Interstate 85 Widening Traffic Analysis Report, MM 96-106, Cherokee County

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South Carolina Department of Transportation

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EXECUTIVE SUMMARY

This report summarizes traffic analyses performed for widening Interstate 85 from two to three lanes in each direction between approximately mile markers 96 and 106.

The analysis includes the existing interchanges at Exits 100, 102, 104, and 106, as well as Exit 98 (an existing northbound exit ramp).

The analysis also includes the existing interchanges at Exits 96 and (NC) 2, which are the next full interchanges adjacent to the modified interchanges at Exits 100 and 106. The interchange at Exit 96 is to be modified in another project. Exit 2 has been included as it is the closest existing intersection north of Exit 106 on I-85.

The study includes the existing northbound off-ramp at Exit 98 and the northbound on-ramp from Gaffney Ferry Road (located north of Exit 96), which are to be eliminated as part of the widening project. The northbound on-ramp from Gaffney Ferry Road, which is expected to be eliminated in a separate widening project, was also included to assess the effects of its elimination on traffic at Exits 96 and 100.

The additional capacity provided by the construction of a third lane in each direction along I-85 will result in LOS results comparable to those experienced under existing conditions. The 2040 Build analysis results indicate that all freeway segments are predicted to operate at LOS B or C during the morning peak hour. During the afternoon peak hour, all freeway segments are projected to operate at LOS C.

The interchanges at Exits 100, 102, 104 and 106 are expected to be modified to improve their operation, geometry, and enhance safety. The analysis of the operation of potential improvement alternatives (Exit 100 – four build alternatives, Exit 102 – two build alternatives, Exit 104 – four build alternatives and Exit 106 – three Build Alternatives) on the ramp termini and adjacent intersections at these interchanges are included in this analysis.

The final build alternative network was identified based on the preferred alternative improvements selected for each interchange. Though traffic operations were a consideration in the evaluation of alternatives, other factors, such as construction costs, business and residential relocations, and environmental impacts were used to identify the preferred alternatives. The preferred alternatives for the interchange improvements are:

- Exit 100: Alternative 4
- Exit 102: Alternative 1
- Exit 104: Alternative 4
- Exit 106: Alternative 3

I. INTRODUCTION

Interstate 85 (I-85) provides a major travel corridor running north-south between Virginia and Alabama. The increasingly busy trucking corridor connects the upstate of South Carolina with the metropolitan areas of Charlotte, North Carolina to the north and Atlanta, Georgia to the south. In addition to serving as a major route between urban areas, the I-85 study area in Cherokee County serves other specific needs, including:

- Daily commuting routes for intra- and interstate travelers;
- Access to Automated Distribution Systems and Cherokee Speedway at Exit 96;
- Access to Blacksburg Aggregate Quarry and Flying J Travel Plaza at Exit 102;
- Access to South Carolina Welcome Center and Rest Area at MM 103 Southbound;
- Access to Atlas Industrial Park, Love's Truck Stop and Shelton Fireworks at Exit 104;
- Access to Wilco Hess Truck Stop and North Carolina State Line at Exit 106

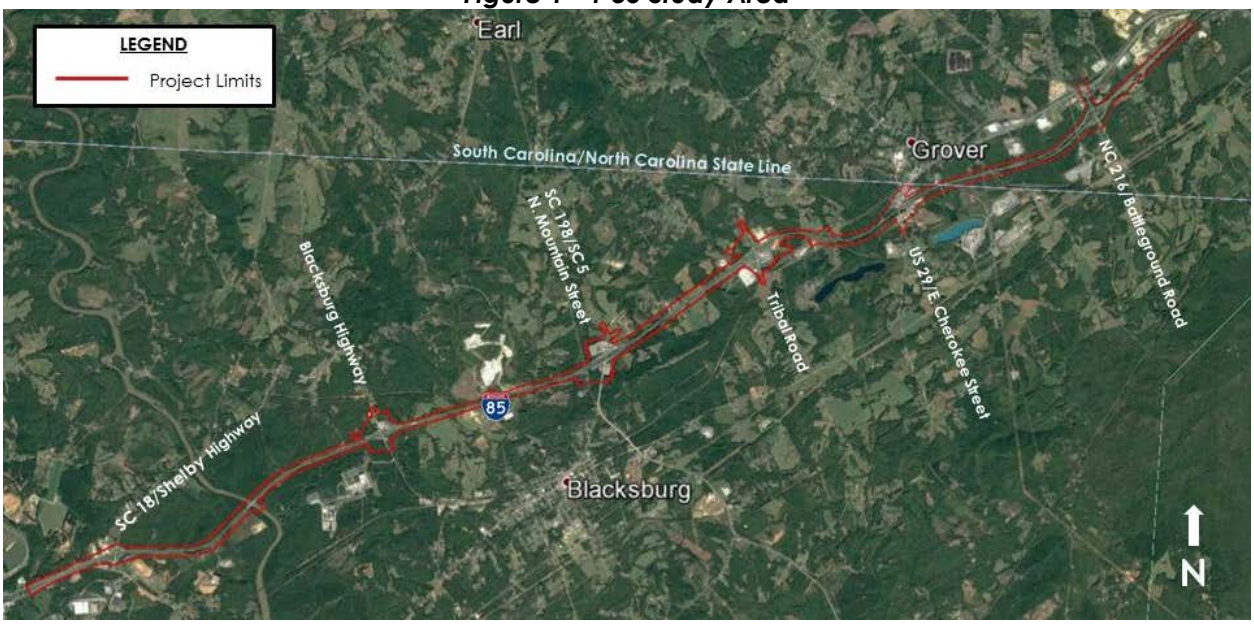
The South Carolina Department of Transportation (SCDOT) proposes multiple improvements to the I-85 corridor designed to increase capacity, upgrade interchanges to meet design requirements, and replace overpass bridges for improved interchange geometry and expanded vertical clearance. Specifically, SCDOT proposes widening I-85 from four to six lanes from the Broad River Bridge, 1.5 miles north of Exit 96 – Shelby Highway, to the southernmost ramps at Exit 106 – E. Cherokee Street. The new outside lane in the northbound direction will serve as an exit only lane at Exit 106. The southbound on-ramp lane at Exit 106 will merge with I-85 becoming the third lane in the southbound direction. Along the approximately 10 mile study area located in Cherokee County interchanges at Exit 100 – Blacksburg Highway, Exit 102 – N. Mountain Street, Exit 104 – Tribal Road, and Exit 106 – E. Cherokee Street will be reconfigured to improve traffic flow and correct any compliance issues that exist. The overpass bridges at Exit 100 – Blacksburg Highway, Exit 102 – N. Mountain Street, Exit 104 – Tribal Road, and Exit 106 – E. Cherokee Street will be replaced by ones with improved alignment for the new interchange geometry.

This report summarizes the result of the traffic analysis performed for a study area consisting of Interstate 85 between approximately mile marker 96 and Exit 106. The study area includes the existing interchanges located at Exits 96, 100, 102, 104, and 106. To provide sufficient coverage for addressing modification to interstate access, the analysis also includes the existing interchange at Exit 2 in North Carolina, as well as the northbound on-ramp from Gaffney Ferry Road (located of Exit 96) and the off-ramp to Frontage Road (designated as Exit 98). The study area location is shown in **Figure 1**.

Interchange improvements are anticipated to be required to upgrade existing interchanges at Exits 100, 102, 104, and 106. No improvements are anticipated at Exit 96 under this contract. Exit 2, located north of Exit 106, is under the jurisdiction of NCDOT and will not be modified under this contract. The on-ramp from Gaffney Ferry Road will be addressed in another project. The single exit ramp at Exit 98 will be removed as part of this project, rerouting the traffic to Exit 100 – Blacksburg Highway.

The traffic analysis also includes ramp termini intersections with arterial roadways at the interchanges along with analysis of adjacent intersections influenced by existing interchange operations that may be affected by modifications to the interchanges.

Figure 1 – I-85 Study Area



II. FREEWAY DESCRIPTION

I-85 is a north-south interstate highway that begins at I-65 in Montgomery, Alabama. From this origin, I-85 runs generally to northeast through Alabama, Georgia, South Carolina, North Carolina and Virginia, where it ends south of Richmond at I-95 in Petersburg, Virginia.

Along its nearly 670 mile length, I-85 provides access to Montgomery, Alabama; Atlanta, Georgia; Greenville and Spartanburg, South Carolina; Charlotte, Greensboro, and Durham, North Carolina; and Petersburg, Virginia.

In South Carolina, I-85 covers approximately 106 miles, and provides connections to I-385 outside of Greenville and I-26 outside of Spartanburg. Within the study area, I-85 crosses a portion of Cherokee County, and provides access to the towns of East Gaffney and Blacksburg.

Number of Lanes

Throughout the study area, I-85 currently provides two lanes in each direction.

Posted Speed Limit

The posted speed limit throughout the I-85 study area is 65 miles per hour.

Grades

In general, interstate routes can be characterized as having level, rolling, or mountainous terrain. Within the study area along I-85, the interstate grades fluctuate between a maximum -4.70 percent down grade to a maximum 5.04 percent upgrade. Based on these grades, the portion of I-85 within the study area can be characterized as having a *rolling terrain*.

Rest Areas

An existing Rest Area is located in the southbound direction on I-85 at approximately mile marker 103. The Rest Area also currently serves as the South Carolina Welcome Center and is open to the public. The general location of the Rest Area/South Carolina Welcome Center is shown in **Figure 2**. The exit to the Rest Area/South Carolina Welcome Center has a posted advisory speed limit of 35 miles per hour at the end of a 285 foot long deceleration lane. The entrance onto southbound I-85 from this location includes an acceleration lane of approximately 830 feet.

Figure 2 – Existing Rest Areas

Frontage Road System

A parallel frontage road system is present at portions of both sides of I-85 throughout the study area. Illustrations of the extent of the I-85 frontage road system within the project limits are shown in **Figure 3** through **Figure 7**.

<u>Northbound Frontage Road System</u>

South of Exit 96, Shelby Highway (SC 18) runs parallel to northbound I-85 for one mile up to Exit 96. North of Exit 96, a frontage road (named Frontage Road) begins from the terminus of Wind Hill Road (S-11-663) and runs parallel to northbound I-85 for approximately 0.9 miles. At this point, the slip on-ramp from Gaffney Ferry Road (S-11-49) intersects I-85 northbound. For 0.6 miles before the crossing of the Broad River, no frontage road is present. North of the bridge over the Broad River, Frontage Road again begins running parallel to northbound I-85. Approximately 0.2 miles north along this portion of I-85 is the location of the Exit 98 off-ramp to the Frontage Road. The Frontage Road extends for a total of about 1.5 miles along northbound I-85 to Exit 100. Henson Road (S-11-352) runs parallel to I-85 northbound for about 1.2 miles, intersecting the I-85 northbound off-ramp at Exit 102. North of Exit 102, Gibbons Road (S-11-657) runs parallel to northbound I-85 for about 1.2 miles up to Exit 104. At Exit 106, Mill Creek Road (S-11-658) begins at

East Cherokee Street (US 29) and runs parallel to I-85 northbound for approximately 0.6 miles before bending south towards Antioch Rd (S-11-21).

Southbound Frontage Road System

At Exit 104, White Farm Road (S-11-73) begins at Holly Grove Road (S-11-52) and runs parallel to I-85 southbound for about 0.75 miles. At Exit 102, Rock Springs Road (S-11-213) runs parallel to I-85 southbound from its terminus on the I-85 southbound on-ramp for approximately 0.5 miles before intersecting Shaman Road (S-11-667). Shaman Road (S-11-667) runs parallel to I-85 from this location for an additional 0.6 miles before terminating at the quarry entrance. Beginning approximately 0.2 miles south of the Exit 100 southbound on-ramp, Orlando Drive runs parallel to southbound I-85 for approximately 0.5 miles before ending in a cul de sac. No frontage road is present next to southbound I-85 for the next 1.9 miles, where Wilcox Avenue (S-11-668) begins. Wilcox Avenue runs parallel to southbound I-85 for approximately 0.3 miles before the southbound off-ramp to Exit 96 begins. South of Exit 96, Wilcox Avenue runs parallel to southbound I-85 for about 1.3 miles to Exit 95.

Figure 3 – Frontage Road Locations: Exit 96

Figure 4 – Frontage Road Locations: Exit 100

Figure 5 – Frontage Road Locations: Exit 102

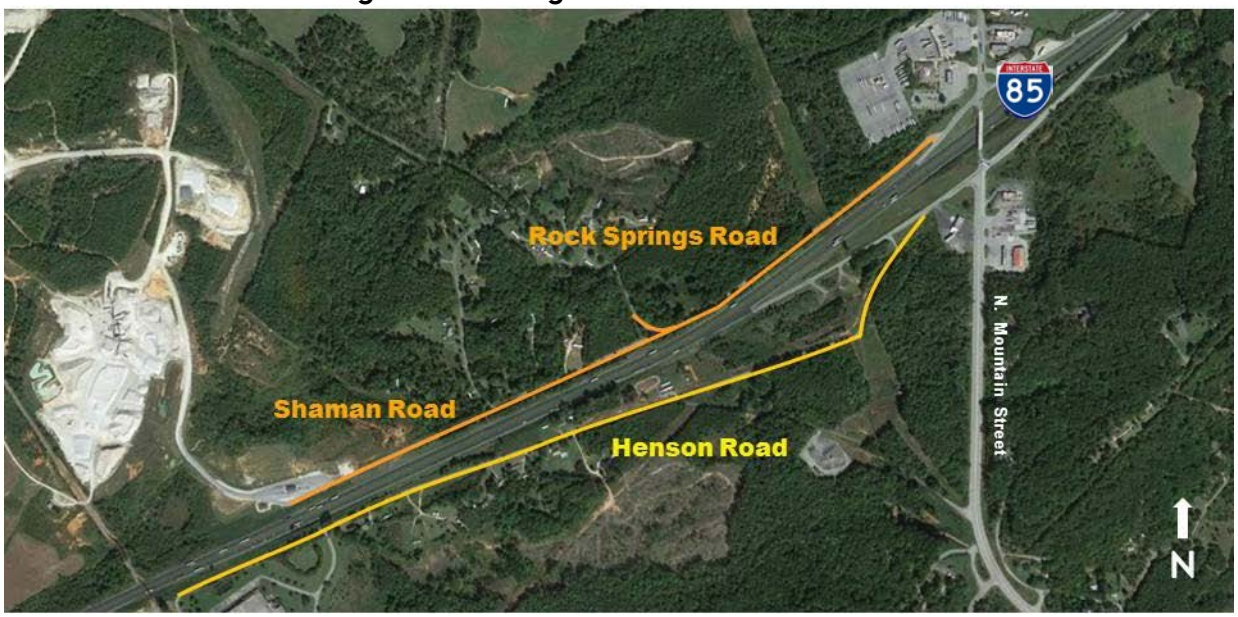


Figure 6 – Frontage Road Locations: Exit 104

Figure 7 – Frontage Road Locations: Exit 106

III. INTERCHANGES

The following interchanges are present within the study area along I-85 or are the next immediate full interchange adjacent to those proposed for modification as part of this project.

- Exit 96 – Shelby Highway (SC 18)
- Gaffney Ferry Road Slip On-Ramp (S-11-49) – northbound on-ramp only
- Exit 98 – Frontage Road Off-Ramp – northbound off-ramp only
- Exit 100 – Blacksburg Highway (S-11-83)
- Exit 102 – N. Mountain Street (SC 5/SC 198)
- South Carolina Welcome Center/Rest Area – southbound ramps only
- Exit 104 – Tribal Road (S-99)
- Exit 106 – E. Cherokee Street (US 29)
- Exit 2 – Battleground Road (NC 216)

The interchanges within the study have some on and off-ramps with indirect access to the designated cross-streets. Cross-streets are accessed from off-ramps via local roads that intersect the ramp terminus and extend to the cross-street. Traffic wishing to access I-85 from the cross-streets at these locations must access the ramp via a local road separating the cross-street and the on-ramp terminus.

At Exit 96, the northbound on and off-ramps directly intersect Shelby Highway. The southbound on and off-ramps intersect Wilcox Avenue. Wilcox Avenue connects to Shelby Highway north of I-85.

At Exit 100, the northbound off-ramp intersects Frontage Road/Milliken Road. These roads connect to Blacksburg Highway. The northbound on-ramp directly intersects Blacksburg Highway. The southbound off-ramp transitions into Simper Road prior to connecting to Blacksburg Highway. The southbound on-ramp is reached from Blacksburg Highway via Crawford Road.

At Exit 102, the northbound off-ramp intersects Henson road, which connects to N. Mountain Street. The northbound on-ramp connects directly to N. Mountain Street. The southbound off-ramp connects directly to N. Mountain Street. Traffic from N. Mountain Street to the southbound on-ramp must use Rock Springs Road.

At Exit 104, the northbound off-ramp directly intersects with Tribal Road. The northbound on-ramp is accessed via Priester Road. The southbound off-ramp is directly connected to Tribal Road. The southbound on-ramp is reached from Tribal Road via Holly Grove Road.

At Exit 106, the northbound off-ramp loop intersects directly with E. Cherokee Street. Traffic from E. Cherokee Street to the northbound on-ramp must use Mill Creek Road. The southbound on and off-ramps are directly connected to E. Cherokee Street and their respective intersections.

At Exit 2 (which is the next full interchange adjacent to the potentially modified Exit 106) the northbound off-ramp intersects Banks Road before connecting to Battleground Road. The northbound on-ramp connects directly to Battleground Road. The southbound on and off-ramps connect directly to Battleground Road.

At the existing interchanges located at Exits 96, 100, 102, 104, and 106, driver expectation is violated by ramps either immediately intersecting or entering two-way roadways that continue to the roadways crossing the interstate. In addition to potentially confusing drivers who are confronted by on-coming traffic at these locations, the short two way ramps can also lead unsuspecting drivers to travel the wrong way onto the off-ramp and enter on-coming freeway traffic.

The following are detailed descriptions of the individual interchanges, including information about ramp lengths, acceleration/deceleration lane lengths, distance between ramps, ramp termini and their traffic control, the intersecting arterial roadways, and existing adjacent intersections. The acceleration/deceleration lanes were measured from the painted gore point of the ramp to the end of the taper. Parallel lengths are measured as the length of the acceleration/deceleration lane prior to tapering to a width less than 12 feet.

Exit 96 – Shelby Highway (SC 18)

The Shelby Highway interchange is a diamond oriented interchange. The southbound on and off-ramps are intersected by surface roads between the cross-street and I-85. In the northbound and southbound directions the exit is signed with the SC 18 state highway shield and the text "Shelby". This interchange is expected to be modified in another project.

The northbound off-ramp is approximately 925 feet long with a tapered deceleration lane approximately 695 feet long. The off-ramp has no posted advisor speed limit, and provides a single lane for the turning movements at the Shelby Highway intersection. The northbound off-ramp turning movements are controlled by a stop sign.

The northbound on-ramp is a single lane ramp approximately 865 feet long that merges into I-85 with a 495 foot long acceleration lane (with a parallel length of approximately 315 feet). The ramp begins with separate lanes accepting the southbound left turn and the northbound channelized right turn traffic from Shelby Highway. These movements are separated by a grass island. The right turning movement is controlled by a yield sign.

The northbound off-ramp and on-ramps are separated by approximately 1,690 feet.

The southbound off-ramp is approximately 600 feet long. The single lane ramp has a posted advisory speed limit of 35 miles per hour and leaves I-85 with a 295 foot tapered deceleration lane. The ramp is intersected by Wilcox Avenue prior to reaching Shelby Highway. The southbound off-ramp left and right turn movements are controlled by a stop sign.

The southbound on-ramp is a two-way road intersected by Wilcox Avenue (S-11-668) prior to merging into I-85. The ramp traffic onto I-85 is controlled by a yield sign at the Wilcox Avenue(S-11-668) intersection. The ramp beyond Wilcox Avenue is approximately 260 feet long and merges into I-85 with a 365 foot acceleration lane. The distance between the southbound on and off-ramps is approximately 1,325 feet.

Figure 8 – Exit 96: Existing Interchange Configuration

<u>Shelby Highway</u>

Shelby Highway (SC 18) is a two lane undivided minor arterial highway with a posted speed limit of 45 miles per hour in the vicinity of the interchange. The Shelby Highway bridge crossing I-85 is two lanes wide. At the northbound ramp intersection, a southbound left turn lane provides approximately 200 feet of vehicle storage and a channelized right turn provides access to the on-ramp. The right turn movement onto the on-ramp is signed to yield to traffic turning left from southbound Shelby Highway.

At the southbound ramp intersection, neither a separate northbound left turn nor southbound right turn lane is provided on Shelby Highway for traffic entering the southbound on-ramp. South of the southbound on and off-ramp intersection, Shelby Highway extends west and continues for approximately 1,200 feet before running parallel to I-85 through the Pleasant School Road Interchange.

Victory Trail Road

Victory Trail Road (S-11-329) is a two lane undivided major collector south of I-85 with a posted speed limit of 45 miles per hour. From its western terminus at Shelby Highway, Victory Trail Road (S-11-329) runs generally southeast towards US 29.

Wind Hill Road

Wind Hill Road (S-11-663) is a local two lane undivided paved secondary roadway with a posted speed limit of 45 miles per hour. From its southern terminus at Victory Trail Road, Wind Hill Road runs parallel to Shelby Highway, following the curvature of the northbound on-ramp and then runs east parallel to I-85 as Frontage Road beyond the Wind Hill Road intersection with Speedway Road. The eastern terminus of Wind Hill Road/frontage Road is Gaffney Ferry Road (S-11-49).

Wilcox Avenue

Wilcox Avenue (S-11-668) is a two lane undivided secondary paved roadway intersecting with Shelby Highway, the adjacent I-85 southbound on and off-ramps, and Lemuel Road. The posted speed limit is 45 miles per hour and runs east-west parallel to I-85. Wilcox Avenue intersects the southbound on-ramp approximately 650 feet west of Shelby Highway. The unconventional through movement is stop controlled and the oncoming on-ramp traffic is controlled by a yield sign. Wilcox Avenue (S-11-668) intersects the I-85 southbound off-ramp approximately 200 feet east of Shelby Highway. The eastbound and westbound unconventional through movements at this location are yield controlled, whereas the oncoming I-85 off-ramp traffic is free flowing through the intersection.

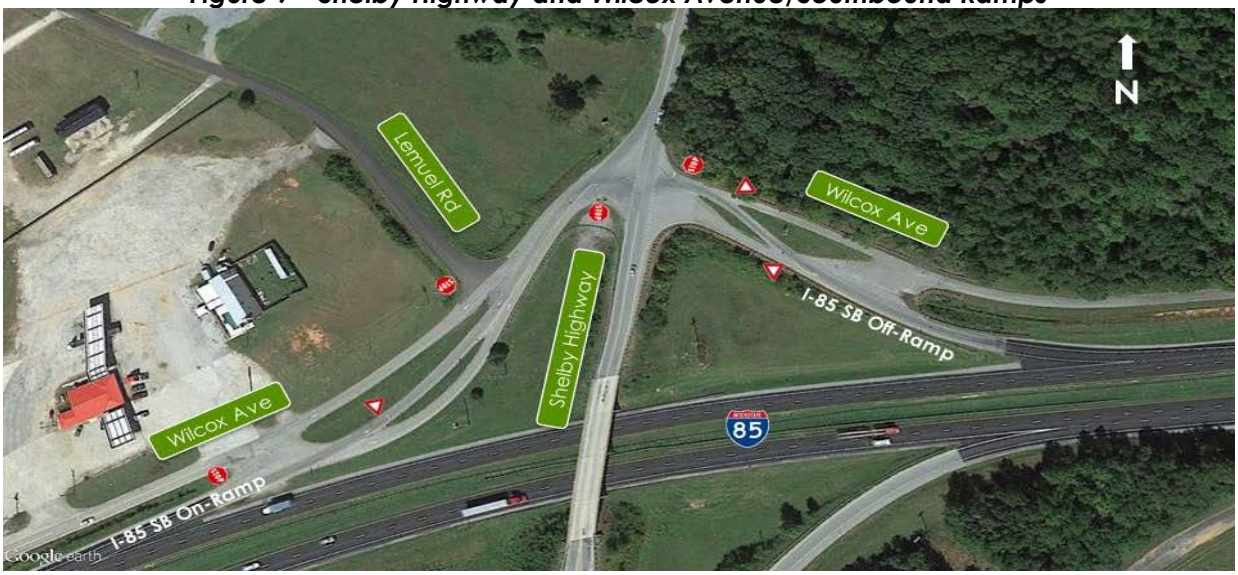
Adjacent Intersections

Three intersections are located in the vicinity of the interchange. The intersection of Shelby Highway (SC 18) with Victory Trail Road (S-11-329) is located approximately 500 feet south of the northbound off-ramp intersection. The intersection of Victory Trail Road (S-11-329) and Wind Hill Road (S-11-663) is located 380 feet east of the Victory Trail Road/Shelby Highway intersection. The intersection of Wilcox Avenue (S-11-668)/Shelby Highway on-ramp to I-85 and Lemuel Road is located 270 feet west of the Shelby Highway and I-85 southbound ramps intersection.

Wilcox Avenue/Shelby Highway on-ramp to I-85 and Lemuel Road

The intersection of Wilcox Avenue/Shelby Highway on-ramp to I-85 and Lemuel Road is an unsignalized intersection with the Lemuel Road approach controlled by a stop sign. The southeastern Lemuel Road approach is a single lane serving both the right turn movement onto Wilcox Avenue westbound. The southbound approach lane serves as the I-85 on-ramp and diverges to the right at Lemuel Road becoming Wilcox Avenue westbound. The northbound approach lane serves as Wilcox Avenue eastbound to Shelby Highway. It is paralleled by the I-85 on-ramp. The intersection of Shelby Highway/Wilcox Avenue/Southbound Ramps is shown in **Figure 9**.

Figure 9 – Shelby Highway and Wilcox Avenue/Southbound Ramps



Shelby Highway and Victory Trail Road

The intersection of Shelby Highway (SC 18) and Victory Trail Road (S-11-329) is an unsignalized T-intersection with the Shelby Highway approach controlled by a stop sign. The Shelby Highway southbound approach has a separate left turn lane that provides 330 feet of storage. The westbound Victory Trail Road (S-11-329) approach provides a channelized yield controlled right turn lane. The eastbound Shelby Highway approach provides a separate left turn lane that provides about 470 feet of vehicle storage. The eastbound and westbound through movements are free flowing. The intersection of Shelby Highway/Victory Trail Road is shown in **Figure 10**.

Victory Trail Road and Wind Hill Road

The intersection of Victory Trail Road (S-329) and Wind Hill Road (S-663) is an unsignalized T-intersection with the Wind Hill Drive approach controlled by a stop sign. The southbound Wind Hill Road approach provides a single lane to serve the right and left turn movements onto Victory Trail Road. The Victory Trail Road westbound approach has two lanes. The left lane serves only through traffic and the right operates as a shared through-right turn lane for traffic wishing to access Wind Hill Road. The eastbound Victory Trail Road approach has a separate left turn lane that provides 265 feet of vehicle storage. The eastbound and westbound through movements are free flowing. The intersection of Victory Trail Road/Wind Hill Road is shown in **Figure 10**.

Figure 10 – Victory Trail Road at Shelby Highway and Wind Hill Road

Exit 100 – Blacksburg Highway (S-83)

The Blacksburg Highway interchange is a diamond oriented interchange. The exit is signed with the text "Blacksburg Hwy" and "Blacksburg" in northbound direction, and the southbound signage is represented by the text "Blacksburg Hwy" and "Shelby" on I-85.

The northbound off-ramp diverges from northbound I-85 with a 345 foot long deceleration lane. The off-ramp is approximately 515 feet long and terminates at the Milliken Road/Frontage Road intersection. The off-ramp has a 25 mile per hour advisory speed limit. To reach Blacksburg Highway, traffic exiting on the off-ramp must cross Milliken Road onto Frontage Road.

The northbound on-ramp is a single lane ramp that intersects directly with Blacksburg Highway. The length of the ramp measures 870 feet to the painted gore point. The ramp merges into I-85 with a 1,085 foot acceleration lane (with a parallel length of approximately 470 feet).

The northbound off-ramp and on-ramp are separated by approximately 1,490 feet on I-85.

The southbound off-ramp length from the diverging gore point to Simper Road is approximately 650 feet. The single lane off-ramp has a posted advisory speed limit of 45 miles per hour. It diverges from southbound I-85 with a 160 foot deceleration lane. To reach Blacksburg Highway, traffic exiting the off-ramp must use Simper Road.

The southbound on-ramp begins at Crawford Road approximately 680 feet west of the Blacksburg Highway and Simper Road intersection. The distance of the point where the ramp begins to the painted gore point is 330 feet. The ramp merges into I-85 southbound with a 1,410 foot acceleration lane (with a parallel length of approximately 865 feet). Traffic wanting to enter I-85 southbound from Blacksburg Highway must travel west on Crawford Road and continue through the intersection where Crawford Road bends to the north before continuing west onto the interstate.

The southbound off-ramp and on-ramp are separated by approximately 2,560 feet on I-85.

Figure 11 – Exit 100: Existing Interchange Configuration

Blacksburg Highway

Blacksburg Highway is a two lane undivided major collector highway with a posted speed limit of 35 miles per hour in the vicinity of the interchange. The Blacksburg Highway bridge crossing I-85 is two lanes wide. Neither the northbound or southbound ramp intersection has a separate left or right turn lane providing vehicle storage for the turning movements.

Adjacent Intersections

Seven intersections are located in the vicinity of the interchange. The I-85 southbound off-ramp/Simper Road is intersected by 5 driveways before terminating at Blacksburg Highway. The intersection of Crawford Road and the I-85 Southbound on-ramp is located approximately 640 feet west of the southbound ramp intersection. The I-85 Northbound off-ramp is intersected by Milliken/Frontage Road approximately 180 from its terminus at Blacksburg Highway. A service station has two driveways along Blacksburg Highway, located 140 feet and 340 feet north of the southbound ramp intersection.

Blacksburg Highway on-ramp to I-85 Southbound and Crawford Road

The intersection of I-85 southbound on-ramp and Crawford Road is an unorthodox yield controlled T-intersection. The on-ramp approach to the intersection provides two lanes for opposing traffic for approximately 640 feet between Blacksburg Highway and Crawford Road. The eastbound approach of Crawford Road provides a yield controlled left turn and a channelized yield controlled right turn for traffic traveling to I-85 Southbound. The I-85 southbound on-ramp/Crawford Road intersection is shown in **Figure 12**.

Figure 12 – Crawford Road I-85 Southbound On-Ramp from Blacksburg Highway

Blacksburg Highway and Service Station Driveway 1

The intersection of Blacksburg Highway and the first service station driveway is an unsignalized T-intersection located approximately 140 feet north of the southbound ramp intersection. The westbound approach from the service station has no signage, but gives the right-of-way to the two-way traffic traveling on Blacksburg Highway. Each Blacksburg Highway approach provides a single shared through-turn lane allowing access to the service station. The Blacksburg Highway/Service Station Driveway 1 intersection is shown in **Figure 13**.

Blacksburg Highway and Service Station Driveway 2

The intersection of Blacksburg Highway and the second service station driveway is an unsignalized T-intersection located approximately 340 feet north of the southbound ramp intersection and 200 feet north of the first service station driveway. The westbound approach from the service station has no signage, but gives the right-of-way to the two-way traffic traveling on Blacksburg Highway. Each Blacksburg Highway approach provides a single shared through-turn lane allowing access to the service station. The Blacksburg Highway/Service Station Driveway 2 intersection is shown in **Figure 13**.

I-85 Southbound off-ramp/Simper Road to Blacksburg Highway and Retail Store

The intersection of I-85 southbound off-ramp/Simper Road and the retail store is an unsignalized T-intersection located approximately 700 feet from the western terminus of Simper Road at Blacksburg Highway. The retail store approach to the intersection is not sign controlled and gives the right-of-way to traffic traveling along Simper Road. Simper Road provides a single left turn lane in the eastbound direction and a single through-right turn lane from the westbound approach. The Simper Road/Retail Store driveway intersection is shown in **Figure 13**.

I-85 Southbound off-ramp/Simper Road to Blacksburg Highway and Service Station Driveway 1

The intersection of I-85 southbound off-ramp/Simper Road and the first service station driveway is an unsignalized T-intersection located approximately 315 feet from the western terminus of Simper Road at Blacksburg Highway. The service station approach to the intersection is not sign controlled and gives the right-of-way to traffic traveling along Simper Road. Simper Road provides a single through-left turn lane in the eastbound direction and a single through-right turn lane from the westbound approach. The Simper Road/Service Station driveway 1 intersection is shown in **Figure 13.**

I-85 Southbound off-ramp/Simper Road to Blacksburg Highway and Service Station Driveway 2

The intersection of I-85 southbound off-ramp/Simper Road and the second service station driveway is an unsignalized T-intersection located approximately 130 feet from the western terminus of Simper Road at Blacksburg Highway. The service station approach to the intersection is not sign controlled and gives the right-of-way to traffic traveling along Simper Road. Simper Road provides a single through-left turn lane in the eastbound direction and a single through-right turn lane from the westbound approach. The Simper Road/Service Station driveway 2 intersection is shown in **Figure 13.**

Figure 13 – Service Station/Retail Store Driveways at Blacksburg Highway and Simper Road

I-85 Northbound off-ramp to Blacksburg Highway and Milliken/Frontage Road

The intersection of the I-85 northbound off-ramp and Milliken/Frontage Road is an unsignalized intersection 180 feet west of the northbound ramp intersection. The eastbound Milliken/Frontage Road approach is yield controlled, giving right-of-way to traffic exiting I-85 Northbound. The I-85 northbound off-ramp/Milliken Road intersection is shown in **Figure 14**.

Figure 14 – Milliken Road at I-85 Northbound Off-Ramp to Blacksburg Highway

Exit 102 – N. Mountain Street (SC 198/SC 5)

The N. Mountain Street interchange is a diamond oriented interchange. Three of the four access ramps are intersected by surface roads and/or business driveways. The exit is signed in the northbound direction with the SC 5 and SC 198 state highway shields and the text "Blacksburg" and "Rock Hill." The exit is signed in the southbound direction with the text "Earl" and "York." The existing interchange configuration at Exit 102 is shown in **Figure 15**.

The northbound off-ramp is approximately 1,660 feet long and transitions from a single lane to a two-way road 680 feet beyond the painted gore point. This ramp has a posted advisory speed limit of 45 miles per hour. Henson Road intersects the northbound off-ramp approximately 400 feet from the N. Mountain Street/I-85 northbound off-ramp intersection. Adjacent to the Henson Road intersection immediately west is an access driveway to the BP Service Station. The off-ramp transitions into a separate 200 foot storage lane for the yield controlled channelized right turn movement onto N. Mountain Street. The through and left turn movements from this approach are controlled by a traffic signal.

The northbound on-ramp is approximately 1,830 feet long and transitions from a two lane to a single lane ramp 420 feet from its terminus at N. Mountain Street. The ramp merges onto I-85 with a 1380 foot long acceleration lane (with a parallel length of approximately 625 feet).

The southbound off-ramp is approximately 1,395 feet long, diverging from I-85 with a 470 foot deceleration lane (with a parallel length of approximately 120 feet). The off-ramp ties into a two-way road 660 feet beyond the painted gore point. Approximately 90 feet beyond the two-way tie-in is a truck parking area positioned off the right shoulder of the ramp. Approximately 115 feet before the N. Mountain Street intersection is an access driveway for the Waffle House restaurant. The off-ramp is signed with a 40 mile per hour advisory speed limit. The turning movements onto N. Mountain Street for this ramp approach are controlled by a traffic signal.

The southbound on-ramp begins as a tie in to Rock Springs Road 415 feet west of the eastern terminus at N. Mountain Street. The single lane on-ramp is approximately 385 feet long from the Rock Springs Road tie in to the painted gore point. The on-ramp merges into I-85 with a 660 foot acceleration lane (with a parallel length of approximately 490 feet).

Figure 15 – Exit 102: Existing Interchange Configuration

N. Mountain Street

N. Mountain Street (SC 195/SC 5) is a three lane major collector north of I-85 divided by a center left turn median that transitions to a two lane undivided major collector north of the White Farm Road intersection. The N. Mountain Street bridge that crosses I-85 is two lanes wide. The posted speed limit is 35 miles per hour.

Holly Grove Road

Holly Grove Road (S-11-52) is a local two lane undivided paved secondary road intersecting N. Mountain Street. The posted speed limit is 45 mph.

White Farm Road

White Farm Road (S-11-73) is a local two lane undivided paved secondary road intersecting N. Mountain Street. The posted speed limit is 45.

Henson Road

Henson Road (S-11-352) is a local two lane undivided paved secondary road accessible via the I-85 Northbound off-ramp in the N. Mountain Street interchange. The posted speed limit is 45 mph.

Rock Springs Road

Rock Springs Road is a local two lane undivided paved secondary road accessible via the I-85 Southbound on-ramp in the N. Mountain Street interchange.

Adjacent Intersections

Seven intersections are located in the vicinity of the interchange. The intersection of Rock Springs Road and the I-85 southbound on-ramp is located approximately 340 feet west of the southbound ramp intersection. The intersection of N. Mountain Street and the McDonald's/Flying J Travel Plaza (truck access) driveways are located approximately 325 feet north of the southbound ramp intersection. The intersection of N. Mountain Street and the Waffle House/Flying J Travel Plaza driveways are located approximately 140 feet north of the southbound ramp intersection. The intersection of N. Mountain Street and the service station driveways south of I-85 are located approximately 515 feet from the northbound ramp intersection. The truck pull-off area adjacent to the I-85 southbound off-ramp is located approximately 500 from the western terminus of the I-85 southbound ramp at N. Mountain Street. The intersection of the I-85 southbound off-ramp and the Waffle House driveway is located approximately 115 feet east of the southbound ramp intersection. The intersection of the I-85 northbound off-ramp and Henson Road is approximately 480 feet from the eastern terminus of the I-85 northbound off-ramp at N. Mountain Street.

N. Mountain Street on-ramp to I-85 southbound and Rock Springs Road

The intersection of Rock Springs Road and the I-85 southbound on-ramp is an unsignalized T-intersection with a stop control on the Rock Springs Road approach. The southbound approach of the on-ramp consists of a single shared through-right turn lane. The Rock Springs road approach consists of a single left-right turn lane. The I-85 southbound on-ramp/Rock Springs Road intersection is shown in **Figure 16.**

Figure 16 – Rock Springs Road at I-85 Southbound On-Ramp from N. Mountain Street

N. Mountain Street & Restaurant/Service Station Driveways (2)

The intersection of N. Mountain Street and the Waffle House/Flying J Travel Center driveways is an unsignalized intersection with right-of-way given to N. Mountain Street traffic. The southbound N. Mountain Street approach provides a through lane, a shared through-right turn lane and a center left turn lane. The northbound N. Mountain Street approach provides a shared through-right turn lane and a center left turn lane. The N. Mountain Street/Waffle House/Flying J driveway intersection is shown in **Figure 17**.

N. Mountain Street & Service Station Driveways (4)

The intersection of N. Mountain Street and The McDonald's/Flying J Travel Center (truck access) driveways is an unsignalized intersection with right-of-way given to the N. Mountain Street traffic. The southbound N. Mountain Street approach provides a through lane, a shared through-right turn lane and a center left turn lane. The northbound N. Mountain Street approach provides a shared through-right turn lane and a center left turn lane. The N. Mountain Street/McDonald's/ Flying J driveway intersections are shown in **Figure 17.**

I-85 southbound off-ramp to N. Mountain Street and Truck pull-off

The access point for the truck pull-off area adjacent to the I-85 southbound off-ramp spans approximately 310 feet. The westbound ramp approach is a single through lane that allows vehicles to merge off of the right shoulder to access the truck pull-off area. The I-85 southbound off-ramp/Truck pull-off area intersection is shown in **Figure 17.**

I-85 southbound off-ramp to N. Mountain Street and Restaurant Driveway

The intersection of the I-85 southbound off-ramp and the Waffle House driveway is an unsignalized T-intersection giving right-of-way to the off-ramp traffic. The westbound ramp approach is a single shared through-right turn lane that allows vehicles to access the restaurant. The I-85 southbound off-ramp/Waffle House driveway intersection is shown in **Figure 17.**

Figure 17 – Service Station/Restaurant Driveways at SC 5 and I-85 Southbound Off-Ramp

N. Mountain Street & Service Station/Retail Store Driveways (4)

The intersection of N. Mountain Street and the Service Station/Retail Store driveways is an unsignalized intersection with right-of-way given to N. Mountain Street traffic. The southbound N. Mountain Street approach provides a through lane, a shared through-right turn lane and a center left turn lane. The northbound N. Mountain Street approach provides a single through lane, a shared through-right turn lane, and a center left turn lane. The N. Mountain Street/Service Station/Retail Store driveway intersections are shown in **Figure 18.**

Figure 18 – Service Station/Retail Store Driveways at N. Mountain Street

I-85 northbound off-ramp to N. Mountain Street and Henson Road

The intersection of the I-85 northbound off-ramp and Henson Road is a Y-intersection that is yield controlled on the Henson Road approach. The eastbound off-ramp approach provides a single through lane. The westbound off-ramp approach provides a single shared through-left turn lane. The northbound Henson Road approach provides a single right turn lane. The I-85 northbound off-ramp/Henson Road intersection is shown in **Figure 19.**

Figure 19 – Henson Road at I-85 Northbound Off-Ramp to N. Mountain Street

Exit 104 – Tribal Road (S-99)

The Tribal Road interchange is a diamond oriented interchange. Two of the four access ramps are intersected by surface roads and/or business driveways.

