 | 4 | | | 6 | 6 | 29 | | | 44 | 42 |
| 22:00 | 1 | | | 2 | 1 | 28 | | | 42 | 41 |
| 23:00 | 1 | | | 2 | 1 | 19 | | | 28 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,800 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 17,800 | 17,200 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | | 44 | 43 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | | 37 | 36 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | | 28 | 27 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | | 29 | 28 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | | 80 | 78 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | | 252 | 244 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | | 429 | 415 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | | 401 | 387 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | | 362 | 350 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | | 313 | 303 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | | 348 | 336 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | | 365 | 353 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | | 396 | 382 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | | 416 | 402 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | | 457 | 441 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | | 519 | 501 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | | 498 | 481 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | | 551 | 533 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | | 404 | 390 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | | 297 | 287 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | | 255 | 247 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | | 192 | 186 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | | 152 | 147 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | | 91 | 88 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 2 | 25 | | | 37 | 36 |
| 1:00 | 3 | | | 4 | 4 | 14 | | | 21 | 20 |
| 2:00 | 2 | | | 3 | 3 | 20 | | | 31 | 30 |
| 3:00 | 3 | | | 4 | 4 | 30 | | | 45 | 44 |
| 4:00 | 3 | | | 5 | 4 | 38 | | | 57 | 56 |
| 5:00 | 2 | | | 2 | 2 | 45 | | | 67 | 64 |
| 6:00 | 5 | | | 7 | 7 | 53 | | | 79 | 76 |
| 7:00 | 11 | | | 17 | 16 | 57 | | | 86 | 83 |
| 8:00 | 5 | | | 7 | 7 | 73 | | | 110 | 106 |
| 9:00 | 9 | | | 14 | 13 | 77 | | | 116 | 112 |
| 10:00 | 13 | | | 19 | 19 | 90 | | | 135 | 130 |
| 11:00 | 10 | | | 15 | 15 | 90 | | | 135 | 130 |
| 12:00 | 10 | | | 15 | 14 | 80 | | | 120 | 116 |
| 13:00 | 12 | | | 18 | 18 | 87 | | | 130 | 126 |
| 14:00 | 10 | | | 15 | 14 | 77 | | | 116 | 112 |
| 15:00 | 10 | | | 15 | 15 | 68 | | | 101 | 98 |
| 16:00 | 9 | | | 14 | 13 | 74 | | | 111 | 107 |
| 17:00 | 7 | | | 10 | 10 | 52 | | | 77 | 75 |
| 18:00 | 9 | | | 14 | 13 | 55 | | | 83 | 80 |
| 19:00 | 6 | | | 9 | 9 | 52 | | | 78 | 76 |
| 20:00 | 3 | | | 5 | 4 | 28 | | | 41 | 40 |
| 21:00 | 1 | | | 1 | 1 | 40 | | | 60 | 58 |
| 22:00 | 1 | | | 2 | 1 | 32 | | | 48 | 47 |
| 23:00 | 3 | | | 4 | 4 | 26 | | | 38 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---|---------------------------|--|
| Route: 220 | | Area Type: Exurban |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,800 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: North Carolina Border | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Rte 220/Bypass Interchange (s | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 17,800 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 71 | | | 106 | 102 | 1.0% | 100% | 44 | 0 | 65 |
| 1:00 | 46 | | | 69 | 67 | 0.7% | 100% | 39 | 0 | 58 |
| 2:00 | 39 | | | 59 | 57 | 0.7% | 100% | 50 | 0 | 74 |
| 3:00 | 28 | | | 41 | 40 | 0.7% | 100% | 60 | 0 | 90 |
| 4:00 | 81 | | | 122 | 118 | 1.3% | 100% | 75 | 0 | 113 |
| 5:00 | 243 | | | 363 | 351 | 2.7% | 100% | 84 | 0 | 125 |
| 6:00 | 469 | | | 702 | 678 | 5.0% | 100% | 121 | 0 | 182 |
| 7:00 | 551 | | | 824 | 796 | 5.9% | 100% | 152 | 0 | 227 |
| 8:00 | 508 | | | 760 | 735 | 5.5% | 100% | 150 | 0 | 225 |
| 9:00 | 414 | | | 619 | 598 | 5.0% | 100% | 177 | 0 | 265 |
| 10:00 | 466 | | | 697 | 674 | 5.6% | 100% | 200 | 0 | 299 |
| 11:00 | 479 | | | 716 | 692 | 5.5% | 100% | 181 | 0 | 271 |
| 12:00 | 540 | | | 807 | 780 | 6.1% | 100% | 182 | 0 | 272 |
| 13:00 | 530 | | | 793 | 767 | 6.0% | 100% | 180 | 0 | 269 |
| 14:00 | 606 | | | 906 | 875 | 6.4% | 100% | 161 | 0 | 241 |
| 15:00 | 688 | | | 1,029 | 994 | 7.1% | 100% | 156 | 0 | 234 |
| 16:00 | 712 | | | 1,065 | 1,029 | 7.2% | 100% | 146 | 0 | 218 |
| 17:00 | 786 | | | 1,175 | 1,135 | 7.5% | 100% | 109 | 0 | 162 |
| 18:00 | 588 | | | 880 | 850 | 5.8% | 100% | 102 | 0 | 153 |
| 19:00 | 447 | | | 669 | 647 | 4.5% | 100% | 90 | 0 | 134 |
| 20:00 | 346 | | | 517 | 500 | 3.4% | 100% | 55 | 0 | 83 |
| 21:00 | 262 | | | 392 | 379 | 2.8% | 100% | 74 | 0 | 110 |
| 22:00 | 192 | | | 287 | 278 | 2.1% | 100% | 63 | 0 | 94 |
| 23:00 | 110 | | | 164 | 158 | 1.3% | 100% | 48 | 0 | 72 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 85 | | | 90 | 86 | 90 | 85 |
| 1:00 | 102 | 98 | | | 102 | 98 | 102 | 98 |
| 2:00 | 125 | 120 | | | 125 | 121 | 125 | 120 |
| 3:00 | 176 | 168 | | | 176 | 169 | 176 | 168 |
| 4:00 | 107 | 102 | | | 107 | 103 | 107 | 102 |
| 5:00 | 75 | 71 | | | 75 | 72 | 75 | 71 |
| 6:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 7:00 | 71 | 67 | | | 71 | 68 | 71 | 67 |
| 8:00 | 72 | 69 | | | 72 | 69 | 72 | 69 |
| 9:00 | 79 | 76 | | | 79 | 76 | 79 | 76 |
| 10:00 | 79 | 76 | | | 79 | 76 | 79 | 76 |
| 11:00 | 76 | 73 | | | 76 | 74 | 76 | 73 |
| 12:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 13:00 | 74 | 71 | | | 74 | 72 | 74 | 71 |
| 14:00 | 70 | 67 | | | 70 | 68 | 70 | 67 |
| 15:00 | 68 | 65 | | | 68 | 66 | 68 | 65 |
| 16:00 | 67 | 64 | | | 67 | 64 | 67 | 64 |
| 17:00 | 63 | 60 | | | 63 | 61 | 63 | 60 |
| 18:00 | 65 | 62 | | | 65 | 63 | 65 | 62 |
| 19:00 | 67 | 64 | | | 67 | 64 | 67 | 64 |
| 20:00 | 64 | 61 | | | 64 | 62 | 64 | 61 |
| 21:00 | 71 | 68 | | | 71 | 68 | 71 | 68 |
| 22:00 | 73 | 70 | | | 73 | 71 | 73 | 70 |
| 23:00 | 80 | 76 | | | 80 | 77 | 80 | 76 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 3.10

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Proposed Rte 220/Bypass Interchange (south of Reservoir Rd) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Morehead Ave (Ridgeway 87) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

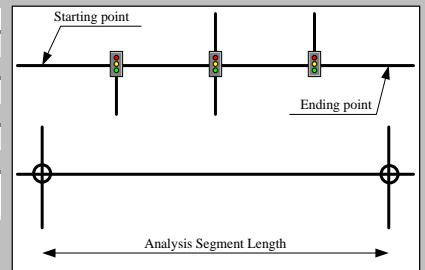
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Principal Art/X-way/Pk-way |
| Capacity: | 1,300 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Existing Year 2018 | | Design Year 2040 | |
|--|--------------------|------------|------------------|------------|
| | Northbound | Southbound | Northbound | Southbound |
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 6 | | 2 | |
| 17. Analysis Segment No. of Signals: | 1 | | 0 | |
| 18. Average Cycle Length (sec.): | 130 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 0 | |
| 20. Signal Coordination: | No Coord. | | 0.00 | |
| Delay caused by signal, mph: | 1 | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 11,900 17,350 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 17,200

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220

From: Proposed Rte 220/Bypass Interchange (south of

To: Morehead Ave (Ridgeway 87)



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban

Traffic Assignment: Constrained - Noise Study

Existing Year: 2018 ADT: 11,900 No-build

Design Year: 2040 ADT: 17,350 17,200

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 3:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 4:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 5:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 6:00 | 0.13 | A | | | | | 0.17 | A | 0.17 | A | 0.19 | A | 0.19 |
| 7:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.27 | A | 0.27 |
| 8:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.25 | A | 0.25 |
| 9:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 10:00 | 0.18 | A | | | | | 0.23 | A | 0.23 | A | 0.26 | A | 0.26 |
| 11:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 12:00 | 0.19 | A | | | | | 0.25 | A | 0.25 | A | 0.28 | A | 0.28 |
| 13:00 | 0.17 | A | | | | | 0.22 | A | 0.22 | A | 0.25 | A | 0.25 |
| 14:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.27 | A | 0.27 |
| 15:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.30 | A | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.30 | A | 0.30 |
| 17:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.30 | B | 0.30 |
| 18:00 | 0.16 | A | | | | | 0.20 | A | 0.20 | A | 0.23 | A | 0.23 |
| 19:00 | 0.13 | A | | | | | 0.16 | A | 0.16 | A | 0.18 | A | 0.18 |
| 20:00 | 0.09 | A | | | | | 0.12 | A | 0.12 | A | 0.13 | A | 0.13 |
| 21:00 | 0.08 | A | | | | | 0.11 | A | 0.11 | A | 0.12 | A | 0.12 |
| 22:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 23:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1300 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.03 | A | 0.03 | A | 0.04 | A | 0.04 |
| 2:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 3:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 4:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |
| 5:00 | 0.11 | A | | | | | 0.14 | A | 0.14 | A | 0.16 | A | 0.16 |
| 6:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 7:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 8:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 9:00 | 0.16 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 10:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.27 | A | 0.27 |
| 11:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.28 | A | 0.28 |
| 12:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.27 | A | 0.27 |
| 13:00 | 0.20 | A | | | | | 0.26 | A | 0.26 | A | 0.29 | A | 0.29 |
| 14:00 | 0.20 | A | | | | | 0.25 | A | 0.25 | A | 0.29 | A | 0.29 |
| 15:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.30 | B | 0.30 |
| 16:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.30 | B | 0.30 |
| 17:00 | 0.20 | A | | | | | 0.25 | A | 0.25 | A | 0.29 | A | 0.29 |
| 18:00 | 0.17 | A | | | | | 0.21 | A | 0.21 | A | 0.24 | A | 0.24 |
| 19:00 | 0.13 | A | | | | | 0.17 | A | 0.17 | A | 0.19 | A | 0.19 |
| 20:00 | 0.10 | A | | | | | 0.12 | A | 0.12 | A | 0.14 | A | 0.14 |
| 21:00 | 0.09 | A | | | | | 0.11 | A | 0.11 | A | 0.13 | A | 0.13 |
| 22:00 | 0.07 | A | | | | | 0.09 | A | 0.09 | A | 0.10 | A | 0.10 |
| 23:00 | 0.05 | A | | | | | 0.06 | A | 0.06 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,350 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 41 | | 60 | 59 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 22 | | 31 | 31 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 20 | | 30 | 30 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 8 | | 12 | 12 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 28 | | 40 | 40 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 74 | | 108 | 107 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 182 | | 266 | 264 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 283 | | 412 | 409 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 266 | | 388 | 385 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 204 | | 298 | 296 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 234 | | 341 | 338 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 235 | | 342 | 339 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 275 | | 401 | 398 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 252 | | 368 | 364 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 300 | | 438 | 434 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 341 | | 497 | 493 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 379 | | 553 | 548 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 417 | | 608 | 603 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 318 | | 464 | 460 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 249 | | 362 | 359 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 175 | | 256 | 253 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 134 | | 195 | 193 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 91 | | 132 | 131 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 49 | | 71 | 70 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|--------------|------------------------|--|--------|--------------|
| | Existing | | Design | Design Nbl'd | Existing | | Design | Design Nbl'd |
| 0:00 | 2 | | 2 | 2 | 16 | | 23 | 23 |
| 1:00 | 1 | | 1 | 1 | 22 | | 31 | 31 |
| 2:00 | 0 | | 0 | 0 | 27 | | 40 | 39 |
| 3:00 | 1 | | 1 | 1 | 26 | | 38 | 38 |
| 4:00 | 3 | | 4 | 4 | 31 | | 46 | 45 |
| 5:00 | 2 | | 3 | 3 | 35 | | 52 | 51 |
| 6:00 | 9 | | 13 | 13 | 55 | | 80 | 79 |
| 7:00 | 16 | | 23 | 23 | 67 | | 98 | 97 |
| 8:00 | 9 | | 13 | 13 | 63 | | 92 | 91 |
| 9:00 | 20 | | 30 | 30 | 70 | | 102 | 101 |
| 10:00 | 10 | | 15 | 15 | 87 | | 126 | 125 |
| 11:00 | 7 | | 10 | 10 | 74 | | 108 | 107 |
| 12:00 | 9 | | 13 | 13 | 83 | | 121 | 120 |
| 13:00 | 13 | | 19 | 19 | 68 | | 99 | 98 |
| 14:00 | 10 | | 14 | 14 | 64 | | 93 | 93 |
| 15:00 | 11 | | 16 | 16 | 68 | | 99 | 98 |
| 16:00 | 7 | | 10 | 10 | 55 | | 80 | 79 |
| 17:00 | 5 | | 7 | 7 | 46 | | 66 | 66 |
| 18:00 | 3 | | 4 | 4 | 34 | | 50 | 50 |
| 19:00 | 5 | | 7 | 7 | 26 | | 38 | 38 |
| 20:00 | 3 | | 4 | 4 | 22 | | 31 | 31 |
| 21:00 | 4 | | 6 | 6 | 29 | | 43 | 42 |
| 22:00 | 1 | | 1 | 1 | 28 | | 41 | 41 |
| 23:00 | 1 | | 1 | 1 | 19 | | 28 | 27 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|---|
| Route: 220 | | Area Type: Exurban |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,350 17,200 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|------------|--|--|---|------------|-----------------------|------------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrupt. | Interrupt. | | | Un-Interrupt. | Interrupt. | Un-Interrupt. | Interrupt. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,350 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 30 | | | 43 | 43 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 25 | | | 36 | 36 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 19 | | | 28 | 27 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 19 | | | 28 | 28 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 54 | | | 78 | 78 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 169 | | | 246 | 244 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 287 | | | 418 | 415 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 268 | | | 391 | 387 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 242 | | | 353 | 350 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 210 | | | 306 | 303 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 233 | | | 339 | 336 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 244 | | | 356 | 353 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 264 | | | 386 | 382 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 278 | | | 406 | 402 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 305 | | | 445 | 441 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 347 | | | 506 | 501 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 333 | | | 486 | 481 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 368 | | | 537 | 533 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 270 | | | 394 | 390 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 199 | | | 290 | 287 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 171 | | | 249 | 247 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 129 | | | 188 | 186 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 101 | | | 148 | 147 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 61 | | | 89 | 88 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 2 | 2 | 25 | | | 36 | 36 |
| 1:00 | 3 | | | 4 | 4 | 14 | | | 20 | 20 |
| 2:00 | 2 | | | 3 | 3 | 20 | | | 30 | 30 |
| 3:00 | 3 | | | 4 | 4 | 30 | | | 44 | 44 |
| 4:00 | 3 | | | 4 | 4 | 38 | | | 56 | 56 |
| 5:00 | 2 | | | 2 | 2 | 45 | | | 65 | 64 |
| 6:00 | 5 | | | 7 | 7 | 53 | | | 77 | 76 |
| 7:00 | 11 | | | 16 | 16 | 57 | | | 84 | 83 |
| 8:00 | 5 | | | 7 | 7 | 73 | | | 107 | 106 |
| 9:00 | 9 | | | 13 | 13 | 77 | | | 113 | 112 |
| 10:00 | 13 | | | 19 | 19 | 90 | | | 131 | 130 |
| 11:00 | 10 | | | 15 | 15 | 90 | | | 131 | 130 |
| 12:00 | 10 | | | 14 | 14 | 80 | | | 117 | 116 |
| 13:00 | 12 | | | 18 | 18 | 87 | | | 127 | 126 |
| 14:00 | 10 | | | 14 | 14 | 77 | | | 113 | 112 |
| 15:00 | 10 | | | 15 | 15 | 68 | | | 99 | 98 |
| 16:00 | 9 | | | 13 | 13 | 74 | | | 108 | 107 |
| 17:00 | 7 | | | 10 | 10 | 52 | | | 75 | 75 |
| 18:00 | 9 | | | 13 | 13 | 55 | | | 81 | 80 |
| 19:00 | 6 | | | 9 | 9 | 52 | | | 76 | 76 |
| 20:00 | 3 | | | 4 | 4 | 28 | | | 40 | 40 |
| 21:00 | 1 | | | 1 | 1 | 40 | | | 58 | 58 |
| 22:00 | 1 | | | 1 | 1 | 32 | | | 47 | 47 |
| 23:00 | 3 | | | 4 | 4 | 26 | | | 37 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Proposed Rte 220/Bypass Interchange (s | | Traffic Assignment: Constrained - Noise Study | |
| To: Morehead Ave (Ridgeway 87) | | Existing Year: 2018 ADT: 11,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 17,350 | 17,200 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 1:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 2:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 3:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 4:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 5:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 6:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 7:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 8:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 9:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 10:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 11:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 12:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 13:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 14:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 15:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 16:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 17:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 18:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 19:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 20:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 21:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 22:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |
| 23:00 | 55 | 53 | | | 55 | 53 | 55 | 53 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

Route: 220

Area Type: Exurban

From: Proposed Rte 220/Bypass Interchange (s

Traffic Assignment: Constrained - Noise Study

To: Morehead Ave (Ridgeway 87)

Existing Year: 2018 ADT: 11,900

No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 hrs.

Design Year: 2040 ADT: 17,350

17,200

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 71 | | 103 | 102 | 1.0% | 100% | | 44 | 0 | 64 |
| 1:00 | 46 | | 67 | 67 | 0.7% | 100% | | 39 | 0 | 57 |
| 2:00 | 39 | | 58 | 57 | 0.7% | 100% | | 50 | 0 | 72 |
| 3:00 | 28 | | 40 | 40 | 0.7% | 100% | | 60 | 0 | 87 |
| 4:00 | 81 | | 119 | 118 | 1.3% | 100% | | 75 | 0 | 110 |
| 5:00 | 243 | | 354 | 351 | 2.7% | 100% | | 84 | 0 | 122 |
| 6:00 | 469 | | 684 | 678 | 5.0% | 100% | | 121 | 0 | 177 |
| 7:00 | 551 | | 803 | 796 | 5.9% | 100% | | 152 | 0 | 221 |
| 8:00 | 508 | | 741 | 735 | 5.5% | 100% | | 150 | 0 | 219 |
| 9:00 | 414 | | 604 | 598 | 5.0% | 100% | | 177 | 0 | 258 |
| 10:00 | 466 | | 680 | 674 | 5.6% | 100% | | 200 | 0 | 291 |
| 11:00 | 479 | | 698 | 692 | 5.5% | 100% | | 181 | 0 | 264 |
| 12:00 | 540 | | 787 | 780 | 6.1% | 100% | | 182 | 0 | 265 |
| 13:00 | 530 | | 773 | 767 | 6.0% | 100% | | 180 | 0 | 262 |
| 14:00 | 606 | | 883 | 875 | 6.4% | 100% | | 161 | 0 | 235 |
| 15:00 | 688 | | 1,003 | 994 | 7.1% | 100% | | 156 | 0 | 228 |
| 16:00 | 712 | | 1,038 | 1,029 | 7.2% | 100% | | 146 | 0 | 212 |
| 17:00 | 786 | | 1,145 | 1,135 | 7.5% | 100% | | 109 | 0 | 158 |
| 18:00 | 588 | | 858 | 850 | 5.8% | 100% | | 102 | 0 | 149 |
| 19:00 | 447 | | 652 | 647 | 4.5% | 100% | | 90 | 0 | 131 |
| 20:00 | 346 | | 504 | 500 | 3.4% | 100% | | 55 | 0 | 81 |
| 21:00 | 262 | | 383 | 379 | 2.8% | 100% | | 74 | 0 | 108 |
| 22:00 | 192 | | 280 | 278 | 2.1% | 100% | | 63 | 0 | 91 |
| 23:00 | 110 | | 160 | 158 | 1.3% | 100% | | 48 | 0 | 70 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 86 | | | 90 | 86 | 90 | 86 |
| 1:00 | 102 | 98 | | | 102 | 98 | 102 | 98 |
| 2:00 | 125 | 120 | | | 125 | 120 | 125 | 120 |
| 3:00 | 176 | 168 | | | 176 | 168 | 176 | 168 |
| 4:00 | 107 | 102 | | | 107 | 102 | 107 | 102 |
| 5:00 | 75 | 71 | | | 75 | 71 | 75 | 71 |
| 6:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 7:00 | 71 | 68 | | | 71 | 68 | 71 | 68 |
| 8:00 | 72 | 69 | | | 72 | 69 | 72 | 69 |
| 9:00 | 79 | 76 | | | 79 | 76 | 79 | 76 |
| 10:00 | 79 | 76 | | | 79 | 76 | 79 | 76 |
| 11:00 | 76 | 73 | | | 76 | 73 | 76 | 73 |
| 12:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 13:00 | 74 | 71 | | | 74 | 71 | 74 | 71 |
| 14:00 | 70 | 67 | | | 70 | 67 | 70 | 67 |
| 15:00 | 68 | 65 | | | 68 | 65 | 68 | 65 |
| 16:00 | 67 | 64 | | | 67 | 64 | 67 | 64 |
| 17:00 | 63 | 61 | | | 63 | 61 | 63 | 61 |
| 18:00 | 65 | 62 | | | 65 | 62 | 65 | 62 |
| 19:00 | 67 | 64 | | | 67 | 64 | 67 | 64 |
| 20:00 | 64 | 62 | | | 64 | 62 | 64 | 62 |
| 21:00 | 71 | 68 | | | 71 | 68 | 71 | 68 |
| 22:00 | 73 | 70 | | | 73 | 70 | 73 | 70 |
| 23:00 | 80 | 77 | | | 80 | 76 | 80 | 77 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.60