The northbound off-ramp diverges from I-85 with an 1,140 foot long deceleration lane. The off-ramp is a single lane ramp that is approximately 665 feet long and intersects directly with Tribal Road. This ramp has a posted advisory speed limit of 25 miles per hour. The through and turning movements from this approach are controlled by a stop sign.

The northbound on-ramp is approximately 330 feet long from its tie in point at Priester Road to the painted gore point. The on-ramp is reached from Tribal Road via Priester Road. The ramp merges onto I-85 with a 1,120 foot long acceleration lane (with a parallel length of approximately 775 feet).

The northbound on and off-ramp are separated by approximately 1,120 feet on I-85.

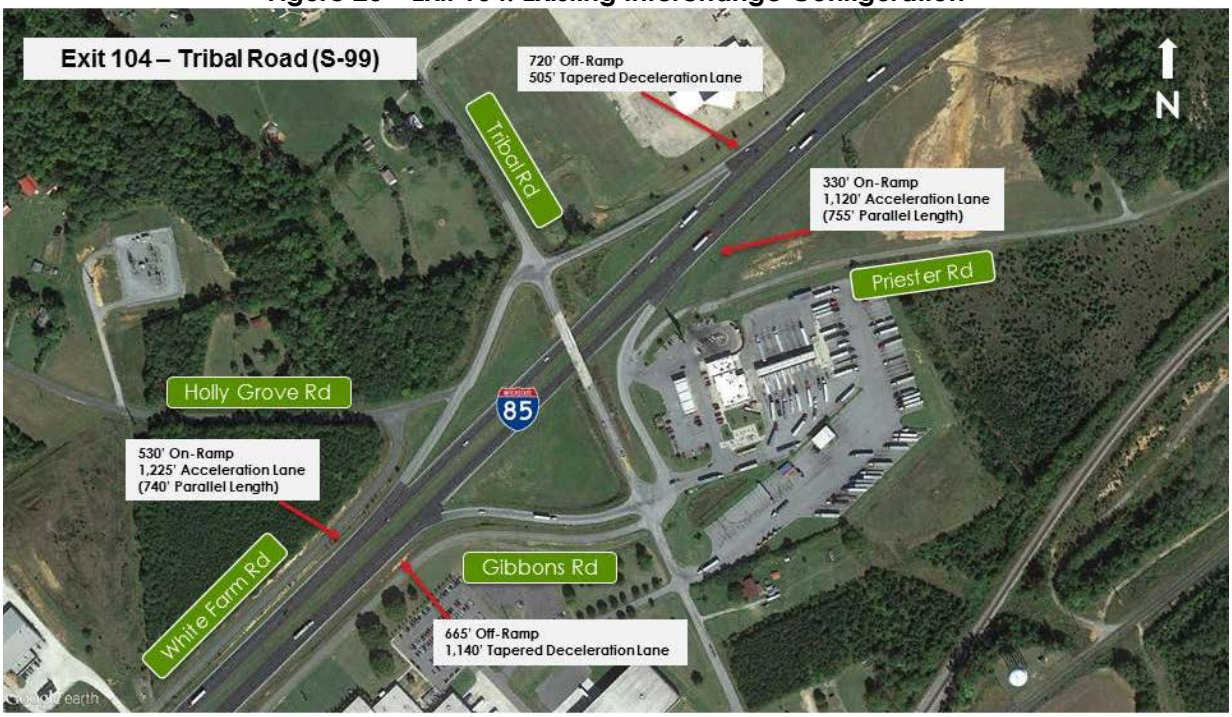
The southbound off-ramp diverges from I-85 with a 505 foot long deceleration lane. The single lane ramp is approximately 720 feet long and intersects directly with Tribal Road. This ramp has an advisory speed limit of 35 miles per hour. The through and turning movements from this approach are controlled by a stop sign.

The southbound on-ramp is approximately 530 feet long from its intersection with Holly Grove Road to the painted gore point. The southbound on-ramp merges onto I-85 with an 1,125 foot long acceleration lane (with a parallel length of 740 feet).

The southbound on and off-ramp are separated by approximately 1,645 feet on I-85.

The exit is signed in the northbound and southbound directions with the text “Tribal Road.”

Figure 20 – Exit 104: Existing Interchange Configuration



Tribal Road

Tribal Road (S-99) is a two lane undivided major collector roadway. The Tribal Road bridge crossing over I-85 is two lanes wide. The posted speed limit is 45 mph.

Priester Road

Priester Road (S-11-151) is a local two lane undivided road that connects Tribal Road and the adjacent I-85 Northbound on-ramp. There is no posted speed limit at this location.

Gibbons Road

Gibbons Road (S-11-657) is a local two lane undivided frontage road intersecting Tribal Road. There is no posted speed limit at this location.

Holly Grove Road

Holly Grove Road (S-11-52) is a local two lane undivided paved secondary road intersecting the I-85 southbound on-ramp from Tribal Road. The posted speed limit is 45 mph.

Adjacent Intersections

Five intersections are located in the vicinity of the interchange. The intersection of the I-85 southbound on-ramp and Holly Grove Road is located approximately 400 feet from the southbound ramp intersections. The intersection of White Farm Road and Holly Grove Road is located approximately 210 feet west of the I-85 southbound off-ramp intersection with Holly Grove Road. The intersection of Priester Road, Love's Travel Stop driveway and the I-85 northbound on-ramp is located approximately 440 feet from the northbound ramp intersection.

The intersection of Tribal Road and the Industrial Plant/Love's Travel Stop is located approximately 260 feet from the northbound ramp intersection. The intersection of Tribal Road and the southernmost Industrial Plant driveway is located approximately 670 feet south of the northbound ramp intersection.

Tribal Road on-ramp to I-85 southbound and Holly Grove Road

The intersection of Holly Grove Road and the I-85 southbound on-ramp is an unsignalized T-intersection with a stop controlled approach on Holly Grove Road. The eastbound approach of Holly Grove Road is a single shared right-left turn lane. The southbound approach on the southbound on-ramp is a shared single through-right turn lane. The I-85 southbound on-ramp/Holly Grove Road intersection is shown in **Figure 21.**

White Farm Road & Holly Grove Road

The intersection of White Farm road and Holly Grove Road is an unsignalized T-intersection that with a stop controlled approach on White Farm Road. The northbound approach of White Farm Road is a single shared left-right turn lane. The eastbound approach of Holly Grove Road is a shared through-right turn lane. The westbound approach of Holly Grove Road is a shared though-left turn lane. The White Farm Road/Holly Grove Road intersection is shown in **Figure 21.**

Figure 21 – Holly Grove Road at White Farm Road and I-85 Southbound On-Ramp

Tribal Road & Industrial Plant Driveway (north)/Service Station Driveway

The intersection of Tribal Road and the Industrial Plant/Service Station (truck access) driveways is an unsignalized intersection with a stop controlled approach from the Industrial Plant. The right-of-way belongs to traffic along Tribal Road. The northbound approach of Tribal Road is a shared through-left turn lane. The southbound approach on Tribal road is a single shared through-right turn lane. The Tribal Road/Industrial Plant driveway (north) intersection is shown in **Figure 22.**

Figure 22 – Industrial Plant Driveway (north)/Love's Travel Stop Driveway at Tribal Road

Tribal Road & Industrial Plant Driveway (south)

The intersection of Tribal Road and this southernmost Industrial Plant driveway is an unsignalized T-intersection with the right-of-way given to traffic on Tribal Road. The northbound approach on Tribal Road is a single share through-left turn lane. The southbound approach on Tribal road is a single shared through-right turn lane. The Tribal Road/Industrial Plant driveway (south) intersection is shown in **Figure 23.**

Figure 23 – Industrial Plant Driveway (south) at Tribal Road

Tribal Road on-ramp to I-85 northbound & Priester Road

The intersection of Priester Road and the I-85 northbound on-ramp is an unsignalized, unorthodox Y-intersection that also provides access to the adjacent Love's Travel Stop. The westbound Priester Road approach is stop controlled. The northbound Priester Road approach provides a single shared through-right turn lane. The I-85 northbound on-ramp/Priester Road intersection is shown in **Figure 24.**

Figure 24 – Priester Road at I-85 Northbound On-Ramp

Exit 106 – E Cherokee Street (US 29)

The E. Cherokee Street interchange is a partial diamond interchange. Three of the four access ramps are intersected by surface roads and/or business driveways.

The northbound off-ramp diverges from I-85 with a 245 foot long deceleration lane. The off-ramp loop is a single lane ramp that is approximately 870 feet long and intersects directly with E. Cherokee Street. The ramp also provides one-way access to Mill Creek Road. This ramp loop has a posted advisory speed limit of 20 miles per hour. The left turning movements onto Mill Creek Road and E. Cherokee Street from this approach are stop controlled, and the channelized right turning movement onto E. Cherokee Street is controlled by a yield sign.

The northbound on-ramp is approximately 675 feet long from its tie in point at the Mill Creek Road intersection to the painted gore point. The on-ramp is reached from E. Cherokee Street via Mill Creek Road. The ramp merges onto I-85 with a 580 foot long acceleration lane (with a parallel length of approximately 220 feet).

The northbound on and off-ramp are separated by approximately 770 feet on I-85.

The southbound off-ramp diverges from I-85 with a 240 foot long deceleration lane. The single lane ramp is approximately 930 feet long and intersects directly with E. Cherokee Street.

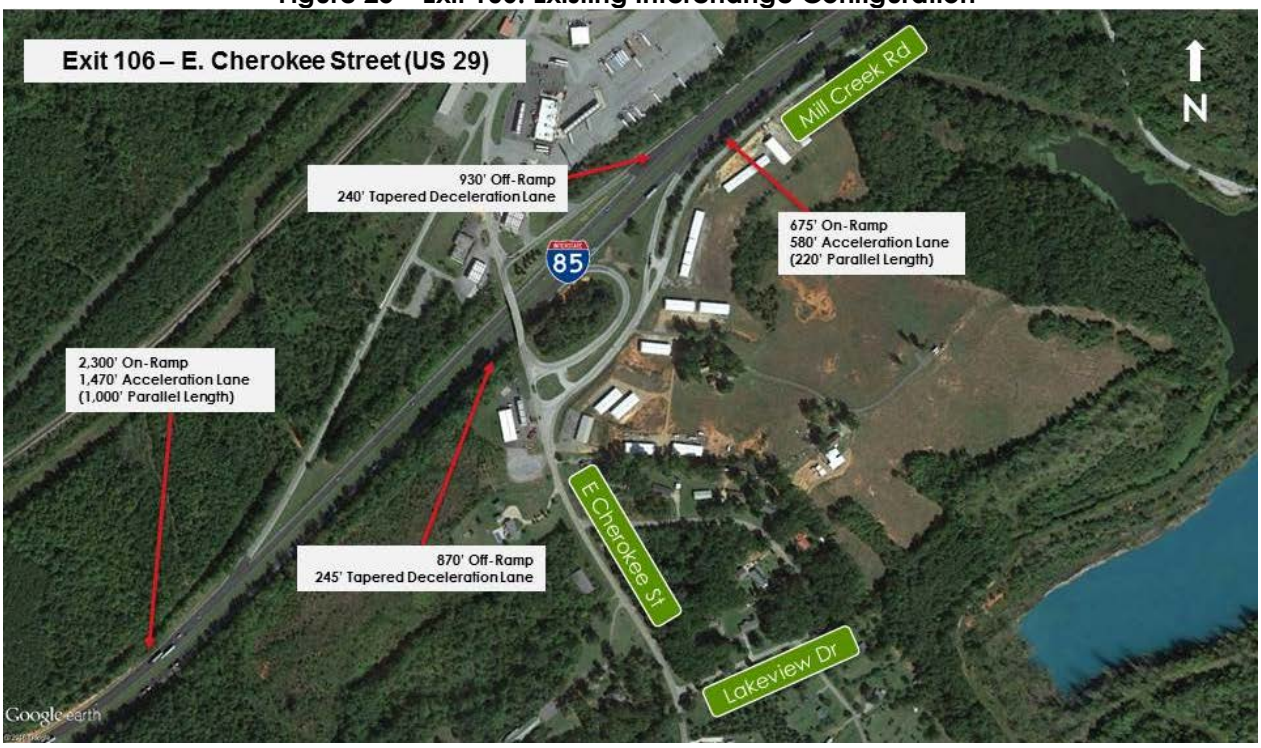
This ramp has an advisory speed limit of 40 miles per hour. The left and right turning movements from this approach are controlled by a stop sign.

The southbound on-ramp is approximately 2,300 feet long. The ramp merges onto I-85 with a 1,470 foot long acceleration lane (with a parallel length of 1,000 feet).

The southbound on and off-ramp are separated by approximately 2,765 feet on I-85.

The exit is signed in the northbound and southbound directions with the US highway 29 shield and the text "Grover" and "Blacksburg."

Figure 25 – Exit 106: Existing Interchange Configuration



E Cherokee Street

East Cherokee Street (US 29) is a two lane undivided principle arterial north of I-85 and a minor arterial south of I-85. The posted speed limit is 35 mph.

Lakeview Drive

Lakeview Drive (S-11-409) is a local two lane undivided paved road intersecting US 29/East Cherokee Street.

Mill Creek Road

Mill Creek Road (S-11-658) is a local two lane undivided paved frontage road intersecting US 29/East Cherokee Street.

Adjacent Intersections

Nine intersections are located in the vicinity of the interchange. The intersection of E. Cherokee Street and the three Service Station/Retail Store driveways are located approximately 95, 330, and 560 feet north of the southbound on-ramp, respectively. The intersection of E. Cherokee Street and the Service Station/Fireworks Store driveways is located approximately 330 feet south of the nearest southbound on-ramp access point. The two abandoned lot driveways intersecting the southbound on-ramp are located approximately 275 and 500 south of the nearest E. Cherokee access point. The intersection of E. Cherokee Street and Mill Creek Road is located approximately 100 feet south of northbound on-ramp loop intersection with E. Cherokee Street. The intersection of the I-85 northbound on-ramp and Mill Creek Road is located approximately 460 feet before the painted gore point at the I-85 northbound merge area. The intersection of the I-85 southbound off-ramp with the Hess Service Station driveway is located approximately 355 feet from the western terminus of the off-ramp at E. Cherokee Street. The intersection of the I-85 southbound off-ramp with the Exxon Service Station driveway is located approximately 110 feet from the western terminus of the off-ramp at E. Cherokee Street. The intersection of E. Cherokee Street and Lakeview Drive is located approximately 1,140 feet south of the I-85 northbound off-ramp loop intersection.

US 29 & Retail Store Driveways (3)

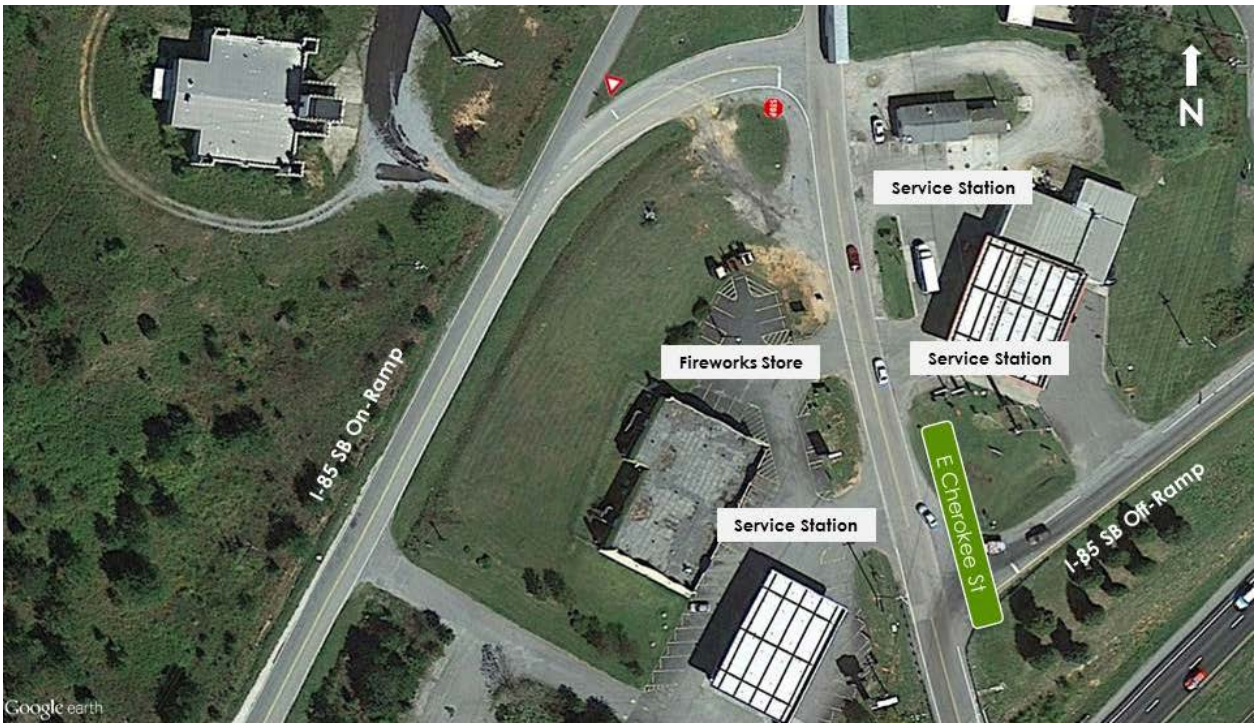
The intersection of E. Cherokee Street and the three retail/service station driveways north of I-85 are all unsignalized intersections with right-of-way given to E. Cherokee Street. The northbound approach of E. Cherokee Street is a single shared though-right turn lane. The southbound approach of E. Cherokee Street is a single shared through-left turn lane. Each of the three driveways allows left and right turns onto E. Cherokee Street. The E Cherokee Street/Retail Store driveways intersection is shown in **Figure 26.**

Figure 26 – Service Station/Retail Store Driveways at E. Cherokee Street

US 29 & Service Station/Retail Store Driveways (4)

The intersection of E. Cherokee Street and the Service Station/Fireworks Store driveways is an unsignalized intersection with right-of-way given to E. Cherokee Street. The northbound approach of E. Cherokee Street is a single shared though-right turn lane. The southbound approach of E. Cherokee Street is a single shared through-left turn lane. Each of the four driveways allows left and right turns onto E. Cherokee Street. The E Cherokee Street/Service Station & Retail Store driveway intersections are shown in **Figure 27.**

Figure 27 – Service Station/Firework Store Driveways at E. Cherokee Street



US 29 & I-85 Southbound On-Ramp/Abandoned Lot Driveway (north)

The intersection of the I-85 southbound on-ramp and the first abandoned lot driveway is an unsignalized intersection with right-of-way given to the on-ramp. The northbound approach of the on-ramp is a single shared though-right turn lane. The southbound approach of on-ramp is a single shared through-left turn lane. The I-85 southbound on-ramp/abandoned lot driveway (north) intersection is shown in **Figure 28.**

US 29 & I-85 Southbound On-Ramp/Abandoned Lot Driveway (south)

The intersection of the I-85 southbound on-ramp and the second abandoned lot driveway is an unsignalized intersection with right-of-way given to the on-ramp. The northbound approach of the on-ramp is a single shared though-right turn lane. The southbound approach of on-ramp is a single shared through-left turn lane. The I-85 southbound on-ramp/abandoned lot driveway (south) intersection is shown in **Figure 28.**

Figure 28 – Abandoned Lot Driveways at I-85 Southbound On-Ramp from E. Cherokee Street

I-85 southbound off-ramp to US 29 & Service Station Driveway 1

The intersection of the I-85 southbound off-ramp and the Hess Service Station driveway is an unsignalized T-intersection. The driveway only receives right turn movements from the single shared through-right lane on the off-ramp westbound approach. The I-85 southbound off-ramp/Service Station 1 intersection is shown in **Figure 29.**

I-85 southbound off-ramp to US 29 & Service Station Driveway 2

The intersection of the I-85 southbound off-ramp and the Exxon Service Station driveway is an unsignalized T-intersection. The driveway only receives right turn movements from the single shared through-right lane on the off-ramp westbound approach. The I-85 southbound off-ramp/Service Station 2 intersection is shown in **Figure 29.**

Figure 29 – Service Station Driveways at I-85 Southbound Off-Ramp to E. Cherokee Street

US 29 & I-85 Northbound On-Ramp/Frontage Road

The intersection of E. Cherokee Street and the shared I-85 northbound on-ramp/Mill Creek Road is an unsignalized intersection with stop control on the Mill Creek Road approach and a yield controlled channelized right turn on the northbound E. Cherokee Street approach. The through movement on E. Cherokee Street is free-flowing. The westbound Mill Creek Road approach provides a single through-right-left turn lane for traffic to access E. Cherokee Street and the BP Service Station on the western side of the intersection. The E Cherokee Street/Mill Creek Road intersection is shown in **Figure 30.**

Figure 30 – Mill Creek Road at E. Cherokee Street

US 29 on-ramp to I-85 northbound & Frontage Road

The intersection of the I-85 northbound on-ramp and Mill Creek Road is an unsignalized intersection with a stop control on the Mill Creek Road approach. The one-way on-ramp approach provides a single through lane for traffic traveling to I-85 northbound. The Mill Creek Road approach provides a single right turn lane for traffic traveling to I-85 northbound. The I-85 northbound on-ramp/Mill Creek Road intersection is shown in **Figure 31.**

Figure 31 – Mill Creek Road at I-85 Northbound On-Ramp from E. Cherokee Street

US 29 & Lakeview Drive

The intersection E. Cherokee Street and Lakeview drive is an unsignalized intersection with a stop control on the Lakeview Drive approach. The northbound approach of E. Cherokee Street is a single shared though-right turn lane. The southbound approach of E. Cherokee Street is a single shared through-left turn lane. The westbound approach from Lakeview Drive is a single shared right-left turn lane. The E Cherokee Street/Lakeview Drive intersection is shown in **Figure 32.**

Figure 32 – Lakeview Drive at E. Cherokee Street

Exit 2 – Battleground Road (NC 216)

The Battleground Road interchange is a diamond oriented interchange. Only one of the four access ramps is intersected by a surface road. This interchange is under the jurisdiction of NCDOT will not be updated or modified by SCDOT.

The northbound off-ramp diverges from I-85 with a 280 foot long deceleration lane. The off-ramp is a single lane ramp that is approximately 955 feet long and intersects directly with Battleground Road. The ramp also provides access to Banks Road. There is no posted advisory speed limit for this ramp. The through and turning movements from this approach are stop controlled.

The northbound on-ramp is approximately 1,460 feet long and merges onto I-85 with an 860 foot long acceleration lane.

The northbound on and off-ramp are separated by approximately 2,400 feet on I-85.

The southbound off-ramp diverges from I-85 with a 395 foot long deceleration lane. The single lane ramp is approximately 825 feet long and intersects directly with Battleground Road. There is no posted advisory speed limit on this ramp. The through and turning movements from this approach are controlled by a stop sign.

The southbound on-ramp is approximately 1,330 feet long and merges onto I-85 with an 825 foot long acceleration lane (with a parallel length of 330 feet).

The southbound on and off-ramp are separated by approximately 2,105 feet on I-85.

The exit is signed in the northbound and southbound directions with the NC 216 state highway shield and the text "Kings Mountain National Military Park."

Figure 33 – Exit 106: Existing Interchange Configuration

Battleground Road

Battleground Road (NC 216) is a two lane undivided minor arterial north of I-85 and a major collector south of I-85. The posted speed limit is 35 mph.

Battleground Avenue

South Battleground Avenue (US 29) is a four lane divided major collector east of NC 216 and a four lane divided minor arterial west of NC 216. The posted speed limit is 55 mph.

Dixon School Road

Dixon School Road is a local two lane undivided secondary road intersecting NC 216. The posted speed limit is 55 mph.

Adjacent Intersections

Five intersections are located in the vicinity of the interchange. The intersection of Battleground Road and US 29 is located approximately 1,245 feet north of the southbound ramps intersection. The intersection of Battleground Road and the Truck Driveway south of Pearl Court is located approximately 705 feet north of the southbound ramps intersection. The intersection of Battleground Road and the Pioneer Motor Bearing Company driveway is located approximately 400 feet north of the southbound ramps intersection. The intersection of Banks Road with the I-85 northbound off-ramp is located approximately 200 feet from the eastern terminus of the off-ramp at Battleground Road. The intersection of Battleground road and Dixon School road is located approximately 4,390 feet (0.83 miles) south of the northbound ramps intersection.

Battleground Road & US 29/Battleground Avenue

The intersection of Battleground Road and US 29/Battleground Avenue is an unsignalized T-intersection with a stop control on the Battleground Road approach. The eastbound and westbound approaches on US 29/Battleground Avenue are separated by a 300 foot grass median and both provide two lanes each, a shared through-left lane and a shared through-right lane. The northbound approach from Battleground Road provides a single shared through-right-left turn lane for traffic accessing US 29/Battleground Avenue and the restaurant located on the northern side of the intersection. The Battleground Road/US 29/Battleground Avenue intersection is shown in **Figure 34.**

Figure 34 – Battleground Road at Alleyway and US 29/Battleground Avenue

Battleground Road & Pioneer Motor Bearing Co. Driveway

The intersection of Battleground Road and the Pioneer Motor Bearing Company driveway is an unsignalized T-intersection with right-of-way given to traffic traveling on Battleground Road. The northbound approach from Battleground Road provides a single shared through-right turn lane. The southbound approach from Battleground Road provides a single shared through-left turn lane. The westbound approach provides a single shared right-left turn lane for traffic to access Battleground Road. The Battleground Road/Pioneer Motor Bearing Company intersection is shown in **Figure 35.**

Battleground Road & Truck Driveway

The intersection of Battleground Road and the truck driveway is an unsignalized T-intersection intersection with a stop control on the truck driveway approach. The northbound approach from Battleground Road provides a single shared through-left turn lane. The southbound approach from Battleground Road provides a single shared through-right turn lane. The eastbound driveway approach provides a single shared right-left turn lane for traffic to access Battleground Road. The Battleground Road/Truck Driveway intersection is shown in **Figure 35.**

Figure 35 – Truck Driveway and Pioneer Motor Bearing Company at Battleground Road

I-85 Northbound Off-Ramp & Banks Road

The intersection of the I-85 northbound off-ramp and Banks Road is an unsignalized T-intersection with a stop control on Banks Road. The eastbound traffic on the off-ramp is given the right-of-way and is provided with a single through-left turn lane. The westbound approach from the on-ramp provides a single left turn lane for traffic accessing Banks Road from Battleground Road. The Banks Road approach provides a single right turn lane. The I-85 Northbound Off-Ramp/Banks Road intersection is shown in **Figure 36.**

Figure 36 – Banks Road at I-85 Northbound Off-Ramp to Battleground Road

Battleground Road & Dixon School Road

The intersection of Battleground Road and Dixon School Road is an unsignalized T-intersection intersection with a stop control on the Dixon School Road approach. The northbound approach from Battleground Road provides a single shared through-right turn lane. The southbound approach from Battleground Road provides a single shared through-left turn lane. The westbound approach provides a single shared right-left turn lane for traffic to access Battleground Road. The Battleground Road/Dixon School Road intersection is shown in **Figure 37.**

Figure 37 – Dixon School Road Company at Battleground Road

IV. DATA COLLECTION

The following data collection activities were performed for the I-85 corridor.

I-85 Mainline Traffic Volume Data

I-85 mainline traffic volume data were obtained from two SCDOT sources. The current and historic average annual daily traffic (AADT) on each of the I-85 segments within the study area were obtained from SCDOT. Hourly count data was obtained from two permanent Automatic Traffic Recording (ATR) stations located within the study area.

Each year, SCDOT produces a database of AADT on segments for state primary and secondary roadways. For each county, a list of the various AADT station numbers, their route designation and number, and the beginning and ending point of the segment are listed along with the AADT for those segments. For interstate routes, separate station numbers are generally assigned to individual freeway segments between interchanges. The SCDOT AADT data available for use in this study includes the annual AADT between 1988 and 2015 inclusive and is provided in **Appendix A**.

Traffic volume data from three permanent ATR stations within the study area were provided by SCDOT. The three ATR stations are identified by SCDOT as Station P-14 and P-132 and P-27. Station P-14 is located on I-85 at approximately milepost 88.2 between Exits 87 and 90. Station P-132 is located on I-85 approximately 500 feet to the south of the Frontage Road off-ramp on northbound I-85 designated as Exit 98. Station P-27 is located on I-85 at the South Carolina Welcome Center and Rest Area.

The ATR data from station P-14 contained all the traffic volumes recorded by the ATR between January 1, 2015 and December 31, 2015. Station P-132 contained traffic volumes recorded between January 1, 2015 and May 31, 2015. Station P-27 contained traffic volumes recorded between January 1, 2015 and April 30, 2015. ATR station P-132 was given higher priority over station P-27 in the design hour review process due to the fact that it provided more complete data.

The AADT data will be used in the development of growth rates used to forecast future traffic. The ATR data from stations P-14 and P-132 will be used to establish the design hour traffic volumes and in the analysis of existing operating conditions for freeway segments and merge/diverge areas in the corridor.

Turning Movement Counts

Turning movement traffic count data was obtained for a number of ramp termini and other adjacent intersections within the study area. The turning movement count data, which is provided in **Appendix B**, included:

- Exit 96
  - Wilcox Avenue/Shelby Highway on-ramp to I-85 SB at Lemuel Road
  - Shelby Highway at I-85 Southbound Ramps
  - Shelby Highway at I-85 Northbound Ramps
  - Shelby Highway at Victory Trail Road
  - Victory Trail Road at Frontage Road

- Exit 100
  - Blacksburg Highway on-ramp to I-85 SB at Crawford Road
  - Blacksburg Highway at Service Station Driveway 1
  - Blacksburg Highway at Service Station Driveway 2
  - Blacksburg Highway at I-85 SB Ramps
  - Blacksburg Highway at I-85 NB Ramps/Frontage Road
  - I-85 SB off-ramp to Blacksburg Highway at Retail Store
  - I-85 SB off-ramp to Blacksburg Highway at Service Station Driveway 1
  - I-85 SB off-ramp to Blacksburg Highway at Service Station Driveway 2
  - I-85 NB off-ramp to Blacksburg Highway at Frontage Road
- Exit 102
  - N. Mountain Street on-ramp to I-85 SB at Rock Springs Road
  - N. Mountain Street at Service Station Driveways (4)
  - N. Mountain Street at Service Station Driveways (2)
  - N. Mountain Street at I-85 Southbound Ramps
  - N. Mountain Street at I-85 Northbound Ramps
  - N. Mountain Street at Service Station/Retail Store Driveways (4)
  - I-85 SB off-ramp to N. Mountain Street & Truck pull-off
  - I-85 SB off-ramp to N. Mountain Street & Restaurant Driveway
  - I-85 NB off-ramp to N. Mountain Street & Henson Road
- Exit 104
  - Tribal Road on-ramp to I-85 SB & White Farm Road
  - Tribal Road at I-85 Southbound Ramps
  - Tribal Road at I-85 NB Ramps/Frontage Road/Priester Road
  - Tribal Road at Industrial Plant Driveway (north)/Service Station Driveway
  - Tribal Road at Industrial Plant Driveway (south)
  - Tribal Road on-ramp to I-85 northbound at Priester Road
- Exit 106
  - US 29 at Retail Store Driveways (3)
  - US 29 at Service Station/Retail Store Driveways (4)
  - US 29 at I-85 SB On-Ramp (north)/Service Station Driveway
  - US 29 at I-85 SB On-Ramp (south)/Service Station Driveway
  - US 29 at Service Station/Retail Store Driveways (4)
  - US 29 at I-85 Southbound Off-Ramp
  - US 29 at I-85 Northbound Off-Ramp
  - US 29 at I-85 Northbound On-Ramp/Frontage Road
  - US 29 on-ramp to I-85 northbound at Frontage Road
  - I-85 southbound off-ramp to US 29 at Service Station Driveway 1
  - I-85 southbound off-ramp to US 29 at Service Station Driveway 2
- Exit 2
  - Battleground Road at US 29
  - Battleground Road at I-85 Southbound Ramps
  - Battleground Road at I-85 Northbound Ramps
  - Battleground Road at Dixon School Road

Crash Data

Historic crash data was provided from the SCDOT Safety Office. The crash data for the interstate corridor and ramps covered the period from January 2011 through December 2015. For roadways in the vicinity of the interchanges being upgraded (Exits 100, 102, 104 and 106), crash data covered the period from January 2011 through December 2015.

The crash data will be used to perform an accident analysis to identify 'hotspots' with frequent and/or severe history of accident occurrence.

Signal Plans/Timings

There are nine existing traffic signals located at interchange ramp termini intersections or at adjacent intersections. Traffic signal plans were obtained from SCDOT for the existing signal installations at the following locations:

- Exit 102
  - N. Mountain Street at I-85 Southbound Ramps
  - N. Mountain Street at I-85 Northbound Ramps

Appendix D includes all existing signal plans and signal timings. The signal plans and signal timings will be used in the analysis of intersections controlled by traffic signals.

V. ANALYSIS

A series of traffic analyses were performed to assess existing and future operations of I-85, the interchange ramps, and intersections located adjacent to the interchange ramp termini. The analyses included:

- An accident analysis for the study area
- A traffic forecasting analysis to estimate future no-build and build condition traffic volumes
- Freeway segment operations analysis for existing, future no-build and future build conditions
- Freeway ramp merge/diverge area analysis for existing, future no-build and future build conditions
- Signalized and unsignalized intersection analysis for existing, future no-build and future build conditions

The individual interchanges were modeled using *Synchro* to analyze and simulate the arterial and intersection operations and to aid in the development of traffic control and geometric recommendations. Traffic simulation models were created for the entire study area and at individual interchange locations for the existing, future no-build, and future build conditions.

Accident Analysis

An accident analysis was performed using the crash data obtained for the entire interstate study area corridor. This data included crashes occurring on the interstate and interstate ramps between January 2011 and December 2015. Additional analysis was performed for arterial roadways adjacent to the interstate and its interchanges using crash data covering January 2011 through December 2015. Crash locations were generally provided by milepost, to the nearest 1/10th mile and/or by latitudinal and longitudinal coordinates. In addition to location data, crash records included the collision type, severity of the crash, road conditions, date, time of day and contributing factors, among other information.

The following is a brief summary of the findings and conclusions of the analysis. Additional references to the accident analysis data and findings are provided elsewhere in this report as appropriate in support of analysis and conceptual design activities.

- The analysis considered crashes along the entire mainline section of I-85 within the study area.
- The analysis of crashes in the interchange areas was focused specifically at the interchanges anticipated to be modified as part of this widening project. This included Exits 100, 102, 104, and 106.
- The most common crash type along I-85 was classified as "no collision with other vehicle" accidents (388 – 53 percent). The fixed objects included guardrail, median, trees, embankments, bridges and fences. Many of these crashes are likely attributable to insufficient clear zone distances at multiple places throughout the corridor.
- Rear end collisions were the second most prevalent type of accident (182 – 25 percent) and side-swipe accidents were the third most commonly occurring accident (96 – 13 percent).

Table 1 summarizes the comparison of predicted crashes provided by SCDOT versus actual recorded crashes for the years 2011-2015. This evaluation focuses on those areas within the project area that have crash counts that exceed this prediction.

Table 1: Predicted Crashes vs. Actual Crashes (2011-2015)

Route	Milepost		Length (mi)	Predicted Crashes		Actual Crashes
	Begin	End		Total		Total
I-85	95	106	11	506	<	728
S-52 (Holly Grove Rd)	2.4	2.78	0.38	1	=	1
S-73 (White Farm Rd)	0	0.5	0.5	1	<	2
S-83 (Blacksburg Hwy)[1]	3.8	4.4	0.6	7	<	18
S-99 (Tribal Rd)[1]	0.4	1.18	0.78	3	<	15
S-352 (Henson Rd)	0	1.54	1.54	1	<	3
S-658 (Mill Creek Rd)	0	0.45	0.45	2	>	1
S-668 (Wilcox Ave)	3.05	4.58	1.53	18	>	7
S-670 (Milliken Rd)	0	1.4	1.4	4	>	1
SC 5 (N. Mountain St)[1]	0	0.3	0.3	9	=	9
SC 18 (Shelby Hwy)[1]	18.79	19	0.21	10	>	9
SC 198 (N. Mountain St)[1]	0	0.31	0.31	4	<	8
US 29 (E. Cherokee St)[1]	23.67	24.42	0.75	6	<	31

1. Represents cross-streets within the project area.

The areas that exceeded their projected 2015 crash totals included I-85, two secondary roads (S-73, S-352), and 80% of the cross-streets in the project study area. SC 18/Shelby Highway was the only cross-street to record a lower number of crashes than predicted during the study period.

The most recent, available, 5 years of crash data (2011-2015) of the cross-streets along I-85 from MM 96 to MM 106 in Cherokee County, SC were analyzed to determine potential problem areas, driveways, and intersections of cross-streets in the project study area. Five cross-streets were analyzed:

(1) Shelby Highway,
(2) Blacksburg Highway,
(3) North Mountain Street,
(4) Tribal Road, and
(5) East Cherokee Street.

The numbers of each type of collision on each cross-street are tabulated in **Table 2**.

Table 2: Types of Collision by Cross-Street

Cross-Street	*Angled*	*Backed Into*	*Head-On*	*No Collision w/ Motor Vehicle*	*Rear-End*	*Side-swipes*	**TOTAL**
Shelby Hwy.	4	---	1	6	2	1	**14**
Blacksburg Hwy.	9	1	---	6	3	---	**19**
N. Mountain St.	8	---	1	---	5	1	**15**
Tribal Rd.	8	1	---	8	1	1	**19**
E. Cherokee St.	16	1	1	3	10	---	**31**
TOTAL	**45**	**3**	**3**	**23**	**21**	**3**	**98**

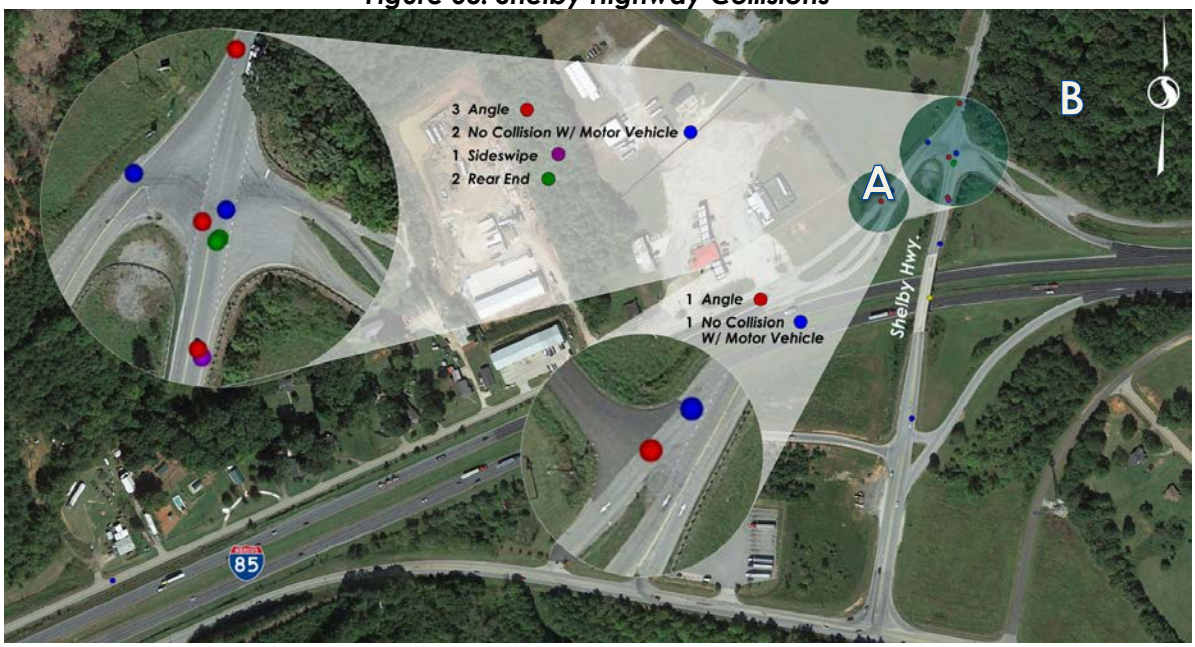
Shelby Highway:

As shown below in **Figure 38**, there are two noteworthy problem locations in the Shelby Highway cross-street vicinity.

- Location **(A)** is at the intersection of Wilcox Avenue (which also feeds into the I-85 SB On-Ramp) and Lemuel Road. Two collisions occurred here, including 1 "Angle" collision and 1 "No Collision with Motor Vehicle"

- Location **(B)** is at the intersection of Shelby Highway and Wilcox Avenue. Eight collisions occurred within the vicinity of the intersection including 3 "Angle", 2 "No Collision with Motor Vehicle", 2 "Rear-End", and 1 "Sideswipe" collision(s).

Figure 38: Shelby Highway Collisions



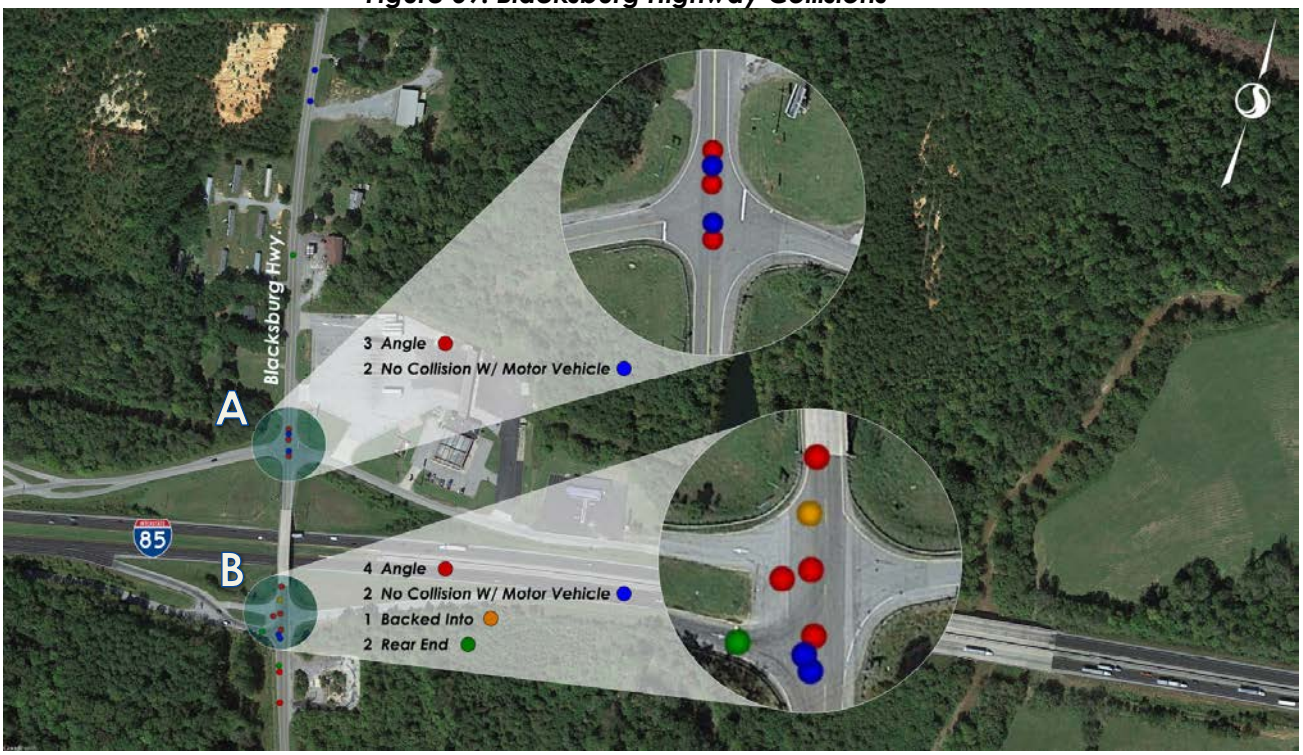
Blacksburg Highway:

As shown below in **Figure 39**, there are two noteworthy problem locations in the Blacksburg Highway cross-street vicinity.

- Location **(A)** is at the intersection of Blacksburg Highway and Crawford Road/Simper Road (which double as the I-85 SB On and off-Ramps, respectively). Five collisions occurred here, including 3 "Angle" and 2 "No Collision with Motor Vehicle".

- Location **(B)** is at the intersection of Blacksburg Highway and Frontage Road/Milliken Road and the I-85 NB On-Ramp. Nine collisions occurred within the vicinity of the intersection including 4 "Angle", 2 "No Collision with Motor Vehicle", 2 "Rear-End", and 1 "Backed Into" collision(s).

Figure 39: Blacksburg Highway Collisions



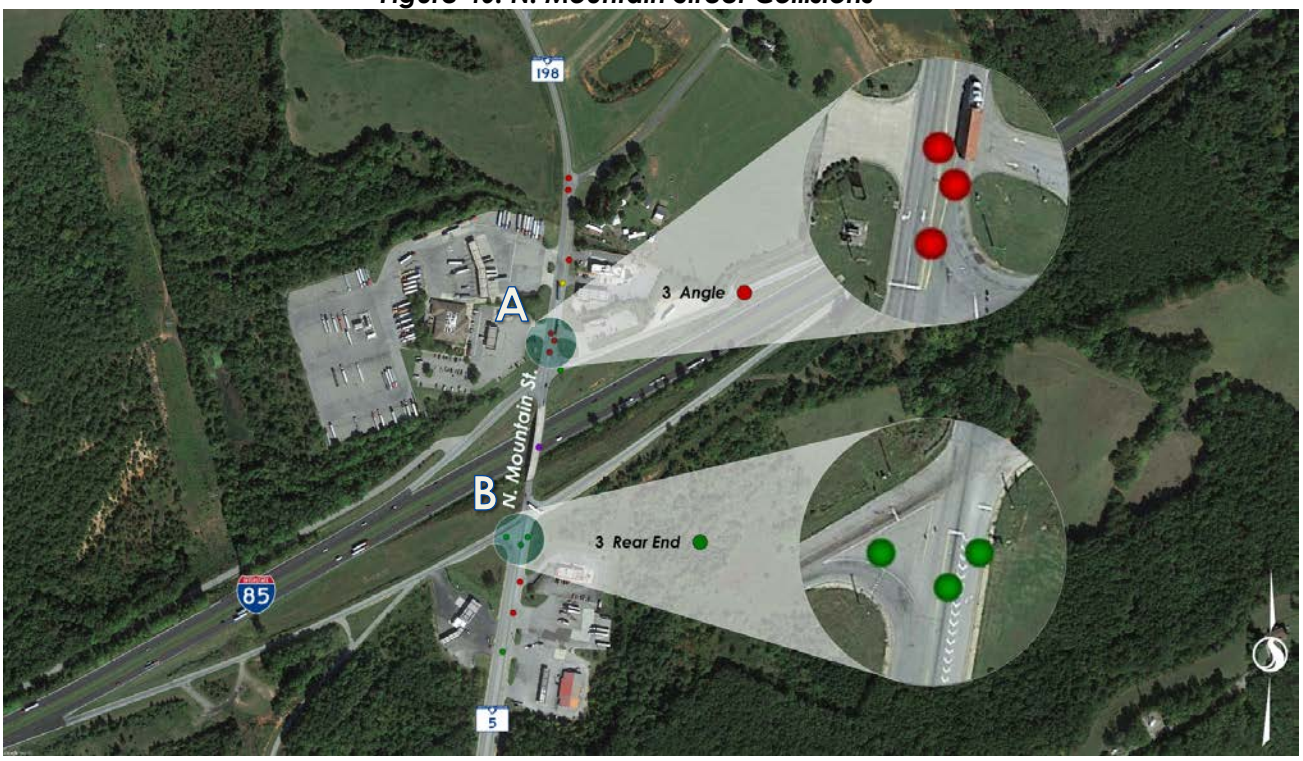
North Mountain Street:

As shown below in **Figure 40**, there are two noteworthy problem locations in the N. Mountain Street cross-street vicinity.

- Location **(A)** is at the intersection of N. Mountain Street and two driveways – one to a gas station, and the other to a 24-hour Restaurant. Three "Angle" collisions occurred at this location.

- Location **(B)** is at the intersection of N. Mountain Street and the I-85 NB On and off-Ramps. Three "Rear-End" collisions occurred at this location.

Figure 40: N. Mountain Street Collisions



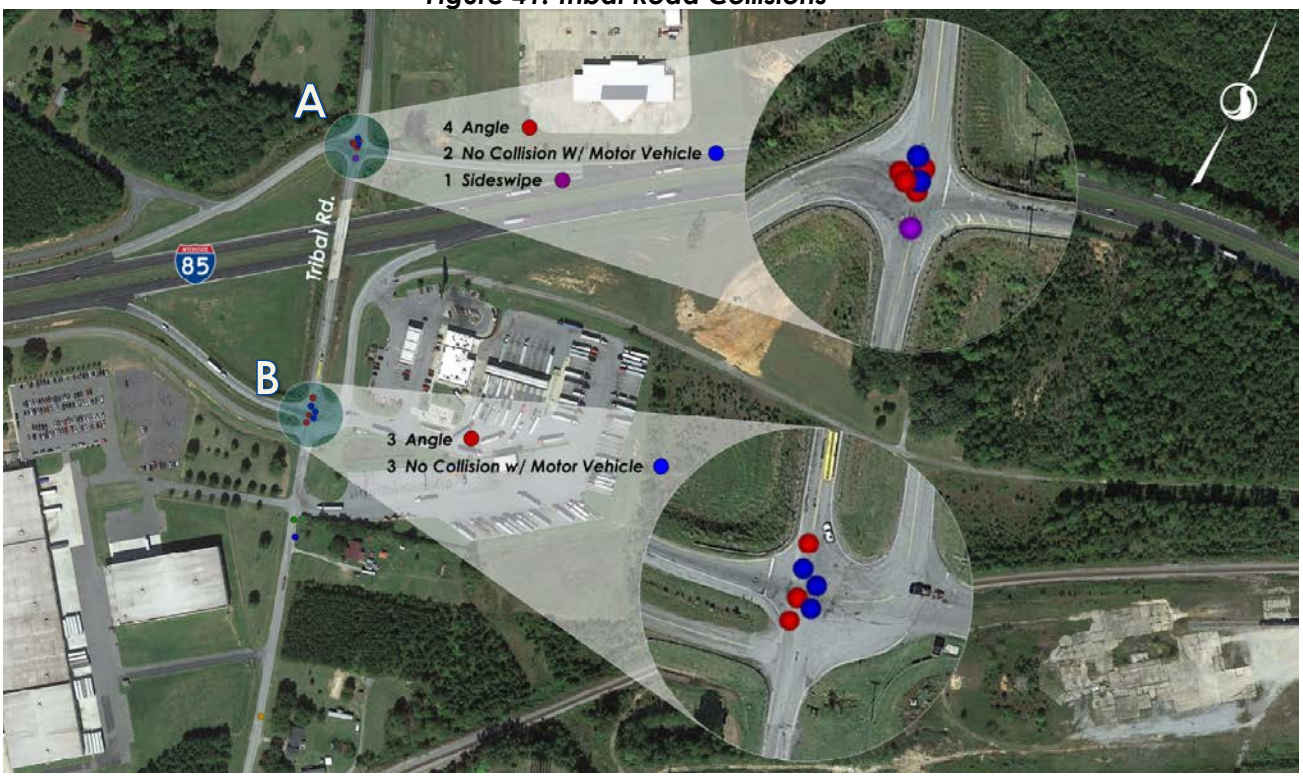
Tribal Road:

As shown below in **Figure 41**, there are two noteworthy problem locations in the Tribal Road cross-street vicinity.

- Location **(A)** is at the intersection of Tribal Road and the I-85 SB On and off-Ramps. Seven collisions occurred at this location including 4 "Angle", 2 "No Collision with Motor Vehicle", and 1 "Sideswipe" collision(s).

- Location **(B)** is at the intersection of Tribal Road and Priester Road (which feeds into the I-85 NB On-Ramp. Six collisions occurred at this location, including 3 "Angle" and 3 "No Collision with Motor Vehicle" collisions.

Figure 41: Tribal Road Collisions

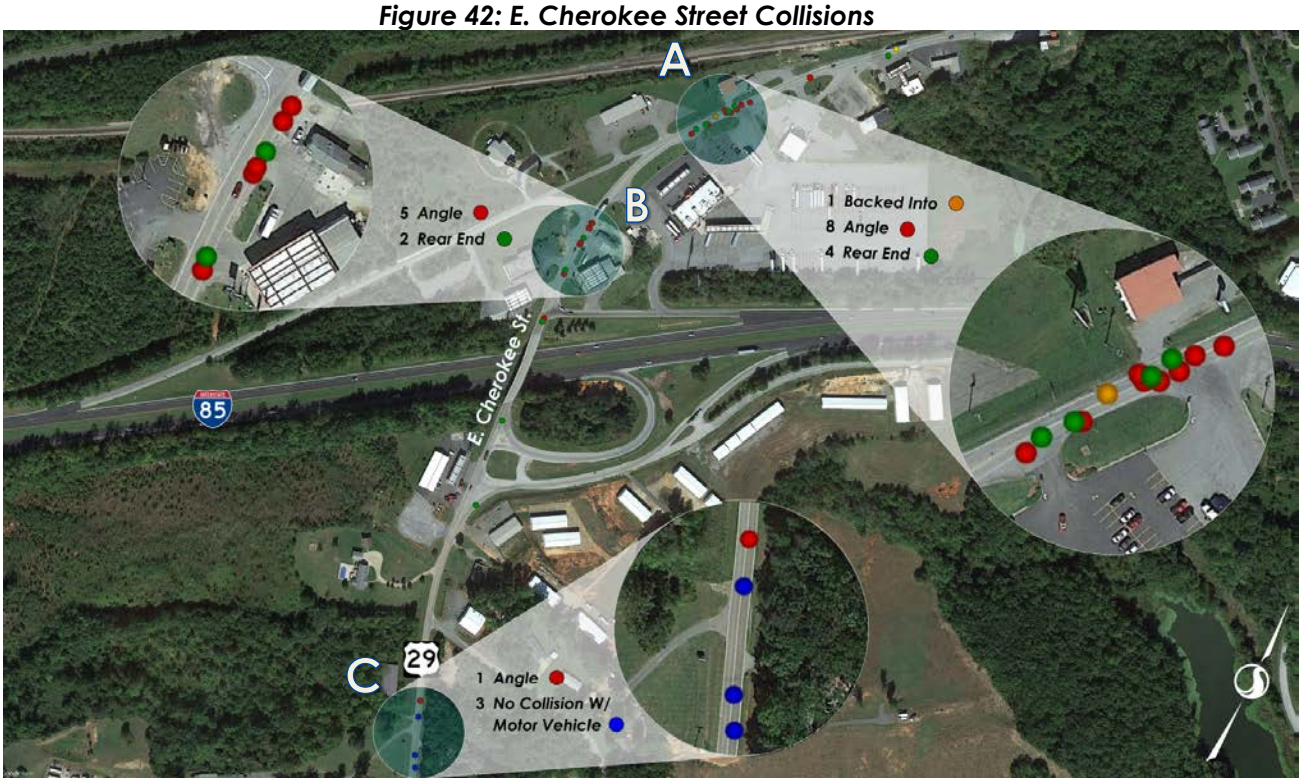


E. Cherokee Street:

As shown below in **Figure 42**, there are three noteworthy problem locations in the E. Cherokee Street cross-street vicinity.

- Location **(A)** is at the intersection of E. Cherokee Street and three driveways – one to a gas station, one serving both the gas station and firework store, and one to an abandoned video game store. Thirteen collisions occurred here, including 8 "Angle", 4 "Rear-End", and 1 "Backed Into" collisions.
- Location **(B)** is at the intersection E. Cherokee Street and three driveways – one serving a gas station, one serving both the gas station and an ABC store, and one serving only the ABC store. Seven collisions occurred here, including 8 "Angle" and 2 "Rear-End" collisions.
- Location **(C)** is at the intersection of E. Cherokee Street and the driveway to a local church. Four collisions occurred here, including 1 "Angle" and 3 "No Collision with Motor Vehicle" collisions.

Figure 42: E. Cherokee Street Collisions



Unusual or unexpected intersection designs at the frontage road intersections with interstate ramps, along with limitations of sight distance along arterial roadways may lead to driver confusion and contribute to the occurrence of crashes.

Traffic Volumes

I-85 Traffic Volume Data – Average Annual Daily Traffic

Average annual daily traffic volumes (AADT) were obtained from SCDOT for the most recently available data set (2015) for the five freeway segments within the study area. Each segment has an associated AADT count station number associated with it. The current AADT for the five freeway segments are summarized in **Table 3**.

Table 3: 2015 AADT for I-85 Freeway Segments

I-85 Segment Number	Count Station #	I-85 Segment Description	2015 AADT
Segment 1	2343	I-85 (Exit 96 to Exit 100) SC 18 TO S-83	**45,800**
Segment 2	2345	I-85 (Exit 100 to Exit 102) SC 83 TO SC 5	**43,500**
Segment 3	2347	I-85 (Exit 102 to Exit 104) SC 5 TO S-99	**37,000**
Segment 4	2349	I-85 (Exit 104 to Exit 106) S-99 TO US 29	**36,500**
Segment 5	2351	I-85 (Exit 106 to NC LINE) US 29 TO STATE LINE	**37,300**

Throughout the I-85 segments, the AADT decreases to the north within the corridor, with the volume of the northernmost segment (37,300 vehicles per day) approximately 81 percent of the volume on the southernmost segment (45,800 vehicles per day).

AADT were also obtained for the arterial roadways with interchanges with I-85. The AADT for the 17 arterial roadway segments are summarized in **Table 4**.

Table 4: 2015 AADT for Arterial Segments

State ID #	Road Name	Road Description	2015 AADT
SC 18	Shelby Highway	(Exit 96) SC 329 TO S-800	**9,400**
S-83	Blacksburg Highway	(Exit 100) S-351 TO S-214	**4,300**
SC 5/SC 198	N. Mountain Street[1]	(Exit 102) S-351 TO S-245	**7,200**
S-99	Tribal Road[2]	(Exit 104) S-65 TO S-66	**650**
US 29	E Cherokee Street	(Exit 106) S-21 TO STATE LINE	**2,300**

I-85 Traffic Volume Data – Existing Design Hour Volumes

Traffic volume data from SCDOT permanent Automatic Traffic Recording (ATR) stations were provided by SCDOT for use in developing the design hour volumes for the mainline I-85 segments in the study area. The two ATR stations within the study area include Station P-14 and P-132. Station P-14 is located on I-85 at approximately milepost 88.2 between Exits 87 and 90. Station P-132 is located on I-85 approximately 500 feet to the south of the Frontage Road off-ramp on northbound I-85 designated as Exit 98.

The ATR data at both stations contained all the traffic volumes recorded by the ATR between January 1, 2015 and May 31, 2015. Only station P-14 contained all the traffic volumes for the entire year (January 1, 2015 to December 31, 2015). This data was analyzed to be able to identify a two-way design hour volume, the percentage of the design hour to the AADT (k-factor) and the directional split between northbound and southbound traffic (D-factor). Typical values sometimes chosen for the design hour include the 10th, 30th and 100th highest hours of traffic.

The ATR station data was analyzed to identify the 10th, 30th, and 100th highest hours of traffic volumes at each station location for the following conditions:

1. Two-way volume (each hour, each day);
2. Two-way AM volume (7:00 AM to 10:00 AM, each day)
3. Two-way PM volume (4:00 to 7:00 PM, each day)
4. Two-way weekday volume (each hour, Tuesday-Thursday);
5. Two-way weekday AM volume (7:00 AM to 10:00 AM, Tuesday-Thursday);
6. Two-way weekday PM Peak Period Volume (4:00 to 7:00 PM, Tuesday-Thursday).

The 100th highest hours of two-way traffic volumes for each hour and each day at ATR Stations P-14 and P-132 are included as part of an attachment in **Appendix E**.

Typically, the 30th highest hour is selected for the design hourly volume (DHV). This hour generally falls at or near the inflection point of a graph of the highest volumes where the change in volumes becomes less pronounced and more consistent, with the steep curve depicting larger changes in volumes flattening to a more gradual curve indicating more consistent reductions in volume. Graphs of the 200 highest volumes at stations P-14 and P-132, along with indications of the 30th and 100th highest hourly volumes are shown in **Figures 43** and **44**.

Figure 43: Graph of Station P-14 Highest Hourly Volumes

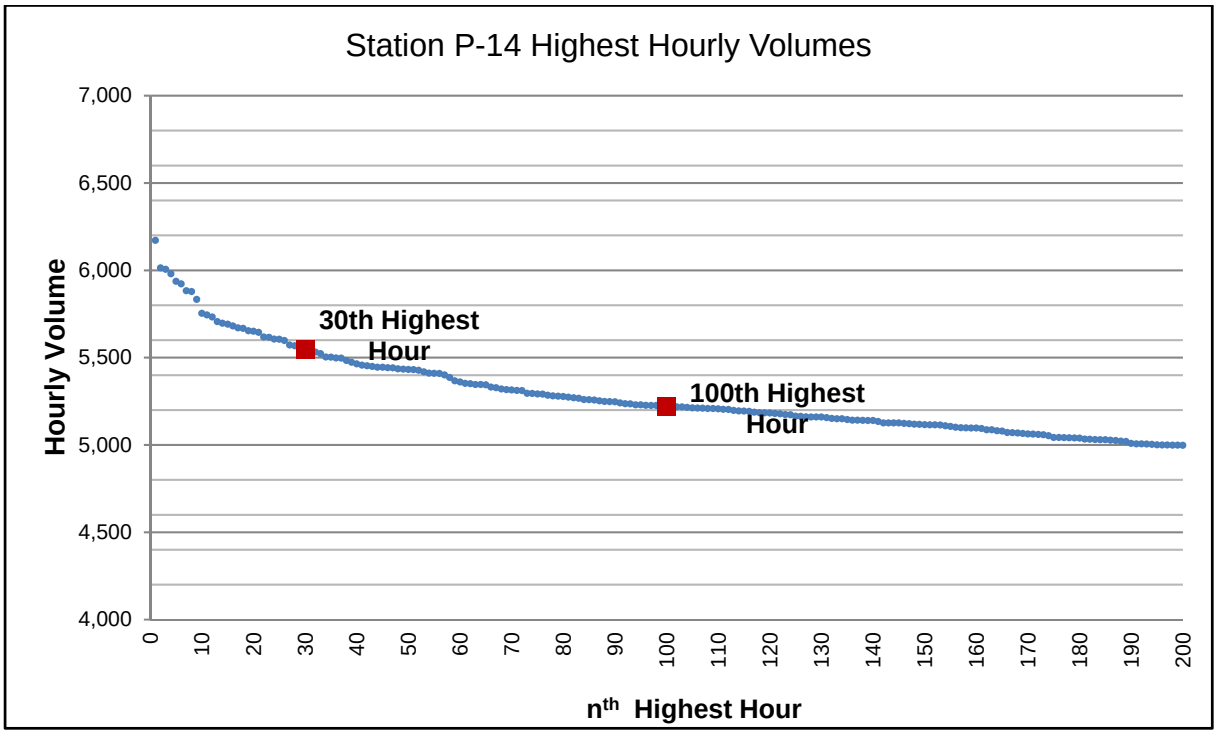
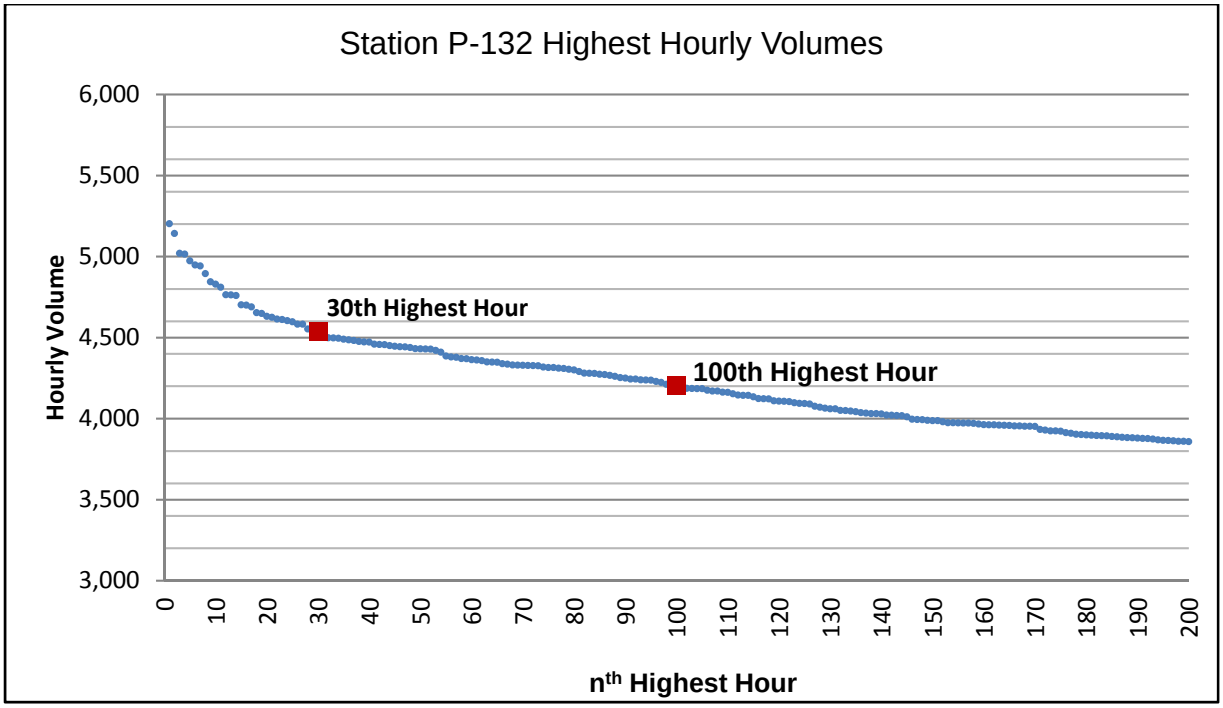


Figure 44: Graph of Station P-132 Highest Hourly Volumes



Based on this data, the design hours of 8:00-9:00AM and 2:00-3:00PM were selected from the high hour volumes occurring on May 22, 2015. This date was selected due to the fact that it occurs on a weekday and is not affected by a notable holiday or major event in the study area during that week, which includes Macedonia, Blacksburg, and Gaffney, SC. The selected Friday, while not a typical weekday, is not a holiday itself and falls in the 30th to 100th highest hour of ATR stations P-14 and P-132. The majority of the typical weekday hours fell on event driven dates (high weekends & holidays), most notably the week of Thanksgiving. The other peak hours found in the top 100 fell on Saturdays and Sundays, which are not desirable because they are weekends.

The I-85 ramp volumes at the study area interchanges were developed based on the peak hour turning movement count data for each ramp intersection with the adjacent street network. The morning and afternoon peak hour volumes on the off- and on-ramp approaches to the intersections were used to establish the existing design peak hour ramp volumes.

Truck Percentages

Truck percentages were derived from the vehicle classification data at ATR Stations P-132 and P-27. The latter was selected over Station P-14 due to it being located within the boundaries of the study area. The vehicle classification data is used to determine the heavy vehicle (trucks/buses) percentages to be used in the analysis. The P-132 and P-27 data sets provided vehicle classification counts for a single day: Tuesday, May 26, 2015. The truck percentage data is summarized in **Table 5**.

Table 5: 2015 Truck Percentages

I-85 Vehicle Classification Data Location	Date	AM Peak Hour Truck Percentage	PM Peak Hour Truck Percentage
ATR 0132 (MM 105)	May 26, 2015	31.9%	30.7%
ATR 0027 (MM 97)	May 26,2015	31.3%	26.7%

Upon review of this data, and based upon concurrence with SCDOT, it was agreed that 30 percent would be used as the truck percentage along the I-85 corridor throughout the analysis.

Traffic Projections

The growth rate of traffic within the corridor was estimated using three procedures.

The first procedure evaluated the annual rate of change for the AADT between 1990 and 2015 for each freeway segment based on the SCDOT AADT count station data. The second procedure evaluated the traffic assignments of the freeway segments in the South Carolina Statewide Travel Demand Model (SCSWM) 2010 and 2040 base networks. The third procedure reviewed approved growth rates on a recent study by STV Incorporated titled *I-85 Widening Project MM80-MM96: Spartanburg and Cherokee Counties* (2015).

These three procedures led to the selection of **1.5%** as the proposed linear traffic growth rate along the I-85 corridor. This proposed growth rate would be applied to all mainline and ramp volumes within the study area to generate the design year peak hour volumes for use in the alternatives analysis.

The growth rates of traffic for individual cross-streets along the corridor were also estimated using the first procedure. The proposed linear annual traffic growth rate for these streets ranged between **1.0%** and **2.5%.** These respective proposed growth rates would be applied to all arterial turning movement count volumes within the study area to generate the design year peak hour volumes for use in the alternatives analysis.

The following sections detail the processes employed to reach the aforementioned proposed linear annual growth rates for the I-85 corridor and cross-street volumes.

I-85 Corridor Growth Rate Analysis

AADT Evaluation

An evaluation of the historic AADT volumes for each of the segments within the study area was performed. The average annual rate of change in AADT on each of the segments was calculated for:

- The last five years of data available (2010-2015)
- The last ten years of data available (2005-2015)
- The last 25 years of data available (1990-2015)

The 2015, 2010, 2005 and 1990 AADT for each of the segments are shown in **Table 6**.

Table 6 – Historic Freeway Segment AADT

I-85 Segment Number	Count Station #	I-85 Segment Description	2015 AADT	2010 AADT	2005 AADT	1990 AADT
Segment 1	2343	I-85 (Exit 96 to Exit 100) SC 18 TO S-83	**45,800**	**47,800**	**45,800**	**29,500**
Segment 2	2345	I-85 (Exit 100 to Exit 102) SC 83 TO SC 5	**43,500**	**46,200**	**44,700**	**29,500**
Segment 3	2347	I-85 (Exit 102 to Exit 104) SC 5 TO S-99	**37,000**	**41,900**	**41,900**	**27,600**
Segment 4	2349	I-85 (Exit 104 to Exit 106) S-99 TO US 29	**36,500**	**41,600**	**41,400**	**27,500**
Segment 5	2351	I-85 (Exit 106 to NC LINE) US 29 TO STATE LINE	**37,300**	**41,800**	**42,000**	**26,000**

The linear annual rate of change in the AADT is shown in **Table 7**.

Table 7 – Freeway Linear Annual Percentage Change in AADT

I-85 Segment Number	Count Station #	I-85 Segment Description	2010-2015 Annual Rate (%)	2005-2015 Annual Rate (%)	1990-2015 Annual Rate (%)
Segment 1	2343	I-85 (Exit 96 to Exit 100) SC 18 TO S-83	**-0.84**	**0.00**	**2.21**
Segment 2	2345	I-85 (Exit 100 to Exit 102) SC 83 TO SC 5	**-1.17**	**-0.27**	**1.90**
Segment 3	2347	I-85 (Exit 102 to Exit 104) SC 5 TO S-99	**-2.34**	**-1.17**	**1.36**
Segment 4	2349	I-85 (Exit 104 to Exit 106) S-99 TO US 29	**-2.45**	**-1.18**	**1.31**
Segment 5	2351	I-85 (Exit 106 to NC LINE) US 29 TO STATE LINE	**-2.15**	**-1.12**	**1.74**
		AVERAGE	**-1.79**	**-0.75**	**1.70**

The linear annual five-year rate of change in the segment volumes based on the AADT ranged from -2.45 to -0.84 percent per year. The linear annual ten-year rate of change in the segment columns ranged from -1.18 to 0 percent per year. The linear annual growth rate between 1990 and 2015 was assessed. The linear rate of growth was positive throughout the corridor, ranging from 1.31 to 2.21 percent per year. The average linear five-,ten-, and twenty year rates of change were -1.79%, -0.75%, and 1.70% respectively.

South Carolina Statewide Model Projection Evaluation

Traffic Assignments for the 2010 and 2040 base South Carolina Statewide Model (SCSWM) networks were obtained from the model. The average annual growth rate for each segment was calculated as shown in **Table 8**.

Table 8 – Statewide Model Projection Growth Rates

I-85 Segment Number	I-85 Segment Description	2010 SCSWM Projection	2040 SCSWM Projection	2010-2040 Annual Rate (%)
Segment 1	I-85 (Exit 96 to Exit 100) SC 18 TO S-83	**61,800**	**70,500**	**0.47**
Segment 2	I-85 (Exit 100 to Exit 102) SC 83 TO SC 5	**60,900**	**66,400**	**0.30**
Segment 3	I-85 (Exit 102 to Exit 104) SC 5 TO S-99	**47,200**	**55,800**	**0.61**
Segment 4	I-85 (Exit 104 to Exit 106) S-99 TO US 29	**45,700**	**55,400**	**0.71**
Segment 5	I-85 (Exit 106 to NC LINE) US 29 TO STATE LINE	**41,400**	**52,200**	**0.87**
			AVERAGE	**0.59**

It should be noted that the SCSWM projected 2010 volumes higher than the 2015 AADT volumes recorded within the study area. The projected SCSWM growth rates on the individual segments ranged from between 0.30 and 0.87 percent per year.

STV, Incorporated Adjacent I-85 Corridor Analysis Review

An adjacent project previously completed by STV, Inc. on I-85 (MM 80-MM 96) utilized a similar methodology that produced comparable results.

The study noted that positive trends in AADT can be seen on both corridors between 1997 and 2007, immediately followed by fluctuating AADT values that reflected changes in the stability of the national economy. A decline in traffic can be noted through the corridors between 2008 and 2014. An annual growth rate of **1.5%** was recommended for the segment between MM80 and MM96 in the study.

Proposed I-85 Corridor Growth Rate

A comparison of the growth rates derived from the historic AADT data, the SCSWM projections, and the reviewed adjacent study is shown in **Table 9**. Only the growth rate for the two southernmost segments (between Exits 96 and 100) exceeded 1.5 percent per year based on the historic AADT, while the SCSWM projected rate for these segments were approximately 0.5 and 0.3 percent per year respectively. The adjacent 2015 STV I-85 MM80-MM96 study produced similar historical growth patterns over a 18-year period.

Table 9 – Comparison of Freeway Linear Growth Rate Projections

I-85 Segment Number	I-85 Segment Description	5-Year (10-15) Annual Rate (%)	10-Year (05-15) Annual Rate (%)	25-Year (90-15) Annual Rate (%)	2010-2040 SCSWM Annual Rate (%)	Adjacent STV Study Growth Rate (%)	Proposed Corridor Growth Rate (%)
Segment 1	I-85 (Exit 96 to Exit 100) SC 18 TO S-83	**-0.84**	**0.00**	**2.21**	**0.47**	**1.50**	**1.50**
Segment 2	I-85 (Exit 100 to Exit 102) SC 83 TO SC 5	**-1.17**	**-0.27**	**1.90**	**0.30**	**1.50**	**1.50**
Segment 3	I-85 (Exit 102 to Exit 104) SC 5 TO S-99	**-2.34**	**-1.17**	**1.36**	**0.61**	**1.50**	**1.50**
Segment 4	I-85 (Exit 104 to Exit 106) S-99 TO US 29	**-2.45**	**-1.18**	**1.31**	**0.71**	**1.50**	**1.50**
Segment 5	I-85 (Exit 106 to NC LINE) US 29 TO STATE LINE	**-2.15**	**-1.12**	**1.74**	**0.87**	**1.50**	**1.50**
	AVERAGE	**-1.79**	**-1.03**	**1.70**	**0.59**	**1.50**	**1.50**

Based on these estimates and the review of the adjacent I-85 Widening Project (MM80-96), an average annual growth rate of **1.5%** per year was selected to be applied to develop the design year volumes throughout the study area. An annual growth rate of 1.5 percent per year would provide a conservative estimate of future traffic volumes on all freeway segments in the study area.

I-85 Traffic Volume Data – 2040 Design Hour Adjusted Volumes

The 1.5 percent per year growth rate will be applied to the freeway and ramp traffic to develop projections of the 2040 Design Hour Traffic Volumes. The estimated freeway segment AADT for the 2040 Design Year using this growth rate is summarized in **Table 10**.

Table 10 – Estimated 2040 Freeway Segment AADT

I-85 Segment Number	Count Station #	I-85 Segment Description	2015 AADT	Projected Annual Growth Rate	Estimated 2040 AADT
Segment 1	2343	I-85 (Exit 96 to Exit 100) SC 18 TO S-83	**45,800**	**1.5%**	**63,000**
Segment 2	2345	I-85 (Exit 100 to Exit 102) SC 83 TO SC 5	**43,500**	**1.5%**	**59,800**
Segment 3	2347	I-85 (Exit 102 to Exit 104) SC 5 TO S-99	**37,000**	**1.5%**	**50,900**
Segment 4	2349	I-85 (Exit 104 to Exit 106) S-99 TO US 29	**36,500**	**1.5%**	**50,200**
Segment 5	2351	I-85 (Exit 106 to NC LINE) US 29 TO STATE LINE	**37,300**	**1.5%**	**51,300**

I-85 Cross-Street Growth Rate Analysis

AADT Evaluation

An evaluation of the historic AADT volumes for each of the cross-streets within the study area was performed. Data values ranged in availablity from 1987-2015 for each interchange. The average annual rate of change in AADT on each of the cross-streets was calculated for:

- The last five years of data available (2010-2015)
- The last ten years of data available (2005-2015)
- The last 25 years of data available (1990-2015)

The 2015, 2010, 2005 and 1990 AADT for each of the cross-streets are shown in **Table 11**.

Table 11 – Historic Cross-Street AADT

State ID #	Road Name	Road Description	2015 AADT	2010 AADT	2005 AADT	1990 AADT
SC 18	Shelby Highway	(Exit 96) SC 329 TO S-800	**9,400**	**9,000**	**7,500**	**7,600**
S-83	Blacksburg Highway	(Exit 100) S-351 TO S-214	**4,300**	**4,000**	**3,200**	**2,900**
SC 5/SC 198	N. Mountain Street[1]	(Exit 102) S-351 TO S-245	**7,200**	**5,600**	**N/A**	**N/A**
S-99	Tribal Road[2]	(Exit 104) S-65 TO S-66	**650**	**475**	**425**	**350**
US 29	E. Cherokee Street	(Exit 106) S-21 TO STATE LINE	**2,300**	**2,200**	**3,000**	**2,100**

The historical annual linear growth rates are sumarized in **Table 12**.

Table 12 – Cross-Street Linear Annual Percentage Change in AADT

State ID #	Road Name	Road Description	5 Year Growth Rate (%)	10 Year Growth Rate (%)	15 Year Growth Rate (%)	25 Year Growth Rate (%)
SC 18	Shelby Highway	(Exit 96) SC 329 TO S-800	**0.89**	**2.53**	**1.17**	**0.95**
S-83	Blacksburg Highway	(Exit 100) S-351 TO S-214	**5.29**	**3.44**	**0.33**	**1.93**
SC 5/SC 198	N. Mountain Street[1]	(Exit 102) S-351 TO S-245	**5.71**	**N/A**	**N/A**	**N/A**
S-99	Tribal Road[2]	(Exit 104) S-65 TO S-66	**7.37**	**5.29**	**1.21**	**3.43**
US 29	E. Cherokee Street	(Exit 106) S-21 TO STATE LINE	**0.91**	**-2.33**	**-1.56**	**0.38**

1. *N. Mountain Street only has data recorded from 2006-2014*
2. *Tribal Road only has data recorded from 1990-2014*

The linear annual five-year rates of change in the cross-street volumes based on the AADT ranged from 0.89 to 7.37 percent per year, the linear annual ten-year rates of change in the segment volumes ranged from -2.33 to 5.29 percent per year, and the linear annual twenty five-year rates of change ranged from 0.38 to 3.43 percent per year.

South Carolina Statewide Model (SCSWM) Projection Evaluation

Traffic assignments for the 2010 and 2040 base SCSWM networks were obtained from the model. The linear growth rate for each cross street was calculated as shown in **Table 13**.

Table 13 – Statewide Model Projection Cross-Street Growth Rates

State ID #	Road Name	2010 SCSWM Projection	2040 SCSWM Projection	30-Year (2010-2040) Linear Growth Rate (%)
SC 18	Shelby Highway	**30,123**	**32,230**	**0.23%**
S-83	Blacksburg Highway	**15,708**	**29,151**	**2.85%**
SC 5/SC 198	N. Mountain Street	**26,122**	**28,361**	**0.29%**
S-99	Tribal Road	**2,509**	**2,330**	**-0.24%**
US 29	E Cherokee Street	**3,829**	**2,670**	**-1.01%**

The projected cross-street growth rates on the individual segments range between -1.01 and 2.85 percent per year.