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Defination](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Morehead Ave (Ridgeway 87) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Soapstone Rd (Rte 687) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

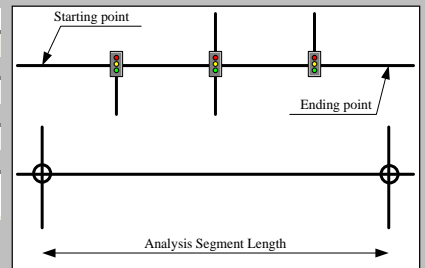
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Principal Art/X-way/Pk-way |
| Capacity: | 1,300 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 1 | | 2 | |
| 17. Analysis Segment No. of Signals: | 1 | | 0 | |
| 18. Average Cycle Length (sec.): | 180 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 148 | | 0 | |
| 20. Signal Coordination: | No Coord. | | 0.00 | |
| Delay caused by signal, mph: | 4 | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

Existing Year 2018 Design Year 2040

21. Truck Input Type: Hourly

22. Two-way ADT or AADT: 15,600 20,400

ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 21,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
From: Morehead Ave (Ridgeway 87)
To: Soapstone Rd (Rte 687)
Jurisdiction: 2. Salem/Henry Co
Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
Existing Year: 2018 ADT: 15,600 No-build
Design Year: 2040 ADT: 20,400 21,400

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|--------|-------------|-----------------------|-------------|------|
| | Existing | | | | | | Design | | | | Design Nblnd | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | Demand | Constrained | |
| 0:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 1:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 3:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 4:00 | 0.06 | A | | | | | 0.06 | A | 0.06 | A | 0.08 | A | 0.08 |
| 5:00 | 0.08 | A | | | | | 0.10 | A | 0.10 | A | 0.12 | A | 0.12 |
| 6:00 | 0.17 | A | | | | | 0.20 | A | 0.20 | A | 0.24 | A | 0.24 |
| 7:00 | 0.25 | A | | | | | 0.28 | A | 0.28 | A | 0.34 | B | 0.34 |
| 8:00 | 0.23 | A | | | | | 0.26 | A | 0.26 | A | 0.31 | B | 0.31 |
| 9:00 | 0.22 | A | | | | | 0.25 | A | 0.25 | A | 0.30 | A | 0.30 |
| 10:00 | 0.24 | A | | | | | 0.27 | A | 0.27 | A | 0.33 | B | 0.33 |
| 11:00 | 0.22 | A | | | | | 0.25 | A | 0.25 | A | 0.30 | B | 0.30 |
| 12:00 | 0.25 | A | | | | | 0.29 | A | 0.29 | A | 0.35 | B | 0.35 |
| 13:00 | 0.23 | A | | | | | 0.26 | A | 0.26 | A | 0.31 | B | 0.31 |
| 14:00 | 0.24 | A | | | | | 0.28 | A | 0.28 | A | 0.34 | B | 0.34 |
| 15:00 | 0.27 | A | | | | | 0.31 | B | 0.31 | B | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.31 | B | 0.31 | B | 0.37 | B | 0.37 |
| 17:00 | 0.27 | A | | | | | 0.31 | B | 0.31 | B | 0.38 | B | 0.38 |
| 18:00 | 0.21 | A | | | | | 0.24 | A | 0.24 | A | 0.28 | A | 0.28 |
| 19:00 | 0.16 | A | | | | | 0.19 | A | 0.19 | A | 0.23 | A | 0.23 |
| 20:00 | 0.12 | A | | | | | 0.14 | A | 0.14 | A | 0.16 | A | 0.16 |
| 21:00 | 0.11 | A | | | | | 0.12 | A | 0.12 | A | 0.15 | A | 0.15 |
| 22:00 | 0.08 | A | | | | | 0.09 | A | 0.09 | A | 0.11 | A | 0.11 |
| 23:00 | 0.05 | A | | | | | 0.06 | A | 0.06 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|--------|-------------|-----------------------|-------------|------|
| | Existing | | | | | | Design | | | | Design Nblnd | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | Demand | Constrained | |
| 0:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 3:00 | 0.05 | A | | | | | 0.06 | A | 0.06 | A | 0.07 | A | 0.07 |
| 4:00 | 0.08 | A | | | | | 0.09 | A | 0.09 | A | 0.11 | A | 0.11 |
| 5:00 | 0.14 | A | | | | | 0.16 | A | 0.16 | A | 0.20 | A | 0.20 |
| 6:00 | 0.22 | A | | | | | 0.25 | A | 0.25 | A | 0.30 | A | 0.30 |
| 7:00 | 0.22 | A | | | | | 0.25 | A | 0.25 | A | 0.30 | B | 0.30 |
| 8:00 | 0.22 | A | | | | | 0.25 | A | 0.25 | A | 0.30 | B | 0.30 |
| 9:00 | 0.21 | A | | | | | 0.24 | A | 0.24 | A | 0.29 | A | 0.29 |
| 10:00 | 0.25 | A | | | | | 0.28 | A | 0.28 | A | 0.34 | B | 0.34 |
| 11:00 | 0.25 | A | | | | | 0.28 | A | 0.28 | A | 0.34 | B | 0.34 |
| 12:00 | 0.25 | A | | | | | 0.28 | A | 0.28 | A | 0.34 | B | 0.34 |
| 13:00 | 0.27 | A | | | | | 0.30 | B | 0.30 | B | 0.36 | B | 0.36 |
| 14:00 | 0.26 | A | | | | | 0.30 | A | 0.30 | A | 0.36 | B | 0.36 |
| 15:00 | 0.27 | A | | | | | 0.31 | B | 0.31 | B | 0.37 | B | 0.37 |
| 16:00 | 0.27 | A | | | | | 0.31 | B | 0.31 | B | 0.37 | B | 0.37 |
| 17:00 | 0.26 | A | | | | | 0.29 | A | 0.29 | A | 0.36 | B | 0.36 |
| 18:00 | 0.22 | A | | | | | 0.25 | A | 0.25 | A | 0.30 | A | 0.30 |
| 19:00 | 0.17 | A | | | | | 0.20 | A | 0.20 | A | 0.24 | A | 0.24 |
| 20:00 | 0.12 | A | | | | | 0.14 | A | 0.14 | A | 0.17 | A | 0.17 |
| 21:00 | 0.12 | A | | | | | 0.13 | A | 0.13 | A | 0.16 | A | 0.16 |
| 22:00 | 0.09 | A | | | | | 0.11 | A | 0.11 | A | 0.13 | A | 0.13 |
| 23:00 | 0.07 | A | | | | | 0.08 | A | 0.08 | A | 0.09 | A | 0.09 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,400 | 21,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 54 | | 70 | 74 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 28 | | 37 | 39 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 27 | | 35 | 37 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 11 | | 14 | 15 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 36 | | 47 | 50 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 97 | | 127 | 134 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 239 | | 313 | 328 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 371 | | 485 | 509 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 349 | | 457 | 479 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 268 | | 350 | 368 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 306 | | 401 | 420 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 308 | | 402 | 422 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 361 | | 472 | 495 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 330 | | 432 | 453 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 394 | | 515 | 540 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 447 | | 584 | 613 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 497 | | 650 | 682 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 547 | | 715 | 750 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 417 | | 546 | 572 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 326 | | 426 | 447 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 230 | | 300 | 315 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 175 | | 229 | 241 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 119 | | 155 | 163 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 64 | | 83 | 88 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|------------|------------------------|--|--------|------------|
| | Existing | | Design | Design Nbl | Existing | | Design | Design Nbl |
| 0:00 | 2 | | 3 | 3 | 21 | | 27 | 29 |
| 1:00 | 1 | | 2 | 2 | 28 | | 37 | 39 |
| 2:00 | 0 | | 0 | 0 | 36 | | 47 | 49 |
| 3:00 | 1 | | 2 | 2 | 34 | | 45 | 47 |
| 4:00 | 3 | | 4 | 5 | 41 | | 54 | 56 |
| 5:00 | 3 | | 4 | 4 | 46 | | 61 | 64 |
| 6:00 | 12 | | 16 | 17 | 72 | | 94 | 99 |
| 7:00 | 21 | | 27 | 29 | 88 | | 115 | 121 |
| 8:00 | 12 | | 16 | 17 | 83 | | 108 | 113 |
| 9:00 | 27 | | 35 | 37 | 92 | | 120 | 126 |
| 10:00 | 13 | | 18 | 18 | 114 | | 148 | 156 |
| 11:00 | 9 | | 11 | 12 | 97 | | 127 | 134 |
| 12:00 | 11 | | 15 | 16 | 109 | | 142 | 149 |
| 13:00 | 17 | | 22 | 23 | 89 | | 116 | 122 |
| 14:00 | 13 | | 17 | 18 | 84 | | 110 | 115 |
| 15:00 | 14 | | 18 | 19 | 89 | | 116 | 122 |
| 16:00 | 9 | | 12 | 13 | 72 | | 94 | 99 |
| 17:00 | 6 | | 8 | 8 | 60 | | 78 | 82 |
| 18:00 | 4 | | 5 | 6 | 45 | | 59 | 62 |
| 19:00 | 7 | | 9 | 9 | 34 | | 45 | 47 |
| 20:00 | 4 | | 5 | 6 | 28 | | 37 | 39 |
| 21:00 | 5 | | 7 | 7 | 38 | | 50 | 53 |
| 22:00 | 1 | | 2 | 2 | 37 | | 48 | 51 |
| 23:00 | 1 | | 2 | 2 | 25 | | 33 | 34 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,400 21,400 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 20,400 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|--|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 39 | | 51 | 53 | | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 32 | | 42 | 44 | | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 25 | | 33 | 34 | | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 26 | | 33 | 35 | | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 71 | | 92 | 97 | | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 221 | | 289 | 303 | | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 376 | | 492 | 516 | | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 351 | | 459 | 482 | | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 317 | | 415 | 435 | | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 275 | | 359 | 377 | | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 305 | | 399 | 418 | | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 320 | | 418 | 439 | | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 347 | | 453 | 475 | | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 365 | | 477 | 500 | | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 400 | | 524 | 549 | | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 455 | | 595 | 624 | | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 437 | | 571 | 599 | | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 483 | | 632 | 663 | | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 354 | | 463 | 486 | | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 261 | | 341 | 358 | | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 224 | | 293 | 307 | | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 169 | | 220 | 231 | | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 133 | | 174 | 182 | | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 80 | | 105 | 110 | | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|------------|--|------------------------|--|--------|------------|--|
| | Existing | | Design | Design Nbl | | Existing | | Design | Design Nbl | |
| 0:00 | 2 | | 3 | 3 | | 32 | | 42 | 44 | |
| 1:00 | 3 | | 4 | 5 | | 18 | | 24 | 25 | |
| 2:00 | 3 | | 4 | 4 | | 27 | | 35 | 37 | |
| 3:00 | 3 | | 4 | 5 | | 40 | | 52 | 54 | |
| 4:00 | 4 | | 5 | 6 | | 50 | | 66 | 69 | |
| 5:00 | 2 | | 3 | 3 | | 58 | | 76 | 80 | |
| 6:00 | 6 | | 8 | 8 | | 69 | | 90 | 95 | |
| 7:00 | 15 | | 19 | 20 | | 75 | | 98 | 103 | |
| 8:00 | 6 | | 8 | 8 | | 96 | | 126 | 132 | |
| 9:00 | 12 | | 16 | 17 | | 101 | | 133 | 139 | |
| 10:00 | 17 | | 22 | 23 | | 118 | | 155 | 162 | |
| 11:00 | 13 | | 18 | 18 | | 118 | | 155 | 162 | |
| 12:00 | 13 | | 17 | 18 | | 105 | | 138 | 145 | |
| 13:00 | 16 | | 21 | 22 | | 114 | | 149 | 157 | |
| 14:00 | 13 | | 17 | 18 | | 101 | | 133 | 139 | |
| 15:00 | 13 | | 18 | 18 | | 89 | | 116 | 122 | |
| 16:00 | 12 | | 16 | 17 | | 97 | | 127 | 134 | |
| 17:00 | 9 | | 11 | 12 | | 68 | | 89 | 93 | |
| 18:00 | 12 | | 16 | 17 | | 73 | | 95 | 100 | |
| 19:00 | 8 | | 11 | 11 | | 69 | | 90 | 94 | |
| 20:00 | 4 | | 5 | 6 | | 36 | | 47 | 50 | |
| 21:00 | 1 | | 1 | 1 | | 52 | | 69 | 72 | |
| 22:00 | 1 | | 2 | 2 | | 42 | | 55 | 58 | |
| 23:00 | 3 | | 4 | 5 | | 34 | | 44 | 46 | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,400 21,400 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|----------------------------------|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Morehead Ave (Ridgeway 87) | | Traffic Assignment: Constrained - Noise Study | |
| To: Soapstone Rd (Rte 687) | | Existing Year: 2018 ADT: 15,600 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 20,400 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 93 | | 121 | 127 | 1.0% | 100% | | 57 | 0 | 75 |
| 1:00 | 60 | | 79 | 83 | 0.7% | 100% | | 51 | 0 | 67 |
| 2:00 | 52 | | 68 | 71 | 0.7% | 100% | | 65 | 0 | 85 |
| 3:00 | 36 | | 47 | 50 | 0.7% | 100% | | 79 | 0 | 103 |
| 4:00 | 107 | | 140 | 147 | 1.3% | 100% | | 99 | 0 | 129 |
| 5:00 | 318 | | 416 | 437 | 2.7% | 100% | | 109 | 0 | 143 |
| 6:00 | 615 | | 805 | 844 | 5.0% | 100% | | 159 | 0 | 208 |
| 7:00 | 722 | | 944 | 991 | 5.9% | 100% | | 199 | 0 | 260 |
| 8:00 | 666 | | 871 | 914 | 5.5% | 100% | | 197 | 0 | 257 |
| 9:00 | 543 | | 710 | 745 | 5.0% | 100% | | 232 | 0 | 304 |
| 10:00 | 611 | | 799 | 839 | 5.6% | 100% | | 262 | 0 | 343 |
| 11:00 | 627 | | 820 | 861 | 5.5% | 100% | | 238 | 0 | 311 |
| 12:00 | 707 | | 925 | 970 | 6.1% | 100% | | 238 | 0 | 312 |
| 13:00 | 695 | | 909 | 954 | 6.0% | 100% | | 236 | 0 | 308 |
| 14:00 | 794 | | 1,038 | 1,089 | 6.4% | 100% | | 211 | 0 | 276 |
| 15:00 | 901 | | 1,179 | 1,237 | 7.1% | 100% | | 205 | 0 | 268 |
| 16:00 | 934 | | 1,221 | 1,281 | 7.2% | 100% | | 191 | 0 | 249 |
| 17:00 | 1,030 | | 1,347 | 1,413 | 7.5% | 100% | | 142 | 0 | 186 |
| 18:00 | 771 | | 1,008 | 1,058 | 5.8% | 100% | | 134 | 0 | 175 |
| 19:00 | 586 | | 767 | 804 | 4.5% | 100% | | 118 | 0 | 154 |
| 20:00 | 453 | | 593 | 622 | 3.4% | 100% | | 73 | 0 | 95 |
| 21:00 | 344 | | 450 | 472 | 2.8% | 100% | | 97 | 0 | 126 |
| 22:00 | 252 | | 329 | 346 | 2.1% | 100% | | 82 | 0 | 107 |
| 23:00 | 144 | | 188 | 197 | 1.3% | 100% | | 63 | 0 | 83 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 83 | | | 90 | 86 | 90 | 83 |
| 1:00 | 102 | 95 | | | 102 | 98 | 102 | 95 |
| 2:00 | 125 | 116 | | | 125 | 120 | 125 | 116 |
| 3:00 | 176 | 163 | | | 176 | 168 | 176 | 163 |
| 4:00 | 107 | 99 | | | 107 | 102 | 107 | 99 |
| 5:00 | 75 | 69 | | | 75 | 71 | 75 | 69 |
| 6:00 | 70 | 65 | | | 70 | 67 | 70 | 65 |
| 7:00 | 71 | 66 | | | 71 | 68 | 71 | 66 |
| 8:00 | 72 | 67 | | | 72 | 69 | 72 | 67 |
| 9:00 | 79 | 73 | | | 79 | 76 | 79 | 73 |
| 10:00 | 79 | 73 | | | 79 | 76 | 79 | 73 |
| 11:00 | 76 | 71 | | | 76 | 73 | 76 | 71 |
| 12:00 | 74 | 69 | | | 74 | 71 | 74 | 69 |
| 13:00 | 74 | 69 | | | 74 | 71 | 74 | 69 |
| 14:00 | 70 | 65 | | | 70 | 67 | 70 | 65 |
| 15:00 | 68 | 63 | | | 68 | 65 | 68 | 63 |
| 16:00 | 67 | 62 | | | 67 | 64 | 67 | 62 |
| 17:00 | 63 | 59 | | | 63 | 61 | 63 | 59 |
| 18:00 | 65 | 60 | | | 65 | 62 | 65 | 60 |
| 19:00 | 67 | 62 | | | 67 | 64 | 67 | 62 |
| 20:00 | 64 | 60 | | | 64 | 62 | 64 | 60 |
| 21:00 | 71 | 66 | | | 71 | 68 | 71 | 66 |
| 22:00 | 73 | 68 | | | 73 | 70 | 73 | 68 |
| 23:00 | 80 | 74 | | | 80 | 76 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.90

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Soapstone Rd (Rte 687) 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Water Plant Rd 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

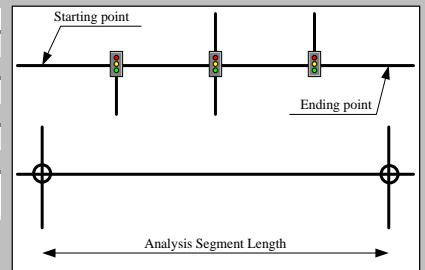
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Principal Art/X-way/Pk-way |
| Capacity: | 1,300 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 55 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 55 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Northbound | Southbound | Northbound | Southbound |
|--|------------|------------|------------|------------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 3 | | 2 | |
| 17. Analysis Segment No. of Signals: | 1 | | 0 | |
| 18. Average Cycle Length (sec.): | 135 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 103 | | 0 | |
| 20. Signal Coordination: | No Coord. | | 0.00 | |
| Delay caused by signal, mph: | 3 | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 18,000 20,400 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 23,400

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
 From: Soapstone Rd (Rte 687)
 To: Water Plant Rd
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 18,000 No-build
 Design Year: 2040 ADT: 20,400 23,400

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|--------------|-------------|-----------------------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.06 | A | 0.06 |
| 1:00 | 0.05 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 2:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |
| 3:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 4:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.08 | A | 0.08 |
| 5:00 | 0.10 | A | | | | | 0.10 | A | 0.10 | A | 0.13 | A | 0.13 |
| 6:00 | 0.20 | A | | | | | 0.20 | A | 0.20 | A | 0.26 | A | 0.26 |
| 7:00 | 0.29 | A | | | | | 0.28 | A | 0.28 | A | 0.37 | B | 0.37 |
| 8:00 | 0.26 | A | | | | | 0.26 | A | 0.26 | A | 0.34 | B | 0.34 |
| 9:00 | 0.25 | A | | | | | 0.25 | A | 0.25 | A | 0.33 | B | 0.33 |
| 10:00 | 0.28 | A | | | | | 0.27 | A | 0.27 | A | 0.36 | B | 0.36 |
| 11:00 | 0.25 | A | | | | | 0.25 | A | 0.25 | A | 0.33 | B | 0.33 |
| 12:00 | 0.29 | A | | | | | 0.29 | A | 0.29 | A | 0.38 | B | 0.38 |
| 13:00 | 0.26 | A | | | | | 0.26 | A | 0.26 | A | 0.34 | B | 0.34 |
| 14:00 | 0.28 | A | | | | | 0.28 | A | 0.28 | A | 0.37 | B | 0.37 |
| 15:00 | 0.31 | B | | | | | 0.31 | B | 0.31 | B | 0.41 | B | 0.41 |
| 16:00 | 0.31 | B | | | | | 0.31 | B | 0.31 | B | 0.40 | B | 0.40 |
| 17:00 | 0.32 | B | | | | | 0.31 | B | 0.31 | B | 0.41 | B | 0.41 |
| 18:00 | 0.24 | A | | | | | 0.24 | A | 0.24 | A | 0.31 | B | 0.31 |
| 19:00 | 0.19 | A | | | | | 0.19 | A | 0.19 | A | 0.25 | A | 0.25 |
| 20:00 | 0.14 | A | | | | | 0.14 | A | 0.14 | A | 0.18 | A | 0.18 |
| 21:00 | 0.13 | A | | | | | 0.12 | A | 0.12 | A | 0.16 | A | 0.16 |
| 22:00 | 0.10 | A | | | | | 0.09 | A | 0.09 | A | 0.12 | A | 0.12 |
| 23:00 | 0.06 | A | | | | | 0.06 | A | 0.06 | A | 0.07 | A | 0.07 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|--------------|-------------|-----------------------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |
| 1:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.05 | A | 0.05 |
| 2:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.06 | A | 0.06 |
| 3:00 | 0.06 | A | | | | | 0.06 | A | 0.06 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | | 0.09 | A | 0.09 | A | 0.12 | A | 0.12 |
| 5:00 | 0.17 | A | | | | | 0.16 | A | 0.16 | A | 0.21 | A | 0.21 |
| 6:00 | 0.25 | A | | | | | 0.25 | A | 0.25 | A | 0.33 | B | 0.33 |
| 7:00 | 0.26 | A | | | | | 0.25 | A | 0.25 | A | 0.33 | B | 0.33 |
| 8:00 | 0.25 | A | | | | | 0.25 | A | 0.25 | A | 0.33 | B | 0.33 |
| 9:00 | 0.25 | A | | | | | 0.24 | A | 0.24 | A | 0.32 | B | 0.32 |
| 10:00 | 0.29 | A | | | | | 0.28 | A | 0.28 | A | 0.37 | B | 0.37 |
| 11:00 | 0.29 | A | | | | | 0.28 | A | 0.28 | A | 0.37 | B | 0.37 |
| 12:00 | 0.28 | A | | | | | 0.28 | A | 0.28 | A | 0.37 | B | 0.37 |
| 13:00 | 0.31 | B | | | | | 0.30 | B | 0.30 | B | 0.40 | B | 0.40 |
| 14:00 | 0.30 | B | | | | | 0.30 | A | 0.30 | A | 0.40 | B | 0.40 |
| 15:00 | 0.32 | B | | | | | 0.31 | B | 0.31 | B | 0.41 | B | 0.41 |
| 16:00 | 0.32 | B | | | | | 0.31 | B | 0.31 | B | 0.41 | B | 0.41 |
| 17:00 | 0.30 | A | | | | | 0.29 | A | 0.29 | A | 0.39 | B | 0.39 |
| 18:00 | 0.25 | A | | | | | 0.25 | A | 0.25 | A | 0.33 | B | 0.33 |
| 19:00 | 0.20 | A | | | | | 0.20 | A | 0.20 | A | 0.26 | A | 0.26 |
| 20:00 | 0.14 | A | | | | | 0.14 | A | 0.14 | A | 0.19 | A | 0.19 |
| 21:00 | 0.13 | A | | | | | 0.13 | A | 0.13 | A | 0.17 | A | 0.17 |
| 22:00 | 0.11 | A | | | | | 0.11 | A | 0.11 | A | 0.14 | A | 0.14 |
| 23:00 | 0.08 | A | | | | | 0.08 | A | 0.08 | A | 0.10 | A | 0.10 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