STV, Incorporated Adjacent I-85 Corridor Analysis Review

A review of approved growth rates from a recent study titled *I-85 Widening Project MM80-MM96: Spartanburg and Cherokee Counties* (2015) by STV, Inc. was conducted.

The study compared growth rates derived from historical AADT to determine recommended growth rates for I-85. An annual growth rate of **1.5%** was recommended for all freeway segments and applied to all cross-streets in the study area. An exclusive review of the cross-street data was not performed as part of the STV, Inc. study.

Proposed I-85 Corridor Growth Rate

A comparison of the growth rates derived from the historic AADT data (from 1990 to 2015), the SCSWM projections, and the resulting proposed growth rate for use in this project is shown in **Table 14**.

Table 14 – Comparison of Cross Street Linear Growth Rate Projections

State ID #	Road Name	1990-2015 Historical Linear Growth Rate (%)	2010-2040 SCSWM Linear Growth Rate (%)	Recommended Linear Growth Rate (%)
SC 18	Shelby Highway	**0.95**	**0.23**	**1.0%**
S-83	Blacksburg Highway	**1.93**	**2.85**	**2.5%**
SC 5/SC 198	N. Mountain Street	**N/A**	**0.29**	**1.0%**
S-99	Tribal Road	**3.43**	**-0.24**	**1.5%**
US 29	E Cherokee Street	**0.38**	**-1.01**	**1.0%**

To develop growth rates for the cross-streets along the corridor, a combination of historical growth and model growth data was considered. Each cross street was reviewed as an independent segment, returning annual linear growth rates ranging from 0.95 to 3.43 percent historically, and linear growth rates of -1.01 to 2.85 percent in the SCSWM. Proposed growth rates ranging from **1.0% to 2.5%** per year would provide a conservative estimate of future traffic volumes on all cross-streets in the study area.

I-85 Cross Street Traffic Volume Data – 2040 Design Hour Volumes

The 1.0 and 2.5 percent per year growth rates would be applied to the respective arterial turning movements to develop projections of the 2040 Design Hour Traffic Volumes. The estimated cross-street AADT for the 2040 Design Year using these growth rates are summarized in **Table 15**.

Table 15 – Estimated 2040 Cross-Street AADT

State ID #	Road Name	2015 AADT	Estimated 2040 AADT
SC 18	Shelby Highway	**9,400**	**11,800**[3]
S-83	Blacksburg Highway	**4,300**	**7,000**[5]
SC 5/SC 198	N. Mountain Street	**7,200**	**9,000**[3]
S-99	Tribal Road	**650**	**900**[4]
US 29	E Cherokee Street	**2,300**	**2,900**[3]

3. *Based on the 1.0% proposed growth rate*
4. *Based on the 1.5% proposed growth rate*
5. *Based on the 2.5% proposed growth rate*

Capacity Analysis

A series of capacity analyses were performed based on the methodologies and guidelines contained in the Transportation Research Board's publication ***HCM 2010 Highway Capacity Manual*** (HCM). Various software analysis and simulation packages based on the HCM were used in performing the analyses.

a. McTrans' *HCS 2010*
- Freeway Segments
- Ramp Merge/Diverge Areas

b. Trafficware's *Synchro*
- Unsignalized Intersections
- Signalized Intersections

<u>Level of Service Criteria</u>

The analysis methodologies contained in the HCM for the various facility types and users describe the operational conditions in terms of a Level of Service (LOS). The HCM defines LOS as:

"…a quality measure describing operations conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience. Six LOS are defined for each type of facility that has analysis procedures available.

Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions and the driver's perception of those conditions. Safety is not included in the measures that establish service levels."

The following discussions and tables describe the HCM LOS criteria for the freeway segments, ramp merge/diverge segments, weaving segments, unsignalized intersections and signalization intersections.

Freeway Segments

The HCM characterizes the capacity of a basic freeway segment "*...by three performance measures: density in passenger cars per mile per lane (pc/mi/ln), space mean speed in miles per hour (mi/h), and the ratio of demand flow rate to capacity (v/c). Each of these measures is an indication of how well traffic is being accommodated by the basic freeway segment.*" LOS F occurs when either the segment density exceeds 45 pc/mi/ln or when the segment v/c ratio exceeds 1.0 (regardless of the segment density). **Table 16** shows the HCM LOS criteria for basic freeway segments.

Table 16 – Freeway Segment LOS Criteria

Basic Freeway Segments	
LOS	**Density (pc/mi/ln)**
A	< 11
B	> 11-18
C	> 18-26
D	> 26-35
E	> 35-45
F	> 45 v/c > 1.0

Ramp Merge and Diverge Area

Ramp-freeway junctions occur when merging maneuvers occur (on-ramps) or when diverging maneuvers occur (off-ramps). The operation of these merge and diverge areas are affected by a number of factors, including the operation of the adjacent freeway segment and the proximity and flow on adjacent ramps. Typically, the influence area of the ramps is 1,500 feet upstream of a diverge point and downstream from a merge point. As with freeway segments and weaving segments, the LOS of a merge or diverge area is related to the density of the segment. Regardless of the density, the merge or diverge areas are considered to operate at LOS F when the freeway demand exceeds the capacity of the upstream freeway segment (at diverge areas) or the downstream freeway segment (at merge areas), as well as when the ramp demand exceeds the ramp capacity. **Table 17** on the following page shows the HCM LOS criteria for ramp merge and diverge areas.

Table 17 – Merge/Diverge LOS Criteria

Merge/Diverge Areas	
LOS	Density (pc/mi/ln)
A	< 10
B	> 10-20
C	> 20-28
D	> 28-35
E	> 35
F	v/c > 1.0

Unsignalized Intersections

The LOS for unsignalized intersections is based on the average control delay per vehicle. Since major street traffic is seldom controlled by stops signs (except at intersections with all-way stop control or in special circumstances), major street traffic generally will experience virtually no delay. Most of the delay will be encountered by traffic on approaches controlled by stop signs. Under certain conditions, delay will also be encountered by left turning traffic on the major street waiting for appropriate sized gaps in the opposing traffic flow to complete their turn. Therefore, the delay experienced by stop controlled movements and major street left turns, rather than the entire average intersection delay, are used to identify the critical LOS at these intersections. **Table 18** shows the HCM LOS criteria for unsignalized intersections.

Table 18 – Unsignalized Intersection LOS Criteria

Unsignalized Intersections	
LOS	Control Delay (sec/veh)
A	< 10
B	> 10-15
C	> 15-25
D	> 25-35
E	> 35-50
F	> 50

Signalized Intersections

The LOS for signalized intersections is based on the average control delay per vehicle. LOS can be identified for the entire intersection, individual intersection approaches, and each movement/lane-group. **Table 19** on the following page shows the HCM LOS criteria for signalized intersections.

Table 19 – Signalized Intersection LOS Criteria

Signalized Intersections	
LOS	Control Delay (sec/veh)
A	< 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

a. HCS Analysis

The analysis of basic freeway segments within the study area were performed for existing conditions, future (2040) no-build conditions and future (2040) build conditions. The following criteria were identified through discussions with SCDOT and used for various inputs within the freeway segment analysis:

- The approved peak hour volumes (8:00-9:00AM and 2:00-3:00PM) based on the P-132 ATR count station data were balanced through the system and used for the freeway segment mainline volumes.
- To develop future (2040) traffic volumes, a 1.5 percent annual growth rate was applied to existing interstate volumes in the study area.
- A peak hour factor of 0.94 was used for freeway segments and ramp areas.
- The proportion of trucks and buses traveling on the freeway segments and ramp movements, based on averaged SCDOT data from the two mainline count locations within the corridor limits, is 30 percent.
- Based on the grades through the study area, the terrain was selected as “Rolling”, instead of “Level” or “Mountainous”.
- Free-flow speed was set at the posted speed limit along the segment.

Basic Freeway Segment Analysis

The existing condition and 2040 no-build condition analyses were performed using the existing number of freeway lanes present on the segments within the study area. The 2040 build condition analysis was performed assuming I-85 would provide 3 lanes in both directions between Exit 96 – Shelby Highway, to the southernmost ramps at Exit 106 – E. Cherokee Street. The Basic Freeway Segment Analysis outputs are provided in **Appendix F** and a summary of results is shown in **Table 20** on the following page.

Table 20 – Freeway Segment Capacity Analysis Results

Basic Freeway Segment Analysis Results													
		AM Peak Hour						PM Peak Hour					
	Segment	2015 Existing		2040 No-Build		2040 Build		2015 Existing		2040 No-Build		2040 Build	
		LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
NB	Exit 96-100	B	17.7	D	27.3	B	17.3	D	29.7	F	66.4	D	28.3
NB	Exit 100-102	B	15.9	C	22.9	B	14.9	D	27.9	F	56.1	D	26.2
NB	Exit 102-104	B	14.6	C	20.9	B	13.8	C	24.1	E	43.9	C	23.2
NB	Exit 104-106	B	14.1	C	20.2	B	13.4	C	23.8	E	43.1	C	22.9
NB	Exit 106-State Line	B	14.6	C	20.8	C	20.8	C	23.9	E	43.2	E	43.2
SB	State Line-Exit 106	B	13.1	C	19.6	C	19.6	C	24.9	F	45.1	F	45.1
SB	Exit 106-104	B	13.9	C	20.7	B	13.6	C	24.6	E	44.3	C	23.3
SB	Exit 104-102	B	12.8	C	19.1	B	12.7	C	25.3	F	46.6	C	23.9
SB	Exit 102-100	B	17.0	C	25.3	B	16.2	D	27.3	F	52.9	C	25.5
SB	Exit 100-96	B	17.7	D	27.3	B	17.1	D	29.7	F	66.6	D	28.3

The analysis results for the freeway segments, summarized in **Table 20**, indicate the following:

2015 Existing Conditions

Using the design hour volumes for the morning and afternoon peak hours, the analysis results indicate that:

- During the morning peak hour, all freeway segments operate at LOS B.
- During the afternoon peak hour, all freeway segments operate at LOS C or D.

2040 No-Build Conditions

With traffic volumes projected to increase within the corridor at an annual rate of 1.5 percent per year, if I-85 is not widened, the increased traffic volumes traveling on the existing interstate capacity will result in increased density and reductions of freeway segment LOS.

During the morning peak hour:

- All northbound freeway segments north of Exit 100 will operate at LOS C.
- The northbound freeway segment south of Exit 100 will operate at LOS D.
- All southbound freeway segments between Exit 100 and the state line will operate at LOS C.
- The southbound freeway segment south of exit 100 will operate at LOS D.

During the afternoon peak hour:

- All northbound freeway segments south of Exit 102 will operate at LOS F.
- All northbound freeway segments north of Exit 102 will operate at LOS E.
- All southbound freeway segments will operate at LOS F except the segment between Exits 106 and 104, which operates at LOS E.

2040 Build Conditions

With traffic volumes projected to increase within the corridor at an annual rate of 1.5 percent per year, if I-85 is not widened, the increased traffic volumes traveling on the existing interstate capacity will result in increased density and reductions of freeway segment LOS. The addition of a third travel lane in each direction on I-85 is expected to improve the LOS on each segment.

During the morning peak hour:

- All northbound freeway segments will operate at LOS B or C.
- All southbound freeway segments at LOS B or C.

During the afternoon peak hour:

- All northbound freeway segments south of Exit 102 will operate at LOS D.
- All northbound freeway segments north of Exit 102 will operate at LOS C except the two-lane segment north of Exit 106, which will operate at LOS E.
- All southbound freeway segments north of Exit 100 will operate at LOS C except the two-lane segment north of Exit 106, which will operate at LOS F.
- The southbound freeway segment south of Exit 100 will operate at LOS D.

Ramp Merge Analysis

The ramp merge analyses outputs are provided in **Appendix G** and the results are summarized in **Table 21**.

Table 21 – Ramp Merge Capacity Analysis Results

Freeway Merge Analysis Results													
		AM Peak Hour						PM Peak Hour					
	Merge Location	2015 Existing		2040 No-Build		2040 Build		2015 Existing		2040 No-Build		2040 Build	
		LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
NB	Exit 96	C	20.6	D	29.1	B	18.7	D	30.9	F	45.0	D	28.5
NB	Exit 100	B	17.0	C	23.9	B	15.1	D	28.1	F	40.3	C	24.9
NB	Exit 102	B	12.2	B	18.6	B	13.5	C	21.9	D	33.3	C	22.2
NB	Exit 104	B	13.8	C	20.1	B	13.1	C	23.6	D	34.9	C	22.2
NB	Exit 106	B	17.4	C	23.9	C	21.9	C	26.8	E	38.1	E	36.1
SB	Exit 106	B	10.7	B	17.8	B	13.4	C	21.5	D	32.6	C	22.3
SB	Exit 104	B	10.7	B	17.1	B	12.5	C	23.4	D	34.6	C	22.8
SB	Exit 102	B	17.9	C	25.3	B	16.1	D	28.1	F	39.8	C	24.1
SB	Exit 100	B	19.3	C	27.3	B	16.9	D	29.8	F	42.3	C	26.1
SB	Exit 96	C	24.5	D	33.7	C	22.5	D	33.4	F	46.7	D	29.6

The analysis results for the ramp merge areas, summarized in **Table 21**, indicate the following:

2015 Existing Conditions

Using the design hour volumes for the morning and afternoon peak hours, the analysis results indicate that:

- During the morning peak hour, all ramp merge areas operate at LOS B or C
- During the afternoon peak hour, all ramp merge areas operate at LOS C or D

2040 No-Build Conditions

With traffic volumes projected to increase within the corridor at an annual rate of 1.5 percent per year, if I-85 is not widened, the increased traffic volumes traveling on the existing interstate capacity will result in increased density and reductions of ramp area LOS.

During the morning peak hour:

- All ramp merge areas north of Exit 96 will operate at LOS B or C in both directions.
- The ramp merge areas at Exit 96 will operate at LOS D in both directions.

During the afternoon peak hour:

- The ramp merge areas at Exits 96 and 100 will operate at LOS F in both directions.
- The northbound ramp merge areas at Exits 102 and 104 will operate at LOS D.
- The ramp merge areas at Exits 102 and 104 will operate at LOS F and D, respectively, in the southbound direction.
- The ramp merge areas at Exit 106 will operate at LOS E northbound and LOS D southbound.

2040 Build Conditions

With traffic volumes projected to increase within the corridor at an annual rate of 1.5 percent per year, if I-85 is not widened, the increased traffic volumes traveling on the existing interstate capacity will result in increased density and reductions of freeway segment LOS. The addition of a third lane in each direction on I-85 is expected to improve the LOS on all segments.

During the morning peak hour:

- All ramp merge areas north of Exit 96 will operate at LOS A, B, or C in both directions

During the afternoon peak hour:

- All ramp merge areas north of Exit 96 will operate at LOS C in both directions except the northbound on-ramp merge area at Exit 106, which will operate at LOS E.
- The ramp merge areas at Exit 96 will operate at LOS D in both directions.

Ramp Diverge Analysis

The ramp diverge analyses outputs are provided in **Appendix G** and the results are summarized in **Table 22**.

Table 22 – Ramp Diverge Capacity Analysis Results

Freeway Diverge Analysis Results													
		AM Peak Hour						PM Peak Hour					
	Merge Location	2015 Existing		2040 No-Build		2040 Build		2015 Existing		2040 No-Build		2040 Build	
		LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
NB	Exit 96	B	17.2	C	26.2	B	17.5	D	28.5	F	42.6	C	26.5
NB	Exit 100	B	19.3	C	26.4	B	19.1	D	31.5	F	44.5	D	28.9
NB	Exit 102	B	17.6	C	24.4	B	18.2	D	28.7	E	41.0	C	27.9
NB	Exit 104	A	9.3	B	15.8	A	9.4	B	19.9	D	31.8	B	18.7
NB	Exit 106	B	18.3	C	25.2	A	7.0	D	28.6	E	40.9	B	16.1
SB	Exit 106	B	17.2	C	24.7	C	24.7	D	30.4	E	41.1	D	29.2
SB	Exit 104	B	11.1	B	17.5	B	12.4	C	26.6	E	37.2	C	23.5
SB	Exit 102	B	14.5	C	21.7	B	15.3	D	28.7	E	39.6	C	25.8
SB	Exit 100	C	22.3	D	30.4	C	21.7	D	34.2	F	45.3	D	30.0
SB	Exit 96	C	22.2	D	31.6	C	21.9	D	34.6	F	47.5	D	30.5

The analysis results for the ramp diverge areas, summarized in **Table 7**, indicate the following:

<u>2015 Existing Conditions</u>

Using the design hour volumes for the morning and afternoon peak hours, the analysis results indicate that:

- During the morning peak hour, all ramp diverge areas operate at LOS A, B and C.
- During the afternoon peak hour, all ramp diverge areas operate at LOS D with the exception of Exit 104, which operates at LOS B northbound and LOS C southbound.

<u>2040 No-Build Conditions</u>

With traffic volumes projected to increase within the corridor at an annual rate of 1.5 percent per year, if I-85 is not widened, the increased traffic volumes traveling on the existing interstate capacity will result in increased density and reductions of ramp area LOS.

During the morning peak hour:

- All northbound ramp diverge areas will operate at LOS B and C.
- The southbound ramp diverge areas north of Exit 100 will operate at LOS B and C.
- The southbound ramp diverge areas at Exits 96 & 100 will operate at LOS D.

During the afternoon peak hour:

- The ramp diverge areas at Exits 96 and 100 will operate at LOS F in both directions.
- The ramp diverge areas north of Exit 100 will operate at LOS E with the exception of Exit 104, which will operate at LOS D in the northbound direction.

2040 Build Conditions

With traffic volumes projected to increase within the corridor at an annual rate of 1.5 percent per year, if I-85 is not widened, the increased traffic volumes traveling on the existing interstate capacity will result in increased density and reductions of freeway segment LOS. The addition of a third travel lane in each direction on I-85 is expected to improve the LOS on each segment.

During the morning peak hour:

- All ramp diverge areas will operate at LOS A or B in the northbound direction.
- All ramp diverge areas will operate at LOS B or C in the southbound direction.

During the afternoon peak hour:

- All ramp diverge areas will operate at LOS B or C in the northbound direction with the exception of Exit 100, which will operate at LOS D.
- The southbound ramp diverge areas north of Exit 100 will operate at LOS C, with the exception of Exit 106, which will operate at LOS D.
- The southbound ramp diverge areas at Exits 96 and 100 will operate at LOS D.

b. Intersection Analysis

Capacity analyses for the signalized and unsignalized intersections at the interchanges within the study area were performed. Analyses were performed for existing conditions (existing traffic, intersection traffic control and geometry), 2040 No-Build conditions (2040 traffic, and existing intersection traffic control and geometry), and 2040 Build conditions (2040 traffic and modified intersection traffic control and geometry).

For unsignalized intersections, the intersection operation is represented by the worst approach delay and LOS of all the stop sign controlled approaches to the intersection. For signalized intersections, the intersection operation is represented by the intersection delay and LOS.

At some intersections, there are atypical intersection geometry and/or traffic control which are not compatible with HCM methodologies and procedures. No LOS or delay can be estimated at these atypical intersections.

For the intersection located where no modifications are anticipated at the existing interchanges (Exit 96), the 2040 No-Build and 2040 Build condition analysis results will be identical since no changes in intersection capacity will be made.

Where the existing interchanges are proposed to be modified as part of the widening project (Exits 100, 102, 104, and 106), the capacity analysis results for the 2040 Build condition alternatives can be found within the section for each of those individual interchanges.

Existing Conditions and 2040 No-Build Intersection Analysis

The results of the unsignalized and signalized intersection capacity analyses for existing conditions and the 2040 No-Build conditions for the intersections under the jurisdiction of SCDOT are shown in **Table 23**. Specific details concerning the results of the intersection capacity analyses can be found in the discussion for each of the individual interchanges. The HCM intersection capacity outputs for each intersection are provided in **Appendix H**.

Table 23 – Intersection Capacity Analysis Results

	Intersection Name	2015 Base Conditions				2040 No Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
	Exit 96 (Shelby Highway/SC 18)								
	Wilcox Ave/Shelby Highway on-ramp & Lemuel Road*	A	7.5	A	6.3	A	7.5	A	7.3
	Shelby Highway & I-85 Southbound Ramps*	C	23.6	D	27.2	E	46.9	F	61.7
	Shelby Highway & I-85 Northbound Ramps*	B	13.1	C	18.0	C	17.1	E	36.3
	Shelby Highway & Victory Trail Road*	C	24.9	C	22.9	F	103.3	F	86.2
	Victory Trail Road and Frontage Road*	B	12.5	B	10.3	B	13.7	B	11.4
	Exit 100 (Blacksburg Hwy/S-83)								
	Blacksburg Hwy on-ramp & Crawford Road**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Blacksburg Highway & Service Station Driveway 2*	B	10.8	B	11.0	B	13.6	B	13.1
	Blacksburg Highway & Service Station Driveway 1*	B	11.8	B	11.3	B	13.7	B	12.0
	Blacksburg Hwy & I-85 Southbound Ramps*	B	12.0	B	13.9	C	24.2	F	55.9
	Blacksburg Hwy & I-85 NB Ramps/Frontage Rd*	B	10.8	B	10.1	C	18.3	B	14.3
	I-85 Southbound off-ramp & Retail Store*	A	0.0	A	8.9	A	0.0	A	9.0
	I-85 Southbound off-ramp & Service Station Dwy 1*	A	8.8	A	8.9	A	9.0	A	9.1
	I-85 Southbound off-ramp & Service Station Dwy 2*	A	9.4	A	9.5	A	9.6	A	9.7
	I-85 Northbound off-ramp & Frontage Rd*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Exit 102 (N. Mountain Street/SC 198/SC 5)								
	N. Mountain Street & Holly Grove Road*	B	10.2	B	10.1	B	10.5	B	10.6
	N. Mountain Street & White Farm Road*	B	10.8	B	10.9	B	11.2	B	11.0
	N. Mountain Street on-ramp & Rock Springs Road**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	N. Mountain Street & Service Station Driveways (4)*	B	12.3	B	13.9	B	14.1	C	15.0
	N. Mountain Street & Service Station Driveways (2)*	B	14.9	C	16.7	C	17.3	C	16.3
	N. Mountain Street & I-85 Southbound Ramps	C	25.0	B	15.6	D	36.3	B	19.8
	N. Mountain Street & I-85 Northbound Ramps	B	13.4	B	13.2	B	18.1	B	14.2
	N. Mtn St & Service Station/Retail Store Driveways (2)*	C	15.4	B	14.4	C	19.6	C	17.9
	I-85 Southbound off-ramp & Truck pull-off*	A	9.9	A	0.0	A	9.9	A	0.0
	I-85 Southbound off-ramp & Restaurant Driveway*	A	6.6	A	7.6	A	6.2	A	7.6
	I-85 Northbound off-ramp & Henson Road*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Exit 104 (Tribal Road/S-99)								
	Tribal Road on-ramp & White Farm Road*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Tribal Road & I-85 Southbound Ramps*	E	42.6	C	15.0	F	269.3	C	19.6
	Tribal Road & I-85 Northbound Ramps/ Frontage Road/ Priester Rd*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Tribal Road & Industrial Plant Dwy (north)/Service Station Dwy	B	13.5	B	13.2	B	13.6	B	12.0
	Tribal Road & Industrial Plant Driveway (south)*	B	10.2	A	9.3	B	10.2	A	9..2
	Tribal Road on-ramp & Priester Road*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Exit 106 (E. Cherokee Street/US 29)								
	US 29 & Retail Store Driveways (3)*	C	16.0	C	17.0	C	18.4	C	20.8
	US 29 & Service Station/Retail Store Driveways (4)*	B	12.6	C	15.0	B	12.6	C	15.1
	US 29 & SB on-ramp(north)/Service Station Driveway*	A	0.0	A	0.0	A	0.0	A	0.0
	US 29 & SB on-ramp(south)/Service Station Driveway*	A	0.0	A	0.0	A	0.0	A	0.0
	US 29 & I-85 Southbound Off-Ramp*	B	10.6	B	11.6	B	11.1	B	12.8
	US 29 & I-85 Northbound Off-Ramp*	A	8.6	A	9.6	A	8.7	A	9.7
	US 29 & I-85 Northbound On-Ramp/Frontage Road**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	US 29 & on-ramp to I-85 Northbound & Frontage Rd*	B	12.1	B	11.4	B	13.2	B	11.7
	I-85 Southbound off-ramp & Service Station Dwy 1*	A	0.0	A	0.0	A	0.0	A	0.0
	I-85 Southbound off-ramp & Service Station Dwy 2*	A	8.6	A	9.0	A	8.7	A	9.1
	US 29 & Lakeview Drive*	A	8.9	A	8.9	A	9.0	A	9.1

*Unsignalized intersection; worst approach LOS and delay reported

**Unique intersection geometry under all Conditions incompatible with HCM 2010; LOS and delay not reported

***The LOS F result at the Blacksburg Highway and Southbound Ramps in the PM peak hour (westbound approach) is caused by a high traffic count from the northbound approach and the need of a separate turn lane on the westbound approach.

In general, with the forecast increases in traffic and without improvements to the intersections, delay in the 2040 No-Build analyses can be expected to be higher than delays during the Existing Conditions analyses. In some cases, the increases in delay may still result in acceptable LOS being obtained. In other cases, the increases in delay may result in LOS E or LOS F conditions. When these results occur, it may be necessary to provide additional capacity (such as constructing separating left and/or right turn lanes) and/or changes in the traffic control (such as installing traffic signals or roundabouts) to reduce delay and improve the LOS.

2040 Build Intersection Analysis

The results of the unsignalized and signalized intersection capacity analyses for the 2040 Build conditions are shown in Table 23 through Table 35. Specific details concerning the results of the intersection capacity analyses can be found in the discussion for each of the individual interchanges which are proposed to be modified as part of the widening project (Exit 100, 102, 104, and 106).

Exit 98 – Frontage Road

The northbound off-ramp to the Frontage Road is anticipated to be removed as part of this project. With the removal of the off-ramp, the intersection of Frontage/Milliken Road with the I-85 northbound off-ramp to Blacksburg Highway will cease to exist.

The removal of the off-ramp is expected to redirect the small traffic volume traveling on the frontage road to the Exit 100 northbound off-ramp. The off-ramp approach to Blacksburg Highway operates at LOS A under the 2040 No-Build conditions and is expected to continue to operate at LOS A under to the 2040 Build Conditions.

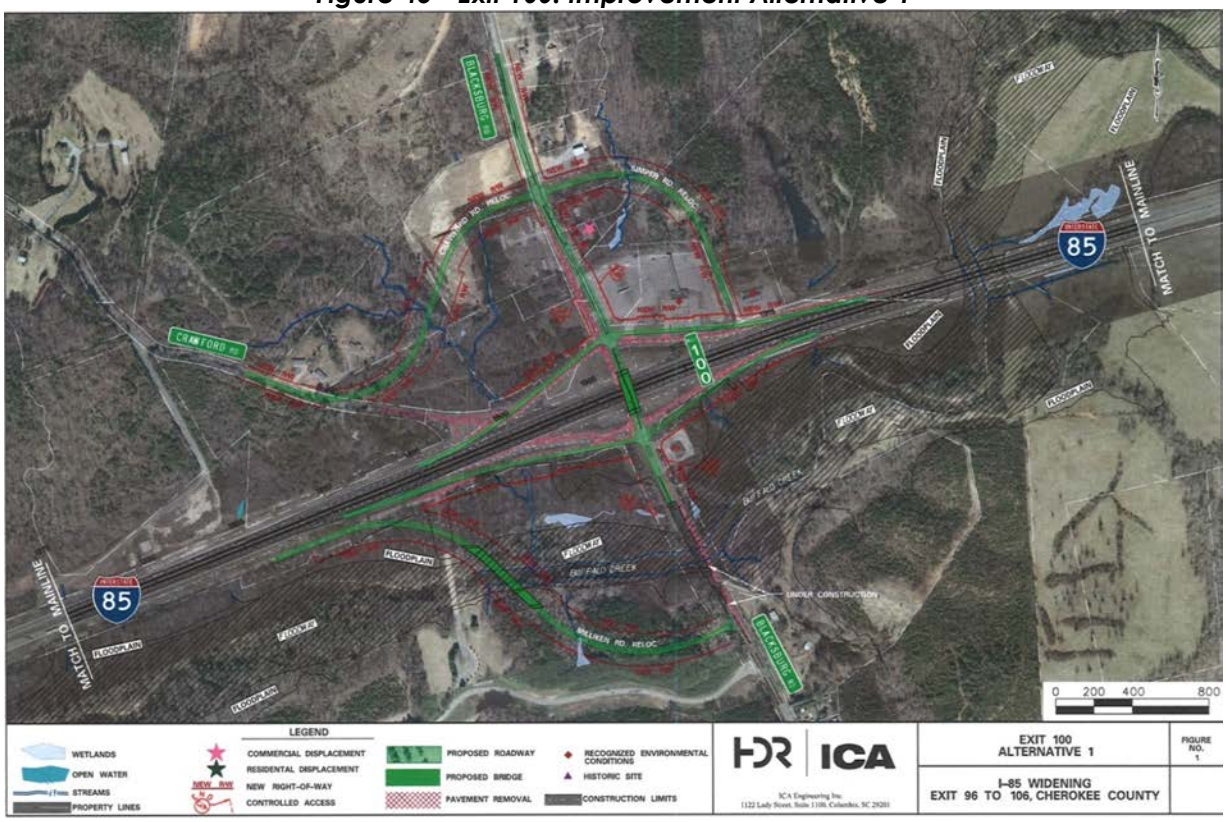
Exit 100 – Blacksburg Highway (S-83)

The Blacksburg Highway interchange is expected to be modified as part of the I-85 widening project. 2040 Build analyses for the intersections within the Exit 100 interchange area were performed for four alternatives.

Alternative 1

The conceptual design of Alternative 1 is shown in **Figure 43**.

Figure 43 - Exit 100: Improvement Alternative 1



Alternate 1 retains the diamond interchange style for Exit 100. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Crawford Road & the southbound on-ramp
  - Store Driveway & the southbound off-ramp
  - Service Station Driveway 1 & the southbound off-ramp
  - Service Station Driveway 2 & the southbound off-ramp
  - Frontage/Milliken Road & the northbound off-ramp
- Relocating and adjusting the alignment of the northbound ramps intersection with Blacksburg Highway.
- Relocating and adjusting the alignment of the southbound ramps intersection with Blacksburg Highway
- Creating a new T-intersection south of Buffalo Creek to provide access to the relocated Frontage/Milliken Road.

- Creating a new intersection north of the southbound ramps intersection provides access to the businesses fronting Simper Road and the relocated Crawford Road.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In Alternate 1, the stop sign controlled approaches at the unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours.

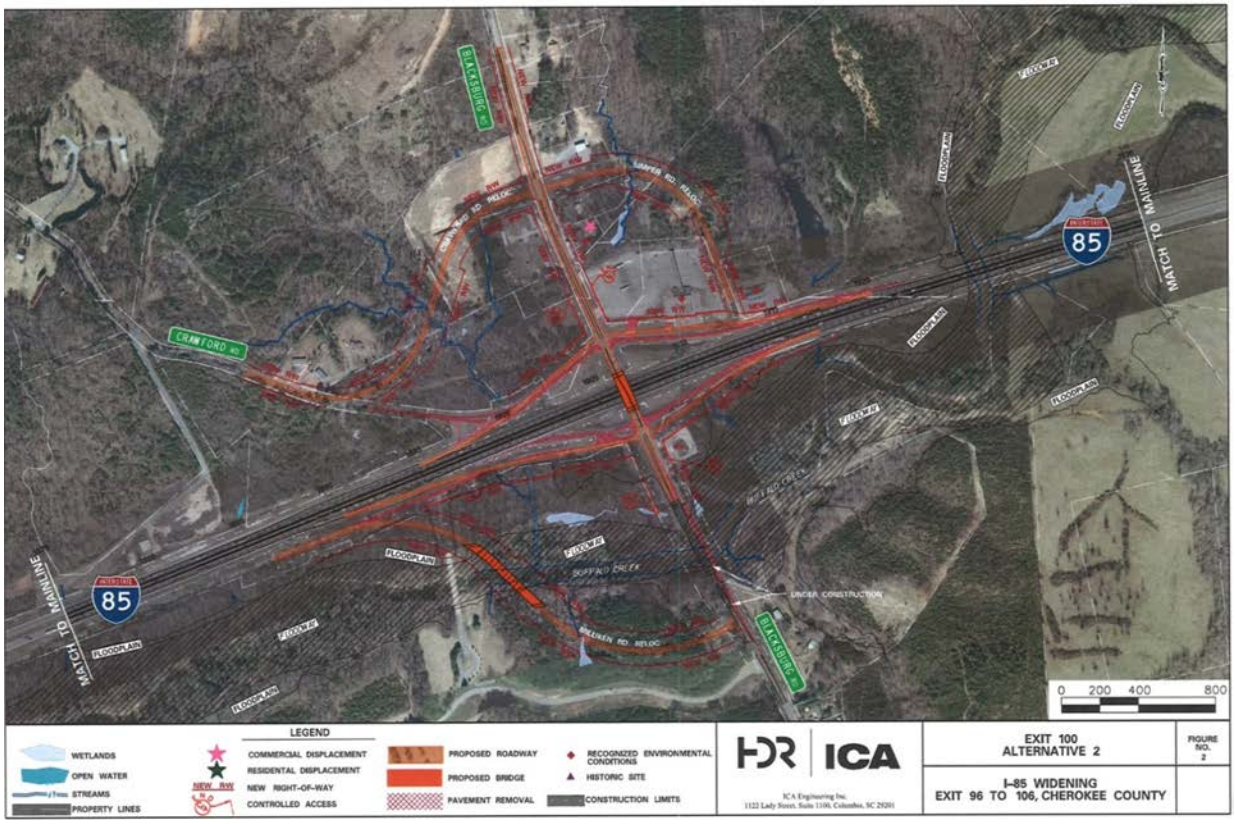
Table 24 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Exit 100 (Blacksburg Hwy/S-83) Alternative 1									
	Blacksburg Hwy at Crawford Road & Simper Road*	Added in Build Conditions				B	12.0	B	12.8
	Blacksburg Hwy on-ramp & Crawford Road**	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Blacksburg Highway & Service Station Driveway 2*	B	13.6	B	13.1	B	11.0	B	10.9
	Blacksburg Highway & Service Station Driveway 1*	B	13.7	B	12.0	Removed in Build Conditions			
	Blacksburg Hwy & I-85 Southbound Ramps*	C	24.2	F	55.9	C	17.3	C	18.0
	Blacksburg Hwy & I-85 NB Ramps/Frontage Rd*	C	18.3	B	14.3				
	Blacksburg Hwy & I-85 Northbound Ramps*	Added in Build Conditions				C	15.3	B	11.8
	I-85 Southbound off-ramp & Retail Store*	A	0.0	A	9.0	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 1*	A	9.0	A	9.1	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 2*	A	9.6	A	9.7	Removed in Build Conditions			
	I-85 Northbound off-ramp & Frontage Rd*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Blacksburg Hwy & Milliken Road*	Added in Build Conditions				B	13.9	B	12.1

Alternative 2

The conceptual design of Alternative 2 is shown in **Figure 44**.

Figure 44 - Exit 100: Improvement Alternative 2



Alternate 2 retains the diamond interchange style for Exit 100. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Crawford Road & the southbound on-ramp
  - Store Driveway & the southbound off-ramp
  - Service Station Driveway 1 & the southbound off-ramp
  - Service Station Driveway 2 & the southbound off-ramp
  - Frontage/Milliken Road & the northbound off-ramp
- Relocating and adjusting the alignment of the northbound ramps intersection with Blacksburg Highway.
- Relocating and adjusting the alignment of the southbound ramps intersection with Blacksburg Highway
- Creating a new T-intersection south of Buffalo Creek to provide access to the relocated Frontage/Milliken Road from Blacksburg Highway.
- Creating a new intersection north of the southbound ramps intersection to provide access to the businesses fronting Simper Road and the relocated Crawford Road.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In Alternate 2, the stop sign controlled approaches at the unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours.

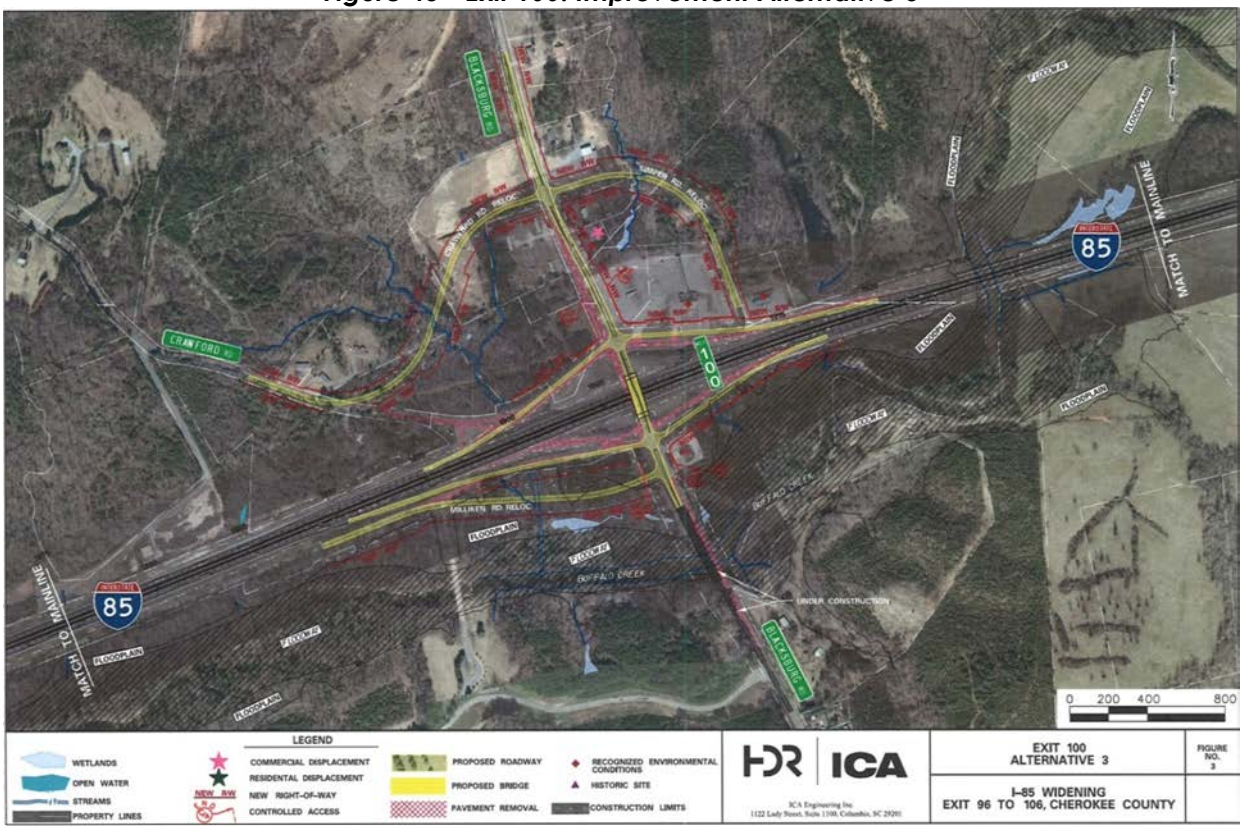
Table 25 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Exit 100 (Blacksburg Hwy/S-83) Alternative 2									
	Blacksburg Hwy at Crawford Road & Simper Road*	Added in Build Conditions				B	12.0	B	12.8
	Blacksburg Hwy on-ramp & Crawford Road**	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Blacksburg Highway & Service Station Driveway 2*	B	13.6	B	13.1	B	11.0	B	10.9
	Blacksburg Highway & Service Station Driveway 1*	B	13.7	B	12.0	Removed in Build Conditions			
	Blacksburg Hwy & I-85 Southbound Ramps*	C	24.2	F	55.9	C	17.3	C	18.0
	Blacksburg Hwy & I-85 NB Ramps/Frontage Rd*	C	18.3	B	14.3				
	Blacksburg Hwy & I-85 Northbound Ramps*	Added in Build Conditions				C	15.3	B	11.8
	I-85 Southbound off-ramp & Retail Store*	A	0.0	A	9.0	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 1*	A	9.0	A	9.1	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 2*	A	9.6	A	9.7	Removed in Build Conditions			
	I-85 Northbound off-ramp & Frontage Rd*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Blacksburg Hwy & Milliken Road*	Added in Build Conditions				B	13.9	B	12.1

Alternative 3

The conceptual design of Alternative 3 is shown in **Figure 45**.

Figure 45 - Exit 100: Improvement Alternative 3



Alternate 3 retains the diamond interchange style for Exit 100. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Crawford Road & the southbound on-ramp
  - Store Driveway & the southbound off-ramp
  - Service Station Driveway 1 & the southbound off-ramp
  - Service Station Driveway 2 & the southbound off-ramp
  - Frontage/Milliken Road & the northbound off-ramp
- Relocating and adjusting the alignment of the northbound ramps intersection with Blacksburg Highway.
- Relocating and adjusting the alignment of the southbound ramps intersection with Blacksburg Highway.
- Creating a new T-intersection between the southbound ramps and Buffalo Creek to provide access to the relocated Frontage/Milliken Road from Blacksburg Highway.
- Creating a new intersection north of the southbound ramps intersection to provide access to the businesses fronting Simper Road and the relocated Crawford Road.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In Alternate 3, the stop sign controlled approaches at the unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours.

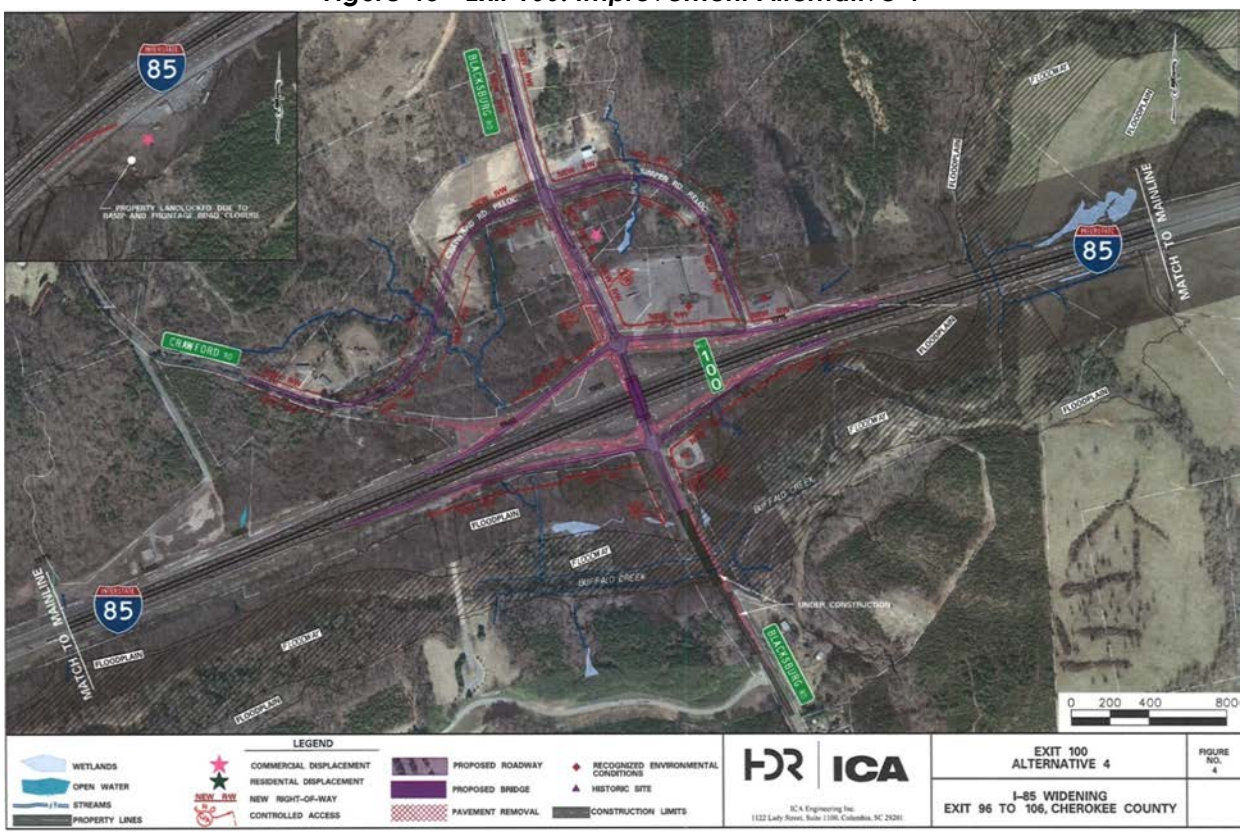
Table 26 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Exit 100 (Blacksburg Hwy/S-83) Alternative 3									
	Blacksburg Hwy at Crawford Road & Simper Road*	Added in Build Conditions				B	12.0	B	12.8
	Blacksburg Hwy on-ramp & Crawford Road**	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Blacksburg Highway & Service Station Driveway 2*	B	13.6	B	13.1	B	11.0	B	10.9
	Blacksburg Highway & Service Station Driveway 1*	B	13.7	B	12.0	Removed in Build Conditions			
	Blacksburg Hwy & I-85 Southbound Ramps*	C	24.2	F	55.9	C	17.3	C	18.0
	Blacksburg Hwy & I-85 NB Ramps/Frontage Rd*	C	18.3	B	14.3				
	Blacksburg Hwy & I-85 Northbound Ramps*	Added in Build Conditions				C	15.3	B	11.8
	I-85 Southbound off-ramp & Retail Store*	A	0.0	A	9.0	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 1*	A	9.0	A	9.1	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 2*	A	9.6	A	9.7	Removed in Build Conditions			
	I-85 Northbound off-ramp & Frontage Rd*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Blacksburg Hwy & Milliken Road*	Added in Build Conditions				B	13.9	B	12.1

Alternative 4 (Selected)

The conceptual design of Alternative 4 is shown in **Figure 46**.

Figure 46 - Exit 100: Improvement Alternative 4



Alternate 4 retains the diamond interchange style for Exit 100. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Crawford Road & the southbound on-ramp
  - Store Driveway & the southbound off-ramp
  - Service Station Driveway 1 & the southbound off-ramp
  - Service Station Driveway 2 & the southbound off-ramp
  - Frontage/Milliken Road & the northbound off-ramp
- Relocating and adjusting the alignment of the northbound ramps intersection with Blacksburg Highway.
- Relocating and adjusting the alignment of the southbound ramps intersection with Blacksburg Highway.
- Creating a new intersection north of the southbound ramps intersection provide alternative access to the businesses fronting Simper Road and the relocated Crawford Road.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In Alternate 4, the stop sign controlled approaches at the unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours.

Table 27 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Exit 100 (Blacksburg Hwy/S-83) Alternative 4									
	Blacksburg Hwy at Crawford Road & Simper Road*	Added in Build Conditions				B	12.1	B	12.9
	Blacksburg Hwy on-ramp & Crawford Road**	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Blacksburg Highway & Service Station Driveway 2*	B	13.6	B	13.1	B	11.7	B	11.5
	Blacksburg Highway & Service Station Driveway 1*	B	13.7	B	12.0	Removed in Build Conditions			
	Blacksburg Hwy & I-85 Southbound Ramps*	C	24.2	F	55.9	C	22.6	C	22.7
	Blacksburg Hwy & I-85 NB Ramps/Frontage Rd*	C	18.3	B	14.3				
	Blacksburg Hwy & I-85 Northbound Ramps*	Added in Build Conditions				C	19.1	C	16.1
	I-85 Southbound off-ramp & Retail Store*	A	0.0	A	9.0	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 1*	A	9.0	A	9.1	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 2*	A	9.6	A	9.7	Removed in Build Conditions			
	I-85 Northbound off-ramp & Frontage Rd*	n/a	n/a	n/a	n/a	Removed in Build Conditions			

Exit 102 – N. Mountain Street (SC 5/SC 198)

The N. Mountain Street interchange is expected to be modified as part of the I-85 widening project. 2040 Build analyses for the intersections within the Exit 102 interchange area were performed for two alternatives.

Alternative 1 (Selected)

The conceptual design of Alternative 1 is shown in **Figure 47**.

Figure 47 - Exit 102: Improvement Alternative 1

Alternate 1 retains the diamond interchange style for Exit 102. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Rock Springs Road & the southbound on-ramp
  - Truck pull-off area & the southbound off-ramp
  - Waffle House restaurant & the southbound off-ramp
  - Waffle House restaurant & N. Mountain Street
  - Flying J Service Station Driveway & N. Mountain Street
  - Service Station Driveway & the southbound off-ramp
  - Henson Road & the southbound off-ramp
- Relocating and adjusting the alignment of the northbound ramps intersection with N. Mountain Street.
- Relocating and adjusting the alignment of the southbound ramps intersection with N. Mountain Street.

- Relocation of Rock Springs Road access to intersection opposite of the realigned White Farms Road.
- Combining the two Flying J driveways to intersect opposite the McDonald's Driveway.
- Creating a new intersection south of the northbound ramps intersection to provide access to Henson Road.
- Placing a cul de sac at the end of Henson Road.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized with the exception of the northbound ramps and southbound ramps intersections, which are existing signalized intersections.

In Alternate 1, the stop sign controlled approaches at the unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours. The signalized intersections operate at LOS C or better during the morning and afternoon peak hours.

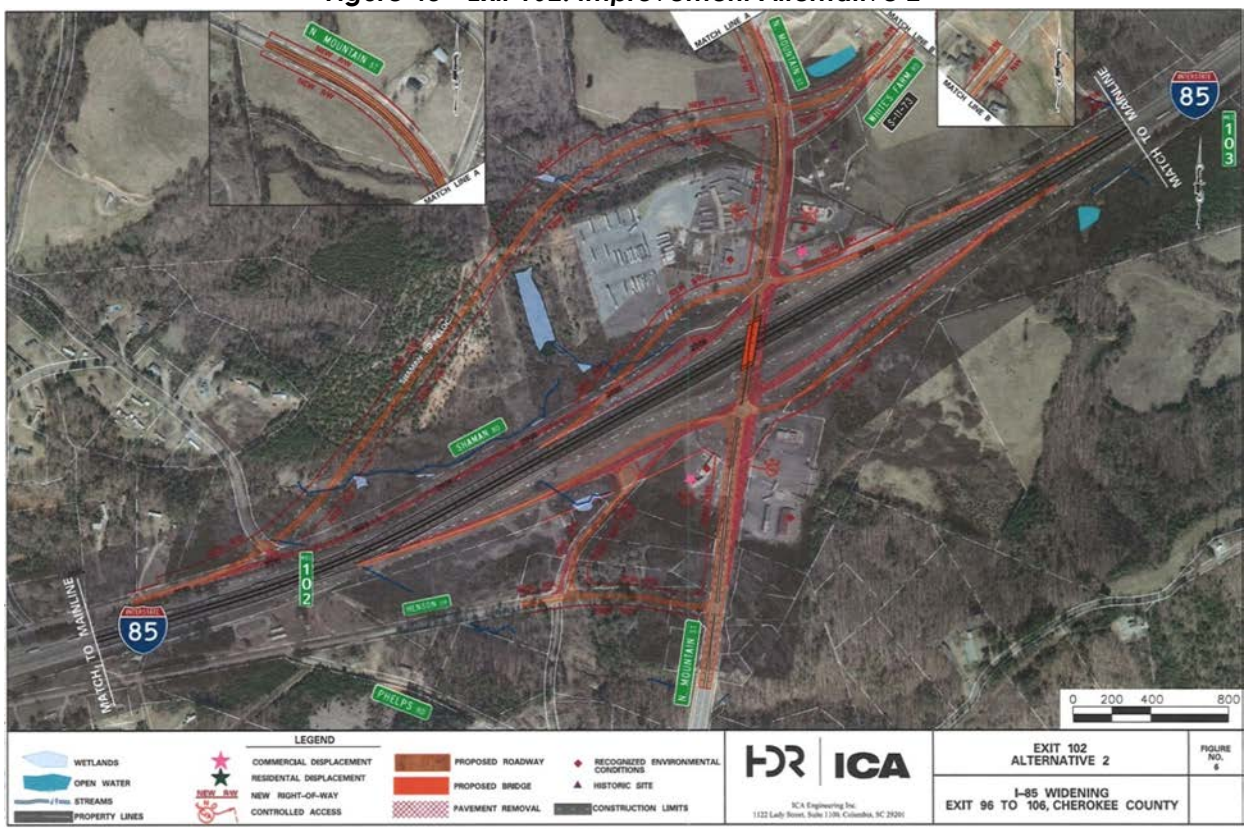
Table 28 – Interchange Alternate Analysis Results

Intersection Name	2040 Base Conditions				2040 Build Conditions			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Exit 102 (N. Mountain Street/SC 198/SC 5) Alternative 1								
N. Mountain Street & Holly Grove Road*	B	10.5	B	10.6	B	10.6	B	10.5
N. Mountain Street & White Farm Road*	B	11.2	B	11.0	Removed in Build Conditions			
N. Mtn Street at White Farm Road & Shaman Road*	Added in Build Conditions				B	13.7	B	12.7
N. Mountain Street on-ramp & Rock Springs Road**	n/a	n/a	n/a	n/a	Removed in Build Conditions			
N. Mountain Street & Service Station Driveways (4)*	B	14.1	C	15.0	C	24.4	D	27.3
N. Mountain Street & Service Station Driveways (2)*	C	17.3	C	16.3	Removed in Build Conditions			
N. Mountain Street & I-85 Southbound Ramps	D	36.3	B	19.8	A	5.2	A	6.6
N. Mountain Street & I-85 Northbound Ramps	B	18.1	B	14.2	B	10.1	B	12.5
N. Mtn St & Service Station/Retail Store Driveways (2)*	C	19.6	C	17.9	C	18.0	C	16.8
N. Mountain Street & Henson Road*	Added in Build Conditions				B	10.9	B	11.7
I-85 Southbound off-ramp & Truck pull-off*	A	9.9	A	0.0	Removed in Build Conditions			
I-85 Southbound off-ramp & Restaurant Driveway*	A	6.2	A	7.6	Removed in Build Conditions			
I-85 Northbound off-ramp & Henson Road*	n/a	n/a	n/a	n/a	Removed in Build Conditions			

Alternative 2

The conceptual design of Alternative 2 is shown in **Figure 48**.

Figure 48 - Exit 102: Improvement Alternative 2



Alternate 2 retains the diamond interchange style for Exit 102. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Rock Springs Road & the southbound on-ramp
  - Truck pull-off area & the southbound off-ramp
  - Waffle House restaurant & the southbound off-ramp
  - Waffle House restaurant & N. Mountain Street
  - Flying J Service Station Driveway & N. Mountain Street
  - Service Station Driveway (southwest of interchange) & N. Mountain Street
  - Service Station Driveway & the southbound off-ramp
  - Henson Road & the southbound off-ramp
- Relocating and adjusting the alignment of the northbound ramps intersection with N. Mountain Street.
- Relocating and adjusting the alignment of the southbound ramps intersection with N. Mountain Street.
- Relocation of Rock Springs Road access to intersection opposite of the realigned White Farms Road.
- Combining the two Flying J driveways to intersect opposite the McDonald's Driveway.

- Creating a new intersection south of the northbound ramps intersection to provide access to Henson Road.
- Placing a cul de sac at the end of Henson Road.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized with the exception of the northbound ramps and southbound ramps intersections, which are existing signalized intersections.

In Alternate 2, the stop sign controlled approaches at the unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours. The signalized intersections operate at LOS C during the morning and afternoon peak hours.

Table 29 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
	Exit 102 (N. Mountain Street/SC 198/SC 5) Alternative 2								
	N. Mountain Street & Holly Grove Road*	B	10.5	B	10.6	B	10.5	B	10.5
	N. Mountain Street & White Farm Road*	B	11.2	B	11.0	Removed in Build Conditions			
	N. Mtn Street at White Farm Road & Shaman Road*	Added in Build Conditions				B	13.7	B	12.7
	N. Mountain Street on-ramp & Rock Springs Road**	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	N. Mountain Street & Service Station Driveways (4)*	B	14.1	C	15.0	C	17.0	C	21.2
	N. Mountain Street & Service Station Driveways (2)*	C	17.3	C	16.3	Removed in Build Conditions			
	N. Mountain Street & I-85 Southbound Ramps	D	36.3	B	19.8	C	20.3	A	8.7
	N. Mountain Street & I-85 Northbound Ramps	B	18.1	B	14.2	B	13.4	B	10.6
	N. Mtn St & Service Station/Retail Store Driveways (2)*	C	19.6	C	17.9	B	11.7	B	10.5
	N. Mountain Street & Henson Road*	Added in Build Conditions				B	10.9	B	11.7
	I-85 Southbound off-ramp & Truck pull-off*	A	9.9	A	0.0	Removed in Build Conditions			
	I-85 Southbound off-ramp & Restaurant Driveway*	A	6.2	A	7.6	Removed in Build Conditions			
	I-85 Northbound off-ramp & Henson Road*	n/a	n/a	n/a	n/a	Removed in Build Conditions			

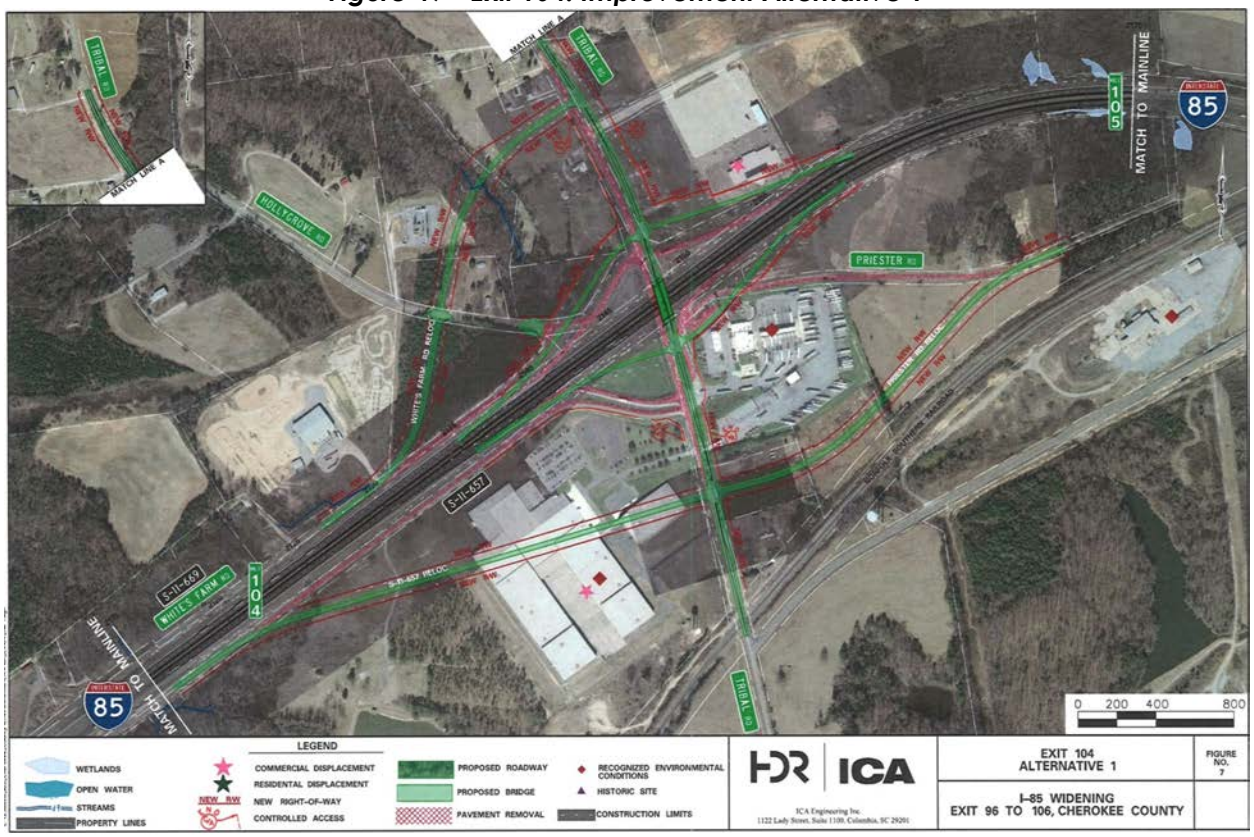
Exit 104 – Tribal Road (S-99)

The Tribal Road interchange is expected to be modified as part of the I-85 widening project. 2040 Build analyses for the intersections within the Exit 104 interchange area were performed for five alternatives.

Alternative 1

The conceptual design of Alternative 1 is shown in **Figure 49**.

Figure 49 - Exit 104: Improvement Alternative 1



Alternate 1 retains the diamond interchange style for Exit 104. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Holly Grove Road & the southbound on-ramp
  - Priester Road & the northbound on-ramp
  - Gibbons Road & Tribal Road
  - Love's Travel Stop Driveway/Priester Road & Tribal Road
- Relocating and adjusting the alignment of the northbound ramps intersection with Tribal Road.
- Relocating and adjusting the alignment of the southbound ramps intersection with Tribal Road.
- Creating a new T-intersection north of the southbound ramps intersection to provide access to Holly Grove Road and White Farm Road.

- Placing a cul de sac at the end of Holly Grove Road.
- Creating a new intersection south of Love's Travel Stop on Tribal Road to provide access to the relocated intersection of Gibbons Road and Priester Road.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In Alternate 1, the stop sign controlled approaches at the unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours.

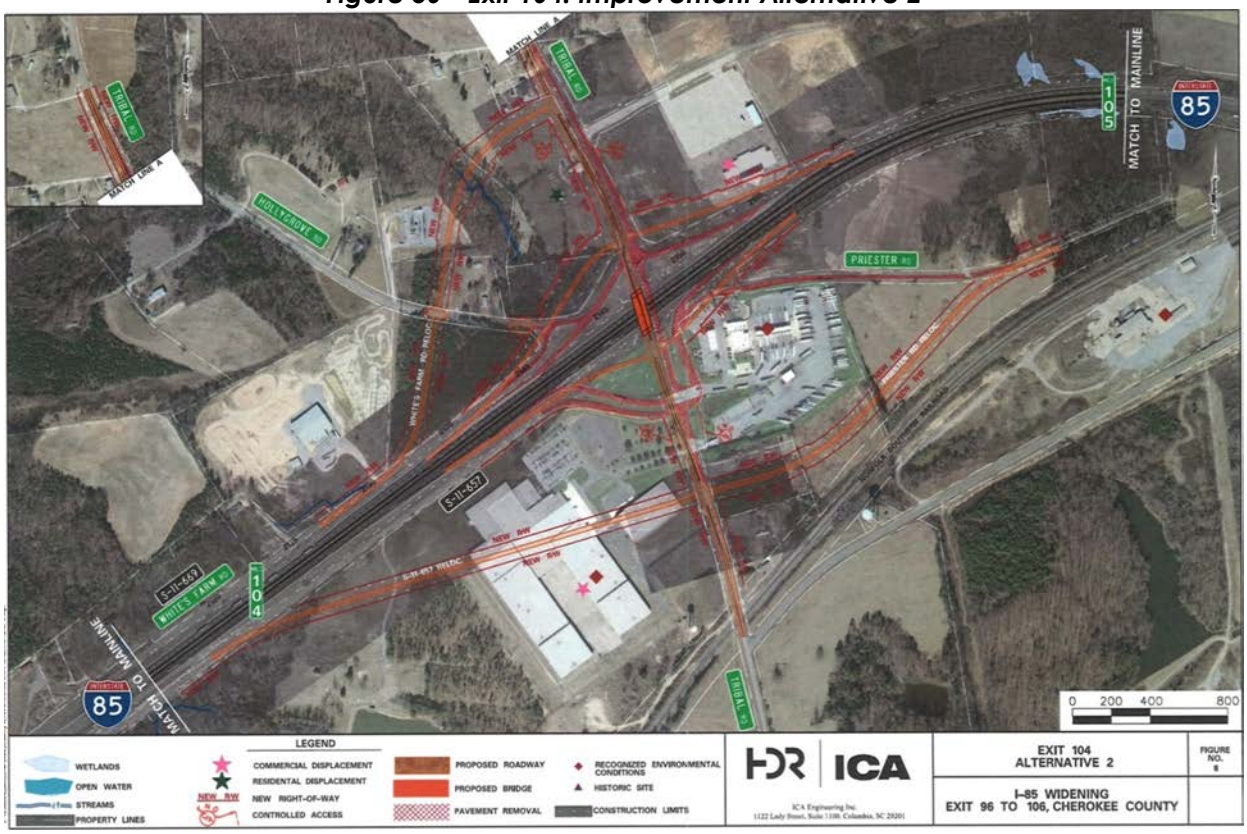
Table 30 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Exit 104 (Tribal Road/S-99) Alternative 1									
	I-85 Southbound on-ramp & Holly Grove Road*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Tribal Road & White Farm Road	Added in Build Conditions				A	8.8	A	8.8
	Tribal Road & I-85 Southbound Ramps*	F	269.3	C	19.6	B	14.9	B	12.7
	Tribal Road & I-85 Northbound Ramps/ Frontage Road/ Priester Rd*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Tribal Road & I-85 Northbound Ramps	Added in Build Conditions				B	10.3	B	11.6
	Tribal Road & Industrial Plant Dwy (north)/Service Station Dwy	B	13.6	B	12.0	Removed in Build Conditions			
	Tribal Road & Service Station Dwy	Added in Build Conditions				B	13.6	B	10.4
	Tribal Road & Industrial Plant Driveway (south)*	B	10.2	A	9..2	Removed in Build Conditions			
	Tribal Road on-ramp & Priester Road*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Tribal Road at Priester Road & Gibbons Road*	Added in Build Conditions				B	11.4	A	9.3

Alternative 2

The conceptual design of Alternative 2 is shown in **Figure 50**.

Figure 50 - Exit 104: Improvement Alternative 2



Alternate 2 retains the diamond interchange style for Exit 104. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Holly Grove Road & the southbound on-ramp
  - Priester Road & the northbound on-ramp
  - Gibbons Road & Tribal Road
  - Love's Travel Stop Driveway/Priester Road & Tribal Road
- Relocating and adjusting the alignment of the northbound ramps intersection with Tribal Road.
- Relocating and adjusting the alignment of the southbound ramps intersection with Tribal Road.
- Creating a new T-intersection north of the southbound ramps intersection to provide access to Holly Grove Road and White Farm Road.
- Placing a cul de sac at the end of Holly Grove Road.
- Relocation and adjusting the alignment of the Gibbons Road intersection with Priester Road to a new intersection south of Love's Travel Stop on Tribal Road.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In Alternate 2, the stop sign controlled approaches at the unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours.

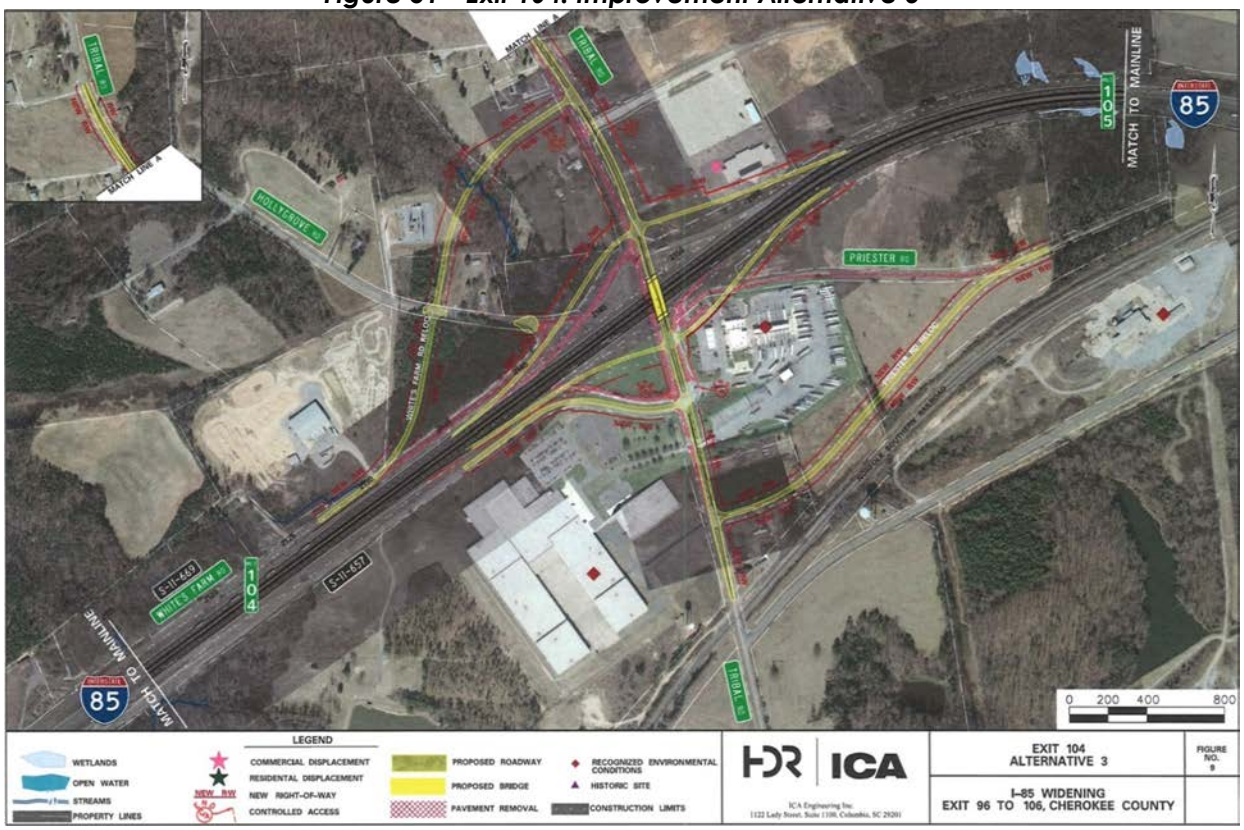
Table 31 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Exit 104 (Tribal Road/S-99) Alternative 2									
	I-85 Southbound on-ramp & Holly Grove Road*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Tribal Road & White Farm Road	Added in Build Conditions				A	8.8	A	8.8
	Tribal Road & I-85 Southbound Ramps*	F	269.3	C	19.6	B	14.9	B	12.7
	Tribal Road & I-85 Northbound Ramps/ Frontage Road/ Priester Rd*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Tribal Road & I-85 Northbound Ramps	Added in Build Conditions				B	10.3	B	11.6
	Tribal Road & Industrial Plant Dwy (north)/Service Station Dwy	B	13.6	B	12.0	Removed in Build Conditions			
	Tribal Road & Service Station Dwy	Added in Build Conditions				B	13.6	B	10.4
	Tribal Road & Industrial Plant Driveway (south)*	B	10.2	A	9..2	Removed in Build Conditions			
	Tribal Road on-ramp & Priester Road*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Tribal Road at Priester Road & Gibbons Road*	Added in Build Conditions				B	11.4	A	9.3

<u>Alternative 3</u>

The conceptual design of Alternative 3 is shown in **Figure 51**.

Figure 51 - Exit 104: Improvement Alternative 3



Alternate 3 retains the diamond interchange style for Exit 104. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Holly Grove Road & the southbound on-ramp
  - Priester Road & the northbound on-ramp
  - Love's Travel Stop Driveway/Priester Road & Tribal Road
- Relocating and adjusting the alignment of the northbound ramps intersection with Tribal Road.
- Relocating and adjusting the alignment of the southbound ramps intersection with Tribal Road.
- Relocation of access to Holly Grove Road and White Farm Road to a T-intersection north of the southbound ramps intersection.
- Placing a cul de sac at the end of Holly Grove Road.
- Creating a new T-intersection south of Love's travel Stop on Tribal Road to provide access to Priester Road.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In Alternate 3, the stop sign controlled approaches at the unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours.

Table 32 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Exit 104 (Tribal Road/S-99) Alternative 3									
	I-85 Southbound on-ramp & Holly Grove Road*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Tribal Road & White Farm Road	Added in Build Conditions				A	8.8	A	8.9
	Tribal Road & I-85 Southbound Ramps*	F	269.3	C	19.6	C	17.1	B	13.7
	Tribal Road & I-85 Northbound Ramps/ Frontage Road/ Priester Rd*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Tribal Road & I-85 Northbound Ramps	Added in Build Conditions				B	11.6	A	9.8
	Tribal Road & Industrial Plant Dwy (north)/Service Station Dwy	B	13.6	B	12.0	C	21.9	C	17.6
	Tribal Road & Gibbons Road	Modified in Build Conditions				B	12.5	A	9.1
	Tribal Road & Industrial Plant Driveway (south)	B	10.2	A	9..2	Removed in Build Conditions			
	Tribal Road at Industrial Plant Driveway (south) & Priester Road	Added in Build Conditions				B	10.6	A	9.5
	Tribal Road on-ramp & Priester Road*	n/a	n/a	n/a	n/a	Removed in Build Conditions			

Alternative 4 (Selected)

The conceptual design of Alternative 4 is shown in **Figure 52**.

Figure 52 - Exit 104: Improvement Alternative 4

Alternate 4 retains the diamond interchange style for Exit 104. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Holly Grove Road & the southbound on-ramp
  - Priester Road & the northbound on-ramp
  - Gibbons Road & Tribal Road
  - Love's Travel Stop Driveways/Priester Road & Tribal Road
- Relocating and adjusting the alignment of the northbound ramps intersection with Tribal Road.
- Relocating and adjusting the alignment of the southbound ramps intersection with Tribal Road.
- Relocation of access to Holly Grove Road and White Farm Road to a T-intersection north of the southbound ramps intersection.
- Placing a cul de sac at the end of Holly Grove Road.
- Relocation and adjusting the alignment of the Gibbons Road intersection with Tribal Road opposite the relocated Priester Road south of Love's Travel Stop.
- Creating a new intersection south of Love's Travel Stop on Tribal Road to provide access to Gibbons Road opposite the relocated Priester Road.
- Creating a new T-intersection on Gibbons Road to provide access to the existing Industrial Plant parking lot.

- Creating a new T-intersection on Priester Road to provide access to Love's Travel Stop.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In Alternate 4, the stop sign controlled approaches at the unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours.

Table 33 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Exit 104 (Tribal Road/S-99) Alternative 4									
	I-85 Southbound on-ramp & Holly Grove Road*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Tribal Road & White Farm Road	Added in Build Conditions				A	8.8	A	8.9
	Tribal Road & I-85 Southbound Ramps*	F	269.3	C	19.6	C	20.4	B	14.3
	Tribal Road & I-85 Northbound Ramps/ Frontage Road/ Priester Rd*	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	Tribal Road & I-85 Northbound Ramps	Added in Build Conditions				B	11.6	A	9.8
	Tribal Road & Industrial Plant Dwy (north)/Service Station Dwy	B	13.6	B	12.0	Removed in Build Conditions			
	Tribal Road at Gibbons Road & Priester Road	Added in Build Conditions				C	22.8	C	18.3
	Tribal Road & Industrial Plant Driveway (south)	B	10.2	A	9..2	Removed in Build Conditions			
	Tribal Road on-ramp & Priester Road*	n/a	n/a	n/a	n/a	Removed in Build Conditions			

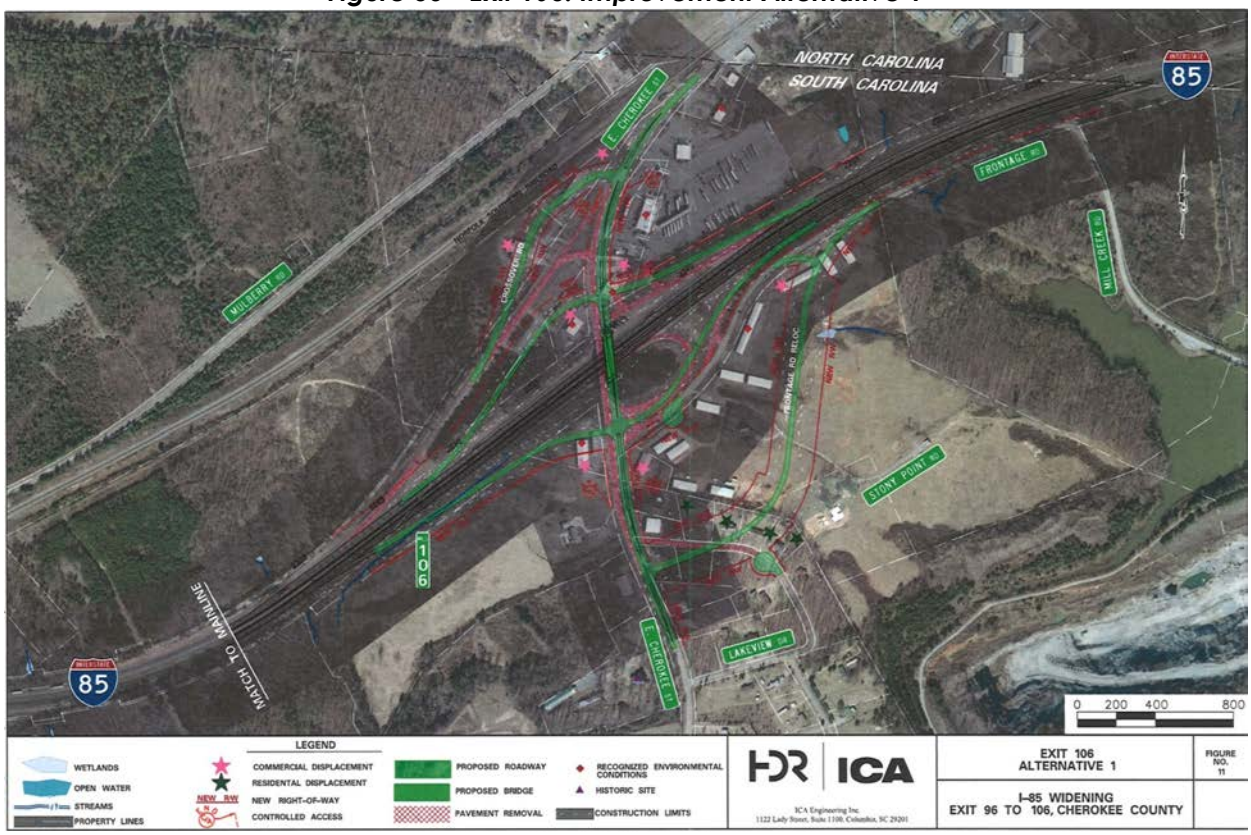
Exit 106 – E. Cherokee Street (US 29)

The E. Cherokee Street interchange is expected to be modified as part of the I-85 widening project. 2040 Build analyses for the intersections within the Exit 106 interchange area were performed for three alternatives.

Alternative 1

The conceptual design of Alternative 1 is shown in **Figure 53**.

Figure 53 - Exit 106: Improvement Alternative 1



Alternate 1 replaces the partial cloverleaf interchange with a full diamond interchange for Exit 106. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Crossover Road/southbound on-ramp & E. Cherokee Street
  - Service Station Driveways & the southbound off-ramp
  - Fireworks Store/Service Station Driveways & E. Cherokee Street
  - ABC Store Driveway & E. Cherokee Street
  - Mill Creek Road & northbound on-ramp
  - Mill Creek Road/Service Station Driveway & E. Cherokee Street
  - Lakeview Drive (northernmost access) & E Cherokee Street
- Relocating and adjusting the alignment of the northbound ramps intersection with E. Cherokee Street. The off-loop will be replaced with a standard off-ramp in the south western quadrant of the interchange.

- Relocating and adjusting the alignment of Frontage Road/Crossover Road intersection opposite the first remaining Service Station driveway north of the southbound ramps.
- Relocating and adjusting the alignment of the southbound ramps intersection with E. Cherokee Street.
- Creating a new T-intersection south of the intersection on E. Cherokee Street to provide access to the relocated Mill Creek Road.
- Placing a cul de sac at the end of Mill Creek Road.
- Placing a cul de sac at the end of Lakeview Drive.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In Alternate 1, the stop sign controlled approaches at the unsignalized intersections operate at LOS B or better during the morning and afternoon peak hours.