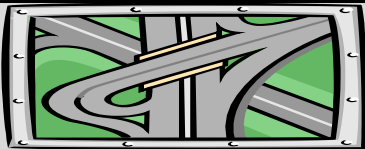
ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|---|--|---------------|
| Route: 220 |  | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,400 | 23,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|-------------------|-------------------------|-------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 62 | | | 70 | 81 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 33 | | | 37 | 42 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 31 | | | 35 | 40 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 12 | | | 14 | 16 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 42 | | | 47 | 54 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 112 | | | 127 | 146 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 276 | | | 313 | 359 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 428 | | | 485 | 556 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 403 | | | 457 | 524 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 309 | | | 350 | 402 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 353 | | | 401 | 459 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 355 | | | 402 | 461 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 416 | | | 472 | 541 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 381 | | | 432 | 496 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 454 | | | 515 | 590 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 515 | | | 584 | 670 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 574 | | | 650 | 746 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 631 | | | 715 | 820 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 481 | | | 546 | 626 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 376 | | | 426 | 489 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 265 | | | 300 | 345 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 202 | | | 229 | 263 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 137 | | | 155 | 178 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 74 | | | 83 | 96 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | | | |
|---------------|-------------------|--|--|--------|------------------------|----------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 3 | 3 | 24 | | | 27 | 31 |
| 1:00 | 2 | | | 2 | 2 | 33 | | | 37 | 42 |
| 2:00 | 0 | | | 0 | 0 | 41 | | | 47 | 53 |
| 3:00 | 2 | | | 2 | 2 | 40 | | | 45 | 51 |
| 4:00 | 4 | | | 4 | 5 | 47 | | | 54 | 61 |
| 5:00 | 3 | | | 4 | 4 | 53 | | | 61 | 70 |
| 6:00 | 14 | | | 16 | 18 | 83 | | | 94 | 108 |
| 7:00 | 24 | | | 27 | 31 | 102 | | | 115 | 132 |
| 8:00 | 14 | | | 16 | 18 | 95 | | | 108 | 124 |
| 9:00 | 31 | | | 35 | 40 | 106 | | | 120 | 138 |
| 10:00 | 16 | | | 18 | 20 | 131 | | | 148 | 170 |
| 11:00 | 10 | | | 11 | 13 | 112 | | | 127 | 146 |
| 12:00 | 13 | | | 15 | 17 | 126 | | | 142 | 163 |
| 13:00 | 19 | | | 22 | 25 | 102 | | | 116 | 133 |
| 14:00 | 15 | | | 17 | 19 | 97 | | | 110 | 126 |
| 15:00 | 16 | | | 18 | 21 | 102 | | | 116 | 133 |
| 16:00 | 11 | | | 12 | 14 | 83 | | | 94 | 108 |
| 17:00 | 7 | | | 8 | 9 | 69 | | | 78 | 90 |
| 18:00 | 5 | | | 5 | 6 | 52 | | | 59 | 68 |
| 19:00 | 8 | | | 9 | 10 | 40 | | | 45 | 51 |
| 20:00 | 5 | | | 5 | 6 | 33 | | | 37 | 42 |
| 21:00 | 6 | | | 7 | 8 | 44 | | | 50 | 57 |
| 22:00 | 2 | | | 2 | 2 | 43 | | | 48 | 55 |
| 23:00 | 2 | | | 2 | 2 | 29 | | | 33 | 37 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|---------------------------------|--------------------|---|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,400 23,400 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | |

| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 20,400 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|------------|--|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl | | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 45 | | 51 | 58 | | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 37 | | 42 | 48 | | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 29 | | 33 | 37 | | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 29 | | 33 | 38 | | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 81 | | 92 | 106 | | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 255 | | 289 | 332 | | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 434 | | 492 | 564 | | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 405 | | 459 | 527 | | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 366 | | 415 | 476 | | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 317 | | 359 | 412 | | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 352 | | 399 | 457 | | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 369 | | 418 | 480 | | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 400 | | 453 | 520 | | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 421 | | 477 | 547 | | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 462 | | 524 | 601 | | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 525 | | 595 | 682 | | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 504 | | 571 | 655 | | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 557 | | 632 | 724 | | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 408 | | 463 | 531 | | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 301 | | 341 | 391 | | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 258 | | 293 | 336 | | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 195 | | 220 | 253 | | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 153 | | 174 | 200 | | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 92 | | 105 | 120 | | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|------------|--|------------------------|--|--------|------------|--|
| | Existing | | Design | Design Nbl | | Existing | | Design | Design Nbl | |
| 0:00 | 2 | | 3 | 3 | | 37 | | 42 | 48 | |
| 1:00 | 4 | | 4 | 5 | | 21 | | 24 | 27 | |
| 2:00 | 3 | | 4 | 4 | | 31 | | 35 | 40 | |
| 3:00 | 4 | | 4 | 5 | | 46 | | 52 | 59 | |
| 4:00 | 5 | | 5 | 6 | | 58 | | 66 | 76 | |
| 5:00 | 2 | | 3 | 3 | | 67 | | 76 | 88 | |
| 6:00 | 7 | | 8 | 9 | | 80 | | 90 | 104 | |
| 7:00 | 17 | | 19 | 22 | | 87 | | 98 | 113 | |
| 8:00 | 7 | | 8 | 9 | | 111 | | 126 | 144 | |
| 9:00 | 14 | | 16 | 18 | | 117 | | 133 | 152 | |
| 10:00 | 19 | | 22 | 25 | | 136 | | 155 | 177 | |
| 11:00 | 16 | | 18 | 20 | | 136 | | 155 | 177 | |
| 12:00 | 15 | | 17 | 19 | | 122 | | 138 | 158 | |
| 13:00 | 19 | | 21 | 24 | | 132 | | 149 | 171 | |
| 14:00 | 15 | | 17 | 19 | | 117 | | 133 | 152 | |
| 15:00 | 16 | | 18 | 20 | | 102 | | 116 | 133 | |
| 16:00 | 14 | | 16 | 18 | | 112 | | 127 | 146 | |
| 17:00 | 10 | | 11 | 13 | | 78 | | 89 | 102 | |
| 18:00 | 14 | | 16 | 18 | | 84 | | 95 | 109 | |
| 19:00 | 9 | | 11 | 12 | | 79 | | 90 | 103 | |
| 20:00 | 5 | | 5 | 6 | | 42 | | 47 | 54 | |
| 21:00 | 1 | | 1 | 1 | | 60 | | 69 | 79 | |
| 22:00 | 2 | | 2 | 2 | | 49 | | 55 | 63 | |
| 23:00 | 4 | | 4 | 5 | | 39 | | 44 | 50 | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 220 | | Area Type: Exurban |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,400 23,400 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl'd (PS= 55) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 1:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 2:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 3:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 4:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 5:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 6:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 7:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 8:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 9:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 10:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 11:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 12:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 13:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 14:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 15:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 16:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 17:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 18:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 19:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 20:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 21:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 22:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |
| 23:00 | 55 | 51 | | | 55 | 53 | 55 | 51 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Soapstone Rd (Rte 687) | | Traffic Assignment: Constrained - Noise Study | |
| To: Water Plant Rd | | Existing Year: 2018 ADT: 18,000 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 20,400 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | Existing | | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--------|------------|------------------|----------------|----|---------------------------------|---|--------|
| | Existing | | Design | Design Nbl | Tow-way K-factor | Two-way factor | D- | Existing | 0 | Design |
| 0:00 | 107 | | 121 | 139 | 1.0% | 100% | | 66 | 0 | 75 |
| 1:00 | 70 | | 79 | 91 | 0.7% | 100% | | 59 | 0 | 67 |
| 2:00 | 60 | | 68 | 78 | 0.7% | 100% | | 75 | 0 | 85 |
| 3:00 | 42 | | 47 | 54 | 0.7% | 100% | | 91 | 0 | 103 |
| 4:00 | 123 | | 140 | 160 | 1.3% | 100% | | 114 | 0 | 129 |
| 5:00 | 367 | | 416 | 478 | 2.7% | 100% | | 126 | 0 | 143 |
| 6:00 | 710 | | 805 | 923 | 5.0% | 100% | | 184 | 0 | 208 |
| 7:00 | 833 | | 944 | 1,083 | 5.9% | 100% | | 229 | 0 | 260 |
| 8:00 | 769 | | 871 | 1,000 | 5.5% | 100% | | 227 | 0 | 257 |
| 9:00 | 626 | | 710 | 814 | 5.0% | 100% | | 268 | 0 | 304 |
| 10:00 | 705 | | 799 | 917 | 5.6% | 100% | | 302 | 0 | 343 |
| 11:00 | 724 | | 820 | 941 | 5.5% | 100% | | 274 | 0 | 311 |
| 12:00 | 816 | | 925 | 1,061 | 6.1% | 100% | | 275 | 0 | 312 |
| 13:00 | 802 | | 909 | 1,043 | 6.0% | 100% | | 272 | 0 | 308 |
| 14:00 | 916 | | 1,038 | 1,191 | 6.4% | 100% | | 243 | 0 | 276 |
| 15:00 | 1,040 | | 1,179 | 1,352 | 7.1% | 100% | | 236 | 0 | 268 |
| 16:00 | 1,077 | | 1,221 | 1,401 | 7.2% | 100% | | 220 | 0 | 249 |
| 17:00 | 1,188 | | 1,347 | 1,545 | 7.5% | 100% | | 164 | 0 | 186 |
| 18:00 | 890 | | 1,008 | 1,157 | 5.8% | 100% | | 154 | 0 | 175 |
| 19:00 | 677 | | 767 | 880 | 4.5% | 100% | | 136 | 0 | 154 |
| 20:00 | 523 | | 593 | 680 | 3.4% | 100% | | 84 | 0 | 95 |
| 21:00 | 397 | | 450 | 516 | 2.8% | 100% | | 112 | 0 | 126 |
| 22:00 | 291 | | 329 | 378 | 2.1% | 100% | | 95 | 0 | 107 |
| 23:00 | 166 | | 188 | 216 | 1.3% | 100% | | 73 | 0 | 83 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 55) | | | | Design (PS= 55) | | Design Nbl (PS= 55) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 90 | 83 | | | 90 | 86 | 90 | 83 |
| 1:00 | 102 | 95 | | | 102 | 98 | 102 | 95 |
| 2:00 | 125 | 116 | | | 125 | 120 | 125 | 116 |
| 3:00 | 176 | 163 | | | 176 | 168 | 176 | 163 |
| 4:00 | 107 | 99 | | | 107 | 102 | 107 | 99 |
| 5:00 | 75 | 69 | | | 75 | 71 | 75 | 69 |
| 6:00 | 70 | 65 | | | 70 | 67 | 70 | 65 |
| 7:00 | 71 | 65 | | | 71 | 68 | 71 | 65 |
| 8:00 | 72 | 66 | | | 72 | 69 | 72 | 66 |
| 9:00 | 79 | 73 | | | 79 | 76 | 79 | 73 |
| 10:00 | 79 | 73 | | | 79 | 76 | 79 | 73 |
| 11:00 | 76 | 71 | | | 76 | 73 | 76 | 71 |
| 12:00 | 74 | 69 | | | 74 | 71 | 74 | 69 |
| 13:00 | 74 | 69 | | | 74 | 71 | 74 | 69 |
| 14:00 | 70 | 65 | | | 70 | 67 | 70 | 65 |
| 15:00 | 68 | 63 | | | 68 | 65 | 68 | 63 |
| 16:00 | 67 | 62 | | | 67 | 64 | 67 | 62 |
| 17:00 | 63 | 58 | | | 63 | 61 | 63 | 58 |
| 18:00 | 65 | 60 | | | 65 | 62 | 65 | 60 |
| 19:00 | 67 | 62 | | | 67 | 64 | 67 | 62 |
| 20:00 | 64 | 60 | | | 64 | 62 | 64 | 60 |
| 21:00 | 71 | 66 | | | 71 | 68 | 71 | 66 |
| 22:00 | 73 | 68 | | | 73 | 70 | 73 | 68 |
| 23:00 | 80 | 74 | | | 80 | 76 | 80 | 74 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

Ed Azimi

V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 1.50

2. Is the Analysis Segment Signalized: Yes 2a. Does it Remain Signalized After Project Completion: Yes

3. Analysis Facility Name & Number: 220 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Water Plant Rd 4b. Facility Direction: North-South

4c. Analysis Segment Ending: Rte 58/Rte 220 Interchange 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

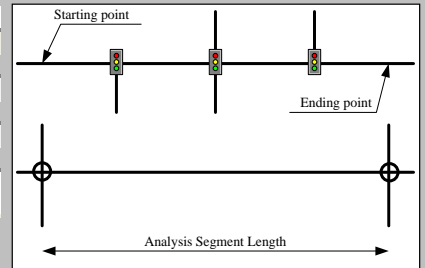
7. Volume-Delay Function (Travel-Time Model): BPR Updated Arterial

8. Selected BPR Parameters & Formulation: α 0.05 β 10.00 BPR Model: $t = t_0 * (1.0 + 0.05 * (v/c)^{10.00})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|-------------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Major Arterial with PS>50 mph | Principal Art/X-way/Pk-way |
| Capacity: | 1,300 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 45 | 55 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | Smb= 0.79 * PS + 12 | Smb= 0.79 * PS + 12 |
| 12a. Free-Flow Speed, mph: | 48 | 55 |



Smb= Mid-block F-F Speed (Signalized Facility)

| | Existing Year 2018 | | Design Year 2040 | |
|--|--------------------|------------|------------------|------------|
| | Northbound | Southbound | Northbound | Southbound |
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| 16. Access Density (# of access/mi.): | 10 | | 2 | |
| 17. Analysis Segment No. of Signals: | 2 | | 0 | |
| 18. Average Cycle Length (sec.): | 108 | | 0 | |
| 19. Average Green Time per Cycle (sec.): | 93 | | 0 | |
| 20. Signal Coordination: | Excellent Coord. | | 0.00 | |
| Delay caused by signal, mph: | 0 | | #N/A | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

21. Truck Input Type: Hourly Existing Year 2018 Design Year 2040

22. Two-way ADT or AADT: 25,300 25,900 ADT: Average Daily Traffic, AADT: Annual ADT

22a. Is No-build Condition ADT or AADT Available: Yes No-Bld ADT: 31,900

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

23. Design - Build & No-Build Traffic Assignment: Constrained - Noise Study 23a. Is Current Hourly Speed Available: No 23b. Initial: SN

24. Apply Existing K-factor & D-factor to the Design Year: Yes 24b. Apply Existing Hourly % Truck: Yes



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|------------|--------------------|---------|--------------------|---------|--|--|--|--|
| | Tow-way | Northbound | Northbound % Truck | | Southbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |

100%

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

220
TBA

V 2018-0

Route: 220
From: Water Plant Rd
To: Rte 58/Rte 220 Interchange
Jurisdiction: 2. Salem/Henry Co
Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
Existing Year: 2018 ADT: 25,300 No-build
Design Year: 2040 ADT: 25,900 31,900

Northbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|------|---|-----------------------|-------------|------|
| | Existing | | | | | | Design | | | | Design Nblnd | | |
| | Demand | | | | | | Demand | Constrained | | | Demand | Constrained | |
| 0:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 1:00 | 0.06 | A | | | | | 0.06 | A | 0.06 | A | 0.08 | A | 0.08 |
| 2:00 | 0.07 | A | | | | | 0.06 | A | 0.06 | A | 0.09 | A | 0.09 |
| 3:00 | 0.06 | A | | | | | 0.06 | A | 0.06 | A | 0.08 | A | 0.08 |
| 4:00 | 0.09 | A | | | | | 0.08 | A | 0.08 | A | 0.12 | A | 0.12 |
| 5:00 | 0.14 | A | | | | | 0.12 | A | 0.12 | A | 0.17 | A | 0.17 |
| 6:00 | 0.28 | A | | | | | 0.25 | A | 0.25 | A | 0.35 | B | 0.35 |
| 7:00 | 0.40 | B | | | | | 0.36 | B | 0.36 | B | 0.51 | C | 0.51 |
| 8:00 | 0.37 | B | | | | | 0.32 | B | 0.32 | B | 0.46 | B | 0.46 |
| 9:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 10:00 | 0.39 | B | | | | | 0.35 | B | 0.35 | B | 0.49 | B | 0.49 |
| 11:00 | 0.36 | B | | | | | 0.32 | B | 0.32 | B | 0.45 | B | 0.45 |
| 12:00 | 0.41 | B | | | | | 0.37 | B | 0.37 | B | 0.52 | C | 0.52 |
| 13:00 | 0.37 | B | | | | | 0.33 | B | 0.33 | B | 0.47 | B | 0.47 |
| 14:00 | 0.40 | B | | | | | 0.35 | B | 0.35 | B | 0.50 | B | 0.50 |
| 15:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.55 | C | 0.55 |
| 16:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.55 | C | 0.55 |
| 17:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 18:00 | 0.34 | B | | | | | 0.30 | A | 0.30 | A | 0.42 | B | 0.42 |
| 19:00 | 0.27 | A | | | | | 0.24 | A | 0.24 | A | 0.34 | B | 0.34 |
| 20:00 | 0.19 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 21:00 | 0.18 | A | | | | | 0.16 | A | 0.16 | A | 0.22 | A | 0.22 |
| 22:00 | 0.13 | A | | | | | 0.12 | A | 0.12 | A | 0.17 | A | 0.17 |
| 23:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |

Southbound

| Starting Time | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1300 pcphpl | | Capacity= 1500 pcphpl | | | | Capacity= 1300 pcphpl | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|------|---|-----------------------|-------------|------|
| | Existing | | | | | | Design | | | | Design Nblnd | | |
| | Demand | | | | | | Demand | Constrained | | | Demand | Constrained | |
| 0:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |
| 1:00 | 0.05 | A | | | | | 0.05 | A | 0.05 | A | 0.07 | A | 0.07 |
| 2:00 | 0.06 | A | | | | | 0.05 | A | 0.05 | A | 0.08 | A | 0.08 |
| 3:00 | 0.08 | A | | | | | 0.07 | A | 0.07 | A | 0.10 | A | 0.10 |
| 4:00 | 0.13 | A | | | | | 0.11 | A | 0.11 | A | 0.16 | A | 0.16 |
| 5:00 | 0.23 | A | | | | | 0.21 | A | 0.21 | A | 0.29 | A | 0.29 |
| 6:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 7:00 | 0.36 | B | | | | | 0.32 | B | 0.32 | B | 0.45 | B | 0.45 |
| 8:00 | 0.36 | B | | | | | 0.32 | B | 0.32 | B | 0.45 | B | 0.45 |
| 9:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 10:00 | 0.40 | B | | | | | 0.36 | B | 0.36 | B | 0.51 | C | 0.51 |
| 11:00 | 0.40 | B | | | | | 0.36 | B | 0.36 | B | 0.51 | C | 0.51 |
| 12:00 | 0.40 | B | | | | | 0.36 | B | 0.36 | B | 0.51 | C | 0.51 |
| 13:00 | 0.43 | B | | | | | 0.38 | B | 0.38 | B | 0.54 | C | 0.54 |
| 14:00 | 0.43 | B | | | | | 0.38 | B | 0.38 | B | 0.54 | C | 0.54 |
| 15:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 16:00 | 0.44 | B | | | | | 0.39 | B | 0.39 | B | 0.56 | C | 0.56 |
| 17:00 | 0.42 | B | | | | | 0.37 | B | 0.37 | B | 0.53 | C | 0.53 |
| 18:00 | 0.35 | B | | | | | 0.31 | B | 0.31 | B | 0.44 | B | 0.44 |
| 19:00 | 0.28 | A | | | | | 0.25 | A | 0.25 | A | 0.36 | B | 0.36 |
| 20:00 | 0.20 | A | | | | | 0.18 | A | 0.18 | A | 0.26 | A | 0.26 |
| 21:00 | 0.19 | A | | | | | 0.17 | A | 0.17 | A | 0.24 | A | 0.24 |
| 22:00 | 0.15 | A | | | | | 0.13 | A | 0.13 | A | 0.19 | A | 0.19 |
| 23:00 | 0.11 | A | | | | | 0.10 | A | 0.10 | A | 0.14 | A | 0.14 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 25,900 | 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Northbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|--------------|------------------|-------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl'd | Tow-way K-factor | Northbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 87 | | 89 | 110 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 46 | | 47 | 58 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 44 | | 45 | 55 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 17 | | 18 | 22 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 59 | | 60 | 74 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 158 | | 162 | 199 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 388 | | 397 | 489 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 601 | | 616 | 758 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 567 | | 580 | 714 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 435 | | 445 | 548 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 497 | | 509 | 626 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 499 | | 511 | 629 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 585 | | 599 | 738 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 536 | | 549 | 676 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 638 | | 654 | 805 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 724 | | 742 | 913 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 806 | | 825 | 1,016 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 887 | | 908 | 1,118 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 677 | | 693 | 853 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 528 | | 541 | 666 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 373 | | 381 | 470 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 284 | | 291 | 359 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 193 | | 197 | 243 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 103 | | 106 | 130 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Northbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 3 | | 3 | 4 | 34 | | | 35 | 43 |
| 1:00 | 2 | | 2 | 3 | 46 | | | 47 | 58 |
| 2:00 | 0 | | 0 | 0 | 58 | | | 59 | 73 |
| 3:00 | 2 | | 2 | 3 | 56 | | | 57 | 70 |
| 4:00 | 5 | | 6 | 7 | 66 | | | 68 | 84 |
| 5:00 | 4 | | 4 | 5 | 75 | | | 77 | 95 |
| 6:00 | 20 | | 20 | 25 | 117 | | | 119 | 147 |
| 7:00 | 34 | | 35 | 43 | 143 | | | 146 | 180 |
| 8:00 | 20 | | 20 | 25 | 134 | | | 137 | 169 |
| 9:00 | 44 | | 45 | 55 | 149 | | | 153 | 188 |
| 10:00 | 22 | | 22 | 27 | 184 | | | 188 | 232 |
| 11:00 | 14 | | 14 | 18 | 158 | | | 162 | 199 |
| 12:00 | 19 | | 19 | 23 | 176 | | | 181 | 223 |
| 13:00 | 27 | | 28 | 34 | 144 | | | 147 | 181 |
| 14:00 | 21 | | 21 | 26 | 136 | | | 139 | 172 |
| 15:00 | 23 | | 23 | 29 | 144 | | | 147 | 181 |
| 16:00 | 15 | | 16 | 19 | 117 | | | 119 | 147 |
| 17:00 | 10 | | 10 | 12 | 97 | | | 99 | 122 |
| 18:00 | 7 | | 7 | 8 | 73 | | | 75 | 92 |
| 19:00 | 11 | | 11 | 14 | 56 | | | 57 | 70 |
| 20:00 | 7 | | 7 | 8 | 46 | | | 47 | 58 |
| 21:00 | 9 | | 9 | 11 | 62 | | | 64 | 78 |
| 22:00 | 2 | | 2 | 3 | 60 | | | 61 | 76 |
| 23:00 | 2 | | 2 | 3 | 40 | | | 41 | 51 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| Route: 220 | | | Area Type: Exurban | | | | | |
|--|------------------------------|---------------------------|--|---------------|--|-----------|-----------------------|-----------|
| From: Water Plant Rd | | | Traffic Assignment: Constrained - Noise Study | | | | | |
| To: Rte 58/Rte 220 Interchange | | | Existing Year: 2018 ADT: 25,300 | No-build | | | | |
| Jurisdiction: 2. Salem/Henry Co | | | Design Year: 2040 ADT: 25,900 | 31,900 | | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | | | | | | |
| Starting Time | Northbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
| | Calc. Existing (PS= 45) | | | | Design (PS= 55) | | Design Nbl'd (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 1:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 2:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 3:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 4:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 5:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 6:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 7:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 8:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 9:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 10:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 11:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 12:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 13:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 14:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 15:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 16:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 17:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 18:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 19:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 20:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 21:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 22:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 23:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| * Volume Exceeded Max. Service Flow (Capacity) | | | Comment, Q & Problem: Ed Azimi | | V 2018-09 | | | |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|--|--|--|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | Design Year: 2040 ADT: 25,900 | 31,900 |

Southbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|---------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Southbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 63 | | | 65 | 80 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 52 | | | 54 | 66 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 40 | | | 41 | 51 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 41 | | | 42 | 52 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 114 | | | 117 | 144 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 358 | | | 367 | 452 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 610 | | | 625 | 769 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 570 | | | 583 | 718 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 514 | | | 526 | 648 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 446 | | | 456 | 562 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 495 | | | 506 | 624 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 519 | | | 531 | 654 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 562 | | | 575 | 709 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 592 | | | 606 | 746 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 649 | | | 665 | 819 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 738 | | | 755 | 930 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 708 | | | 725 | 893 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 783 | | | 802 | 988 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 574 | | | 588 | 724 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 423 | | | 433 | 533 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 363 | | | 371 | 457 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 273 | | | 280 | 345 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 216 | | | 221 | 272 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 130 | | | 133 | 163 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Southbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 3 | | | 3 | 4 | 52 | | | 54 | 66 |
| 1:00 | 5 | | | 6 | 7 | 29 | | | 30 | 37 |
| 2:00 | 4 | | | 4 | 5 | 44 | | | 45 | 55 |
| 3:00 | 5 | | | 6 | 7 | 64 | | | 66 | 81 |
| 4:00 | 7 | | | 7 | 8 | 82 | | | 84 | 103 |
| 5:00 | 3 | | | 3 | 4 | 95 | | | 97 | 120 |
| 6:00 | 10 | | | 10 | 12 | 112 | | | 115 | 141 |
| 7:00 | 24 | | | 25 | 30 | 122 | | | 125 | 154 |
| 8:00 | 10 | | | 10 | 12 | 156 | | | 159 | 196 |
| 9:00 | 20 | | | 20 | 25 | 165 | | | 168 | 207 |
| 10:00 | 27 | | | 28 | 34 | 192 | | | 196 | 242 |
| 11:00 | 22 | | | 22 | 27 | 192 | | | 196 | 242 |
| 12:00 | 21 | | | 21 | 26 | 171 | | | 175 | 216 |
| 13:00 | 26 | | | 27 | 33 | 185 | | | 190 | 234 |
| 14:00 | 21 | | | 21 | 26 | 165 | | | 168 | 207 |
| 15:00 | 22 | | | 22 | 27 | 144 | | | 147 | 181 |
| 16:00 | 20 | | | 20 | 25 | 158 | | | 162 | 199 |
| 17:00 | 14 | | | 14 | 18 | 110 | | | 113 | 139 |
| 18:00 | 20 | | | 20 | 25 | 118 | | | 120 | 148 |
| 19:00 | 13 | | | 13 | 16 | 111 | | | 114 | 140 |
| 20:00 | 7 | | | 7 | 8 | 59 | | | 60 | 74 |
| 21:00 | 1 | | | 1 | 1 | 85 | | | 87 | 107 |
| 22:00 | 2 | | | 2 | 3 | 69 | | | 70 | 87 |
| 23:00 | 5 | | | 6 | 7 | 54 | | | 56 | 69 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--------------------|---|----------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 25,900 | 31,900 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Southbound Hourly Speed, mph | | | | Travel-Time Model: BPR Updated Arterial | | | |
|---------------|------------------------------|-----------|--|--|---|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 45) | | | | Design (PS= 55) | | Design Nbl'd (PS= 45) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 1:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 2:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 3:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 4:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 5:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 6:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 7:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 8:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 9:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 10:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 11:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 12:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 13:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 14:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 15:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 16:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 17:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 18:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 19:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 20:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 21:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 22:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |
| 23:00 | 48 | 45 | | | 55 | 53 | 48 | 45 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

220
TBA

V 2018-09

| | | | |
|---------------------------------|--|---|-------------------------------|
| Route: 220 | | Area Type: Exurban | |
| From: Water Plant Rd | | Traffic Assignment: Constrained - Noise Study | |
| To: Rte 58/Rte 220 Interchange | | Existing Year: 2018 ADT: 25,300 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | | |
| Run Date: 4/29/2019 | | Time Span: 24 hrs. | Design Year: 2040 ADT: 25,900 |

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 150 | | | 154 | 190 | 1.0% | 100% | 93 | 0 | 95 |
| 1:00 | 98 | | | 100 | 124 | 0.7% | 100% | 83 | 0 | 85 |
| 2:00 | 84 | | | 86 | 106 | 0.7% | 100% | 106 | 0 | 108 |
| 3:00 | 59 | | | 60 | 74 | 0.7% | 100% | 127 | 0 | 130 |
| 4:00 | 173 | | | 177 | 218 | 1.3% | 100% | 160 | 0 | 164 |
| 5:00 | 516 | | | 529 | 651 | 2.7% | 100% | 178 | 0 | 182 |
| 6:00 | 998 | | | 1,022 | 1,258 | 5.0% | 100% | 258 | 0 | 264 |
| 7:00 | 1,171 | | | 1,199 | 1,477 | 5.9% | 100% | 322 | 0 | 330 |
| 8:00 | 1,081 | | | 1,106 | 1,363 | 5.5% | 100% | 319 | 0 | 327 |
| 9:00 | 880 | | | 901 | 1,110 | 5.0% | 100% | 377 | 0 | 386 |
| 10:00 | 991 | | | 1,015 | 1,250 | 5.6% | 100% | 425 | 0 | 435 |
| 11:00 | 1,018 | | | 1,042 | 1,283 | 5.5% | 100% | 386 | 0 | 395 |
| 12:00 | 1,147 | | | 1,174 | 1,446 | 6.1% | 100% | 387 | 0 | 396 |
| 13:00 | 1,128 | | | 1,154 | 1,422 | 6.0% | 100% | 382 | 0 | 391 |
| 14:00 | 1,288 | | | 1,318 | 1,624 | 6.4% | 100% | 342 | 0 | 350 |
| 15:00 | 1,462 | | | 1,497 | 1,843 | 7.1% | 100% | 332 | 0 | 340 |
| 16:00 | 1,514 | | | 1,550 | 1,909 | 7.2% | 100% | 309 | 0 | 317 |
| 17:00 | 1,670 | | | 1,710 | 2,106 | 7.5% | 100% | 231 | 0 | 236 |
| 18:00 | 1,251 | | | 1,280 | 1,577 | 5.8% | 100% | 217 | 0 | 222 |
| 19:00 | 951 | | | 974 | 1,199 | 4.5% | 100% | 191 | 0 | 195 |
| 20:00 | 735 | | | 753 | 927 | 3.4% | 100% | 118 | 0 | 120 |
| 21:00 | 558 | | | 571 | 703 | 2.8% | 100% | 157 | 0 | 161 |
| 22:00 | 409 | | | 418 | 515 | 2.1% | 100% | 133 | 0 | 136 |
| 23:00 | 233 | | | 239 | 294 | 1.3% | 100% | 102 | 0 | 105 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 45) | | | | Design (PS= 55) | | Design Nbl (PS= 45) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 77 | 72 | | | 90 | 86 | 77 | 72 |
| 1:00 | 88 | 82 | | | 102 | 98 | 88 | 82 |
| 2:00 | 107 | 101 | | | 125 | 120 | 107 | 101 |
| 3:00 | 151 | 141 | | | 176 | 168 | 151 | 141 |
| 4:00 | 92 | 86 | | | 107 | 102 | 92 | 86 |
| 5:00 | 64 | 60 | | | 75 | 71 | 64 | 60 |
| 6:00 | 60 | 56 | | | 70 | 67 | 60 | 56 |
| 7:00 | 61 | 57 | | | 71 | 68 | 61 | 57 |
| 8:00 | 62 | 58 | | | 72 | 69 | 62 | 58 |
| 9:00 | 68 | 64 | | | 79 | 76 | 68 | 64 |
| 10:00 | 68 | 64 | | | 79 | 76 | 68 | 64 |
| 11:00 | 66 | 61 | | | 76 | 73 | 66 | 61 |
| 12:00 | 64 | 60 | | | 74 | 71 | 64 | 60 |
| 13:00 | 64 | 60 | | | 74 | 71 | 64 | 60 |
| 14:00 | 60 | 56 | | | 70 | 67 | 60 | 56 |
| 15:00 | 58 | 55 | | | 68 | 65 | 58 | 55 |
| 16:00 | 57 | 54 | | | 67 | 64 | 57 | 54 |
| 17:00 | 54 | 51 | | | 63 | 60 | 54 | 51 |
| 18:00 | 56 | 52 | | | 65 | 62 | 56 | 52 |
| 19:00 | 57 | 54 | | | 67 | 64 | 57 | 54 |
| 20:00 | 55 | 52 | | | 64 | 62 | 55 | 52 |
| 21:00 | 61 | 57 | | | 71 | 68 | 61 | 57 |
| 22:00 | 63 | 59 | | | 73 | 70 | 63 | 59 |
| 23:00 | 68 | 64 | | | 80 | 76 | 68 | 64 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

1. Purpose of Analysis: 2-Scenario: Existing & Design (Noise) 1a. Period: 24-hour 1b. Segment Length (mi.): 0.50

2. Is the Analysis Segment Signalized: No 2a. Will it be Signalized After Project Completion: No

3. Analysis Facility Name & Number: 58 3a. Area Type: Exurban [Definition](#)

4. Project Title/Proj. Number/UPC Number: TBA

4a. Analysis Segment Beginning: Rte 58/Rte 220 Interchange 4b. Facility Direction: East-West

4c. Analysis Segment Ending: Proposed Route 58/Bypass Interchange (near Trinity Terrace) 4d. Reverse Direction: No

5. VDOT District: 2. Salem 5a. Jurisdiction: Henry Co 5b. Terrain: Rolling PCE= 2.50

6. Name/Year 1: Existing 2018 Name/Year 2: Design 2040

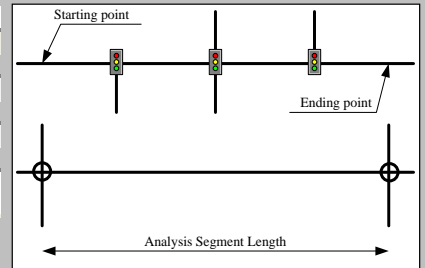
7. Volume-Delay Function (Travel-Time Model): BPR HCM 4-1a Hwy Spd 60 mph

8. Selected BPR Parameters & Formulation: α 0.83 β 2.70 BPR Model: $t = t_0 * (1.0 + 0.83 * (v/c)^{2.70})$

[Link to additional Parameters for most Volume-Delay Models](#)

NEW - Facility type selections are now available for Design year

| | Existing Year 2018 | Design Year 2040 |
|--|----------------------------|----------------------------|
| 9. Analysis Facility Type (FT): | Principal Art/X-way/Pk-way | Principal Art/X-way/Pk-way |
| Capacity: | 1,500 pcphpl | 1,500 pcphpl |
| 10. Facility Cross Section: | Divided | Divided |
| 11. Posted Speed (PS, mph): | 65 | 65 |
| 12. Free-Flow Speed (F-FS) Calculation Method: | 85th. %tile | 85th. %tile |
| 12a. Free-Flow Speed, mph: | 71 | 71 |



| | Eastbound | Westbound | Eastbound | Westbound |
|--|-----------|-----------|-----------|-----------|
| 13. Number of Lane: | 2 | 2 | 2 | 2 |
| 14. Lane Width (ft.): | 12 | | 12 | |
| 15. Shoulder Width (ft.): | Inside | Outside | Inside | Outside |
| | 6.0 | 6.0 | 6.0 | 6.0 |
| 16. Access Density (# of access/mi.): | 0 | | 0 | |
| 17. Analysis Segment No. of Signals: | _____ | | | |
| 18. Average Cycle Length (sec.): | _____ | | | |
| 19. Average Green Time per Cycle (sec.): | _____ | | | |
| 20. Signal Coordination: | _____ | | | |

Note:

Analysis Segment Truck Input Type and Daily Traffic Volume

| | Existing Year 2018 | Design Year 2040 | |
|---|--------------------|--------------------|--|
| 21. Truck Input Type: | Hourly | | |
| 22. Two-way ADT or AADT: | 16,900 | 20,800 | ADT: Average Daily Traffic, AADT: Annual ADT |
| 22a. Is No-build Condition ADT or AADT Available: | Yes | No-Bld ADT: 20,000 | |

Existing & Future Traffic Inputs (The default time periods for the Noise Study are 6:00 AM to 9:00 PM)

| | | | | | |
|--|---------------------------|---|-----|---------------|----|
| 23. Design - Build & No-Build Traffic Assignment: | Constrained - Noise Study | 23a. Is Current Hourly Speed Available: | No | 23b. Initial: | SN |
| 24. Apply Existing K-factor & D-factor to the Design Year: | Yes | 24b. Apply Existing Hourly % Truck: | Yes | | |



ENTRADA© - Environmental Traffic Data Input Sheet (V 2018-09)

Use "Paste-as-value" option.

| Starting Time | Existing Hourly: % K-factor, % D-factor, % Truck and Collected Speed | | | | | | | | | |
|---------------|--|-----------|-------------------|---------|-------------------|---------|--|--|--|--|
| | Tow-way | Eastbound | Eastbound % Truck | | Westbound % Truck | | | | | |
| | K-factor | D-factor | 2X-6T | 3X & up | 2X-6T | 3X & up | | | | |
| 0:00 | 1.0% | 51% | 2.6% | 27.2% | 2.8% | 44.0% | | | | |
| 1:00 | 0.7% | 52% | 2.3% | 48.8% | 6.3% | 33.8% | | | | |
| 2:00 | 0.7% | 53% | 0.0% | 57.0% | 4.9% | 49.4% | | | | |
| 3:00 | 0.7% | 40% | 2.9% | 73.9% | 4.9% | 57.8% | | | | |
| 4:00 | 1.3% | 39% | 4.2% | 50.8% | 3.2% | 40.3% | | | | |
| 5:00 | 2.7% | 34% | 1.8% | 31.7% | 0.7% | 20.8% | | | | |
| 6:00 | 5.0% | 42% | 3.7% | 22.2% | 1.3% | 15.3% | | | | |
| 7:00 | 5.9% | 52% | 4.3% | 18.3% | 3.3% | 17.0% | | | | |
| 8:00 | 5.5% | 51% | 2.7% | 18.6% | 1.4% | 22.9% | | | | |
| 9:00 | 5.0% | 50% | 6.9% | 23.8% | 3.1% | 26.1% | | | | |
| 10:00 | 5.6% | 50% | 3.1% | 26.2% | 3.8% | 26.9% | | | | |
| 11:00 | 5.5% | 48% | 2.1% | 23.5% | 3.0% | 26.2% | | | | |
| 12:00 | 6.1% | 51% | 2.4% | 22.6% | 2.7% | 22.7% | | | | |
| 13:00 | 6.0% | 47% | 3.9% | 20.3% | 3.3% | 23.1% | | | | |
| 14:00 | 6.4% | 49% | 2.6% | 17.1% | 2.5% | 19.7% | | | | |
| 15:00 | 7.1% | 50% | 2.6% | 16.1% | 2.4% | 15.9% | | | | |
| 16:00 | 7.2% | 51% | 1.6% | 12.4% | 2.2% | 17.8% | | | | |
| 17:00 | 7.5% | 52% | 1.0% | 9.8% | 1.6% | 12.1% | | | | |
| 18:00 | 5.8% | 52% | 0.9% | 9.7% | 2.8% | 16.5% | | | | |
| 19:00 | 4.5% | 52% | 1.8% | 9.3% | 2.4% | 20.3% | | | | |
| 20:00 | 3.4% | 50% | 1.5% | 10.8% | 1.5% | 13.7% | | | | |
| 21:00 | 2.8% | 50% | 2.5% | 17.5% | 0.3% | 23.6% | | | | |
| 22:00 | 2.1% | 47% | 0.9% | 23.5% | 0.8% | 24.0% | | | | |
| 23:00 | 1.3% | 44% | 1.5% | 27.6% | 2.9% | 28.7% | | | | |
| 100% | | | | | | | | | | |

ENTRADA program is developed by Ed Azimi @VDOT-NOVA/TP

For Question, Problem & Comment:

[Ed Azimi](#)

V 2018-09



ENTRADA© Volume-to-Capacity (V/C) and Level-of-Service (LOS)



V 2018-09

58
TBA

V 2018-0

Route: 58
 From: Rte 58/Rte 220 Interchange
 To: Proposed Route 58/Bypass Interchange (near Tr
 Jurisdiction: 2. Salem/Henry Co
 Run Date: 4/29/2019 Time Span: 24 Hours



The HCM Special Report 209 Level of Service Criteria is used to determine LOS.