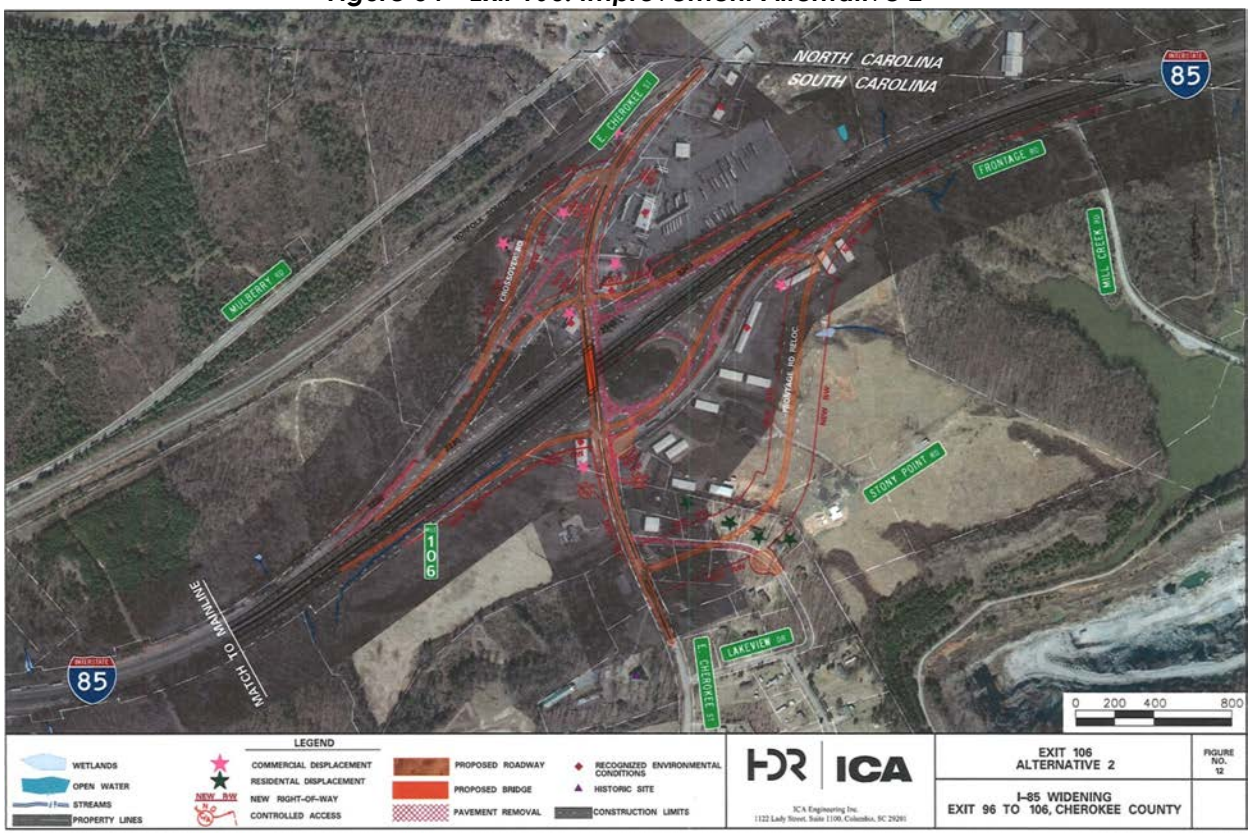
Table 34 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Exit 106 (E. Cherokee Street/US 29) Alternative 1									
	US 29 & Retail Store Driveways (3)*	C	18.4	C	20.8	Removed in Build Conditions			
	US 29 & Retail Store/Service Station Driveway*	Added in Build Conditions				B	13.3	C	16.9
	US 29 & Crossover Road*	Added in Build Conditions				A	0.0	A	0.0
	US 29 & Service Station/Retail Store Driveways (4)*	B	12.6	C	15.1	Removed in Build Conditions			
	US 29 & SB on-ramp(north)/Service Station Driveway*	A	0.0	A	0.0	Removed in Build Conditions			
	US 29 & SB on-ramp(south)/Service Station Driveway*	A	0.0	A	0.0	Removed in Build Conditions			
	US 29 & I-85 Southbound Off-Ramp*	B	11.1	B	12.8	B	10.3	B	10.9
	US 29 & I-85 Northbound Off-Ramp*	A	8.7	A	9.7	B	12.0	B	15.4
	US 29 & I-85 Northbound On-Ramp/Frontage Road**	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	US 29 & on-ramp to I-85 Northbound & Frontage Rd*	B	13.2	B	11.7	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 1*	A	0.0	A	0.0	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 2*	A	8.7	A	9.1	Removed in Build Conditions			
	US 29 & Mill Creek Road*	Added in Build Conditions				A	9.2	A	9.2
	US 29 & Lakeview Drive*	A	9.0	A	9.1	A	9.0	A	9.1

Alternative 2

The conceptual design of Alternative 2 is shown in **Figure 54**.

Figure 54 - Exit 106: Improvement Alternative 2



Alternate 2 retains the diamond interchange style for Exit 106. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Crossover Road/southbound on-ramp & E. Cherokee Street
  - Service Station Driveways & the southbound off-ramp
  - Fireworks Store/Service Station Driveways & E. Cherokee Street
  - ABC Store Driveway & E. Cherokee Street
  - Mill Creek Road & northbound on-ramp
  - Mill Creek Road/Service Station Driveway & E. Cherokee Street
  - Lakeview Drive (northernmost access) & E. Cherokee Street
- Relocating and adjusting the alignment of the northbound ramps intersection with E. Cherokee Street. The off-loop will be replaced with a standard off-ramp in the south western quadrant of the interchange.
- Relocating and adjusting the alignment of Frontage Road/Crossover Road intersection opposite the first remaining Service Station driveway north of the southbound ramps.
- Relocating and adjusting the alignment of the southbound ramps intersection with E. Cherokee Street.
- Creating a new T-intersection south of the intersection on E. Cherokee Street to provide access to the relocated Mill Creek Road.

- Placing a cul de sac at the end of Mill Creek Road.
- Placing a cul de sac at the end of Lakeview Drive.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In Alternate 2, the stop sign controlled approaches at the unsignalized intersections operate at LOS B or better during the morning and afternoon peak hours.

Table 35 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
	Exit 106 (E. Cherokee Street/US 29) Alternative 2								
	US 29 & Retail Store Driveways (3)*	C	18.4	C	20.8	Removed in Build Conditions			
	US 29 & Retail Store/Service Station Driveway*	Added in Build Conditions				B	13.3	C	16.9
	US 29 & Crossover Road*	Added in Build Conditions				A	0.0	A	0.0
	US 29 & Service Station/Retail Store Driveways (4)*	B	12.6	C	15.1	Removed in Build Conditions			
	US 29 & SB on-ramp(north)/Service Station Driveway*	A	0.0	A	0.0	Removed in Build Conditions			
	US 29 & SB on-ramp(south)/Service Station Driveway*	A	0.0	A	0.0	Removed in Build Conditions			
	US 29 & I-85 Southbound Off-Ramp*	B	11.1	B	12.8	B	10.3	B	10.9
	US 29 & I-85 Northbound Off-Ramp*	A	8.7	A	9.7	B	12.0	B	15.4
	US 29 & I-85 Northbound On-Ramp/Frontage Road**	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	US 29 & on-ramp to I-85 Northbound & Frontage Rd*	B	13.2	B	11.7	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 1*	A	0.0	A	0.0	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 2*	A	8.7	A	9.1	Removed in Build Conditions			
	US 29 & Mill Creek Road*	Added in Build Conditions				A	9.2	A	9.2
	US 29 & Lakeview Drive*	A	9.0	A	9.1	A	9.0	A	9.0

Alternative 3 (Selected)

The conceptual design of Alternative 3 is shown in **Figure 55**.

Figure 55 - Exit 106: Improvement Alternative 3

Alternate 3 retains the diamond interchange style for Exit 106. Elements of the alternative concept include:

- Eliminating the intersections of:
  - Crossover Road/southbound on-ramp & E. Cherokee Street
  - Service Station Driveways & the southbound off-ramp
  - Fireworks Store/Service Station Driveways & E. Cherokee Street
  - ABC Store Driveway & E. Cherokee Street
  - Mill Creek Road & northbound on-ramp
  - Mill Creek Road/Service Station Driveway & E. Cherokee Street
  - Lakeview Drive (northernmost access) & E Cherokee Street
- Relocating and adjusting the alignment of the northbound ramps intersection with E. Cherokee Street. The off-loop will be replaced with a standard off-ramp in the south western quadrant of the interchange.
- The 395 foot long slip ramp that allowed free flow access for southbound traffic on E. Cherokee Street to reach the southbound on-ramp would be removed.
- Relocating and adjusting the alignment of Frontage Road/Crossover Road intersection opposite the first remaining Service Station driveway north of the southbound ramps.
- Relocating and adjusting the alignment of the southbound ramps intersection with E. Cherokee Street.
- Relocating and adjusting the alignment of Mill Creek Road so that is can be accessed from E. Cherokee Street via southernmost Lakeview Drive intersection.

- Placing a cul de sac at the end of Mill Creek Road.

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In Alternate 3, the stop sign controlled approaches at the unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours.

Table 36 – Interchange Alternate Analysis Results

	Intersection Name	2040 Base Conditions				2040 Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Exit 106 (E. Cherokee Street/US 29) Alternative 3									
	US 29 & Retail Store Driveways (3)*	C	18.4	C	20.8	Removed in Build Conditions			
	US 29 & Retail Store/Service Station Driveway*	Added in Build Conditions				B	13.3	C	16.9
	US 29 & Crossover Road*	Added in Build Conditions				A	0.0	A	0.0
	US 29 & Service Station/Retail Store Driveways (4)*	B	12.6	C	15.1	Removed in Build Conditions			
	US 29 & SB on-ramp(north)/Service Station Driveway*	A	0.0	A	0.0	Removed in Build Conditions			
	US 29 & SB on-ramp(south)/Service Station Driveway*	A	0.0	A	0.0	Removed in Build Conditions			
	US 29 & I-85 Southbound Off-Ramp*	B	11.1	B	12.8	B	10.3	B	10.9
	US 29 & I-85 Northbound Off-Ramp*	A	8.7	A	9.7	B	11.9	B	14.2
	US 29 & I-85 Northbound On-Ramp/Frontage Road**	n/a	n/a	n/a	n/a	Removed in Build Conditions			
	US 29 & on-ramp to I-85 Northbound & Frontage Rd*	B	13.2	B	11.7	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 1*	A	0.0	A	0.0	Removed in Build Conditions			
	I-85 Southbound off-ramp & Service Station Dwy 2*	A	8.7	A	9.1	Removed in Build Conditions			
	US 29 & Lakeview Drive*	A	9.0	A	9.1	A	9.2	A	9.2

VI. CONCLUSIONS AND RECOMMENDATIONS

Data obtained for this study includes:

- Average Annual Daily Traffic (AADT) volumes for freeway segments and arterials between 1988 and 2015.
- Traffic volumes from permanent Automatic Traffic Recording (ATR) stations P-14 (between Exits 87 and 90), P-132 (north of Exit 96), and P-27 (near MM 103).
- Vehicle classification volumes from ATR stations P-132 and P-27.
- Turning movement counts for morning (7-9 AM) and afternoon (4-6 PM) peak periods at most of the ramp termini and adjacent intersections.
- Historic crash data for the interstate corridor from January 2011 through December 2015.
- Historic crash data in the vicinity of the interchanges to be upgraded (Exits 100, 102, 104, 106) from January 2011 through December 2015.
- Signal plans and signal timings for the two existing traffic signals at ramp termini.

Analyses performed for the study include:

- An accident analysis for the study area
- A traffic forecasting analysis to estimate future no-build and build condition traffic volumes
- Freeway segment operations analysis for existing, future no-build and future build conditions
- Freeway ramp merge/diverge area analysis for existing, future no-build and future build conditions
- Signalized and unsignalized intersection analysis for existing, future no-build and future build conditions,
- Microsimulation analysis of the interchange intersections using Synchro/SimTraffic

Some of the findings of the accident analysis include:

- 729 crashes within the study area, with 623 crashes along I-85 or its ramps and 106 on adjacent roadways
- The three most prevalent crash types were:
    - No collision with other vehicle - 388 crashes (53 percent)
    - Rear end collisions - 182 crashes (25 percent)
    - Same direction sideswipes – 93 crashes (13 percent)
- Most crashes were classified as property damage only. The crashes that were not property damage only included:
    - Possible injury crashes – 112 (15 percent)
    - Non-incapacitating injury crashes – 18 (two percent)
    - Incapacitating injury crashes – 11 (one percent)
    - Fatal crashes – 9 (one percent)
- The geometric conditions of the merge and diverge areas at the interchanges, short on and off-ramp distances, and the connection between ramps and the adjacent roadway system contribute to the frequency of accidents at some locations. It is likely that combinations of these factors violate drivers' expectations and create confusion, particularly for drivers who are unfamiliar with the area.

The following criteria, as outlined in the Data Collection section of the report, were used for inputs for the analysis of freeway segments, merge and diverge ramp areas, and signalized and unsignalized intersections for the existing, future no-build and future build conditions:

- The 30th highest hour volumes based on the P-132 ATR count station data, balanced through the system, were used for the freeway segment mainline volumes.

- To develop future (2040) traffic volumes, a 1.5 percent annual growth rate was applied to existing interstate volumes in the study area. Growth percentages for the cross-streets and adjacent roadways were calculated separately.
- A peak hour factor of 0.94 was used for freeway segments and ramp areas.
- The proportion of trucks and buses traveling on the freeway segments and ramp movements, based on SCDOT data, is 30 percent.
- Based on the grades through the study area, the terrain was set as "Rolling", instead of "Level" or "Mountainous".

For the 2015 Existing Conditions

- Freeway segments operate near capacity in both directions between Exits 96 and 102 during the afternoon peak hour
- Ramp merge conditions operate near capacity during the afternoon peak hour at the northbound on-ramp at Exits 96 and 100, and the southbound on-ramp at Exits 96, 100, and 102
- Ramp diverge conditions operate near capacity during the morning and afternoon peak hours with the exception of the northbound and southbound off-ramps at Exit 104
- Intersection operations approach capacity at the unsignalized intersections of Tribal Road and the southbound ramps (Exit 104) during the morning peak hour, and the intersection of Shelby Highway and the southbound ramps (Exit 96) during the afternoon peak hour.

For the 2040 No-Build conditions

- Freeway segments:
  - Operate near capacity in both directions between Exits 96 and 100 during the morning peak hour
  - All operate over capacity during the afternoon peak hour
- Ramp merge conditions:
  - Operate near capacity in both directions at Exit 96 in the morning peak hour. In the afternoon peak hour, the northbound ramps at Exits 102 and 104, and the southbound ramps at Exits 104 and 106 operate near capacity
  - Operate over capacity at Exits 96, 100 and 106 in the northbound direction, and at Exits 96, 100, and 102 in the southbound direction
- Ramp diverge conditions:
  - Operate near capacity in the southbound ramps at Exits 96 and 100 in the morning peak hour.
  - Operate near capacity in the northbound direction at Exit 104 in the afternoon peak hour
  - All other ramps in both directions during the afternoon peak hour operate over capacity
- Intersection operations:
  - Are near capacity during the morning peak hour at the intersection of N. Mountain Street and the I-85 southbound ramps (Exit 102)
  - Are over capacity during the morning peak hour at:
    - Shelby Highway & I-85 southbound ramps (Exit 96)
    - Shelby Highway & Victory Trail Road (Exit 96)
    - Tribal Road & the I-85 southbound ramps (Exit 104)
  - Are over capacity during the afternoon peak hour at:
    - Shelby Highway & I-85 southbound ramps (Exit 96)
    - Shelby Highway & Victory Trail Road (Exit 96)
    - Blacksburg Highway & I-85 southbound ramps (Exit 100)

- The following intersection may require capacity improvements and/or signalization to improve their operation for the 2040 no-build conditions.
    - Blacksburg Highway & southbound ramps (Exit 100)
    - N. Mountain Street & I-85 southbound ramps (Exit 102)
    - Tribal Road & southbound ramps (Exit 104)

For the 2040 Build conditions

- Freeway segments operate near capacity in the afternoon peak hour between Exits 96 and 102 in the northbound direction and Exits 96-100 in the southbound direction.
- Ramp merge conditions operate near capacity in both directions at Exit 96 during the afternoon peak hour.
- Ramp diverge conditions operate near capacity during the afternoon peak hour at Exit 100 northbound and Exits 96 and 100 in the southbound direction.
- Intersection operations varied between alternatives. In all alternatives, the intersections were presumed to operate with stop sign control on the minor street approaches.
    - All interchange alternatives provide a separate left turn storage lane for the northbound cross-street traffic to access the southbound on-ramps.
    - All interchange alternatives provide a separate left turn storage lane for the southbound cross-street traffic to access to the northbound on-ramps.
    - Exit 104 Alternatives
        - The intersection of Tribal Road and the southbound ramp would need to provide a separate westbound left turn lane and a shared through-right lane if unsignalized.

APPENDIX A

AVERAGE ANNUAL DAILY TRAFFIC (AADT) DATA

I-85 Mainline Historical AADT Data							
Estimated AADT							
	SC 18 to S-83	S-83 to SC 5	SC 5 to S-99	S-99 to US 29	US 29 to State Line (North Carolina)		**Average**
	2343	2345	2347	2349	2351		
1988	n/a	n/a	n/a	n/a	27,000		
1989	29,000	29,000	26,400	26,500	27,600		27,700
1990	29,500	29,500	27,600	27,500	26,000		28,020
1991	31,500	30,100	28,000	27,600	27,200		28,880
1992	34,000	31,300	29,200	28,700	28,300		30,300
1993	34,900	33,000	30,500	29,900	29,600		31,580
1994	33,900	32,000	32,200	31,300	30,700		32,020
1995	37,400	34,600	32,900	32,100	31,600		33,720
1996	39,500	35,700	34,100	34,000	34,100		35,480
1997	40,200	37,100	35,300	35,800	37,100		37,100
1998	42,600	39,500	37,300	39,100	40,900		39,880
1999	42,600	40,100	38,700	39,500	41,800		40,540
2000	46,200	40,500	40,300	39,400	37,900		40,860
2001	44,200	41,400	40,300	39,800	39,100		40,960
2002	44,000	41,600	41,100	41,300	42,800		42,160
2003	44,000	42,000	41,000	41,000	44,700		42,540
2004	45,600	44,400	41,100	40,800	41,700		42,720
2005	45,800	44,700	41,900	41,400	42,000		43,160
2006	46,800	45,800	43,100	42,800	43,600		44,420
2007	48,300	47,100	44,700	44,500	45,500		46,020
2008	47,200	46,100	42,900	42,700	43,300		44,440
2009	46,900	45,400	42,100	41,800	42,200		43,680
2010	47,800	46,200	41,900	41,600	41,800		43,860
2011	46,900	45,300	41,600	41,300	41,500		43,320
2012	44,900	43,100	38,800	38,600	38,800		40,840
2013	43,200	41,100	35,500	35,400	36,000		38,240
2014	43,600	41,300	35,900	35,400	35,300		38,300
2015	45,800	43,500	37,000	36,500	37,300		40,020

I-85 Cross-Streets Historical AADT Data									
Estimated AADT									
	Shelby Highway (SC 18)	Shelby Highway (SC 18)	Blacksburg Highway (S-83)	Blacksburg Highway (S-83)	N Mountain Street (SC 5)	N Mountain Street (SC 198)	Tribal Road (S-99)	E Cherokee Street (US 29)	E Cherokee Street (US 29)
	Station 213	Station 215	Station 151	Station 153	Station 292	Station 295	Station 451	Station 133	Station 135
1987	6,500	5,200	1,800	2,400	n/a	n/a	n/a	2,100	3,100
1988	7,300	4,853	1,850	2,700	n/a	n/a	n/a	2,300	3,200
1989	8,400	5,800	2,000	3,100	n/a	n/a	n/a	2,500	3,900
1990	7,600	5,300	2,300	2,900	n/a	n/a	350	2,100	3,700
1991	7,900	5,300	1,950	2,800	n/a	n/a	300	2,200	3,300
1992	7,600	5,300	1,950	2,800	n/a	n/a	350	2,200	3,400
1993	8,900	6,000	2,100	3,100	n/a	n/a	325	2,300	4,000
1994	9,500	6,100	2,500	3,600	n/a	n/a	350	2,700	4,900
1995	8,900	6,300	2,900	3,700	n/a	n/a	375	2,800	4,500
1996	9,800	6,300	2,900	3,500	n/a	n/a	400	2,800	4,500
1997	7,700	5,600	2,800	4,200	n/a	n/a	400	2,700	4,000
1998	7,700	6,300	2,800	4,100	n/a	n/a	475	2,800	3,500
1999	8,300	6,100	3,000	3,700	n/a	n/a	425	2,900	4,000
2000	8,000	5,600	3,100	4,100	n/a	n/a	550	3,000	4,800
2001	7,900	5,700	2,900	4,200	n/a	n/a	550	3,300	5,500
2002	8,100	6,000	2,900	3,900	n/a	n/a	550	3,700	5,500
2003	8,000	5,700	2,900	4,000	n/a	n/a	600	3,200	6,400
2004	6,800	5,600	2,600	3,600	n/a	n/a	600	2,900	5,900
2005	7,500	5,600	2,500	3,200	n/a	n/a	425	3,000	5,700

I-85 Cross-Streets Historical AADT Data									
Estimated AADT									
	Shelby Highway (SC 18)	Shelby Highway (SC 18)	Blacksburg Highway (S-83)	Blacksburg Highway (S-83)	N Mountain Street (SC 5)	N Mountain Street (SC 198)	Tribal Road (S-99)	E Cherokee Street (US 29)	E Cherokee Street (US 29)
	Station 213	Station 215	Station 151	Station 153	Station 292	Station 295	Station 451	Station 133	Station 135
2006	7,000	5,700	2,400	3,700	4,900	2,700	450	2,500	5,800
2007	7,700	6,000	2,700	3,600	4,900	2,400	450	2,700	6,200
2008	7,500	4,900	2,300	3,000	5,100	2,000	400	2,600	5,500
2009	8,500	5,300	2,400	3,100	5,200	2,200	425	2,200	4,700
2010	9,000	5,900	2,300	3,400	5,600	2,100	475	2,200	5,000
2011	9,100	6,200	2,600	4,000	5,700	2,400	600	2,500	5,500
2012	9,300	6,400	2,700	4,100	5,900	2,400	600	2,600	5,600
2013	9,500	6,300	2,700	3,900	5,500	2,300	600	2,500	5,600
2014	8,400	5,500	2,300	4,000	6,800	2,200	475	2,100	5,900
2015	9,400	6,700	2,500	4,300	7,200	2,500	650	2,300	6,100

APPENDIX B

TURNING MOVEMENT COUNT DATA

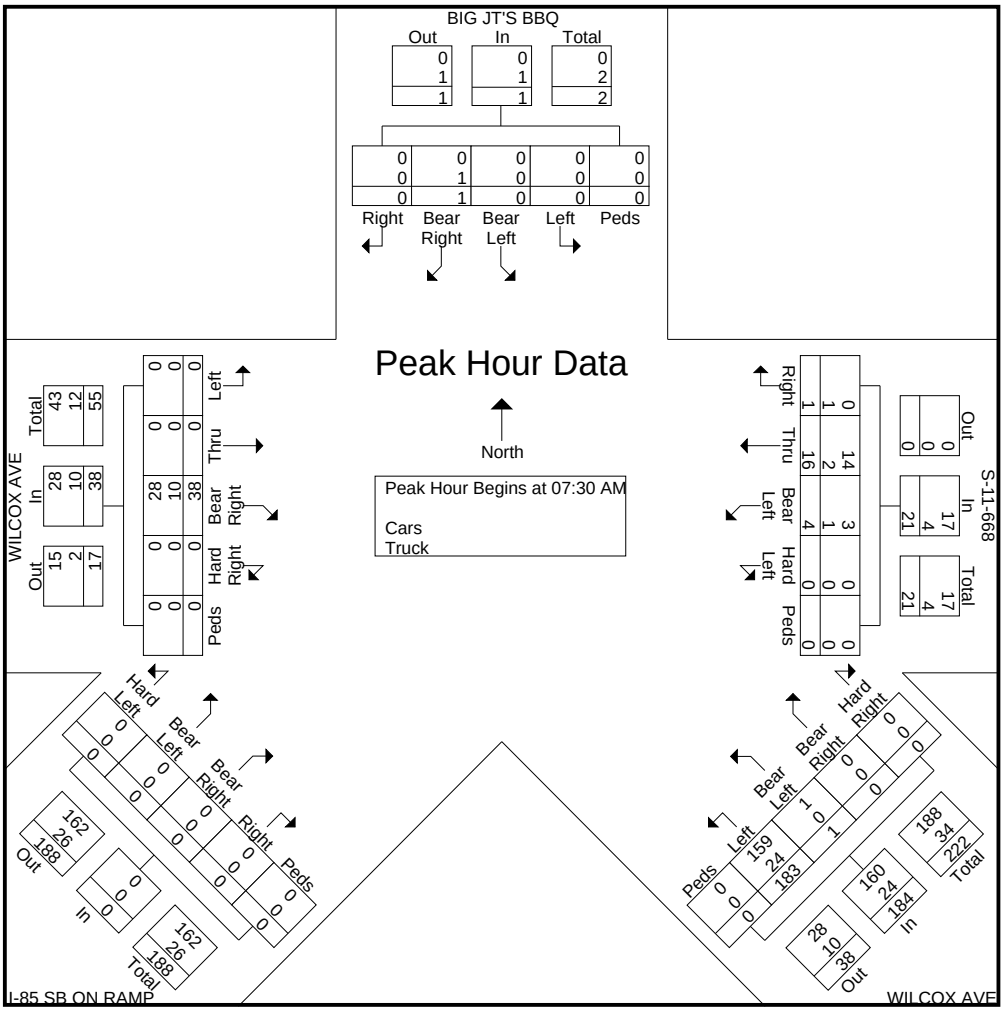
MORNING PEAK HOUR
TURNING MOVEMENT COUNT DATA

All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #1RampAccess@WilcoxAveAM
Site Code :
Start Date : 5/27/2015
Page No : 2

	BIG JT'S BBQ Southbound						S-11-668 Westbound						WILCOX AVE Northwestbound						I-85 SB ON RAMP Northeastbound						WILCOX AVE Eastbound						
Start Time	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:30 AM																															
07:30 AM	0	0	0	0	0	0	0	3	**2**	0	0	5	0	0	0	48	0	48	0	0	0	0	0	0	0	**14**	0	0	0	**14**	67
07:45 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	42	0	42	0	0	0	0	0	0	0	10	0	0	0	10	55
08:00 AM	0	0	0	0	0	0	**1**	4	2	0	0	**7**	0	0	0	33	0	33	0	0	0	0	0	0	0	9	0	0	0	9	49
08:15 AM	0	**1**	0	0	0	**1**	0	**6**	0	0	0	6	0	0	**1**	**60**	0	**61**	0	0	0	0	0	0	0	5	0	0	0	5	**73**
Total Volume	0	1	0	0	0	1	1	16	4	0	0	21	0	0	1	183	0	184	0	0	0	0	0	0	0	38	0	0	0	38	244
% App. Total	0	100	0	0	0		4.8	76.2	19	0	0		0	0	0.5	99.5	0		0	0	0	0	0		0	100	0	0	0		
PHF	.000	.250	.000	.000	.000	.250	.250	.667	.500	.000	.000	.750	.000	.000	.250	.763	.000	.754	.000	.000	.000	.000	.000	.000	.000	.679	.000	.000	.000	.679	.836
Cars	0	0	0	0	0	0	0	14	3	0	0	17	0	0	1	159	0	160	0	0	0	0	0	0	0	28	0	0	0	28	205
% Cars	0	0	0	0	0	0	0	87.5	75.0	0	0	81.0	0	0	100	86.9	0	87.0	0	0	0	0	0	0	0	73.7	0	0	0	73.7	84.0
Truck	0	1	0	0	0	1	1	2	1	0	0	4	0	0	0	24	0	24	0	0	0	0	0	0	0	10	0	0	0	10	39
% Truck	0	100	0	0	0	100	100	12.5	25.0	0	0	19.0	0	0	0	13.1	0	13.0	0	0	0	0	0	0	0	26.3	0	0	0	26.3	16.0



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

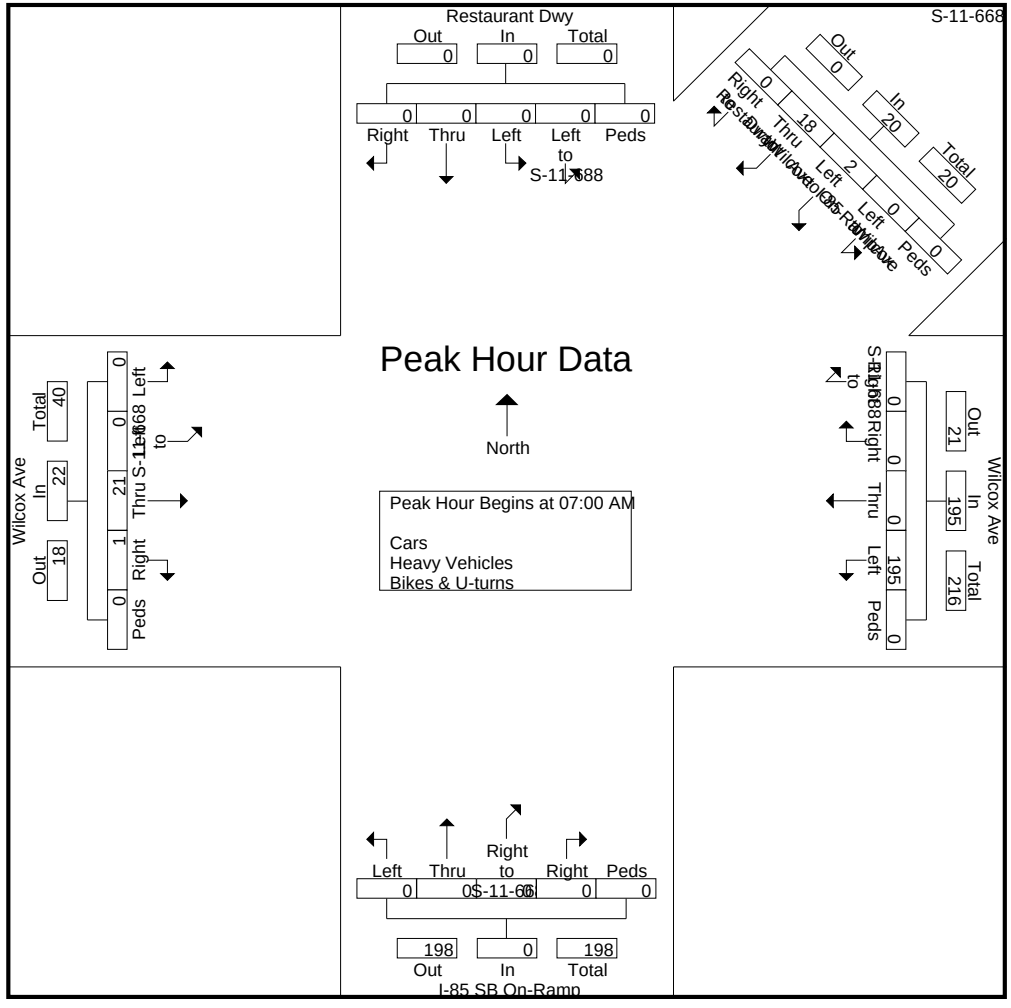
File Name : 12896533 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896533
Start Date : 9/25/2014
Page No : 3

	Restaurant Dwy Southbound						S-11-668						Wilcox Ave Westbound						I-85 SB On-Ramp Northbound						Wilcox Ave Eastbound						
Start Time	Right	Thru	Left	Left to S-11-688	Peds	App. Total	Right to Restaurant Dwy	Thru to Wilcox Ave	Left to I-85 On-Ramp	Left to Wilcox Ave	Peds	App. Total	Right to S-11-688	Right	Thru	Left	Peds	App. Total	Right	Right to S-11-668	Thru	Left	Peds	App. Total	Right	Thru	Left to S-11-668	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:00 AM																															
07:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	44	0	44	0	0	0	0	0	0	0	6	0	0	0	6	52
07:15 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	60		60													
07:30 AM	0	0	0	0	0	0	0	8	1	0	0	**9**	0	0	0	39	0	39	0	0	0	0	0	0	**1**	5	0	0	0	6	54
07:45 AM	0	0	0	0	0	0	0	5	1	0	0	6	0	0	0	52	0	52	0	0	0	0	0	0	0	**8**	0	0	0	**8**	**66**
Total Volume	0	0	0	0	0	0	0	18	2	0	0	20	0	0	0	195	0	195	0	0	0	0	0	0	1	21	0	0	0	22	237
% App. Total	0	0	0	0	0		0	90	10	0	0		0	0	0	100	0		0	0	0	0	0		4.5	95.5	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.563	.500	.000	.000	.556	.000	.000	.000	.813	.000	.813	.000	.000	.000	.000	.000	.000	.250	.656	.000	.000	.000	.688	.898

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896533 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896533
Start Date : 9/25/2014
Page No : 4



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

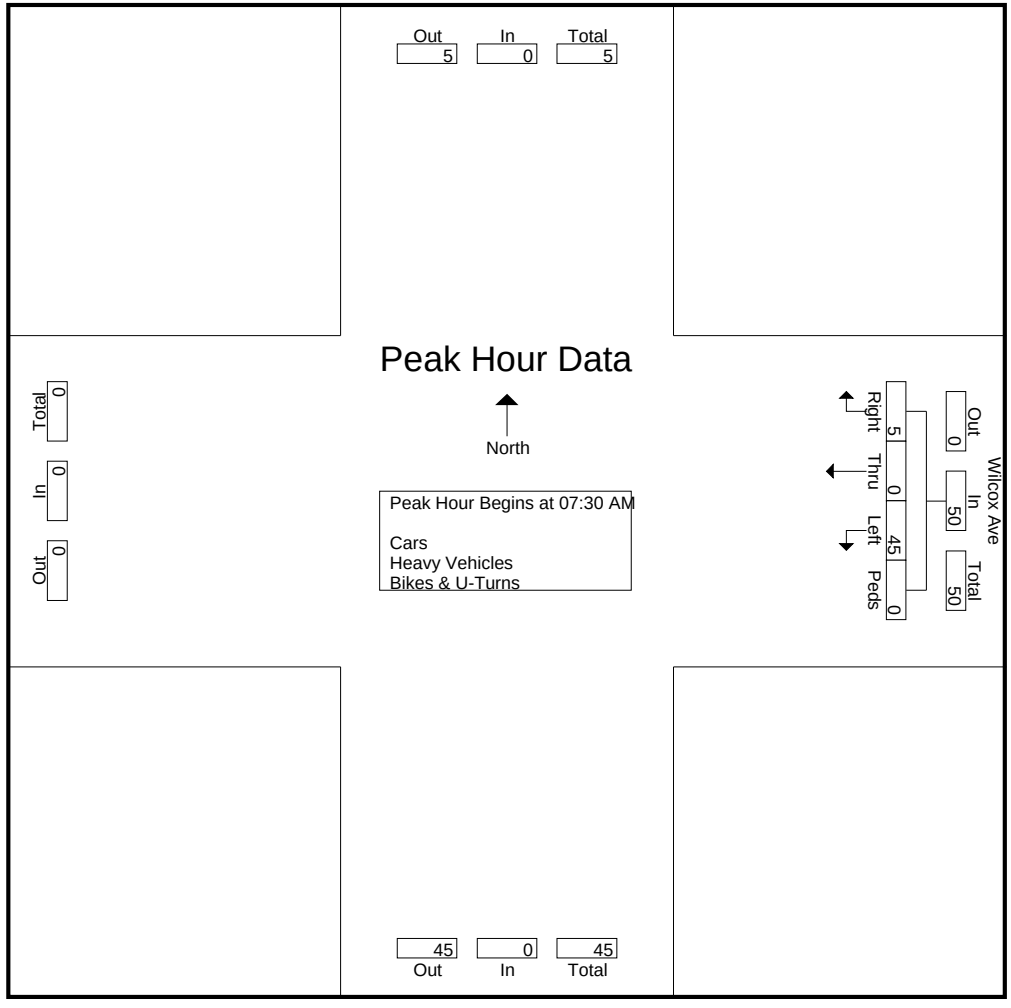
File Name : 12896531 - I-85 Off-Ramp -- Wilcox Ave WB Data
Site Code : 12896531
Start Date : 9/25/2014
Page No : 3

	Wilcox Ave Westbound					
Start Time	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1						
Peak Hour for Entire Intersection Begins at 07:30 AM						
07:30 AM	**3**	0	7	0	10	10
07:45 AM	1	0	8	0	9	9
08:00 AM	1	0	13	0	14	14
08:15 AM	0	0	**17**	0	**17**	**17**
Total Volume	5	0	45	0	50	50
% App. Total	10	0	90	0		
PHF	.417	.000	.662	.000	.735	.735

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896531 - I-85 Off-Ramp -- Wilcox Ave WB Data
Site Code : 12896531
Start Date : 9/25/2014
Page No : 4



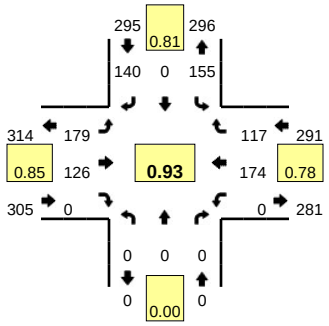
Type of peak hour being reported: Intersection Peak

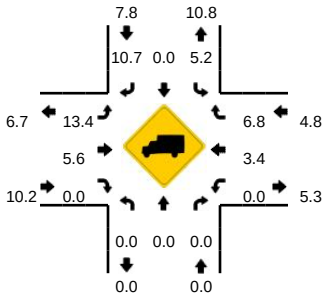
Method for determining peak hour: Total Entering Volume

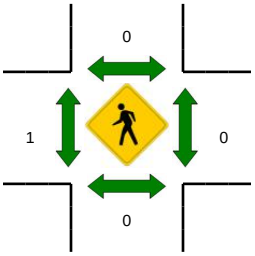
LOCATION: Shelby Hwy -- Victory Trail Rd/Shelby Hwy
CITY/STATE: Gaffney, SC

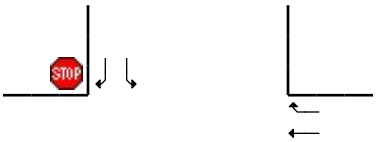
QC JOB #: 12896547
DATE: Thu, Sep 25 2014

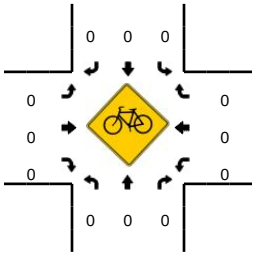
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

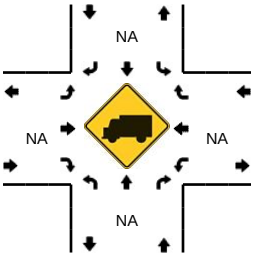


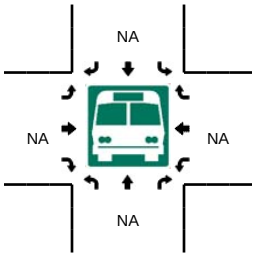












15-Min Count Period Beginning At	Shelby Hwy (Northbound)				Shelby Hwy (Southbound)				Victory Trail Rd/Shelby Hwy (Eastbound)				Victory Trail Rd/Shelby Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	27	0	35	0	44	22	0	0	0	56	37	0	221	
7:15 AM	0	0	0	0	30	0	28	0	45	32	0	0	0	39	30	0	204	
7:30 AM	0	0	0	0	51	0	40	0	39	33	0	0	0	38	26	0	227	
7:45 AM	0	0	0	0	47	0	37	0	51	39	0	0	0	41	24	0	239	891
8:00 AM	0	0	0	0	14	0	33	0	40	15	0	0	0	37	13	0	152	822
8:15 AM	0	0	0	0	12	0	31	0	38	13	0	0	0	25	21	0	140	758
8:30 AM	0	0	0	0	16	0	29	0	51	9	0	0	0	26	19	0	150	681
8:45 AM	0	0	0	0	8	0	37	0	28	17	0	0	0	21	16	0	127	569

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	188	0	148	0	204	156	0	0	0	164	96	0	956
Heavy Trucks	0	0	0		8	0	16		24	0	0		0	4	12		64
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

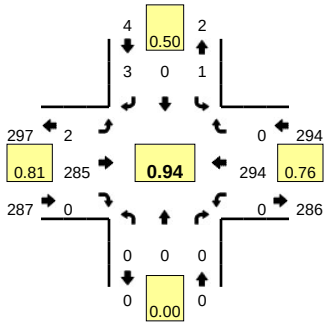
Type of peak hour being reported: Intersection Peak

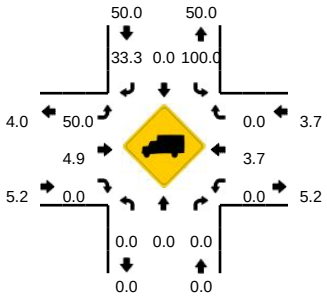
Method for determining peak hour: Total Entering Volume

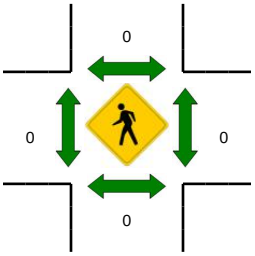
LOCATION: SC 18 -- Wind Hill Rd
CITY/STATE: Gaffney, SC

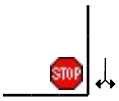
QC JOB #: 12896535
DATE: Thu, Sep 25 2014

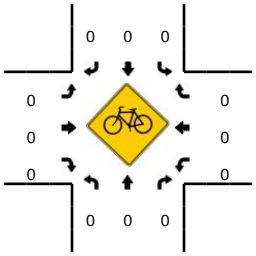
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