Area Type: Exurban
Traffic Assignment: Constrained - Noise Study
 Existing Year: 2018 ADT: 16,900 No-build
 Design Year: 2040 ADT: 20,800 20,000

Eastbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 1:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.04 | A | 0.04 |
| 2:00 | 0.04 | A | | | | | 0.05 | A | 0.05 | A | 0.05 | A | 0.05 |
| 3:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 4:00 | 0.05 | A | | | | | 0.07 | A | 0.07 | A | 0.06 | A | 0.06 |
| 5:00 | 0.08 | A | | | | | 0.10 | A | 0.10 | A | 0.09 | A | 0.09 |
| 6:00 | 0.16 | A | | | | | 0.20 | A | 0.20 | A | 0.19 | A | 0.19 |
| 7:00 | 0.23 | A | | | | | 0.29 | A | 0.29 | A | 0.27 | A | 0.27 |
| 8:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.25 | A | 0.25 |
| 9:00 | 0.20 | A | | | | | 0.25 | A | 0.25 | A | 0.24 | A | 0.24 |
| 10:00 | 0.23 | A | | | | | 0.28 | A | 0.28 | A | 0.27 | A | 0.27 |
| 11:00 | 0.21 | A | | | | | 0.25 | A | 0.25 | A | 0.24 | A | 0.24 |
| 12:00 | 0.24 | A | | | | | 0.29 | A | 0.29 | A | 0.28 | A | 0.28 |
| 13:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.25 | A | 0.25 |
| 14:00 | 0.23 | A | | | | | 0.28 | A | 0.28 | A | 0.27 | A | 0.27 |
| 15:00 | 0.25 | A | | | | | 0.31 | A | 0.31 | A | 0.30 | A | 0.30 |
| 16:00 | 0.25 | A | | | | | 0.31 | A | 0.31 | A | 0.30 | A | 0.30 |
| 17:00 | 0.26 | A | | | | | 0.32 | A | 0.32 | A | 0.30 | A | 0.30 |
| 18:00 | 0.19 | A | | | | | 0.24 | A | 0.24 | A | 0.23 | A | 0.23 |
| 19:00 | 0.15 | A | | | | | 0.19 | A | 0.19 | A | 0.18 | A | 0.18 |
| 20:00 | 0.11 | A | | | | | 0.14 | A | 0.14 | A | 0.13 | A | 0.13 |
| 21:00 | 0.10 | A | | | | | 0.13 | A | 0.13 | A | 0.12 | A | 0.12 |
| 22:00 | 0.08 | A | | | | | 0.10 | A | 0.10 | A | 0.09 | A | 0.09 |
| 23:00 | 0.05 | A | | | | | 0.06 | A | 0.06 | A | 0.06 | A | 0.06 |

Westbound

| Starting Time | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | Capacity= 1500 pcphpl | | | | |
|---------------|-----------------------|---|-----------------------|--|-----------------------|--|-----------------------|-------------|-----------------------|-------------|------|---|------|
| | Existing | | | | | | Design | | Design Nblnd | | | | |
| | Demand | | | | | | Demand | Constrained | Demand | Constrained | | | |
| 0:00 | 0.04 | A | | | | | 0.06 | A | 0.06 | A | 0.05 | A | 0.05 |
| 1:00 | 0.03 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 2:00 | 0.04 | A | | | | | 0.04 | A | 0.04 | A | 0.04 | A | 0.04 |
| 3:00 | 0.05 | A | | | | | 0.06 | A | 0.06 | A | 0.06 | A | 0.06 |
| 4:00 | 0.07 | A | | | | | 0.09 | A | 0.09 | A | 0.09 | A | 0.09 |
| 5:00 | 0.13 | A | | | | | 0.17 | A | 0.17 | A | 0.16 | A | 0.16 |
| 6:00 | 0.20 | A | | | | | 0.25 | A | 0.25 | A | 0.24 | A | 0.24 |
| 7:00 | 0.21 | A | | | | | 0.26 | A | 0.26 | A | 0.25 | A | 0.25 |
| 8:00 | 0.21 | A | | | | | 0.25 | A | 0.25 | A | 0.24 | A | 0.24 |
| 9:00 | 0.20 | A | | | | | 0.25 | A | 0.25 | A | 0.24 | A | 0.24 |
| 10:00 | 0.23 | A | | | | | 0.29 | A | 0.29 | A | 0.27 | A | 0.27 |
| 11:00 | 0.23 | A | | | | | 0.29 | A | 0.29 | A | 0.28 | A | 0.28 |
| 12:00 | 0.23 | A | | | | | 0.29 | A | 0.29 | A | 0.27 | A | 0.27 |
| 13:00 | 0.25 | A | | | | | 0.31 | A | 0.31 | A | 0.30 | A | 0.30 |
| 14:00 | 0.25 | A | | | | | 0.30 | A | 0.30 | A | 0.29 | A | 0.29 |
| 15:00 | 0.26 | A | | | | | 0.32 | A | 0.32 | A | 0.30 | A | 0.30 |
| 16:00 | 0.26 | A | | | | | 0.32 | A | 0.32 | A | 0.30 | A | 0.30 |
| 17:00 | 0.24 | A | | | | | 0.30 | A | 0.30 | A | 0.29 | A | 0.29 |
| 18:00 | 0.20 | A | | | | | 0.25 | A | 0.25 | A | 0.24 | A | 0.24 |
| 19:00 | 0.16 | A | | | | | 0.20 | A | 0.20 | A | 0.19 | A | 0.19 |
| 20:00 | 0.12 | A | | | | | 0.14 | A | 0.14 | A | 0.14 | A | 0.14 |
| 21:00 | 0.11 | A | | | | | 0.13 | A | 0.13 | A | 0.13 | A | 0.13 |
| 22:00 | 0.09 | A | | | | | 0.11 | A | 0.11 | A | 0.10 | A | 0.10 |
| 23:00 | 0.06 | A | | | | | 0.08 | A | 0.08 | A | 0.07 | A | 0.07 |

[Link to Level-of-Service Criteria](#)

Comment, Q & Problem:

[Ed Azimi](#)

ENTRADA, V 2018-09, VDOT



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,800 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Eastbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | Existing | | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--------|--------------|------------------|------------------|----|-------------------------|-------|-------|
| | Existing | | Design | Design Nbl'd | Tow-way K-factor | Eastbound factor | D- | 2A-6T | 3A+ | Total |
| 0:00 | 58 | | 72 | 69 | 1.0% | 51% | | 2.6% | 27.2% | 29.8% |
| 1:00 | 31 | | 38 | 36 | 0.7% | 52% | | 2.3% | 48.8% | 51.2% |
| 2:00 | 29 | | 36 | 34 | 0.7% | 53% | | 0.0% | 57.0% | 57.0% |
| 3:00 | 12 | | 14 | 14 | 0.7% | 40% | | 2.9% | 73.9% | 76.8% |
| 4:00 | 39 | | 48 | 47 | 1.3% | 39% | | 4.2% | 50.8% | 55.0% |
| 5:00 | 106 | | 130 | 125 | 2.7% | 34% | | 1.8% | 31.7% | 33.5% |
| 6:00 | 259 | | 319 | 307 | 5.0% | 42% | | 3.7% | 22.2% | 26.0% |
| 7:00 | 402 | | 494 | 475 | 5.9% | 52% | | 4.3% | 18.3% | 22.7% |
| 8:00 | 378 | | 466 | 448 | 5.5% | 51% | | 2.7% | 18.6% | 21.3% |
| 9:00 | 290 | | 357 | 344 | 5.0% | 50% | | 6.9% | 23.8% | 30.7% |
| 10:00 | 332 | | 408 | 393 | 5.6% | 50% | | 3.1% | 26.2% | 29.3% |
| 11:00 | 333 | | 410 | 394 | 5.5% | 48% | | 2.1% | 23.5% | 25.6% |
| 12:00 | 391 | | 481 | 462 | 6.1% | 51% | | 2.4% | 22.6% | 25.0% |
| 13:00 | 358 | | 441 | 424 | 6.0% | 47% | | 3.9% | 20.3% | 24.2% |
| 14:00 | 426 | | 525 | 505 | 6.4% | 49% | | 2.6% | 17.1% | 19.7% |
| 15:00 | 484 | | 596 | 573 | 7.1% | 50% | | 2.6% | 16.1% | 18.7% |
| 16:00 | 539 | | 663 | 637 | 7.2% | 51% | | 1.6% | 12.4% | 14.1% |
| 17:00 | 592 | | 729 | 701 | 7.5% | 52% | | 1.0% | 9.8% | 10.7% |
| 18:00 | 452 | | 556 | 535 | 5.8% | 52% | | 0.9% | 9.7% | 10.5% |
| 19:00 | 353 | | 434 | 418 | 4.5% | 52% | | 1.8% | 9.3% | 11.2% |
| 20:00 | 249 | | 306 | 295 | 3.4% | 50% | | 1.5% | 10.8% | 12.3% |
| 21:00 | 190 | | 234 | 225 | 2.8% | 50% | | 2.5% | 17.5% | 19.9% |
| 22:00 | 129 | | 159 | 152 | 2.1% | 47% | | 0.9% | 23.5% | 24.4% |
| 23:00 | 69 | | 85 | 82 | 1.3% | 44% | | 1.5% | 27.6% | 29.1% |

Eastbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | Class 6-13 (3X & more) | | | |
|---------------|-------------------|--|--------|--------------|------------------------|--|--------|--------------|
| | Existing | | Design | Design Nbl'd | Existing | | Design | Design Nbl'd |
| 0:00 | 2 | | 3 | 3 | 23 | | 28 | 27 |
| 1:00 | 1 | | 2 | 2 | 31 | | 38 | 36 |
| 2:00 | 0 | | 0 | 0 | 39 | | 47 | 46 |
| 3:00 | 1 | | 2 | 2 | 37 | | 46 | 44 |
| 4:00 | 4 | | 4 | 4 | 44 | | 55 | 53 |
| 5:00 | 3 | | 4 | 3 | 50 | | 62 | 59 |
| 6:00 | 13 | | 16 | 16 | 78 | | 96 | 92 |
| 7:00 | 23 | | 28 | 27 | 95 | | 117 | 113 |
| 8:00 | 13 | | 16 | 16 | 90 | | 110 | 106 |
| 9:00 | 29 | | 36 | 34 | 100 | | 123 | 118 |
| 10:00 | 15 | | 18 | 17 | 123 | | 151 | 146 |
| 11:00 | 9 | | 12 | 11 | 106 | | 130 | 125 |
| 12:00 | 12 | | 15 | 15 | 118 | | 145 | 140 |
| 13:00 | 18 | | 22 | 22 | 96 | | 118 | 114 |
| 14:00 | 14 | | 17 | 16 | 91 | | 112 | 108 |
| 15:00 | 15 | | 19 | 18 | 96 | | 118 | 114 |
| 16:00 | 10 | | 13 | 12 | 78 | | 96 | 92 |
| 17:00 | 7 | | 8 | 8 | 65 | | 80 | 77 |
| 18:00 | 4 | | 5 | 5 | 49 | | 60 | 58 |
| 19:00 | 7 | | 9 | 9 | 37 | | 46 | 44 |
| 20:00 | 4 | | 5 | 5 | 31 | | 38 | 36 |
| 21:00 | 6 | | 7 | 7 | 41 | | 51 | 49 |
| 22:00 | 1 | | 2 | 2 | 40 | | 49 | 47 |
| 23:00 | 1 | | 2 | 2 | 27 | | 33 | 32 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | |
|--|--|--|
| Route: 58 | | Area Type: Exurban |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,800 20,000 |
| Run Date: 4/29/2019 Time Span: 24 hrs. | | |

| Starting Time | Eastbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-1a Hwy Spd 60 mph | | | |
|---------------|-----------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 1:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 2:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 3:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 4:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 5:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 6:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 7:00 | 70 | 70 | | | 69 | 69 | 70 | 70 |
| 8:00 | 70 | 70 | | | 70 | 70 | 70 | 70 |
| 9:00 | 71 | 71 | | | 70 | 70 | 70 | 70 |
| 10:00 | 70 | 70 | | | 70 | 70 | 70 | 70 |
| 11:00 | 71 | 71 | | | 70 | 70 | 70 | 70 |
| 12:00 | 70 | 70 | | | 69 | 69 | 69 | 69 |
| 13:00 | 70 | 70 | | | 70 | 70 | 70 | 70 |
| 14:00 | 70 | 70 | | | 69 | 69 | 70 | 70 |
| 15:00 | 70 | 70 | | | 69 | 69 | 69 | 69 |
| 16:00 | 70 | 70 | | | 69 | 69 | 69 | 69 |
| 17:00 | 70 | 70 | | | 69 | 69 | 69 | 69 |
| 18:00 | 71 | 71 | | | 70 | 70 | 70 | 70 |
| 19:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 20:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 21:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 22:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 23:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |

* Volume Exceeded Max. Service Flow (Capacity) Comment, Q & Problem: [Ed Azimi](#) V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,800 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

Westbound: Auto and Truck Traffic & Speed Data, mph

| Starting Time | AUTO Only Traffic Volume | | | | | Existing | | Existing Hourly Truck % | | |
|---------------|--------------------------|--|--|--------|--------------|------------------|--------------------|-------------------------|-------|-------|
| | Existing | | | Design | Design Nbl'd | Tow-way K-factor | Westbound D-factor | 2A-6T | 3A+ | Total |
| 0:00 | 42 | | | 52 | 50 | 1.0% | 49% | 2.8% | 44.0% | 46.8% |
| 1:00 | 35 | | | 43 | 41 | 0.7% | 48% | 6.3% | 33.8% | 40.0% |
| 2:00 | 27 | | | 33 | 32 | 0.7% | 47% | 4.9% | 49.4% | 54.3% |
| 3:00 | 28 | | | 34 | 33 | 0.7% | 60% | 4.9% | 57.8% | 62.7% |
| 4:00 | 76 | | | 94 | 90 | 1.3% | 61% | 3.2% | 40.3% | 43.5% |
| 5:00 | 239 | | | 295 | 283 | 2.7% | 66% | 0.7% | 20.8% | 21.5% |
| 6:00 | 408 | | | 502 | 482 | 5.0% | 58% | 1.3% | 15.3% | 16.7% |
| 7:00 | 381 | | | 468 | 450 | 5.9% | 48% | 3.3% | 17.0% | 20.4% |
| 8:00 | 343 | | | 423 | 406 | 5.5% | 49% | 1.4% | 22.9% | 24.4% |
| 9:00 | 298 | | | 366 | 352 | 5.0% | 50% | 3.1% | 26.1% | 29.2% |
| 10:00 | 330 | | | 407 | 391 | 5.6% | 50% | 3.8% | 26.9% | 30.7% |
| 11:00 | 346 | | | 426 | 410 | 5.5% | 52% | 3.0% | 26.2% | 29.2% |
| 12:00 | 376 | | | 462 | 444 | 6.1% | 49% | 2.7% | 22.7% | 25.4% |
| 13:00 | 395 | | | 486 | 468 | 6.0% | 53% | 3.3% | 23.1% | 26.3% |
| 14:00 | 434 | | | 534 | 513 | 6.4% | 51% | 2.5% | 19.7% | 22.2% |
| 15:00 | 493 | | | 606 | 583 | 7.1% | 50% | 2.4% | 15.9% | 18.3% |
| 16:00 | 473 | | | 582 | 560 | 7.2% | 49% | 2.2% | 17.8% | 20.0% |
| 17:00 | 523 | | | 644 | 619 | 7.5% | 48% | 1.6% | 12.1% | 13.7% |
| 18:00 | 384 | | | 472 | 454 | 5.8% | 48% | 2.8% | 16.5% | 19.3% |
| 19:00 | 282 | | | 348 | 334 | 4.5% | 48% | 2.4% | 20.3% | 22.7% |
| 20:00 | 242 | | | 298 | 287 | 3.4% | 50% | 1.5% | 13.7% | 15.3% |
| 21:00 | 183 | | | 225 | 216 | 2.8% | 50% | 0.3% | 23.6% | 23.9% |
| 22:00 | 144 | | | 177 | 171 | 2.1% | 53% | 0.8% | 24.0% | 24.7% |
| 23:00 | 87 | | | 107 | 102 | 1.3% | 56% | 2.9% | 28.7% | 31.6% |

Westbound Truck Volume

| Starting Time | Class 4-5 (2X-6T) | | | | | Class 6-13 (3X & more) | | | | |
|---------------|-------------------|--|--|--------|--------------|------------------------|--|--|--------|--------------|
| | Existing | | | Design | Design Nbl'd | Existing | | | Design | Design Nbl'd |
| 0:00 | 2 | | | 3 | 3 | 35 | | | 43 | 41 |
| 1:00 | 4 | | | 4 | 4 | 20 | | | 24 | 23 |
| 2:00 | 3 | | | 4 | 3 | 29 | | | 36 | 34 |
| 3:00 | 4 | | | 4 | 4 | 43 | | | 53 | 51 |
| 4:00 | 4 | | | 5 | 5 | 55 | | | 67 | 65 |
| 5:00 | 2 | | | 3 | 3 | 63 | | | 78 | 75 |
| 6:00 | 7 | | | 8 | 8 | 75 | | | 92 | 89 |
| 7:00 | 16 | | | 20 | 19 | 82 | | | 100 | 96 |
| 8:00 | 7 | | | 8 | 8 | 104 | | | 128 | 123 |
| 9:00 | 13 | | | 16 | 16 | 110 | | | 135 | 130 |
| 10:00 | 18 | | | 22 | 22 | 128 | | | 158 | 152 |
| 11:00 | 15 | | | 18 | 17 | 128 | | | 158 | 152 |
| 12:00 | 14 | | | 17 | 16 | 114 | | | 141 | 135 |
| 13:00 | 17 | | | 21 | 21 | 124 | | | 152 | 146 |
| 14:00 | 14 | | | 17 | 16 | 110 | | | 135 | 130 |
| 15:00 | 15 | | | 18 | 17 | 96 | | | 118 | 114 |
| 16:00 | 13 | | | 16 | 16 | 106 | | | 130 | 125 |
| 17:00 | 9 | | | 12 | 11 | 74 | | | 90 | 87 |
| 18:00 | 13 | | | 16 | 16 | 79 | | | 97 | 93 |
| 19:00 | 9 | | | 11 | 10 | 74 | | | 91 | 88 |
| 20:00 | 4 | | | 5 | 5 | 39 | | | 48 | 47 |
| 21:00 | 1 | | | 1 | 1 | 57 | | | 70 | 67 |
| 22:00 | 1 | | | 2 | 2 | 46 | | | 56 | 54 |
| 23:00 | 4 | | | 4 | 4 | 36 | | | 45 | 43 |



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

| | | | |
|--|--------------------|---|----------|
| Route: 58 | | Area Type: Exurban | |
| From: Rte 58/Rte 220 Interchange | | Traffic Assignment: Constrained - Noise Study | |
| To: Proposed Route 58/Bypass Interchange | | Existing Year: 2018 ADT: 16,900 | No-build |
| Jurisdiction: 2. Salem/Henry Co | | Design Year: 2040 ADT: 20,800 | 20,000 |
| Run Date: 4/29/2019 | Time Span: 24 hrs. | | |

| Starting Time | Westbound Hourly Speed, mph | | | | Travel-Time Model: BPR HCM 4-1a Hwy Spd 60 mph | | | |
|---------------|-----------------------------|-----------|--|--|--|-----------|-----------------------|-----------|
| | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl'd (PS= 65) | |
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 1:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 2:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 3:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 4:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 5:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 6:00 | 71 | 71 | | | 70 | 70 | 70 | 70 |
| 7:00 | 71 | 71 | | | 70 | 70 | 70 | 70 |
| 8:00 | 71 | 71 | | | 70 | 70 | 70 | 70 |
| 9:00 | 71 | 71 | | | 70 | 70 | 70 | 70 |
| 10:00 | 70 | 70 | | | 69 | 69 | 70 | 70 |
| 11:00 | 70 | 70 | | | 69 | 69 | 70 | 70 |
| 12:00 | 70 | 70 | | | 69 | 69 | 70 | 70 |
| 13:00 | 70 | 70 | | | 69 | 69 | 69 | 69 |
| 14:00 | 70 | 70 | | | 69 | 69 | 69 | 69 |
| 15:00 | 70 | 70 | | | 69 | 69 | 69 | 69 |
| 16:00 | 70 | 70 | | | 69 | 69 | 69 | 69 |
| 17:00 | 70 | 70 | | | 69 | 69 | 69 | 69 |
| 18:00 | 71 | 71 | | | 70 | 70 | 70 | 70 |
| 19:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 20:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 21:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 22:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |
| 23:00 | 71 | 71 | | | 71 | 71 | 71 | 71 |

* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem: [Ed Azimi](#)

V 2018-09



ENTRADA© Traffic & Forecasted Speed Output Sheet



V 2018-09

58
TBA

V 2018-09

Route: 58

Area Type: Exurban

From: Rte 58/Rte 220 Interchange

Traffic Assignment: Constrained - Noise Study

To: Proposed Route 58/Bypass Interchange

Existing Year: 2018 ADT: 16,900

No-build

Jurisdiction: 2. Salem/Henry Co

Run Date: 4/29/2019

Time Span: 24 hrs.