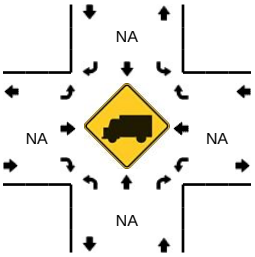


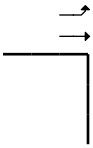


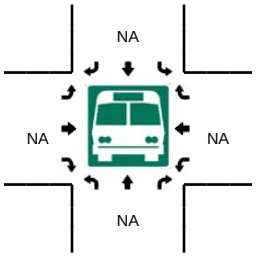












15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Wind Hill Rd (Eastbound)				Wind Hill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	2	49	0	0	0	97	0	0	148	
7:15 AM	0	0	0	0	0	0	2	0	0	63	0	0	0	67	0	0	132	
7:30 AM	0	0	0	0	0	0	1	0	0	84	0	0	0	65	0	0	150	
7:45 AM	0	0	0	0	1	0	0	0	0	89	0	0	0	65	0	0	155	585
8:00 AM	0	0	0	0	0	0	0	0	1	43	0	0	0	69	0	0	113	550
8:15 AM	0	0	0	0	0	0	0	0	0	16	0	0	0	40	0	0	56	474
8:30 AM	0	0	0	0	0	0	0	0	1	23	0	0	0	44	0	0	68	392
8:45 AM	0	0	0	0	0	0	2	0	1	26	0	0	0	36	1	0	66	303

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	4	0	0	0	0	356	0	0	0	260	0	0	620
Heavy Trucks	0	0	0		4	0	0		0	8	0		0	12	0		24
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

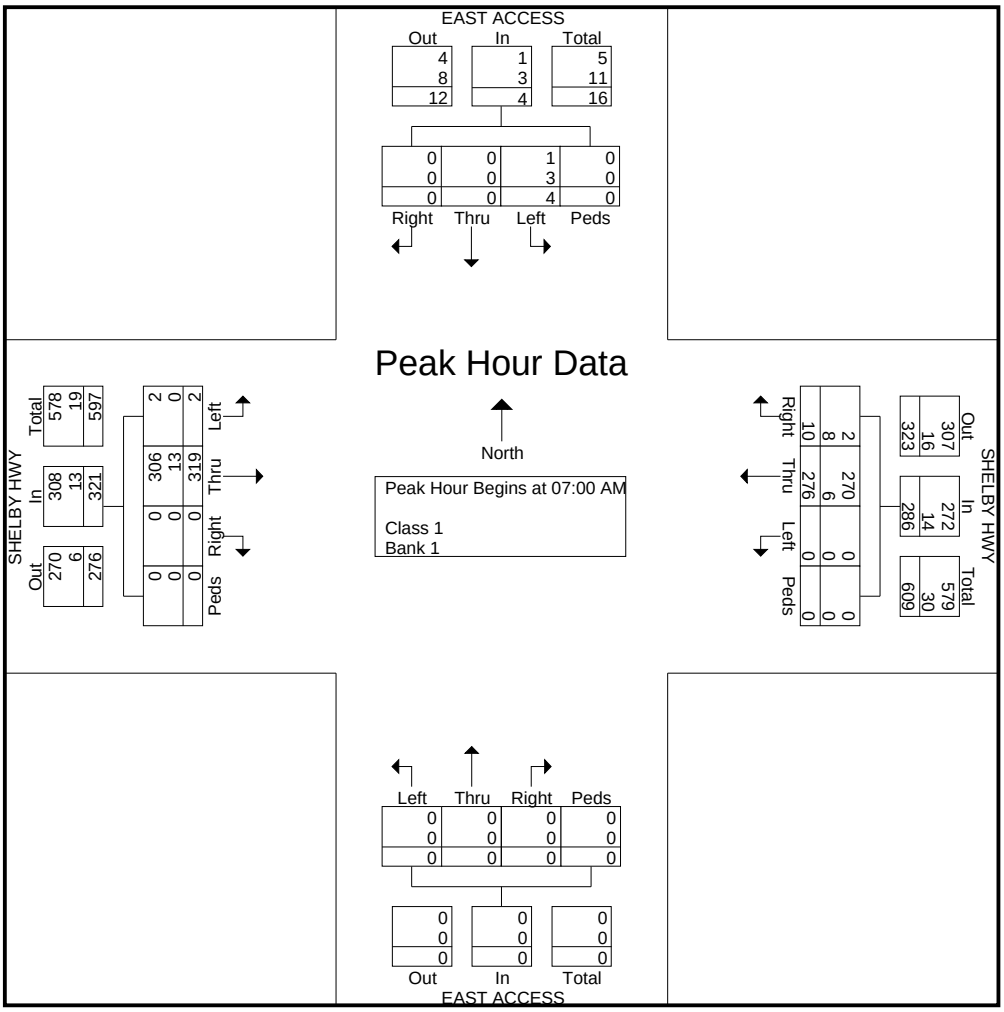
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #2 EACCESS&SHELBYAM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	EAST ACCESS Southbound					SHELBY HWY Westbound					EAST ACCESS Northbound					SHELBY HWY Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	**2**	0	**2**	2	**84**	0	0	**86**	0	0	0	0	0	0	69	**1**	0	70	158
07:15 AM	0	0	0	0	0	0	67	0	0	67	0	0	0	0	0	0	73	0	0	73	140
07:30 AM	0	0	0	0	0	3	46	0	0	49	0	0	0	0	0	0	**97**	0	0	**97**	146
07:45 AM	0	0	2	0	2	**5**	79	0	0	84	0	0	0	0	0	0	80	1	0	81	**167**
Total Volume	0	0	4	0	4	10	276	0	0	286	0	0	0	0	0	0	319	2	0	321	611
% App. Total	0	0	100	0		3.5	96.5	0	0		0	0	0	0		0	99.4	0.6	0		
PHF	.000	.000	.500	.000	.500	.500	.821	.000	.000	.831	.000	.000	.000	.000	.000	.000	.822	.500	.000	.827	.915
Class 1	0	0	1	0	1	2	270	0	0	272	0	0	0	0	0	0	306	2	0	308	581
% Class 1			25.0	0	25.0	20.0	97.8	0	0	95.1	0	0	0	0	0	0	95.9	100	0	96.0	95.1
Bank 1	0	0	3	0	3	8	6	0	0	14	0	0	0	0	0	0	13	0	0	13	30
% Bank 1	0	0	75.0	0	75.0	80.0	2.2	0	0	4.9	0	0	0	0	0	0	4.1	0	0	4.0	4.9

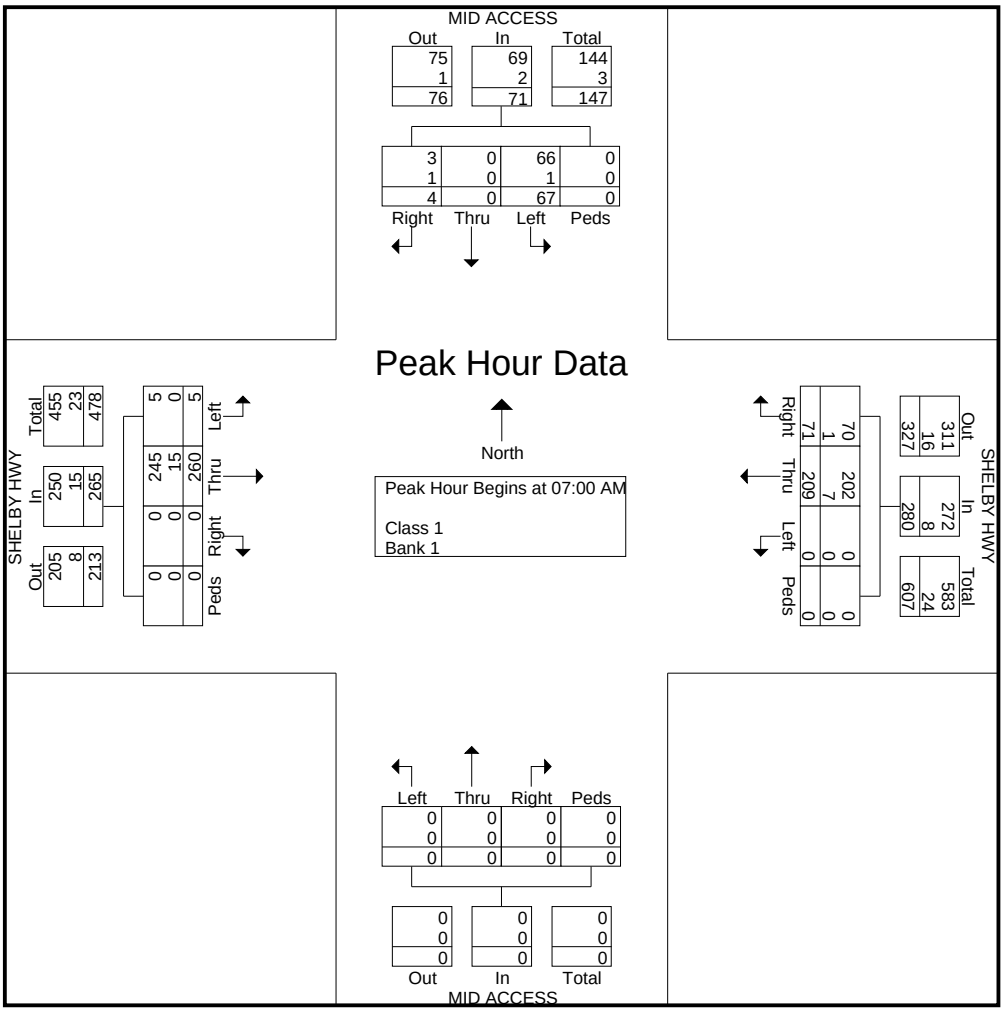


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #2 MACCESS&SHELBYAM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	MID ACCESS Southbound					SHELBY HWY Westbound					MID ACCESS Northbound					SHELBY HWY Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	13	0	13	**25**	62	0	0	**87**	0	0	0	0	0	0	61	0	0	61	161
07:15 AM	**2**	0	**20**	0	**22**	18	45	0	0	63	0	0	0	0	0	0	54	**3**	0	57	142
07:30 AM	1	0	18	0	19	14	36	0	0	50	0	0	0	0	0	0	70	2	0	72	141
07:45 AM	1	0	16	0	17	14	**66**	0	0	80	0	0	0	0	0	0	**75**	0	0	**75**	**172**
Total Volume	4	0	67	0	71	71	209	0	0	280	0	0	0	0	0	0	260	5	0	265	616
% App. Total	5.6	0	94.4	0		25.4	74.6	0	0		0	0	0	0		0	98.1	1.9	0		
PHF	.500	.000	.838	.000	.807	.710	.792	.000	.000	.805	.000	.000	.000	.000	.000	.000	.867	.417	.000	.883	.895
Class 1	3	0	66	0	69	70	202	0	0	272	0	0	0	0	0	0	245	5	0	250	591
% Class 1	75.0	0	98.5	0	97.2	98.6	96.7	0	0	97.1	0	0	0	0	0	0	94.2	100	0	94.3	95.9
Bank 1	1	0	1	0	2	1	7	0	0	8	0	0	0	0	0	0	15	0	0	15	25
% Bank 1	25.0	0	1.5	0	2.8	1.4	3.3	0	0	2.9	0	0	0	0	0	0	5.8	0	0	5.7	4.1

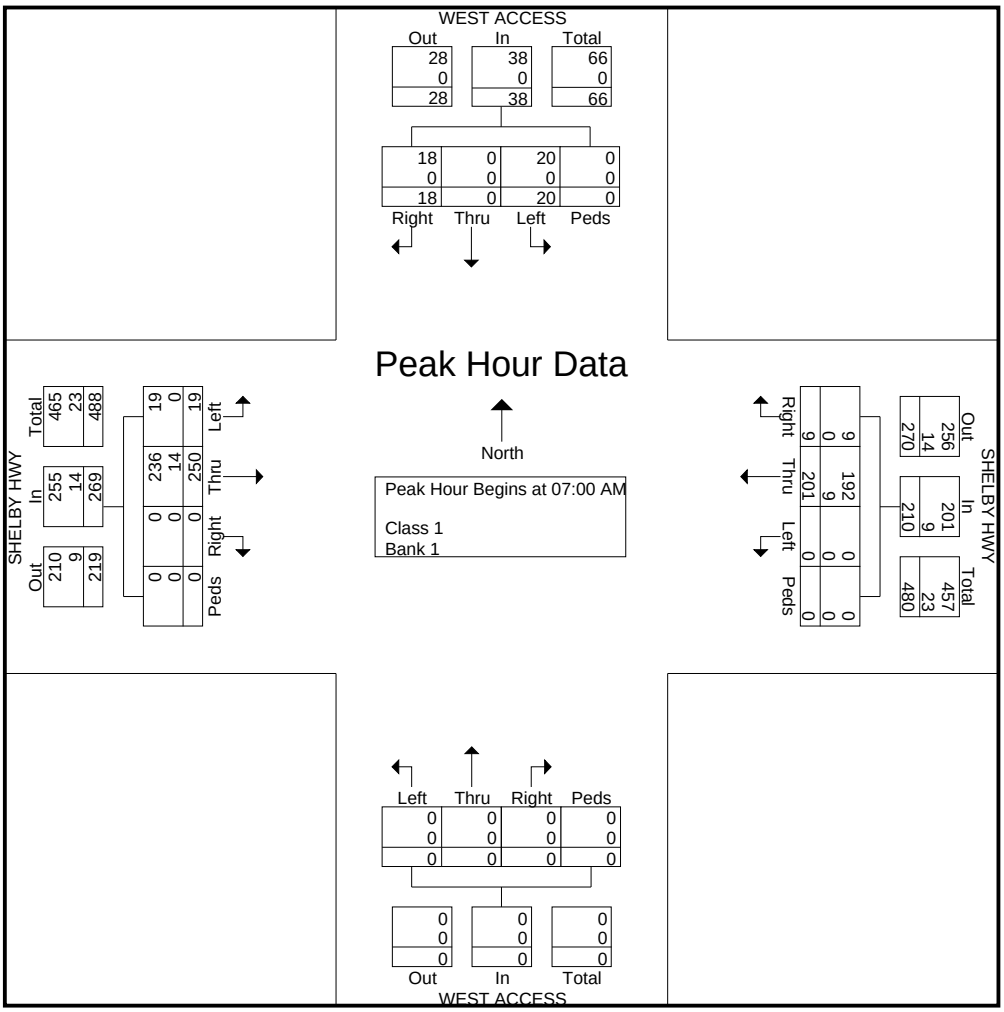


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #3 WACCESS&SHELBYHWYAM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	WEST ACCESS Southbound					SHELBY HWY Westbound					WEST ACCESS Northbound					SHELBY HWY Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	3	0	**9**	0	**12**	2	57	0	0	59	0	0	0	0	0	0	53	2	0	55	126
07:15 AM	4	0	6	0	10	1	47	0	0	48	0	0	0	0	0	0	51	**8**	0	59	117
07:30 AM	**8**	0	2	0	10	**4**	34	0	0	38	0	0	0	0	0	0	**73**	2	0	75	123
07:45 AM	3	0	3	0	6	2	**63**	0	0	**65**	0	0	0	0	0	0	73	7	0	**80**	**151**
Total Volume	18	0	20	0	38	9	201	0	0	210	0	0	0	0	0	0	250	19	0	269	517
% App. Total	47.4	0	52.6	0		4.3	95.7	0	0		0	0	0	0		0	92.9	7.1	0		
PHF	.563	.000	.556	.000	.792	.563	.798	.000	.000	.808	.000	.000	.000	.000	.000	.000	.856	.594	.000	.841	.856
Class 1	18	0	20	0	38	9	192	0	0	201	0	0	0	0	0	0	236	19	0	255	494
% Class 1							95.5	0	0	95.7	0	0	0	0	0	0	94.4	100	0	94.8	95.6
Bank 1	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	14	0	0	14	23
% Bank 1	0	0	0	0	0	0	4.5	0	0	4.3	0	0	0	0	0	0	5.6	0	0	5.2	4.4



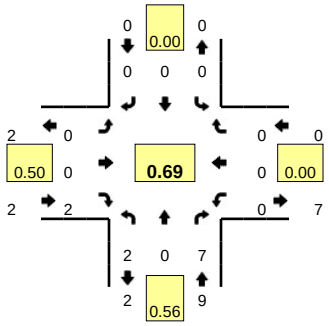
Type of peak hour being reported: Intersection Peak

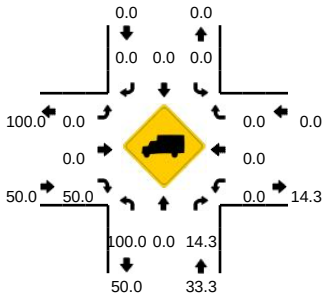
Method for determining peak hour: Total Entering Volume

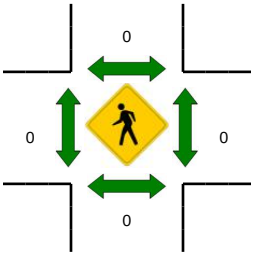
LOCATION: Frontage Rd -- Gaffney Ferry Rd
CITY/STATE: Gaffney, SC

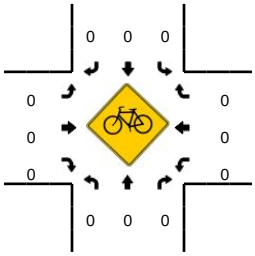
QC JOB #: 12896545
DATE: Thu, Sep 25 2014

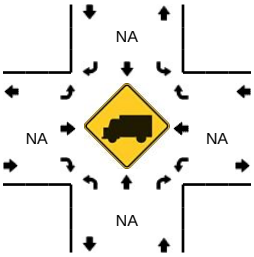
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

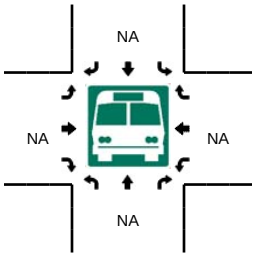












15-Min Count Period Beginning At	Frontage Rd (Northbound)				Frontage Rd (Southbound)				Gaffney Ferry Rd (Eastbound)				Gaffney Ferry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	
7:15 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	
7:30 AM	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
7:45 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	11
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	5
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Heavy Trucks	4	0	4		0	0	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

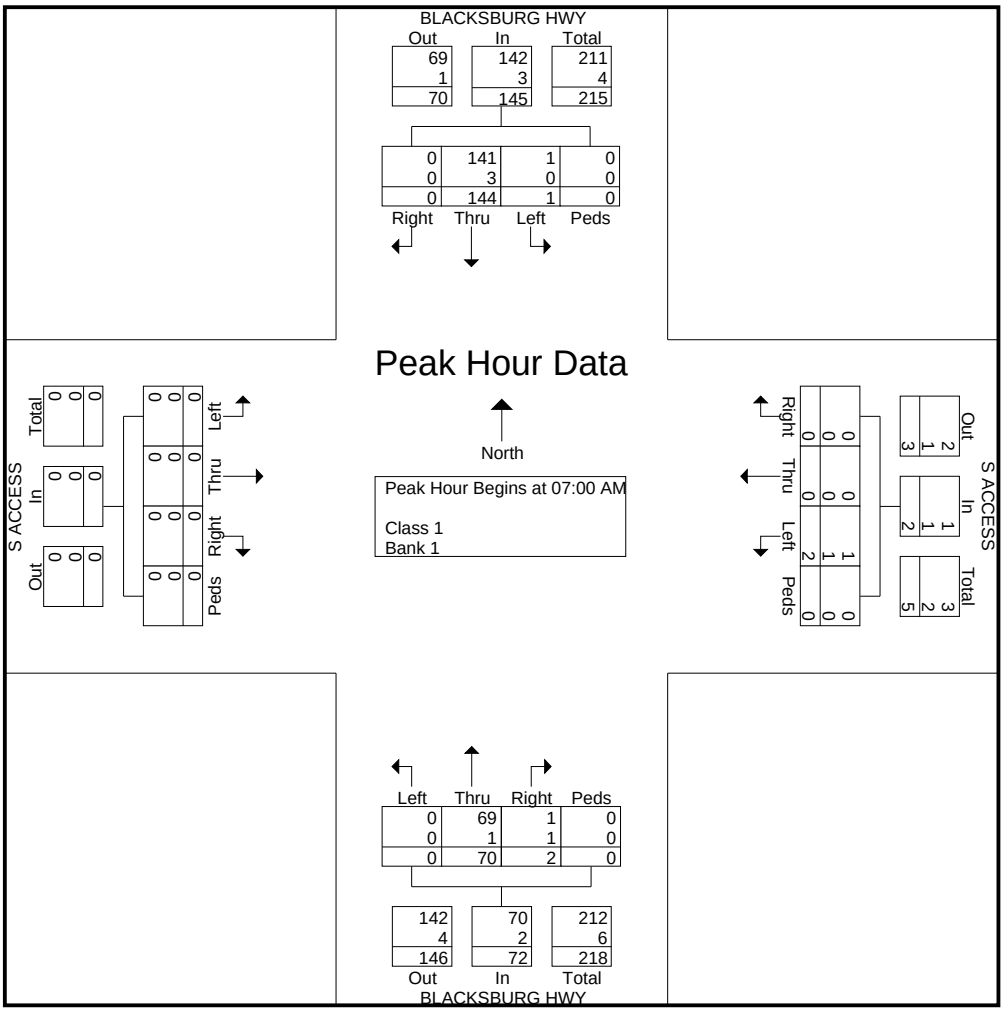
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #4 Blacksburg Hwy&Station Dw 1AM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	BLACKSBURG HWY Southbound					S ACCESS Westbound					BLACKSBURG HWY Northbound					S ACCESS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	33	0	0	33	0	0	0	0	0	**1**	14	0	0	15	0	0	0	0	0	48
07:15 AM	0	26	0	0	26	0	0	**2**	0	**2**	1	13	0	0	14	0	0	0	0	0	42
07:30 AM	0	**48**	**1**	0	**49**	0	0	0	0	0	0	**25**	0	0	**25**	0	0	0	0	0	**74**
07:45 AM	0	37	0	0	37	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	55
Total Volume	0	144	1	0	145	0	0	2	0	2	2	70	0	0	72	0	0	0	0	0	219
% App. Total	0	99.3	0.7	0		0	0	100	0		2.8	97.2	0	0		0	0	0	0		
PHF	.000	.750	.250	.000	.740	.000	.000	.250	.000	.250	.500	.700	.000	.000	.720	.000	.000	.000	.000	.000	.740
Class 1	0	141	1	0	142	0	0	1	0	1	1	69	0	0	70	0	0	0	0	0	213
% Class 1		97.9	100	0	97.9	0	0	50.0	0	50.0	50.0	98.6	0	0	97.2	0	0	0	0	0	97.3
Bank 1	0	3	0	0	3	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	6
% Bank 1	0	2.1	0	0	2.1	0	0	50.0	0	50.0	50.0	1.4	0	0	2.8	0	0	0	0	0	2.7

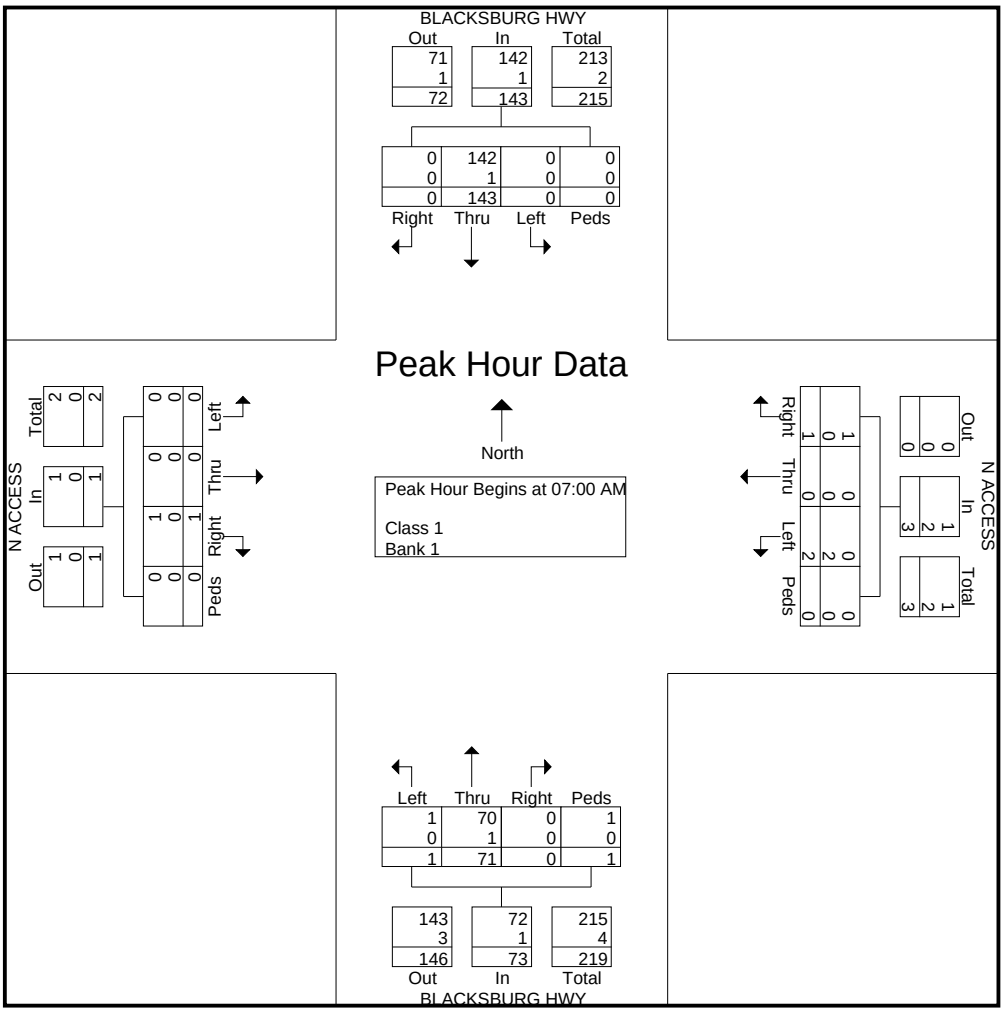


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #5 Blacksburg Hwy&Station DW 2AM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	BLACKSBURG HWY Southbound					N ACCESS Westbound					BLACKSBURG HWY Northbound					N ACCESS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	32	0	0	32	0	0	**1**	0	**1**	0	14	0	0	14	0	0	0	0	0	47
07:15 AM	0	26	0	0	26	0	0	0	0	0	0	12	0	**1**	13	0	0	0	0	0	39
07:30 AM	0	**48**	0	0	**48**	**1**	0	0	0	1	0	**26**	0	0	**26**	**1**	0	0	0	**1**	**76**
07:45 AM	0	37	0	0	37	0	0	1	0	1	0	19	**1**	0	20	0	0	0	0	0	58
Total Volume	0	143	0	0	143	1	0	2	0	3	0	71	1	1	73	1	0	0	0	1	220
% App. Total	0	100	0	0		33.3	0	66.7	0		0	97.3	1.4	1.4		100	0	0	0		
PHF	.000	.745	.000	.000	.745	.250	.000	.500	.000	.750	.000	.683	.250	.250	.702	.250	.000	.000	.000	.250	.724
Class 1	0	142	0	0	142	1	0	0	0	1	0	70	1	1	72	1	0	0	0	1	216
% Class 1		99.3	0	0	99.3	100	0	0	0	33.3	0	98.6	100	100	98.6	100	0	0	0	100	98.2
Bank 1	0	1	0	0	1	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	4
% Bank 1	0	0.7	0	0	0.7	0	0	100	0	66.7	0	1.4	0	0	1.4	0	0	0	0	0	1.8

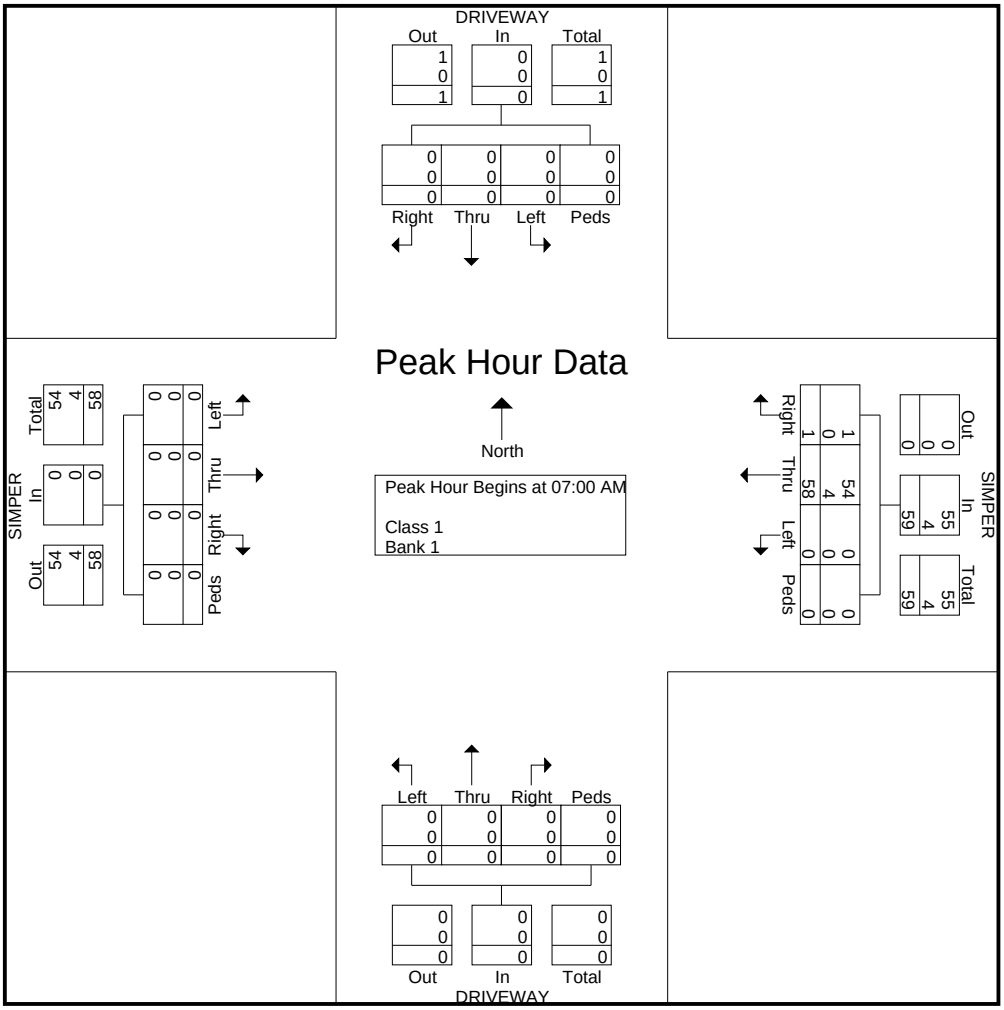


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #6 Retail Store&I-85 SB Off RampAM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	DRIVEWAY Southbound					SIMPER Westbound					DRIVEWAY Northbound					SIMPER Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	10
07:15 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	8
07:30 AM	0	0	0	0	0	**1**	**24**	0	0	**25**	0	0	0	0	0	0	0	0	0	0	**25**
07:45 AM	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	0	0	0	0	0	16
Total Volume	0	0	0	0	0	1	58	0	0	59	0	0	0	0	0	0	0	0	0	0	59
% App. Total	0	0	0	0		1.7	98.3	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.604	.000	.000	.590	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.590
Class 1	0	0	0	0	0	1	54	0	0	55	0	0	0	0	0	0	0	0	0	0	55
% Class 1							93.1	0	0	93.2	0	0	0	0	0	0	0	0	0	0	93.2
Bank 1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
% Bank 1	0	0	0	0	0	0	6.9	0	0	6.8	0	0	0	0	0	0	0	0	0	0	6.8

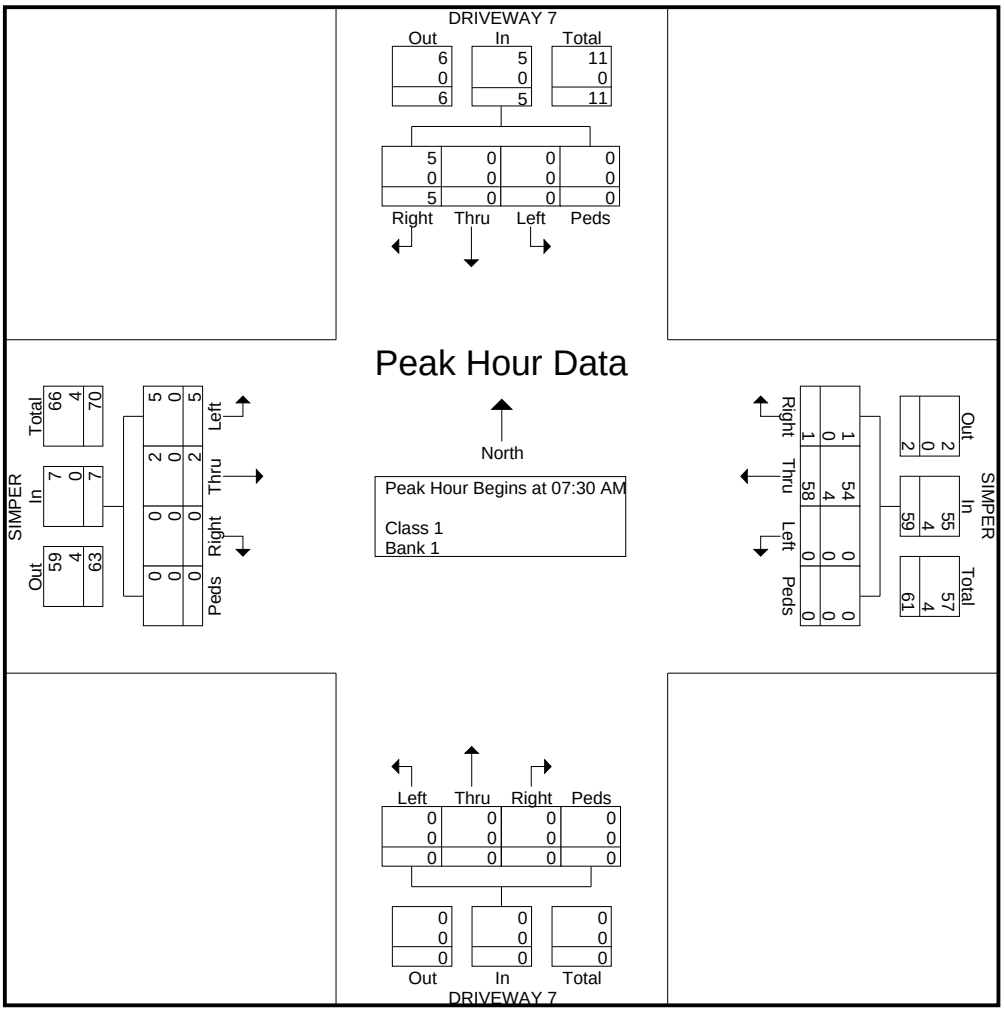


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #7 Service Dw 1&I-85 SB Off RampAM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	DRIVEWAY 7 Southbound					SIMPER Westbound					DRIVEWAY 7 Northbound					SIMPER Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	**24**	0	0	**24**	0	0	0	0	0	0	0	0	0	0	24
07:45 AM	**2**	0	0	0	**2**	**1**	19	0	0	20	0	0	0	0	0	0	0	**5**	0	**5**	**27**
08:00 AM	2	0	0	0	2	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	11
08:15 AM	1	0	0	0	1	0	6	0	0	6	0	0	0	0	0	0	**2**	0	0	2	9
Total Volume	5	0	0	0	5	1	58	0	0	59	0	0	0	0	0	0	2	5	0	7	71
% App. Total	100	0	0	0		1.7	98.3	0	0		0	0	0	0		0	28.6	71.4	0		
PHF	.625	.000	.000	.000	.625	.250	.604	.000	.000	.615	.000	.000	.000	.000	.000	.000	.250	.250	.000	.350	.657
Class 1	5	0	0	0	5	1	54	0	0	55	0	0	0	0	0	0	2	5	0	7	67
% Class 1							93.1	0	0	93.2	0	0	0	0	0	0	100	100	0	100	94.4
Bank 1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
% Bank 1	0	0	0	0	0	0	6.9	0	0	6.8	0	0	0	0	0	0	0	0	0	0	5.6

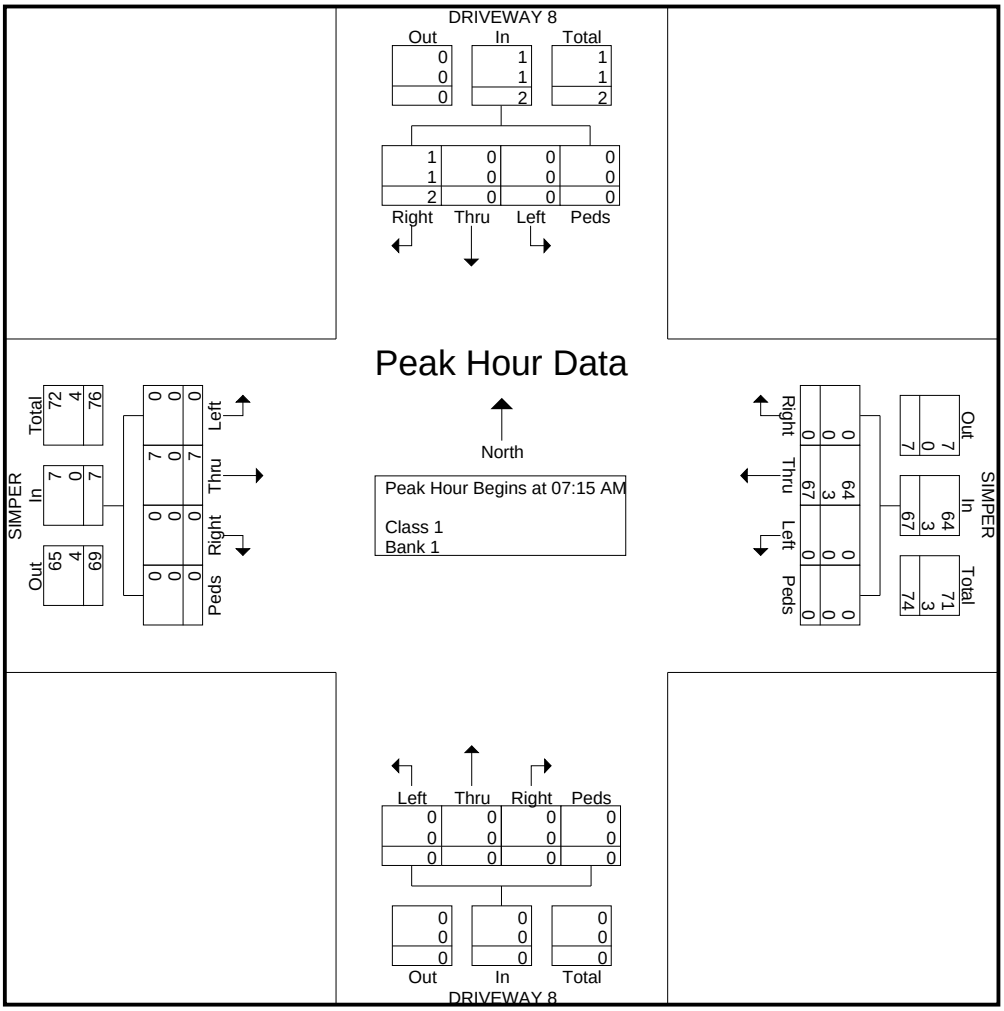


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #8 Service DW2 @ I-85 SB off RampAM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	DRIVEWAY 8 Southbound					SIMPER Westbound					DRIVEWAY 8 Northbound					SIMPER Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**2**	0	0	0	**2**	0	11	0	0	11	0	0	0	0	0	0	2	0	0	2	15
07:30 AM	0	0	0	0	0	0	**25**	0	0	**25**	0	0	0	0	0	0	1	0	0	1	**26**
07:45 AM	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	**4**	0	0	**4**	25
08:00 AM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	10
Total Volume	2	0	0	0	2	0	67	0	0	67	0	0	0	0	0	0	7	0	0	7	76
% App. Total	100	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.250	.000	.000	.000	.250	.000	.670	.000	.000	.670	.000	.000	.000	.000	.000	.000	.438	.000	.000	.438	.731
Class 1	1	0	0	0	1	0	64	0	0	64	0	0	0	0	0	0	7	0	0	7	72
% Class 1	50.0	0	0	0	50.0	0	95.5	0	0	95.5	0	0	0	0	0	0	100	0	0	100	94.7
Bank 1	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
% Bank 1	50.0	0	0	0	50.0	0	4.5	0	0	4.5	0	0	0	0	0	0	0	0	0	0	5.3



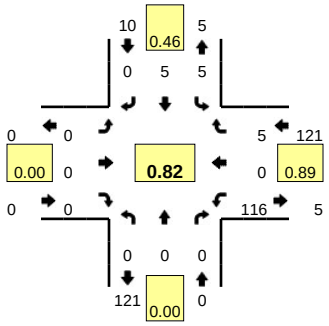
Type of peak hour being reported: Intersection Peak

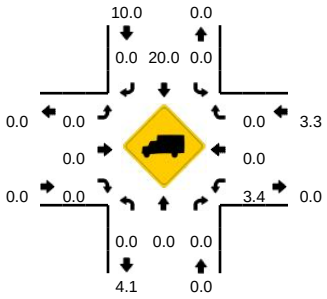
Method for determining peak hour: Total Entering Volume

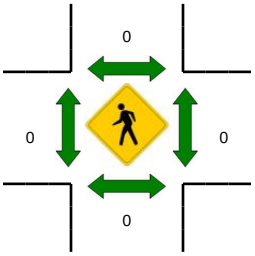
LOCATION: I-85 SB On-Ramp -- Crawford Rd
CITY/STATE: Blacksburg, SC

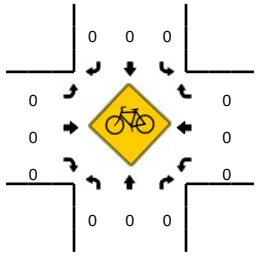
QC JOB #: 12896543
DATE: Thu, Sep 25 2014

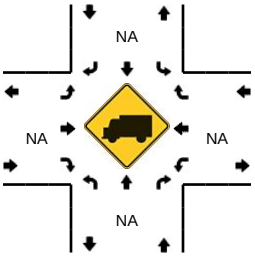
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

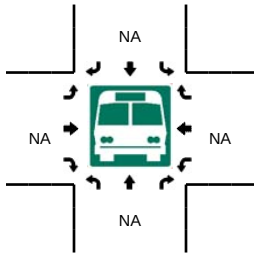












15-Min Count Period Beginning At	I-85 SB On-Ramp (Northbound)				I-85 SB On-Ramp (Southbound)				Crawford Rd (Eastbound)				Crawford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	22	0	1	0	23	
7:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	22	0	1	0	25	
7:30 AM	0	0	0	0	3	3	0	0	0	0	0	0	31	0	3	0	40	
7:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	27	0	2	0	31	119
8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	27	0	0	0	28	124
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	31	0	0	0	32	131
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	20	0	0	0	21	112
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13	94

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	12	12	0	0	0	0	0	0	124	0	12	0	160
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Include EBR from Crawford to I-85.