Design Year: 2040 ADT: 20,800

20,000

Two-way Traffic and Weighted Speed Data, mph

| Starting Time | Total Vehicles Traffic Volume | | | | | Existing | | Total Truck Volume (Class 4-13) | | |
|---------------|-------------------------------|--|--|--------|------------|------------------|------------------|---------------------------------|---|--------|
| | Existing | | | Design | Design Nbl | Tow-way K-factor | Two-way D-factor | Existing | 0 | Design |
| 0:00 | 100 | | | 124 | 119 | 1.0% | 100% | 62 | 0 | 76 |
| 1:00 | 65 | | | 81 | 78 | 0.7% | 100% | 55 | 0 | 68 |
| 2:00 | 56 | | | 69 | 66 | 0.7% | 100% | 71 | 0 | 87 |
| 3:00 | 39 | | | 48 | 47 | 0.7% | 100% | 85 | 0 | 105 |
| 4:00 | 116 | | | 142 | 137 | 1.3% | 100% | 107 | 0 | 132 |
| 5:00 | 345 | | | 425 | 408 | 2.7% | 100% | 119 | 0 | 146 |
| 6:00 | 667 | | | 820 | 789 | 5.0% | 100% | 172 | 0 | 212 |
| 7:00 | 782 | | | 963 | 926 | 5.9% | 100% | 215 | 0 | 265 |
| 8:00 | 722 | | | 888 | 854 | 5.5% | 100% | 213 | 0 | 262 |
| 9:00 | 588 | | | 724 | 696 | 5.0% | 100% | 252 | 0 | 310 |
| 10:00 | 662 | | | 815 | 784 | 5.6% | 100% | 284 | 0 | 349 |
| 11:00 | 680 | | | 837 | 804 | 5.5% | 100% | 258 | 0 | 317 |
| 12:00 | 766 | | | 943 | 907 | 6.1% | 100% | 258 | 0 | 318 |
| 13:00 | 753 | | | 927 | 891 | 6.0% | 100% | 255 | 0 | 314 |
| 14:00 | 860 | | | 1,059 | 1,018 | 6.4% | 100% | 229 | 0 | 281 |
| 15:00 | 977 | | | 1,202 | 1,156 | 7.1% | 100% | 222 | 0 | 273 |
| 16:00 | 1,012 | | | 1,245 | 1,197 | 7.2% | 100% | 207 | 0 | 254 |
| 17:00 | 1,116 | | | 1,373 | 1,320 | 7.5% | 100% | 154 | 0 | 190 |
| 18:00 | 835 | | | 1,028 | 989 | 5.8% | 100% | 145 | 0 | 178 |
| 19:00 | 635 | | | 782 | 752 | 4.5% | 100% | 127 | 0 | 157 |
| 20:00 | 491 | | | 605 | 581 | 3.4% | 100% | 79 | 0 | 97 |
| 21:00 | 373 | | | 459 | 441 | 2.8% | 100% | 105 | 0 | 129 |
| 22:00 | 273 | | | 336 | 323 | 2.1% | 100% | 89 | 0 | 109 |
| 23:00 | 156 | | | 192 | 184 | 1.3% | 100% | 68 | 0 | 84 |

Two-way Weighted Average Hourly Speed, mph

| Starting Time | Calc. Existing (PS= 65) | | | | Design (PS= 65) | | Design Nbl (PS= 65) | |
|---------------|-------------------------|-----------|--|--|-----------------|-----------|---------------------|-----------|
| | Un-Interrup. | Interrup. | | | Un-Interrup. | Interrup. | Un-Interrup. | Interrup. |
| 0:00 | 115 | 115 | | | 115 | 115 | 115 | 115 |
| 1:00 | 132 | 132 | | | 132 | 132 | 132 | 132 |
| 2:00 | 161 | 161 | | | 161 | 161 | 161 | 161 |
| 3:00 | 226 | 226 | | | 226 | 226 | 226 | 226 |
| 4:00 | 137 | 137 | | | 137 | 137 | 137 | 137 |
| 5:00 | 96 | 96 | | | 95 | 95 | 96 | 96 |
| 6:00 | 89 | 89 | | | 88 | 88 | 89 | 89 |
| 7:00 | 90 | 90 | | | 89 | 89 | 89 | 89 |
| 8:00 | 91 | 91 | | | 91 | 91 | 91 | 91 |
| 9:00 | 101 | 101 | | | 100 | 100 | 100 | 100 |
| 10:00 | 100 | 100 | | | 99 | 99 | 100 | 100 |
| 11:00 | 97 | 97 | | | 96 | 96 | 96 | 96 |
| 12:00 | 94 | 94 | | | 93 | 93 | 93 | 93 |
| 13:00 | 94 | 94 | | | 93 | 93 | 93 | 93 |
| 14:00 | 89 | 89 | | | 88 | 88 | 88 | 88 |
| 15:00 | 86 | 86 | | | 85 | 85 | 85 | 85 |
| 16:00 | 84 | 84 | | | 83 | 83 | 83 | 83 |
| 17:00 | 80 | 80 | | | 79 | 79 | 79 | 79 |
| 18:00 | 83 | 83 | | | 82 | 82 | 82 | 82 |
| 19:00 | 85 | 85 | | | 85 | 85 | 85 | 85 |
| 20:00 | 83 | 83 | | | 82 | 82 | 82 | 82 |
| 21:00 | 91 | 91 | | | 91 | 91 | 91 | 91 |
| 22:00 | 95 | 95 | | | 94 | 94 | 94 | 94 |
| 23:00 | 103 | 103 | | | 103 | 103 | 103 | 103 |

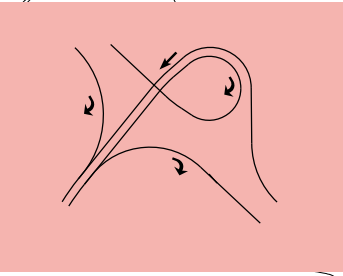
* Volume Exceeded Max. Service Flow (Capacity)

Comment, Q & Problem:

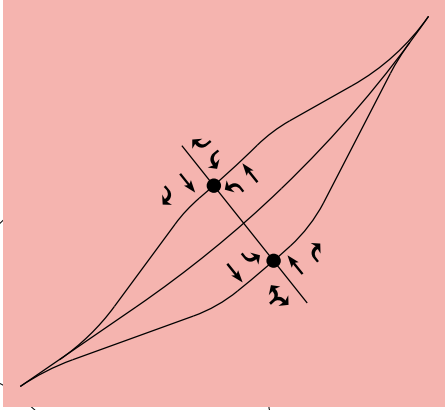
Ed Azimi

V 2018-09

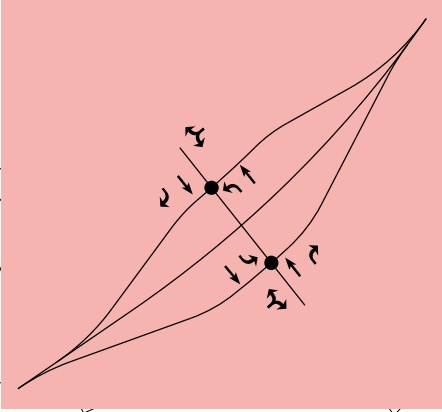
14. RT 58 INTERCHANGE



13. SOAPSTONE RD INTERCHANGE



12. RESERVOIR RD INTERCHANGE



58

220

BUS 220

1. RT 58 WB RAMPS

2. RT 58 EB RAMPS

3. KILARNEY CT/
VILLA RD

4. MARROWBONE CIR

5. SHAMROCK DR

6. COVINGTON LN

7. STEVE DR/ DREWRY
MASON SCHOOL RD

8. WATER PLANT RD/
MICA RD

9. SOAPSTONE RD/
MAIN ST

10. MOREHEAD AVE (VA 87)

11. LEE FORD CAMP
RD/CHURCH ST

220

BUS 220

220

87

RIDGEWAY

VIRGINIA
NORTH CAROLINA

Legend

-  **SIGNALIZED INTERSECTION**
-  **UNSIGNALIZED INTERSECTION**



ALTERNATIVE A

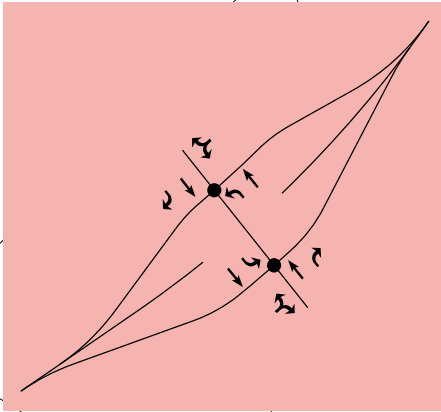


Martinsville Southern Connector Study
Route 220 Environmental Impact Statement

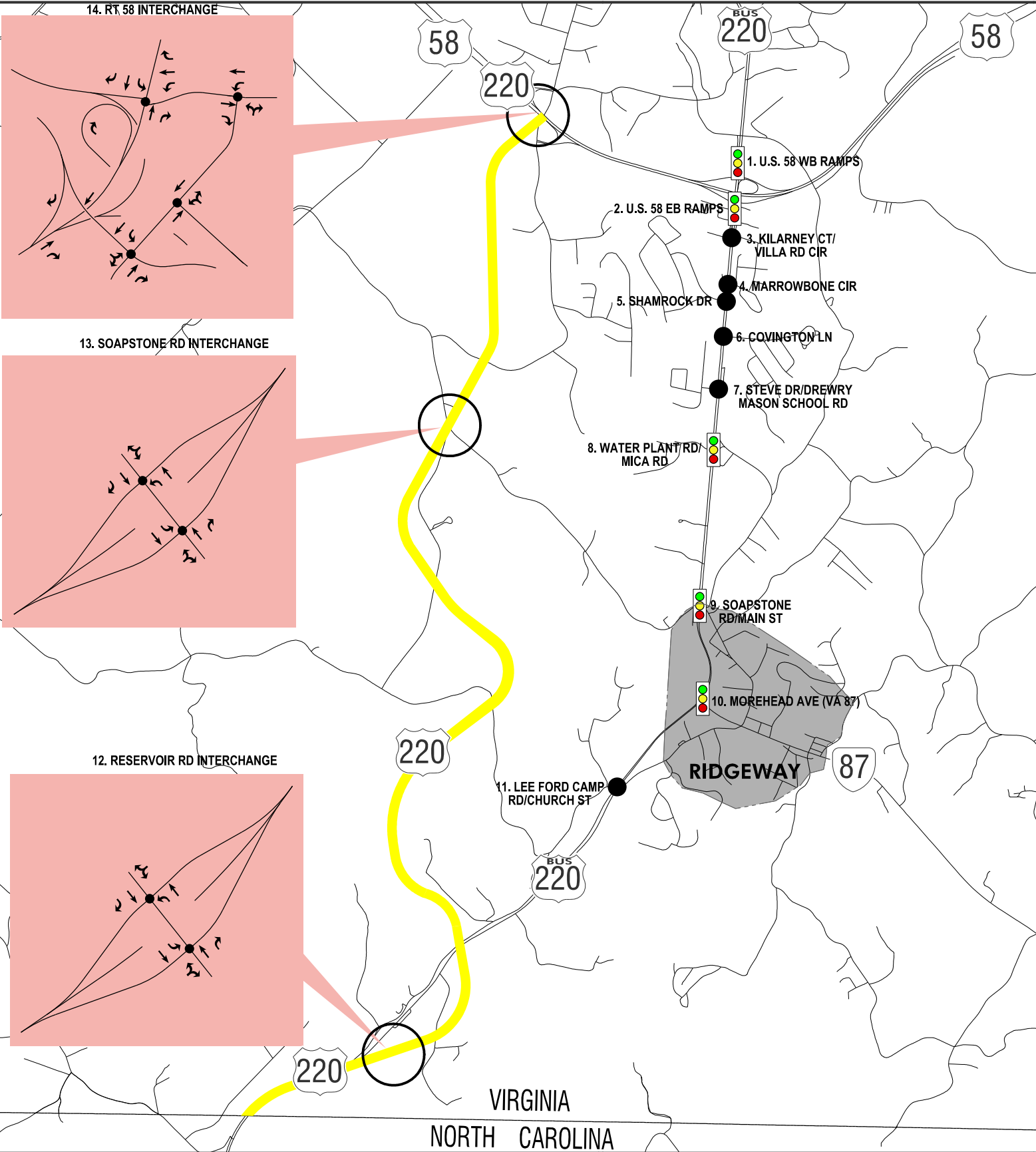
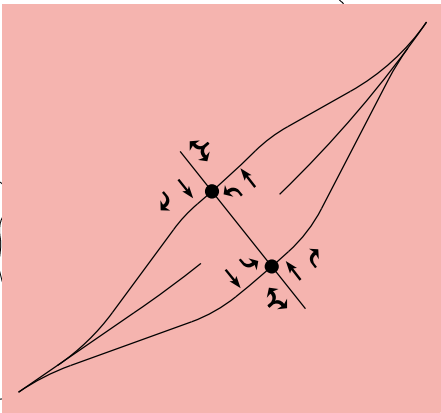
14. RT. 58 INTERCHANGE



13. SOAPSTONE RD INTERCHANGE



12. RESERVOIR RD INTERCHANGE



Legend

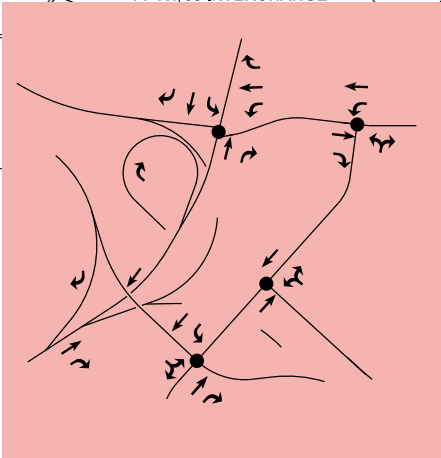
-  **SIGNALIZED INTERSECTION**
-  **UNSIGNALIZED INTERSECTION**



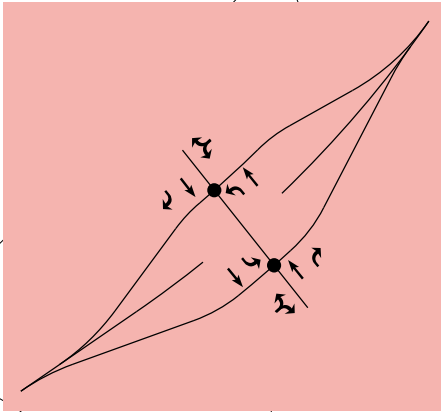
ALTERNATIVE B



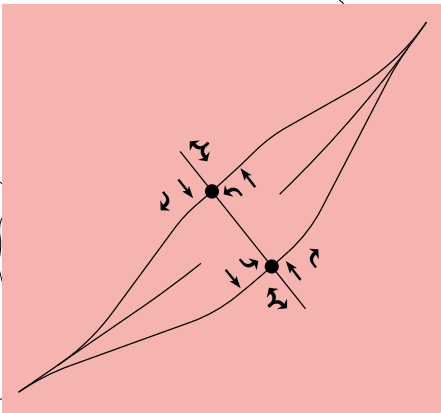
14. RT 58 INTERCHANGE



13. SOAPSTONE RD INTERCHANGE



12. RESERVOIR RD INTERCHANGE



58

220

BUS 220

58

1. RT 58 WB RAMP

2. RT 58 EB RAMP

3. KILARNEY CT/
VILLA RD CIR

4. MARROWBONE
CIR

5. SHAMROCK DR

6. COVINGTON LN

7. STEVE DR/DREWRY
MASON SCHOOL RD

8. WATER PLANT RD/
MICA RD

9. SOAPSTONE
RD/MAIN ST

10. MOREHEAD AVE (VA 87)

220

RIDGEWAY

87

11. LEE FORD CAMP
RD/CHURCH ST

BUS 220

220

VIRGINIA
NORTH CAROLINA

Legend



**SIGNALIZED
INTERSECTION**



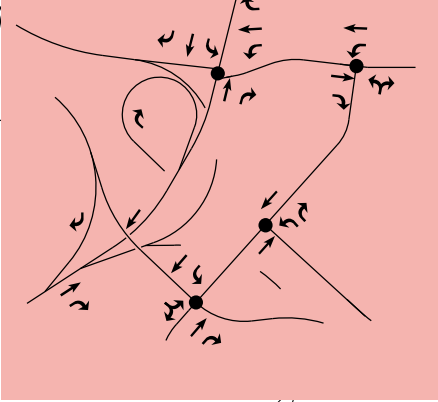
**UNSIGNALIZED
INTERSECTION**



ALTERNATIVE C



14. RT 58 INTERCHANGE



58

220

BUS 220

58

1. RT. 58 WB RAMPS

2. RT. 58 EB RAMPS

3. KILARNEY CT/
VILLA RD

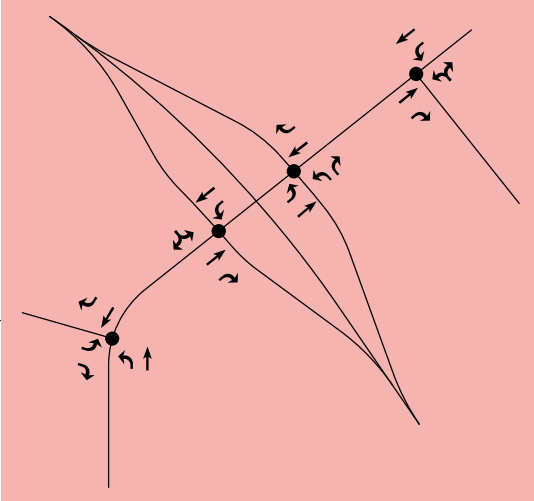
4. MARROWBONE CIR

5. SHAMROCK DR

6. COVINGTON LN

7. STEVE DR/DREWRY
MASON SCHOOL RD

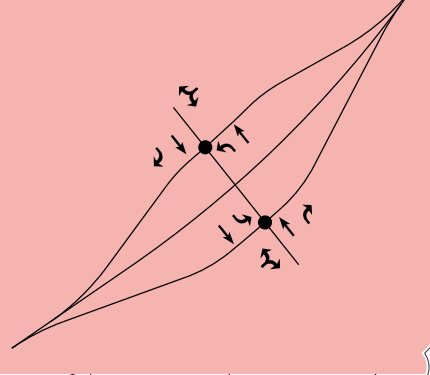
8. WATER PLANT RD INTERCHANGE



220

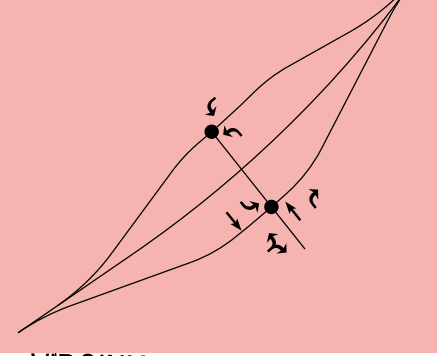
RIDGEWAY

12. RESERVOIR RD INTERCHANGE



220

10. MOREHEAD AVE (VA 87)
INTERCHANGE



87

VIRGINIA
NORTH CAROLINA

Legend



SIGNALIZED INTERSECTION



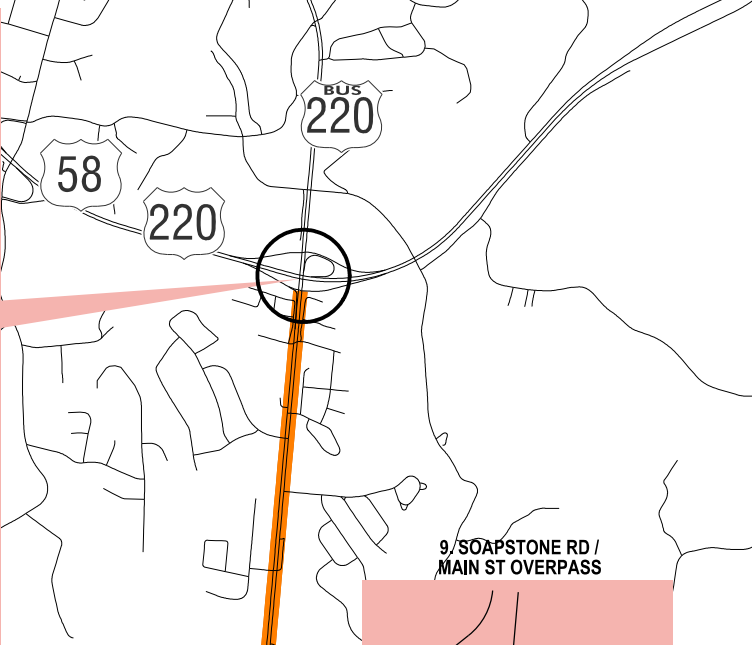
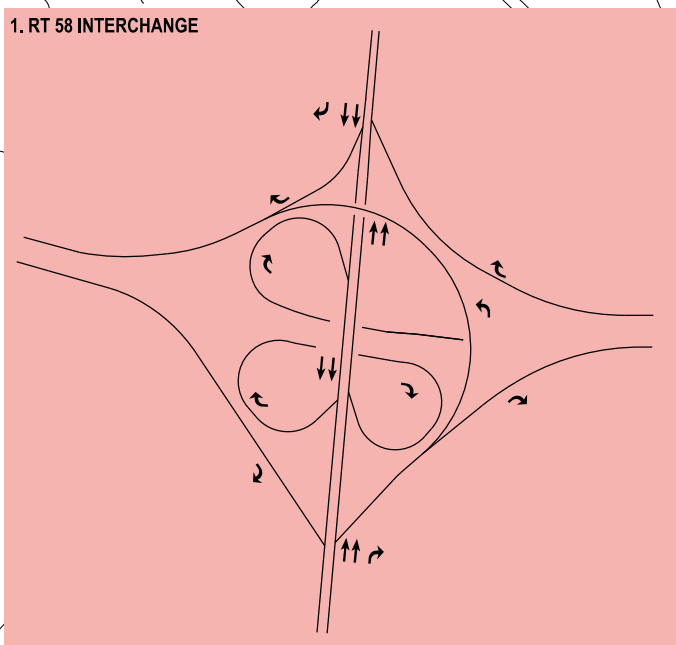
UNSIGNALIZED INTERSECTION



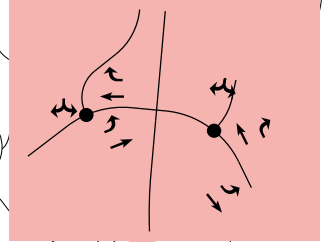
ALTERNATIVE D



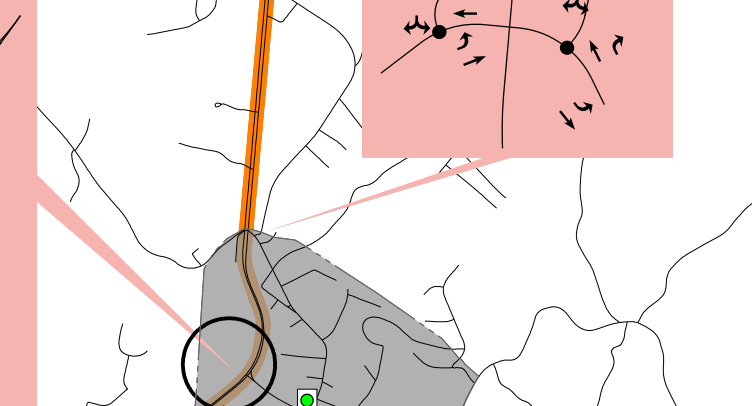
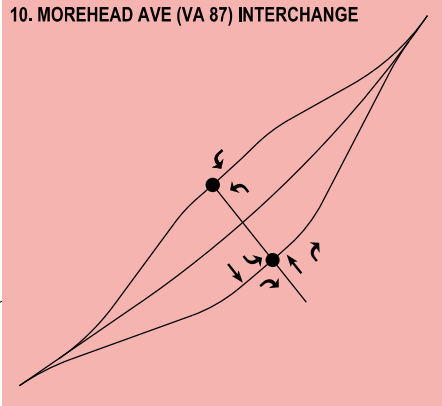
1. RT 58 INTERCHANGE



9. SOAPSTONE RD / MAIN ST OVERPASS



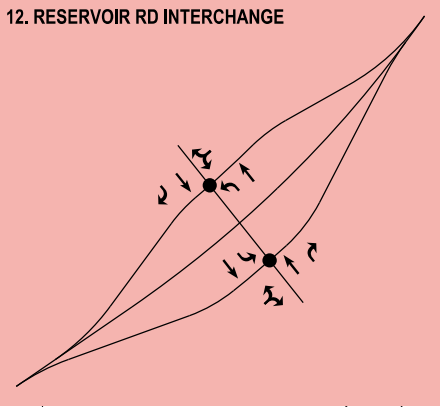
10. MOREHEAD AVE (VA 87) INTERCHANGE



RIDGEWAY

87

12. RESERVOIR RD INTERCHANGE



220

VIRGINIA
NORTH CAROLINA

Legend



SIGNALIZED INTERSECTION

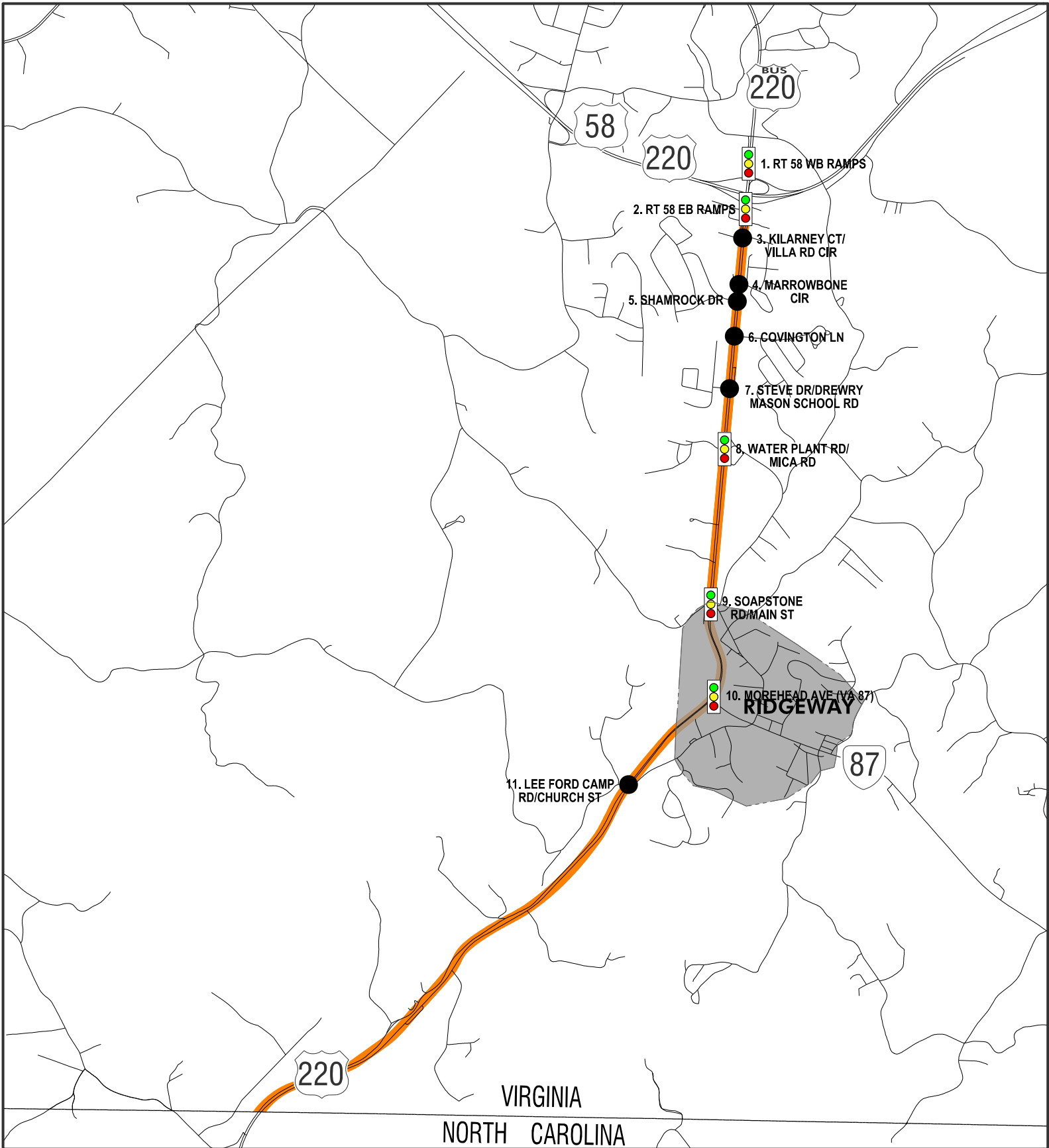


UNSIGNALIZED INTERSECTION



ALTERNATIVE E





Legend

-  **SIGNALIZED INTERSECTION**
-  **UNSIGNALIZED INTERSECTION**



Existing



Worst Case Intersections Ranked by Alternative for LOS and Peak Hour 2025

| Alternative A LOS | | | | | | |
|-------------------|-------|-------------------------|-----------------------|------------|-----|-------|
| Rank | Int # | Segment | Type of Signalization | 2025 Build | | |
| | | | | Peak Hour | LOS | Delay |
| 1 | 10 | Morehead Avenue (VA 87) | signalized | 1643 | F | 123.3 |
| 3 | 2 | Route 58 EB Ramp | signalized | 2585 | C | 34.5 |
| 4 | 8 | Water Plant Road | signalized | 2095 | C | 21.2 |

| Alternative B LOS | | | | | | |
|-------------------|-------|-----------------------------|-----------------------|------------|-----|-------|
| Rank | Int # | Segment | Type of Signalization | 2025 Build | | |
| | | | | Peak Hour | LOS | Delay |
| 1 | 10 | Morehead Avenue (VA 87) | signalized | 1643 | F | 123.0 |
| 2 | 2 | Route 58 EB Ramp | signalized | 2585 | D | 35.7 |
| 3 | 9 | Soapstone Road/ Main Street | signalized | 1930 | C | 30.9 |

| Alternative A Peak Hour | | | | | | |
|-------------------------|-------|------------------|-----------------------|------------|-----|-------|
| Rank | Int # | Segment | Type of Signalization | 2025 Build | | |
| | | | | Peak Hour | LOS | Delay |
| 1 | 2 | Route 58 EB Ramp | signalized | 2585 | C | 34.5 |
| 3 | 1 | Route 58 WB Ramp | signalized | 2101 | B | 13.0 |
| 4 | 8 | Water Plant Road | signalized | 2095 | C | 21.2 |

| Alternative B Peak Hour | | | | | | |
|-------------------------|-------|------------------|-----------------------|------------|-----|-------|
| Rank | Int # | Segment | Type of Signalization | 2025 Build | | |
| | | | | Peak Hour | LOS | Delay |
| 1 | 2 | Route 58 EB Ramp | signalized | 2585 | D | 35.7 |
| 3 | 1 | Route 58 WB Ramp | signalized | 2101 | B | 13.7 |
| 4 | 8 | Water Plant Road | signalized | 2091 | B | 13.4 |

| Alternative C LOS | | | | | | |
|-------------------|-------|-----------------------------|-----------------------|------------|-----|-------|
| Rank | Int # | Segment | Type of Signalization | 2025 Build | | |
| | | | | Peak Hour | LOS | Delay |
| 1 | 10 | Morehead Avenue (VA 87) | signalized | 1643 | F | 123.0 |
| 2 | 2 | Route 58 EB Ramp | signalized | 2585 | D | 35.7 |
| 3 | 9 | Soapstone Road/ Main Street | signalized | 1930 | C | 31.6 |

| Alternative D LOS | | | | | | |
|-------------------|-------|---------------------|-----------------------|------------|-----|-------|
| Rank | Int # | Segment | Type of Signalization | 2025 Build | | |
| | | | | Peak Hour | LOS | Delay |
| 1 | 8.4 | Water Plant Road EB | signalized | 1977 | C | 20.4 |
| 2 | 2 | Route 58 EB Ramp | signalized | 1667 | B | 12.0 |
| 3 | 1 | Route 58 WB Ramp | signalized | 1268 | B | 13.3 |

| Alternative C Peak Hour | | | | | | |
|-------------------------|-------|------------------|-----------------------|------------|-----|-------|
| Rank | Int # | Segment | Type of Signalization | 2025 Build | | |
| | | | | Peak Hour | LOS | Delay |
| 1 | 2 | Route 58 EB Ramp | signalized | 2585 | D | 35.7 |
| 3 | 1 | Route 58 WB Ramp | signalized | 2101 | B | 13.7 |
| 4 | 8 | Water Plant Road | signalized | 2091 | B | 13.4 |

| Alternative D Peak Hour | | | | | | |
|-------------------------|-------|---------------------|-----------------------|------------|-----|-------|
| Rank | Int # | Segment | Type of Signalization | 2025 Build | | |
| | | | | Peak Hour | LOS | Delay |
| 1 | 2 | Route 58 EB Ramp | signalized | 2236 | B | 14.6 |
| 2 | 8.4 | Water Plant Road EB | signalized | 1977 | C | 20.4 |
| 4 | 1 | Route 58 WB Ramp | signalized | 1462 | A | 9.0 |

| Alternative E | | | | | | |
|----------------------------|--|--|--|--|--|--|
| Unsignalized Intersections | | | | | | |

Worst Case Intersections Ranked by Alternative for LOS and Peak Hour 2040

Alternative A LOS

| Rank | Int # | Segment | Type of Signalization | 2040 Build | | |
|------|-------|-------------------------|-----------------------|------------|-----|-------|
| | | | | Peak Hour | LOS | Delay |
| 1 | 10 | Morehead Avenue (VA 87) | signalized | 1785 | D | 48.3 |
| 2 | 2 | Route 58 EB Ramp | signalized | 2789 | D | 51.8 |
| 4 | 8 | Water Plant Road | signalized | 2285 | C | 20.7 |

Alternative A Peak Hour

| Rank | Int # | Segment | Type of Signalization | 2040 Build | | |
|------|-------|------------------|-----------------------|------------|-----|-------|
| | | | | Peak Hour | LOS | Delay |
| 1 | 2 | Route 58 EB Ramp | signalized | 2789 | D | 51.8 |
| 3 | 8 | Water Plant Road | signalized | 2306 | B | 16.7 |
| 5 | 1 | Route 58 WB Ramp | signalized | 2201 | B | 16.6 |

Alternative C LOS

| Rank | Int # | Segment | Type of Signalization | 2040 Build | | |
|------|-------|-----------------------------|-----------------------|------------|-----|-------|
| | | | | Peak Hour | LOS | Delay |
| 1 | 10 | Morehead Avenue (VA 87) | signalized | 1785 | D | 42.9 |
| 2 | 2 | Route 58 EB Ramp | signalized | 2789 | D | 51.8 |
| 3 | 9 | Soapstone Road/ Main Street | signalized | 1434 | C | 33.6 |

Alternative C Peak Hour

| Rank | Int # | Segment | Type of Signalization | 2040 Build | | |
|------|-------|------------------|-----------------------|------------|-----|-------|
| | | | | Peak Hour | LOS | Delay |
| 1 | 2 | Route 58 EB Ramp | signalized | 2789 | D | 51.8 |
| 3 | 8 | Water Plant Road | signalized | 2306 | B | 16.6 |
| 5 | 1 | Route 58 WB Ramp | signalized | 2201 | B | 16.6 |

Alternative E
Unsignalized Intersections

Alternative B LOS

| Rank | Int # | Segment | Type of Signalization | 2040 Build | | |
|------|-------|-----------------------------|-----------------------|------------|-----|-------|
| | | | | Peak Hour | LOS | Delay |
| 1 | 10 | Morehead Avenue (VA 87) | signalized | 1785 | D | 42.6 |
| 2 | 2 | Route 58 EB Ramp | signalized | 2789 | D | 47.7 |
| 4 | 9 | Soapstone Road/ Main Street | signalized | 2116 | C | 32.8 |

Alternative B Peak Hour

| Rank | Int # | Segment | Type of Signalization | 2040 Build | | |
|------|-------|------------------|-----------------------|------------|-----|-------|
| | | | | Peak Hour | LOS | Delay |
| 1 | 2 | Route 58 EB Ramp | signalized | 2789 | D | 47.7 |
| 3 | 8 | Water Plant Road | signalized | 2306 | B | 16.6 |
| 5 | 1 | Route 58 WB Ramp | signalized | 2201 | B | 10.7 |

Alternative D LOS

| Rank | Int # | Segment | Type of Signalization | 2040 Build | | |
|------|-------|---------------------|-----------------------|------------|-----|-------|
| | | | | Peak Hour | LOS | Delay |
| 1 | 8.4 | Water Plant Road EB | signalized | 2053 | C | 21.3 |
| 2 | 1 | Route 58 WB Ramp | signalized | 1703 | B | 11.9 |
| 3 | 2 | Route 58 EB Ramp | signalized | 1898 | B | 12.8 |

Alternative D Peak Hour

| Rank | Int # | Segment | Type of Signalization | 2040 Build | | |
|------|-------|---------------------|-----------------------|------------|-----|-------|
| | | | | Peak Hour | LOS | Delay |
| 1 | 2 | Route 58 EB Ramp | signalized | 2435 | B | 16.0 |
| 2 | 1 | Route 58 WB Ramp | signalized | 2227 | B | 14.3 |
| 3 | 8.4 | Water Plant Road EB | signalized | 2053 | C | 21.3 |

Martinsville Connector Study - Alternative A Build and No Build ADTs

| Alternative A Proposed Alignment | | Length (mi) | Speed Limit (mph) | Opening Year | | Design Year | |
|---|---|-------------|-------------------|----------------|--------|----------------|--------|
| | | | | 2025 | | 2040 | |
| | Segment | | | ADT | VMT | ADT | VMT |
| 1 | Route 58 between Fisher Farm Road and Cameron Road | 0.93 | 65 | 17,300 | 16,089 | 20,000 | 18,600 |
| 2 | US 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 12,400 | 9,176 | 13,200 | 9,768 |
| 3 | US 220 between US 58 Interchange and Soapstone Road Interchange | 1.79 | 55 | 11,400 | 20,406 | 12,200 | 21,838 |
| 4 | US 220 between Soapstone Road Interchange Road and Reservoir Road Interchange | 2.98 | 55 | 10,700 | 31,886 | 11,400 | 33,972 |
| 5 | US 220 between Reservoir Road Interchange and Virginia State Line | 0.90 | 55 | 12,000 | 10,800 | 14,000 | 12,600 |
| Alternative A Existing Alignment | | | | | | | |
| | Segment | | | | | | |
| 1 | US 220 between Kilarney Court and Route 58 Interchange | 0.21 | 45 | 17,500 | 3,675 | 22,000 | 4,620 |
| 2 | US 220 between Kilarney Court and Marrowbone Circle | 0.28 | 45 | 17,000 | 4,760 | 21,600 | 6,048 |
| 3 | US 220 between Marrowbone Circle and Shamrock Drive | 0.10 | 45 | 14,700 | 1,470 | 19,100 | 1,910 |
| 4 | US 220 between Shamrock Drive and Covington Lane | 0.21 | 45 | 12,800 | 2,688 | 17,200 | 3,612 |
| 5 | US 220 between Covington Lane and Steven Drive/ Drewry Mason School Road | 0.31 | 45 | 13,800 | 4,278 | 18,300 | 5,673 |
| 6 | US 220 between Steven Drive/ Drewry Mason School Road and Water Plant Road/ Mica Road | 0.36 | 45 | 11,100 | 3,996 | 15,400 | 5,544 |
| 7 | US 220 between Water Plant Road/ Mica Road and Soaptone Road/ Main Street | 0.92 | 55 | 10,400 | 9,568 | 14,300 | 13,156 |
| 8 | US 220 between Soaptone Road/ Main Street and Morehead Avenue | 0.60 | 55 | 8,900 | 5,340 | 12,000 | 7,200 |
| 9 | US 220 between Morehead Avenue and Lee Ford Camp Road/ Church Street | 0.69 | 55 | 5,300 | 3,657 | 7,400 | 5,106 |
| 10 | US 220 bewtween Stone View Road/ Old Sand Road and Route 58 Interchange | 0.33 | 45 | 17,500 | 5,775 | 18,800 | 6,204 |
| 11 | Route 58 between US 220 and Old Sand Road | 0.12 | 65 | 13,900 | 1,668 | 16,400 | 1,968 |
| 12 | Morehead Road between US 220 and Church Street/ Main Street | 0.25 | 35 | 6,100 | 1,525 | 7,100 | 1,775 |
| 13 | US 220 between Lee Ford Camp Road/ Church Street and White House Road | 1.02 | 55 | 6,500 | 6,630 | 8,300 | 8,466 |
| 14 | Route 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 12,200 | 9,028 | 13,900 | 10,286 |
| Totals | | 6 | | 152,415 | | 178,346 | |

| No Build | | Length (mi) | Speed Limit (mph) | Opening Year | | Design Year | |
|---------------|---|-------------|-------------------|----------------|--------|----------------|--------|
| | | | | 2025 | | 2040 | |
| | Segment | | | ADT | VMT | ADT | VMT |
| 1 | US 220 between Kilarney Court and Route 58 Interchange | 0.21 | 45 | 27,400 | 5,754 | 31,900 | 6,699 |
| 2 | US 220 between Kilarney Court and Marrowbone Circle | 0.28 | 45 | 27,100 | 7,588 | 31,700 | 8,876 |
| 3 | US 220 between Marrowbone Circle and Shamrock Drive | 0.10 | 45 | 24,800 | 2,480 | 29,200 | 2,920 |
| 4 | US 220 between Shamrock Drive and Covington Lane | 0.21 | 45 | 23,000 | 4,830 | 27,300 | 5,733 |
| 5 | US 220 between Covington Lane and Steven Drive/ Drewry Mason School Road | 0.31 | 45 | 24,100 | 7,471 | 28,500 | 8,835 |
| 6 | US 220 between Steven Drive/ Drewry Mason School Road and Water Plant Road/ Mica Road | 0.36 | 45 | 21,400 | 7,704 | 25,600 | 9,216 |
| 7 | US 220 between Water Plant Road/ Mica Road and Soaptone Road/ Main Street | 0.92 | 55 | 19,700 | 18,124 | 23,400 | 21,528 |
| 8 | US 220 between Soaptone Road/ Main Street and Morehead Avenue | 0.60 | 55 | 17,500 | 10,500 | 21,400 | 12,840 |
| 9 | US 220 between Morehead Avenue and Lee Ford Camp Road/ Church Street | 0.69 | 55 | 11,300 | 7,797 | 14,700 | 10,143 |
| 10 | US 220 bewtween Stone View Road/ Old Sand Road and Route 58 Interchange | 0.33 | 45 | 18,000 | 5,940 | 19,300 | 6,369 |
| 11 | Route 58 between US 220 and Old Sand Road | 0.12 | 65 | 13,900 | 1,668 | 16,300 | 1,956 |
| 12 | Morehead Road between US 220 and Church Street/ Main Street | 0.25 | 35 | 6,700 | 1,675 | 6,300 | 1,575 |
| 13 | US 220 between Lee Ford Camp Road/ Church Street and White House Road | 1.02 | 55 | 13,300 | 13,566 | 17,200 | 17,544 |
| 14 | Route 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 18,000 | 13,320 | 20,000 | 14,800 |
| Totals | | 6.14 | | 108,417 | | 129,034 | |

Martinsville Connector Study - Alternative B Build and No Build ADTs

| Alternative B Proposed Alignment | | Length (mi) | Speed Limit (mph) | Opening Year | | Design Year | |
|----------------------------------|---|-------------|-------------------|----------------|--------|----------------|--------|
| | | | | 2025 | | 2040 | |
| | Segment | | | ADT | VMT | ADT | VMT |
| 1 | Route 58 between Fisher Farm Road and Cameron Road | 1.40 | 65 | 17,300 | 24,220 | 20,000 | 28,000 |
| 2 | US 220 between US 58 Interchange and Soapstone Road Interchange | 2.04 | 55 | 11,900 | 24,276 | 12,800 | 26,112 |
| 3 | US 220 between Soapstone Road Interchange Road and Reservoir Road Interchange | 3.82 | 55 | 10,700 | 40,874 | 11,300 | 43,166 |
| 4 | US 220 between Reservoir Road Interchange and Virginia State Line | 0.90 | 55 | 12,000 | 10,800 | 14,200 | 12,780 |
| Alternative B Existing Alignment | | | | | | | |
| | Segment | | | | | | |
| 1 | US 220 between Kilarney Court and Route 58 Interchange | 0.21 | 45 | 17,600 | 3,696 | 22,000 | 4,620 |
| 2 | US 220 between Kilarney Court and Marrowbone Circle | 0.28 | 45 | 17,100 | 4,788 | 21,600 | 6,048 |
| 3 | US 220 between Marrowbone Circle and Shamrock Drive | 0.10 | 45 | 14,800 | 1,480 | 19,100 | 1,910 |
| 4 | US 220 between Shamrock Drive and Covington Lane | 0.21 | 45 | 12,900 | 2,709 | 17,200 | 3,612 |
| 5 | US 220 between Covington Lane and Steven Drive/ Drewry Mason School Road | 0.31 | 45 | 13,600 | 4,216 | 18,200 | 5,642 |
| 6 | US 220 between Steven Drive/ Drewry Mason School Road and Water Plant Road/ Mica Road | 0.36 | 45 | 11,000 | 3,960 | 15,300 | 5,508 |
| 7 | US 220 between Water Plant Road/ Mica Road and Soapstone Road/ Main Street | 0.92 | 55 | 10,200 | 9,384 | 14,500 | 13,340 |
| 8 | US 220 between Soapstone Road/ Main Street and Morehead Avenue | 0.60 | 55 | 9,700 | 5,820 | 14,000 | 8,400 |
| 9 | US 220 between Morehead Avenue and Lee Ford Camp Road/ Church Street | 0.69 | 55 | 4,800 | 3,312 | 7,500 | 5,175 |
| 10 | US 220 between Stone View Road/ Old Sand Road and Route 58 Interchange | 0.33 | 45 | 17,400 | 5,742 | 18,600 | 6,138 |
| 11 | Route 58 between US 220 and Old Sand Road | 0.12 | 65 | 13,900 | 1,668 | 16,400 | 1,968 |
| 12 | Morehead Road between US 220 and Church Street/ Main Street | 0.25 | 35 | 5,900 | 1,475 | 8,000 | 2,000 |
| 13 | US 220 between Lee Ford Camp Road/ Church Street and White House Road | 1.02 | 55 | 6,000 | 6,120 | 7,900 | 8,058 |
| 14 | Route 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 12,500 | 9,250 | 14,500 | 10,730 |
| Totals | | | | 163,790 | | 193,207 | |

| No Build | | Length (mi) | Speed Limit (mph) | Opening Year | | Design Year | |
|---------------|---|-------------|-------------------|----------------|--------|----------------|--------|
| | | | | 2025 | | 2040 | |
| | Segment | | | ADT | VMT | ADT | VMT |
| 1 | US 220 between Kilarney Court and Route 58 Interchange | 0.21 | 45 | 27,400 | 5,754 | 31,900 | 6,699 |
| 2 | US 220 between Kilarney Court and Marrowbone Circle | 0.28 | 45 | 27,100 | 7,588 | 31,700 | 8,876 |
| 3 | US 220 between Marrowbone Circle and Shamrock Drive | 0.10 | 45 | 24,800 | 2,480 | 29,200 | 2,920 |
| 4 | US 220 between Shamrock Drive and Covington Lane | 0.21 | 45 | 23,000 | 4,830 | 27,300 | 5,733 |
| 5 | US 220 between Covington Lane and Steven Drive/ Drewry Mason School Road | 0.31 | 45 | 24,100 | 7,471 | 28,500 | 8,835 |
| 6 | US 220 between Steven Drive/ Drewry Mason School Road and Water Plant Road/ Mica Road | 0.36 | 45 | 21,400 | 7,704 | 25,600 | 9,216 |
| 7 | US 220 between Water Plant Road/ Mica Road and Soapstone Road/ Main Street | 0.92 | 55 | 19,700 | 18,124 | 23,400 | 21,528 |
| 8 | US 220 between Soapstone Road/ Main Street and Morehead Avenue | 0.60 | 55 | 17,500 | 10,500 | 21,400 | 12,840 |
| 9 | US 220 between Morehead Avenue and Lee Ford Camp Road/ Church Street | 0.69 | 55 | 11,300 | 7,797 | 14,700 | 10,143 |
| 10 | US 220 between Stone View Road/ Old Sand Road and Route 58 Interchange | 0.33 | 45 | 18,000 | 5,940 | 19,300 | 6,369 |
| 11 | Route 58 between US 220 and Old Sand Road | 0.12 | 65 | 13,900 | 1,668 | 16,300 | 1,956 |
| 12 | Morehead Road between US 220 and Church Street/ Main Street | 0.25 | 35 | 6,700 | 1,675 | 6,300 | 1,575 |
| 13 | US 220 between Lee Ford Camp Road/ Church Street and White House Road | 1.02 | 55 | 13,300 | 13,566 | 17,200 | 17,544 |
| 14 | Route 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 18,000 | 13,320 | 20,000 | 14,800 |
| Totals | | | | 108,417 | | 129,034 | |

Martinsville Connector Study - Alternative C Build and No Build ADTs

| Alternative C Proposed Alignment | | Length (mi) | Speed Limit (mph) | Opening Year | | Design Year | |
|---|---|-------------|-------------------|----------------|--------|----------------|--------|
| | | | | 2025 | | 2040 | |
| | Segment | | | ADT | VMT | ADT | VMT |
| 1 | Route 58 between Fisher Farm Road and Cameron Road | 1.40 | 65 | 17,300 | 24,220 | 20,000 | 28,000 |
| 2 | US 220 between US 58 Interchange and Soapstone Road Interchange | 2.89 | 55 | 11,900 | 34,391 | 12,800 | 36,992 |
| 3 | US 220 between Soapstone Road Interchange Road and Reservoir Road Interchange | 3.36 | 55 | 10,700 | 35,952 | 11,300 | 37,968 |
| 4 | US 220 between Reservoir Road Interchange and Virginia State Line | 0.90 | 55 | 12,000 | 10,800 | 14,200 | 12,780 |
| Alternative C Existing Alignment | | | | | | | |
| | Segment | | | | | | |
| 1 | US 220 between Kilarney Court and Route 58 Interchange | 0.21 | 45 | 17,600 | 3,696 | 22,000 | 4,620 |
| 2 | US 220 between Kilarney Court and Marrowbone Circle | 0.28 | 45 | 17,100 | 4,788 | 21,600 | 6,048 |
| 3 | US 220 between Marrowbone Circle and Shamrock Drive | 0.10 | 45 | 14,800 | 1,480 | 19,100 | 1,910 |
| 4 | US 220 between Shamrock Drive and Covington Lane | 0.21 | 45 | 12,900 | 2,709 | 17,200 | 3,612 |
| 5 | US 220 between Covington Lane and Steven Drive/ Drewry Mason School Road | 0.31 | 45 | 13,600 | 4,216 | 18,200 | 5,642 |
| 6 | US 220 between Steven Drive/ Drewry Mason School Road and Water Plant Road/ Mica Road | 0.36 | 45 | 11,000 | 3,960 | 15,300 | 5,508 |
| 7 | US 220 between Water Plant Road/ Mica Road and Soapstone Road/ Main Street | 0.92 | 55 | 10,200 | 9,384 | 14,500 | 13,340 |
| 8 | US 220 between Soapstone Road/ Main Street and Morehead Avenue | 0.60 | 55 | 9,700 | 5,820 | 14,000 | 8,400 |
| 9 | US 220 between Morehead Avenue and Lee Ford Camp Road/ Church Street | 0.69 | 55 | 4,800 | 3,312 | 7,500 | 5,175 |
| 10 | US 220 between Stone View Road/ Old Sand Road and Route 58 Interchange | 0.33 | 45 | 17,400 | 5,742 | 18,600 | 6,138 |
| 11 | Route 58 between US 220 and Old Sand Road | 0.12 | 65 | 13,900 | 1,668 | 16,400 | 1,968 |
| 12 | Morehead Road between US 220 and Church Street/ Main Street | 0.25 | 35 | 5,900 | 1,475 | 8,000 | 2,000 |
| 13 | US 220 between Lee Ford Camp Road/ Church Street and White House Road | 1.02 | 55 | 6,000 | 6,120 | 7,900 | 8,058 |
| 14 | Route 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 12,500 | 9,250 | 14,500 | 10,730 |
| Totals | | | | 168,983 | | 198,889 | |

| No Build | | Length (mi) | Speed Limit (mph) | Opening Year | | Design Year | |
|---------------|---|-------------|-------------------|----------------|--------|----------------|--------|
| | | | | 2025 | | 2040 | |
| | Segment | | | ADT | VMT | ADT | VMT |
| 1 | US 220 between Kilarney Court and Route 58 Interchange | 0.21 | 45 | 27,400 | 5,754 | 31,900 | 6,699 |
| 2 | US 220 between Kilarney Court and Marrowbone Circle | 0.28 | 45 | 27,100 | 7,588 | 31,700 | 8,876 |
| 3 | US 220 between Marrowbone Circle and Shamrock Drive | 0.10 | 45 | 24,800 | 2,480 | 29,200 | 2,920 |
| 4 | US 220 between Shamrock Drive and Covington Lane | 0.21 | 45 | 23,000 | 4,830 | 27,300 | 5,733 |
| 5 | US 220 between Covington Lane and Steven Drive/ Drewry Mason School Road | 0.31 | 45 | 24,100 | 7,471 | 28,500 | 8,835 |
| 6 | US 220 between Steven Drive/ Drewry Mason School Road and Water Plant Road/ Mica Road | 0.36 | 45 | 21,400 | 7,704 | 25,600 | 9,216 |
| 7 | US 220 between Water Plant Road/ Mica Road and Soapstone Road/ Main Street | 0.92 | 55 | 19,700 | 18,124 | 23,400 | 21,528 |
| 8 | US 220 between Soapstone Road/ Main Street and Morehead Avenue | 0.60 | 55 | 17,500 | 10,500 | 21,400 | 12,840 |
| 9 | US 220 between Morehead Avenue and Lee Ford Camp Road/ Church Street | 0.69 | 55 | 11,300 | 7,797 | 14,700 | 10,143 |
| 10 | US 220 between Stone View Road/ Old Sand Road and Route 58 Interchange | 0.33 | 45 | 18,000 | 5,940 | 19,300 | 6,369 |
| 11 | Route 58 between US 220 and Old Sand Road | 0.12 | 65 | 13,900 | 1,668 | 16,300 | 1,956 |
| 12 | Morehead Road between US 220 and Church Street/ Main Street | 0.25 | 35 | 6,700 | 1,675 | 6,300 | 1,575 |
| 13 | US 220 between Lee Ford Camp Road/ Church Street and White House Road | 1.02 | 55 | 13,300 | 13,566 | 17,200 | 17,544 |
| 14 | Route 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 18,000 | 13,320 | 20,000 | 14,800 |
| Totals | | | | 108,417 | | 129,034 | |

Martinsville Connector Study - Alternative D Build and No Build ADTs

| Alternative D Proposed Alignment | | Length (mi) | Speed Limit (mph) | Opening Year | | Design Year | |
|----------------------------------|---|-------------|-------------------|----------------|--------|----------------|--------|
| | | | | 2025 | | 2040 | |
| | Segment | | | ADT | VMT | ADT | VMT |
| 1 | Route 58 between Fisher Farm Road and Cameron Road | 1.40 | 65 | 17,300 | 24,220 | 20,000 | 28,000 |
| 2 | US 220 between Fisher Farm Road and Water Plant Road Interchange | 2.71 | 55 | 12,000 | 32,520 | 13,000 | 35,230 |
| 3 | US 220 between Reservoir Road Interchange and Virginia State Line | 1.00 | 55 | 12,000 | 12,000 | 14,200 | 14,200 |
| Alternative D Existing Alignment | | | | | | | |
| | Segment | | | | | | |
| 1 | US 220 between Kilarney Court and Route 58 Interchange | 0.21 | 45 | 16,100 | 3,381 | 20,500 | 4,305 |
| 2 | US 220 between Kilarney Court and Marrowbone Circle | 0.28 | 45 | 15,900 | 4,452 | 20,300 | 5,684 |
| 3 | US 220 between Marrowbone Circle and Shamrock Drive | 0.10 | 45 | 13,600 | 1,360 | 17,900 | 1,790 |
| 4 | US 220 between Shamrock Drive and Covington Lane | 0.21 | 45 | 12,000 | 2,520 | 13,000 | 2,730 |
| 5 | US 220 between Covington Lane and Steven Drive/ Drewry Mason School Road | 0.31 | 45 | 11,800 | 3,658 | 16,000 | 4,960 |
| 6 | US 220 between Steven Drive/ Drewry Mason School Road and Water Plant Road/ Mica Road | 0.36 | 45 | 10,900 | 3,924 | 15,100 | 5,436 |
| 7 | US 220 between Water Plant Road/ Mica Road and Soaptone Road/ Main Street | 0.92 | 55 | 15,200 | 13,984 | 18,100 | 16,652 |
| 8 | US 220 between Soaptone Road/ Main Street and Morehead Avenue | 0.60 | 55 | 15,200 | 9,120 | 18,100 | 10,860 |
| 9 | US 220 between Morehead Avenue and Lee Ford Camp Road/ Church Street | 0.69 | 55 | 13,700 | 9,453 | 18,100 | 12,489 |
| 10 | US 220 between Stone View Road/ Old Sand Road and Route 58 Interchange | 0.33 | 45 | 17,800 | 5,874 | 19,300 | 6,369 |
| 11 | Route 58 between US 220 and Old Sand Road | 0.12 | 65 | 13,900 | 1,668 | 16,400 | 1,968 |
| 12 | Morehead Road between US 220 and Church Street/ Main Street | 0.25 | 35 | 4,900 | 1,225 | 7,000 | 1,750 |
| 13 | US 220 between Lee Ford Camp Road/ Church Street and J B Dalton Road | 1.57 | 55 | 13,700 | 21,509 | 18,100 | 28,417 |
| 14 | Route 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 10,900 | 8,066 | 21,100 | 15,614 |
| Totals | | | | 158,934 | | 196,454 | |

| No Build | | Length (mi) | Speed Limit (mph) | Opening Year | | Design Year | |
|---------------|---|-------------|-------------------|----------------|--------|----------------|--------|
| | | | | 2025 | | 2040 | |
| | Segment | | | ADT | VMT | ADT | VMT |
| 1 | US 220 between Kilarney Court and Route 58 Interchange | 0.21 | 45 | 27,400 | 5,754 | 31,900 | 6,699 |
| 2 | US 220 between Kilarney Court and Marrowbone Circle | 0.28 | 45 | 27,100 | 7,588 | 31,700 | 8,876 |
| 3 | US 220 between Marrowbone Circle and Shamrock Drive | 0.10 | 45 | 24,800 | 2,480 | 29,200 | 2,920 |
| 4 | US 220 between Shamrock Drive and Covington Lane | 0.21 | 45 | 23,000 | 4,830 | 27,300 | 5,733 |
| 5 | US 220 between Covington Lane and Steven Drive/ Drewry Mason School Road | 0.31 | 45 | 24,100 | 7,471 | 28,500 | 8,835 |
| 6 | US 220 between Steven Drive/ Drewry Mason School Road and Water Plant Road/ Mica Road | 0.36 | 45 | 21,400 | 7,704 | 25,600 | 9,216 |
| 7 | US 220 between Water Plant Road/ Mica Road and Soaptone Road/ Main Street | 0.92 | 55 | 19,700 | 18,124 | 23,400 | 21,528 |
| 8 | US 220 between Soaptone Road/ Main Street and Morehead Avenue | 0.60 | 55 | 17,500 | 10,500 | 21,400 | 12,840 |
| 9 | US 220 between Morehead Avenue and Lee Ford Camp Road/ Church Street | 0.69 | 55 | 11,300 | 7,797 | 14,700 | 10,143 |
| 10 | US 220 between Stone View Road/ Old Sand Road and Route 58 Interchange | 0.33 | 45 | 18,000 | 5,940 | 19,300 | 6,369 |
| 11 | Route 58 between US 220 and Old Sand Road | 0.12 | 65 | 13,900 | 1,668 | 16,300 | 1,956 |
| 12 | Morehead Road between US 220 and Church Street/ Main Street | 0.25 | 35 | 6,700 | 1,675 | 6,300 | 1,575 |
| 13 | US 220 between Lee Ford Camp Road/ Church Street and White House Road | 1.02 | 55 | 13,300 | 13,566 | 17,200 | 17,544 |
| 14 | Route 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 18,000 | 13,320 | 20,000 | 14,800 |
| Totals | | | | 108,417 | | 129,034 | |

Martinsville Connector Study - Alternative E Build and No Build ADTs

| Alternative E Proposed Alignment | | Length (mi) | Speed Limit (mph) | Opening Year | | Design Year | |
|----------------------------------|--|-------------|-------------------|---------------|--------|---------------|--------|
| | | | | 2025 | | 2040 | |
| | Segment | | | ADT | VMT | ADT | VMT |
| 1 | US 220 between Kilarney Court and Route 58 Interchange | 0.21 | 45 | 17,100 | 3,591 | 20,400 | 4,284 |
| 8 | US 220 between Soaptone Road/ Main Street and Morehead Avenue | 0.60 | 55 | 17,100 | 10,260 | 20,400 | 12,240 |
| 9 | US 220 at Morehead Avenue Interchange | 0.50 | 55 | 13,600 | 6,800 | 17,800 | 8,900 |
| 9 | US 220 between Morehead Avenue and Lee Ford Camp Road/ Church Street | 0.69 | 55 | 13,600 | 9,384 | 17,800 | 12,282 |
| 10 | US 220 between Stone View Road/ Old Sand Road and Route 58 Interchange | 0.33 | 45 | 16,200 | 5,346 | 18,500 | 6,105 |
| 11 | Route 58 between US 220 and Old Sand Road | 0.12 | 65 | 14,000 | 1,680 | 16,700 | 2,004 |
| 12 | Morehead Road between US 220 and Church Street/ Main Street | 0.25 | 35 | 9,800 | 2,450 | 10,500 | 2,625 |
| 13 | US 220 between Lee Ford Camp Road/ Church Street and White House Road | 1.02 | 55 | 13,600 | 13,872 | 17,800 | 18,156 |
| 14 | Route 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 18,200 | 13,468 | 20,800 | 15,392 |
| Totals | | 4.46 | | 66,851 | | 81,988 | |

| No Build | | Length (mi) | Speed Limit (mph) | Opening Year | | Design Year | |
|---------------|---|-------------|-------------------|----------------|--------|----------------|--------|
| | | | | 2025 | | 2040 | |
| | Segment | | | ADT | VMT | ADT | VMT |
| 1 | US 220 between Kilarney Court and Route 58 Interchange | 0.21 | 45 | 27,400 | 5,754 | 31,900 | 6,699 |
| 2 | US 220 between Kilarney Court and Marrowbone Circle | 0.28 | 45 | 27,100 | 7,588 | 31,700 | 8,876 |
| 3 | US 220 between Marrowbone Circle and Shamrock Drive | 0.10 | 45 | 24,800 | 2,480 | 29,200 | 2,920 |
| 4 | US 220 between Shamrock Drive and Covington Lane | 0.21 | 45 | 23,000 | 4,830 | 27,300 | 5,733 |
| 5 | US 220 between Covington Lane and Steven Drive/ Drewry Mason School Road | 0.31 | 45 | 24,100 | 7,471 | 28,500 | 8,835 |
| 6 | US 220 between Steven Drive/ Drewry Mason School Road and Water Plant Road/ Mica Road | 0.36 | 45 | 21,400 | 7,704 | 25,600 | 9,216 |
| 7 | US 220 between Water Plant Road/ Mica Road and Soaptone Road/ Main Street | 0.92 | 55 | 19,700 | 18,124 | 23,400 | 21,528 |
| 8 | US 220 between Soaptone Road/ Main Street and Morehead Avenue | 0.60 | 55 | 17,500 | 10,500 | 21,400 | 12,840 |
| 9 | US 220 between Morehead Avenue and Lee Ford Camp Road/ Church Street | 0.69 | 55 | 11,300 | 7,797 | 14,700 | 10,143 |
| 10 | US 220 between Stone View Road/ Old Sand Road and Route 58 Interchange | 0.33 | 45 | 18,000 | 5,940 | 19,300 | 6,369 |
| 11 | Route 58 between US 220 and Old Sand Road | 0.12 | 65 | 13,900 | 1,668 | 16,300 | 1,956 |
| 12 | Morehead Road between US 220 and Church Street/ Main Street | 0.25 | 35 | 6,700 | 1,675 | 6,300 | 1,575 |
| 13 | US 220 between Lee Ford Camp Road/ Church Street and White House Road | 1.02 | 55 | 13,300 | 13,566 | 17,200 | 17,544 |
| 14 | Route 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 18,000 | 13,320 | 20,000 | 14,800 |
| Totals | | 6.14 | | 108,417 | | 129,034 | |

Martinsville Southern Connector Study Existing and No-Build ADT

| No Build | | Length (mi) | Speed Limit (mph) | Existing Year | | Opening Year | | Design Year | |
|---------------|---|----------------|-------------------------|---------------|--------|--------------|--------|-------------|--------|
| | | | | 2018 | | 2025 | | 2040 | |
| | Segment | | | ADT | VMT | ADT | VMT | ADT | VMT |
| 1 | US 220 between Kilarney Court and Route 58 Interchange | 0.21 | 45 | 25,300 | 5,313 | 27,400 | 5,754 | 31,900 | 6,699 |
| 2 | US 220 between Kilarney Court and Marrowbone Circle | 0.28 | 45 | 25,000 | 7,000 | 27,100 | 7,588 | 31,700 | 8,876 |
| 3 | US 220 between Marrowbone Circle and Shamrock Drive | 0.10 | 45 | 22,700 | 2,270 | 24,800 | 2,480 | 29,200 | 2,920 |
| 4 | US 220 between Shamrock Drive and Covington Lane | 0.21 | 45 | 21,000 | 4,410 | 23,000 | 4,830 | 27,300 | 5,733 |
| 5 | US 220 between Covington Lane and Steven Drive/ Drewry Mason School Road | 0.31 | 45 | 22,000 | 6,820 | 24,100 | 7,471 | 28,500 | 8,835 |
| 6 | US 220 between Steven Drive/ Drewry Mason School Road and Water Plant Road/ Mica Road | 0.36 | 45 | 19,500 | 7,020 | 21,400 | 7,704 | 25,600 | 9,216 |
| 7 | US 220 between Water Plant Road/ Mica Road and Soaptone Road/ Main Street | 0.92 | 55 | 18,000 | 16,560 | 19,700 | 18,124 | 23,400 | 21,528 |
| 8 | US 220 between Soaptone Road/ Main Street and Morehead Avenue | 0.60 | 55 | 15,600 | 9,360 | 17,500 | 10,500 | 21,400 | 12,840 |
| 9 | US 220 between Morehead Avenue and Lee Ford Camp Road/ Church Street | 0.69 | 55 | 10,000 | 6,900 | 11,300 | 7,797 | 14,700 | 10,143 |
| 10 | US 220 between Stone View Road/ Old Sand Road and Route 58 Interchange | 0.33 | 45 | 17,200 | 5,676 | 18,000 | 5,940 | 19,300 | 6,369 |
| 11 | Route 58 between US 220 and Old Sand Road | 0.12 | 65 | 12,900 | 1,548 | 13,900 | 1,668 | 16,300 | 1,956 |
| 12 | Morehead Road between US 220 and Church Street/ Main Street | 0.25 | 35 | 6,100 | 1,525 | 6,700 | 1,675 | 6,300 | 1,575 |
| 13 | US 220 between Lee Ford Camp Road/ Church Street and White House Road | 1.02 | 55 | 11,900 | 12,138 | 13,300 | 13,566 | 17,200 | 17,544 |
| 14 | Route 58 between US 220 and Fisher Farm Road | 0.74 | 65 | 16,900 | 12,506 | 18,000 | 13,320 | 20,000 | 14,800 |
| Totals | | | | 99,046 | | 108,417 | | 129,034 | |