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

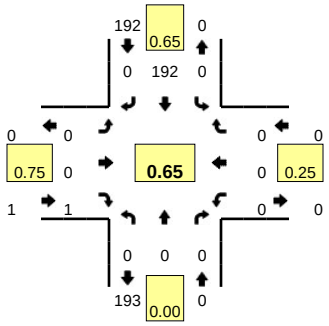
Type of peak hour being reported: Intersection Peak

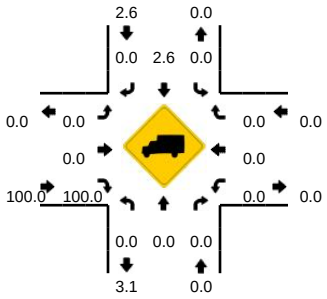
Method for determining peak hour: Total Entering Volume

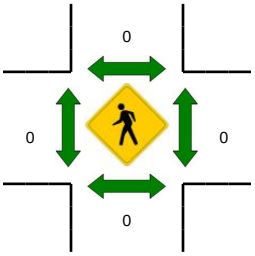
LOCATION: I-85 NB Off-Ramp/Frontage Rd -- Frontage Rd/Milliken Rd
CITY/STATE: Blacksburg, SC

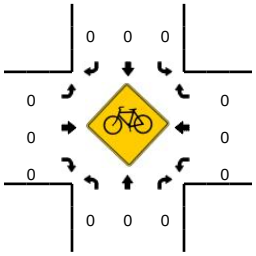
QC JOB #: 12896537
DATE: Thu, Sep 25 2014

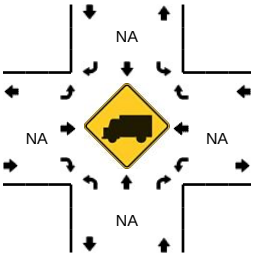
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

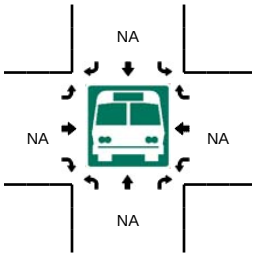












15-Min Count Period Beginning At	I-85 NB Off-Ramp/Frontage Rd (Northbound)				I-85 NB Off-Ramp/Frontage Rd (Southbound)				Frontage Rd/Milliken Rd (Eastbound)				Frontage Rd/Milliken Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	25	
7:15 AM	0	0	0	0	0	36	0	0	0	0	1	0	0	0	0	0	37	
7:30 AM	0	0	0	0	0	57	0	0	0	0	0	0	0	0	0	0	57	
7:45 AM	0	0	0	0	0	74	0	0	0	0	0	0	0	0	0	0	74	193
8:00 AM	0	0	0	0	0	23	0	0	0	0	1	0	0	0	0	0	24	192
8:15 AM	0	0	0	0	0	13	0	0	0	0	1	0	0	0	0	0	14	169
8:30 AM	0	0	0	0	0	16	0	0	0	0	2	0	0	0	0	0	18	130
8:45 AM	0	0	0	0	0	10	0	0	0	0	2	0	0	1	0	0	13	69

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	296	0	0	0	0	0	0	0	0	0	0	296
Heavy Trucks	0	0	0		0	16	0		0	0	0		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

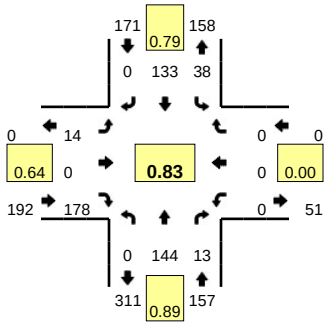
Type of peak hour being reported: Intersection Peak

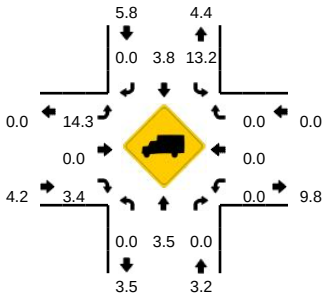
Method for determining peak hour: Total Entering Volume

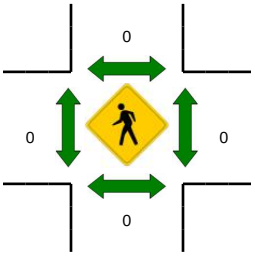
LOCATION: Blacksburg Hwy -- I-85 NB On-Ramp/Frontage Rd/Mill
CITY/STATE: Blacksburg, SC

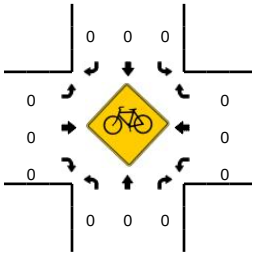
QC JOB #: 12896539
DATE: Thu, Sep 25 2014

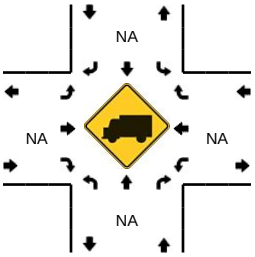
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

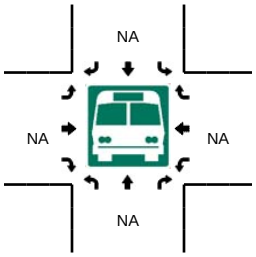












15-Min Count Period Beginning At	Blacksburg Hwy (Northbound)				Blacksburg Hwy (Southbound)				I-85 NB On-Ramp/Frontage Rd/Mill (Eastbound)				I-85 NB On-Ramp/Frontage Rd/Mill (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	25	2	0	7	15	0	0	3	0	22	0	0	0	0	0	74	
7:15 AM	0	27	3	0	16	41	0	0	3	0	34	0	0	0	0	0	124	
7:30 AM	0	42	2	0	10	46	0	0	4	0	52	0	0	0	0	0	156	
7:45 AM	0	35	2	0	8	37	0	0	4	0	71	0	0	0	0	0	157	511
8:00 AM	0	40	6	0	4	9	0	0	3	0	21	0	0	0	0	0	83	520
8:15 AM	0	32	5	0	5	10	0	0	2	1	11	0	0	0	0	0	66	462
8:30 AM	0	28	0	0	1	12	0	0	4	2	11	0	0	0	0	0	58	364
8:45 AM	1	18	2	0	1	21	0	0	2	1	10	0	0	0	0	0	56	263

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	140	8	0	32	148	0	0	16	0	284	0	0	0	0	0	628
Heavy Trucks	0	0	0		8	8	0		4	0	12		0	0	0		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

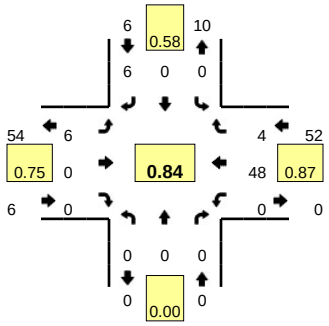
Type of peak hour being reported: Intersection Peak

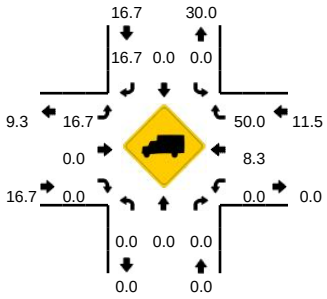
Method for determining peak hour: Total Entering Volume

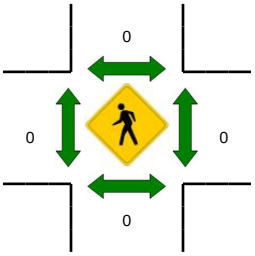
LOCATION: Store Dwys (Entire Frontage) -- I-85 SB Off-Ramp
CITY/STATE: Blacksburg, SC

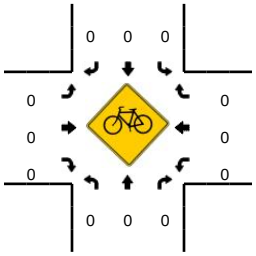
QC JOB #: 12896541
DATE: Thu, Sep 25 2014

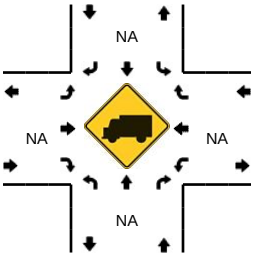
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

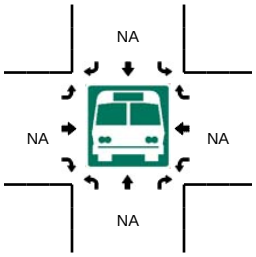












15-Min Count Period Beginning At	Store Dwys (Entire Frontage) (Northbound)				Store Dwys (Entire Frontage) (Southbound)				I-85 SB Off-Ramp (Eastbound)				I-85 SB Off-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	9	3	0	12	
7:15 AM	0	0	0	0	0	0	3	0	1	0	0	0	0	12	1	0	17	
7:30 AM	0	0	0	0	0	0	2	0	2	0	0	0	0	15	0	0	19	
7:45 AM	0	0	0	0	0	0	1	0	3	0	0	0	0	12	0	0	16	64
8:00 AM	0	0	0	0	0	0	1	0	2	0	0	0	0	7	1	0	11	63
8:15 AM	0	0	0	0	0	0	3	0	2	0	0	0	0	8	3	0	16	62
8:30 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	7	0	0	9	52
8:45 AM	0	0	0	0	0	0	1	0	2	0	0	0	0	9	2	0	14	50

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	8	0	8	0	0	0	0	60	0	0	76
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Try to get best coverage of ramps/driveways in case driveway volumes are needed.

Report generated on 10/7/2014 1:32 AM

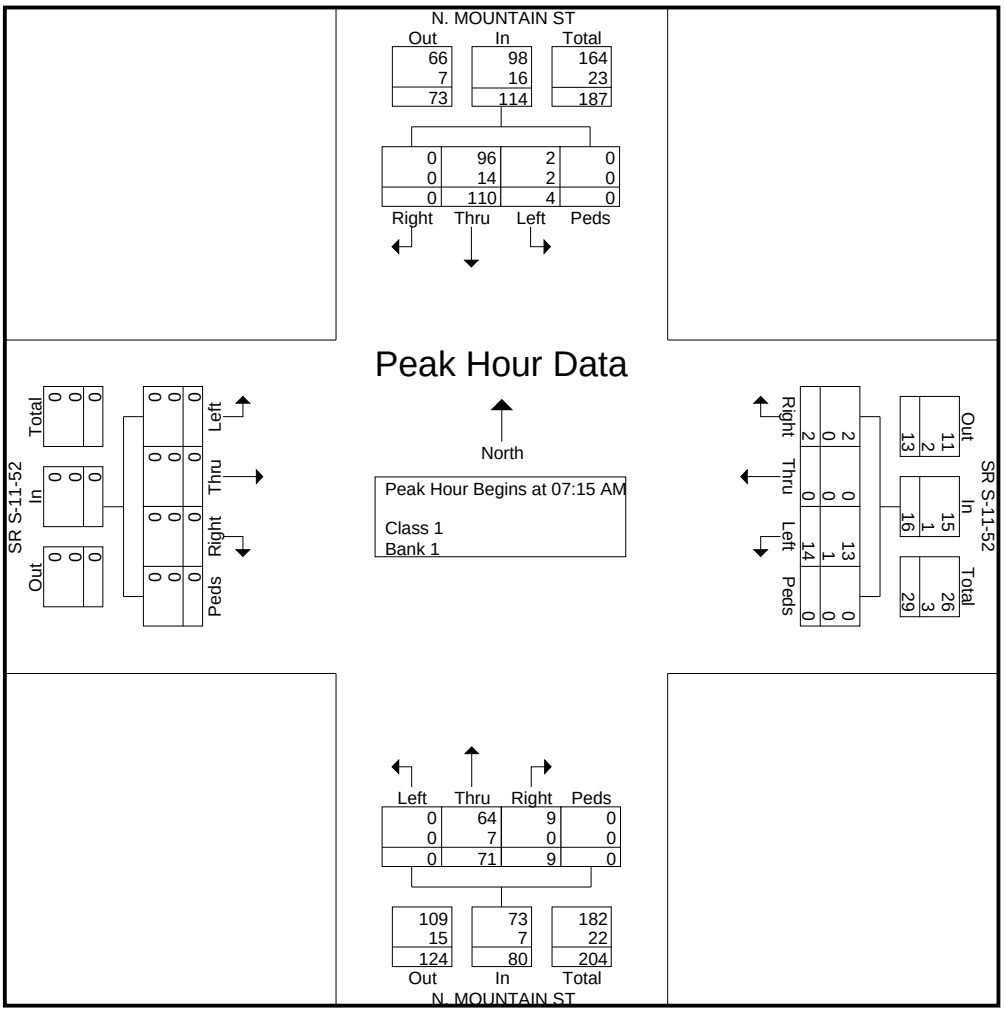
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #9 N Mtn St&R S-11AM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	N. MOUNTAIN ST Southbound					SR S-11-52 Westbound					N. MOUNTAIN ST Northbound					SR S-11-52 Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	**37**	1	0	**38**	0	0	4	0	4	2	18	0	0	20	0	0	0	0	0	**62**
07:30 AM	0	28	0	0	28	0	0	**5**	0	**5**	**3**	17	0	0	20	0	0	0	0	0	53
07:45 AM	0	25	0	0	25	0	0	5	0	5	3	**20**	0	0	**23**	0	0	0	0	0	53
08:00 AM	0	20	**3**	0	23	**2**	0	0	0	2	1	16	0	0	17	0	0	0	0	0	42
Total Volume	0	110	4	0	114	2	0	14	0	16	9	71	0	0	80	0	0	0	0	0	210
% App. Total	0	96.5	3.5	0		12.5	0	87.5	0		11.2	88.8	0	0		0	0	0	0		
PHF	.000	.743	.333	.000	.750	.250	.000	.700	.000	.800	.750	.888	.000	.000	.870	.000	.000	.000	.000	.000	.847
Class 1	0	96	2	0	98	2	0	13	0	15	9	64	0	0	73	0	0	0	0	0	186
% Class 1		87.3	50.0	0	86.0	100	0	92.9	0	93.8	100	90.1	0	0	91.3	0	0	0	0	0	88.6
Bank 1	0	14	2	0	16	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	24
% Bank 1	0	12.7	50.0	0	14.0	0	0	7.1	0	6.3	0	9.9	0	0	8.8	0	0	0	0	0	11.4

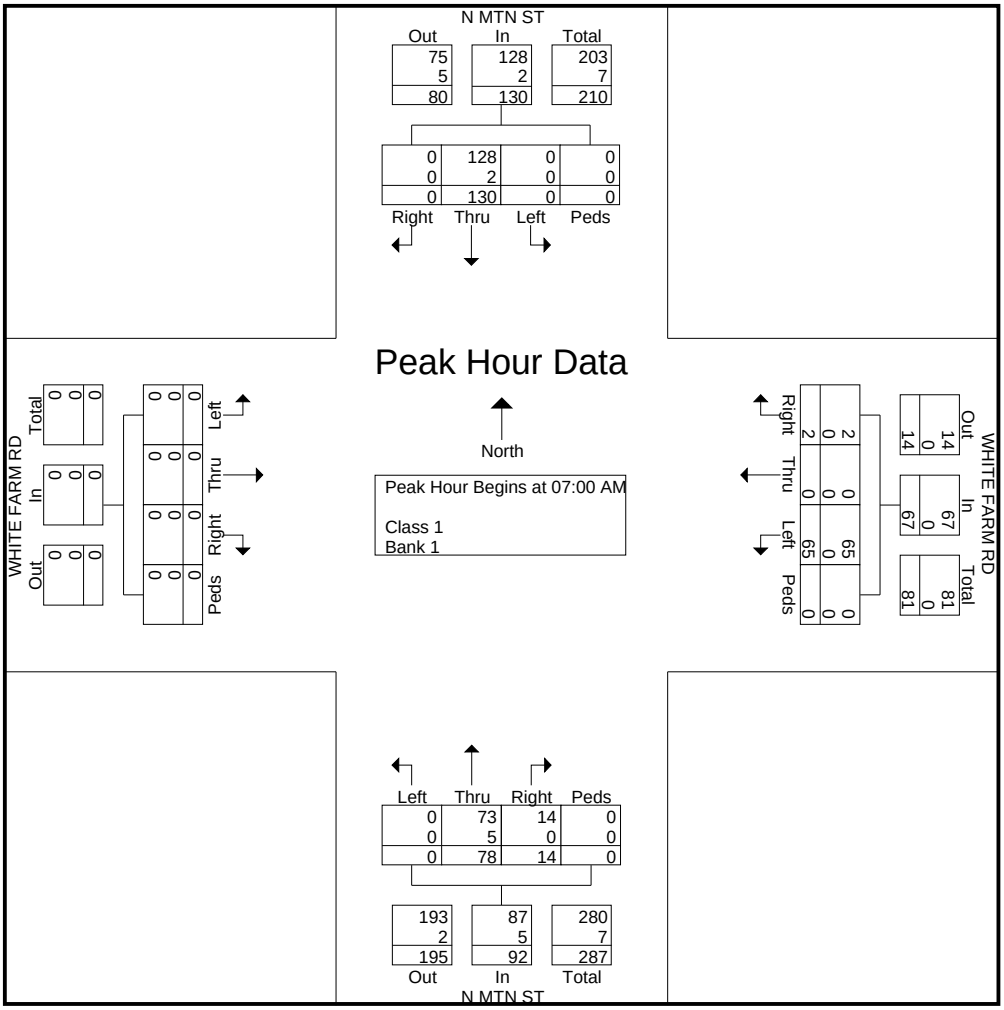


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #10 MTN&WHITEFARMAM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	N MTN ST Southbound					WHITE FARM RD Westbound					N MTN ST Northbound					WHITE FARM RD Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	27	0	0	27	0	0	13	0	13	3	15	0	0	18	0	0	0	0	0	58
07:15 AM	0	**42**	0	0	**42**	0	0	**20**	0	**20**	3	21	0	0	24	0	0	0	0	0	**86**
07:30 AM	0	30	0	0	30	**1**	0	15	0	16	**4**	19	0	0	23	0	0	0	0	0	69
07:45 AM	0	31	0	0	31	1	0	17	0	18	4	**23**	0	0	**27**	0	0	0	0	0	76
Total Volume	0	130	0	0	130	2	0	65	0	67	14	78	0	0	92	0	0	0	0	0	289
% App. Total	0	100	0	0		3	0	97	0		15.2	84.8	0	0		0	0	0	0		
PHF	.000	.774	.000	.000	.774	.500	.000	.813	.000	.838	.875	.848	.000	.000	.852	.000	.000	.000	.000	.000	.840
Class 1	0	128	0	0	128	2	0	65	0	67	14	73	0	0	87	0	0	0	0	0	282
% Class 1		98.5	0	0	98.5	100	0	100	0	100	100	93.6	0	0	94.6	0	0	0	0	0	97.6
Bank 1	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7
% Bank 1	0	1.5	0	0	1.5	0	0	0	0	0	0	6.4	0	0	5.4	0	0	0	0	0	2.4

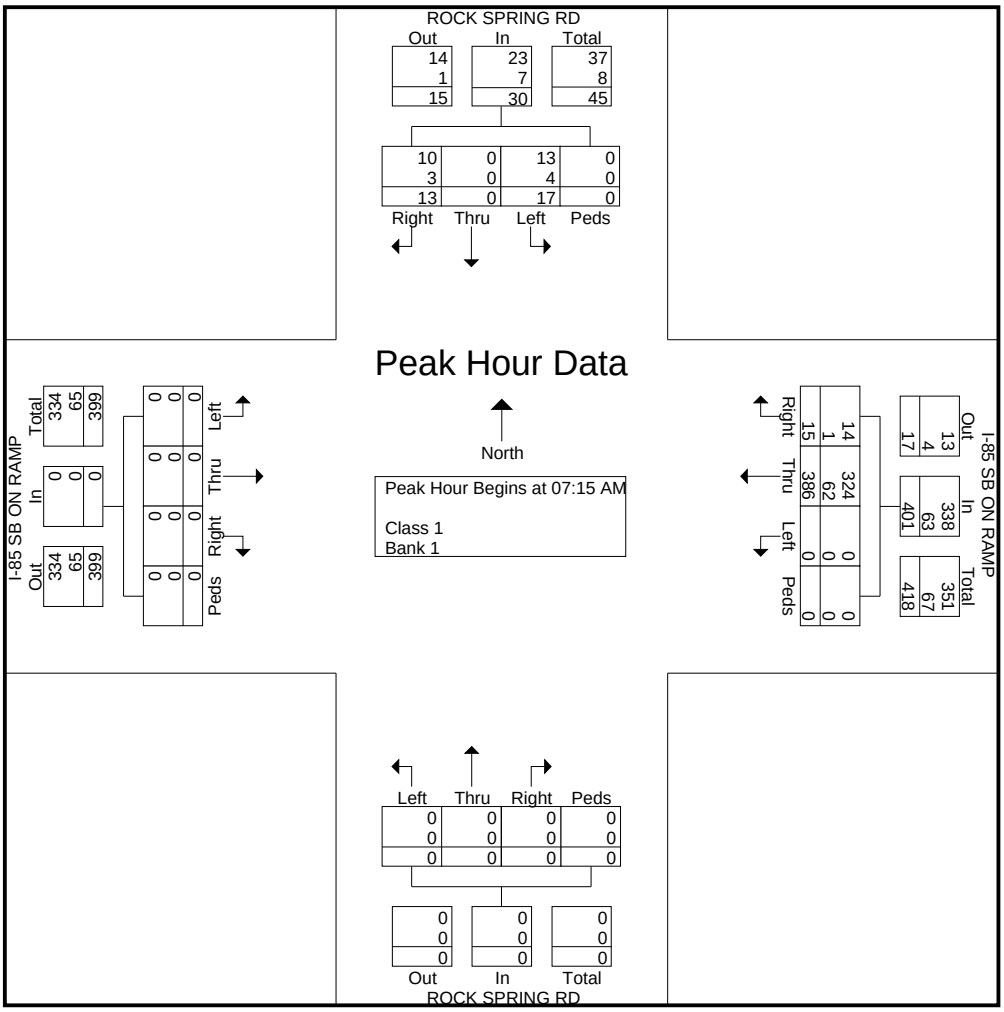


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #11 ROCKSPRING&I85SBRAMPAM
Site Code : 11
Start Date : 5/27/2015
Page No : 2

	ROCK SPRING RD Southbound					I-85 SB ON RAMP Westbound					ROCK SPRING RD Northbound					I-85 SB ON RAMP Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**7**	0	5	0	**12**	4	89	0	0	93	0	0	0	0	0	0	0	0	0	0	105
07:30 AM	5	0	3	0	8	**5**	**117**	0	0	**122**	0	0	0	0	0	0	0	0	0	0	**130**
07:45 AM	1	0	**6**	0	7	2	93	0	0	95	0	0	0	0	0	0	0	0	0	0	102
08:00 AM	0	0	3	0	3	4	87	0	0	91	0	0	0	0	0	0	0	0	0	0	94
Total Volume	13	0	17	0	30	15	386	0	0	401	0	0	0	0	0	0	0	0	0	0	431
% App. Total	43.3	0	56.7	0		3.7	96.3	0	0		0	0	0	0		0	0	0	0		
PHF	.464	.000	.708	.000	.625	.750	.825	.000	.000	.822	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.829
Class 1	10	0	13	0	23	14	324	0	0	338	0	0	0	0	0	0	0	0	0	0	361
% Class 1	76.9	0	76.5	0	76.7	93.3	83.9	0	0	84.3	0	0	0	0	0	0	0	0	0	0	83.8
Bank 1	3	0	4	0	7	1	62	0	0	63	0	0	0	0	0	0	0	0	0	0	70
% Bank 1	23.1	0	23.5	0	23.3	6.7	16.1	0	0	15.7	0	0	0	0	0	0	0	0	0	0	16.2

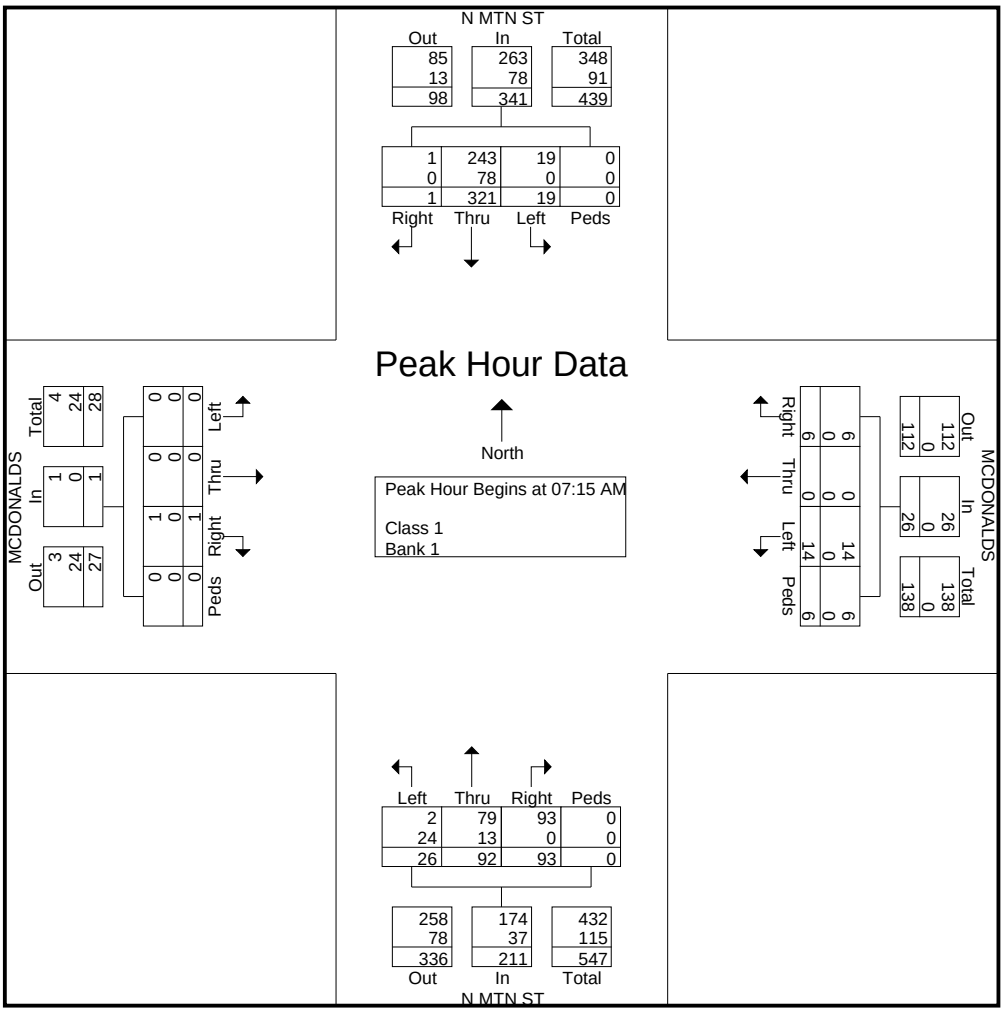


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #12 N Mtn St&McDonalds-Gas StationAM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	N MTN ST Southbound					MCDONALDS Westbound					N MTN ST Northbound					MCDONALDS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	**98**	5	0	**103**	1	0	1	0	2	**28**	**25**	7	0	60	0	0	0	0	0	**165**
07:30 AM	0	82	5	0	87	0	0	**5**	**3**	8	21	20	5	0	46	0	0	0	0	0	141
07:45 AM	0	76	**7**	0	83	1	0	4	0	5	16	22	5	0	43	0	0	0	0	0	131
08:00 AM	**1**	65	2	0	68	**4**	0	4	3	**11**	28	25	**9**	0	**62**	**1**	0	0	0	**1**	142
Total Volume	1	321	19	0	341	6	0	14	6	26	93	92	26	0	211	1	0	0	0	1	579
% App. Total	0.3	94.1	5.6	0		23.1	0	53.8	23.1		44.1	43.6	12.3	0		100	0	0	0		
PHF	.250	.819	.679	.000	.828	.375	.000	.700	.500	.591	.830	.920	.722	.000	.851	.250	.000	.000	.000	.250	.877
Class 1	1	243	19	0	263	6	0	14	6	26	93	79	2	0	174	1	0	0	0	1	464
% Class 1		75.7	100	0	77.1	100	0	100	100	100	100	85.9	7.7	0	82.5	100	0	0	0	100	80.1
Bank 1	0	78	0	0	78	0	0	0	0	0	0	13	24	0	37	0	0	0	0	0	115
% Bank 1	0	24.3	0	0	22.9	0	0	0	0	0	0	14.1	92.3	0	17.5	0	0	0	0	0	19.9

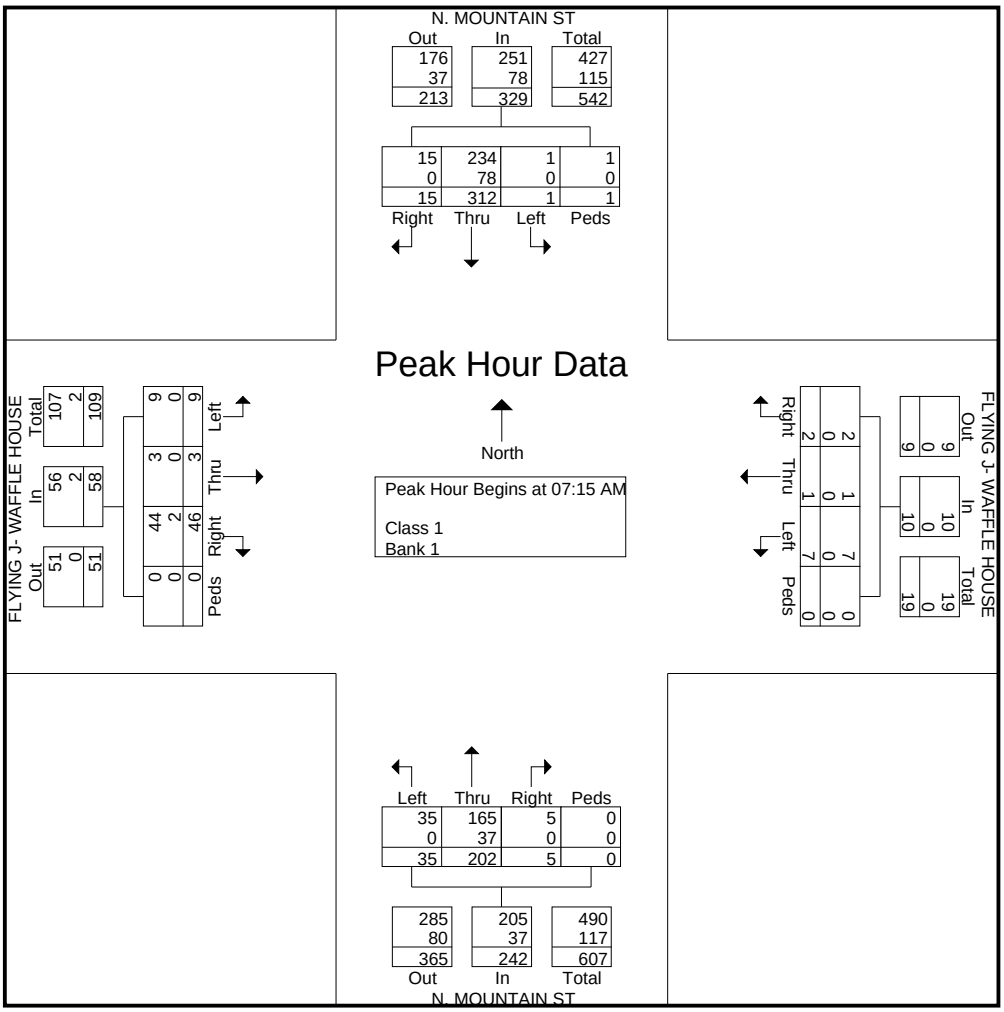


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #13 N. MTN ST&FLYING J - WAFFLEAM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	N. MOUNTAIN ST Southbound					FLYING J- WAFFLE HOUSE Westbound					N. MOUNTAIN ST Northbound					FLYING J- WAFFLE HOUSE Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	2	**91**	**1**	0	**94**	0	0	**3**	0	**3**	0	**59**	**14**	0	**73**	14	0	2	0	16	**186**
07:30 AM	**6**	75	0	0	81	0	**1**	1	0	2	1	46	7	0	54	**15**	0	2	0	**17**	154
07:45 AM	5	77	0	**1**	83	**2**	0	1	0	3	**2**	40	9	0	51	8	1	1	0	10	147
08:00 AM	2	69	0	0	71	0	0	2	0	2	2	57	5	0	64	9	**2**	**4**	0	15	152
Total Volume	15	312	1	1	329	2	1	7	0	10	5	202	35	0	242	46	3	9	0	58	639
% App. Total	4.6	94.8	0.3	0.3		20	10	70	0		2.1	83.5	14.5	0		79.3	5.2	15.5	0		
PHF	.625	.857	.250	.250	.875	.250	.250	.583	.000	.833	.625	.856	.625	.000	.829	.767	.375	.563	.000	.853	.859
Class 1	15	234	1	1	251	2	1	7	0	10	5	165	35	0	205	44	3	9	0	56	522
% Class 1		75.0	100	100	76.3	100	100	100	0	100	100	81.7	100	0	84.7	95.7	100	100	0	96.6	81.7
Bank 1	0	78	0	0	78	0	0	0	0	0	0	37	0	0	37	2	0	0	0	2	117
% Bank 1	0	25.0	0	0	23.7	0	0	0	0	0	0	18.3	0	0	15.3	4.3	0	0	0	3.4	18.3

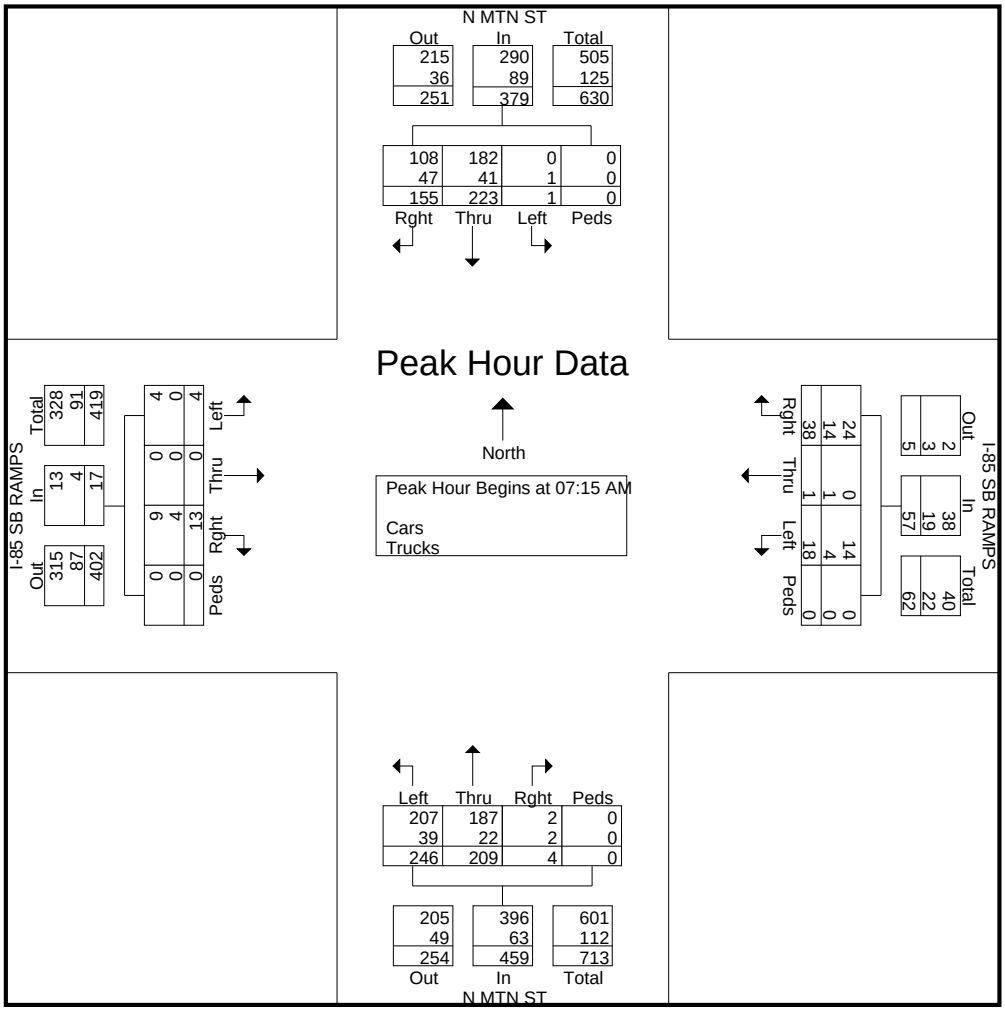


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #14 NMtnSt@I-85SBRampsAM
Site Code :
Start Date : 5/26/2015
Page No : 2

	N MTN ST Southbound					I-85 SB RAMPS Westbound					N MTN ST Northbound					I-85 SB RAMPS Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**49**	**66**	0	0	**115**	**13**	**1**	**8**	0	**22**	**1**	55	43	0	99	4	0	**1**	0	5	241
07:30 AM	44	56	0	0	100	8	0	6	0	14	1	52	**82**	0	**135**	2	0	1	0	3	**252**
07:45 AM	30	47	0	0	77	10	0	1	0	11	1	46	64	0	111	**5**	0	1	0	**6**	205
08:00 AM	32	54	**1**	0	87	7	0	3	0	10	1	**56**	57	0	114	2	0	1	0	3	214
Total Volume	155	223	1	0	379	38	1	18	0	57	4	209	246	0	459	13	0	4	0	17	912
% App. Total	40.9	58.8	0.3	0		66.7	1.8	31.6	0		0.9	45.5	53.6	0		76.5	0	23.5	0		
PHF	.791	.845	.250	.000	.824	.731	.250	.563	.000	.648	1.00	.933	.750	.000	.850	.650	.000	1.00	.000	.708	.905
Cars	108	182	0	0	290	24	0	14	0	38	2	187	207	0	396	9	0	4	0	13	737
% Cars	69.7	81.6	0	0	76.5	63.2	0	77.8	0	66.7	50.0	89.5	84.1	0	86.3	69.2	0	100	0	76.5	80.8
Trucks	47	41	1	0	89	14	1	4	0	19	2	22	39	0	63	4	0	0	0	4	175
% Trucks	30.3	18.4	100	0	23.5	36.8	100	22.2	0	33.3	50.0	10.5	15.9	0	13.7	30.8	0	0	0	23.5	19.2

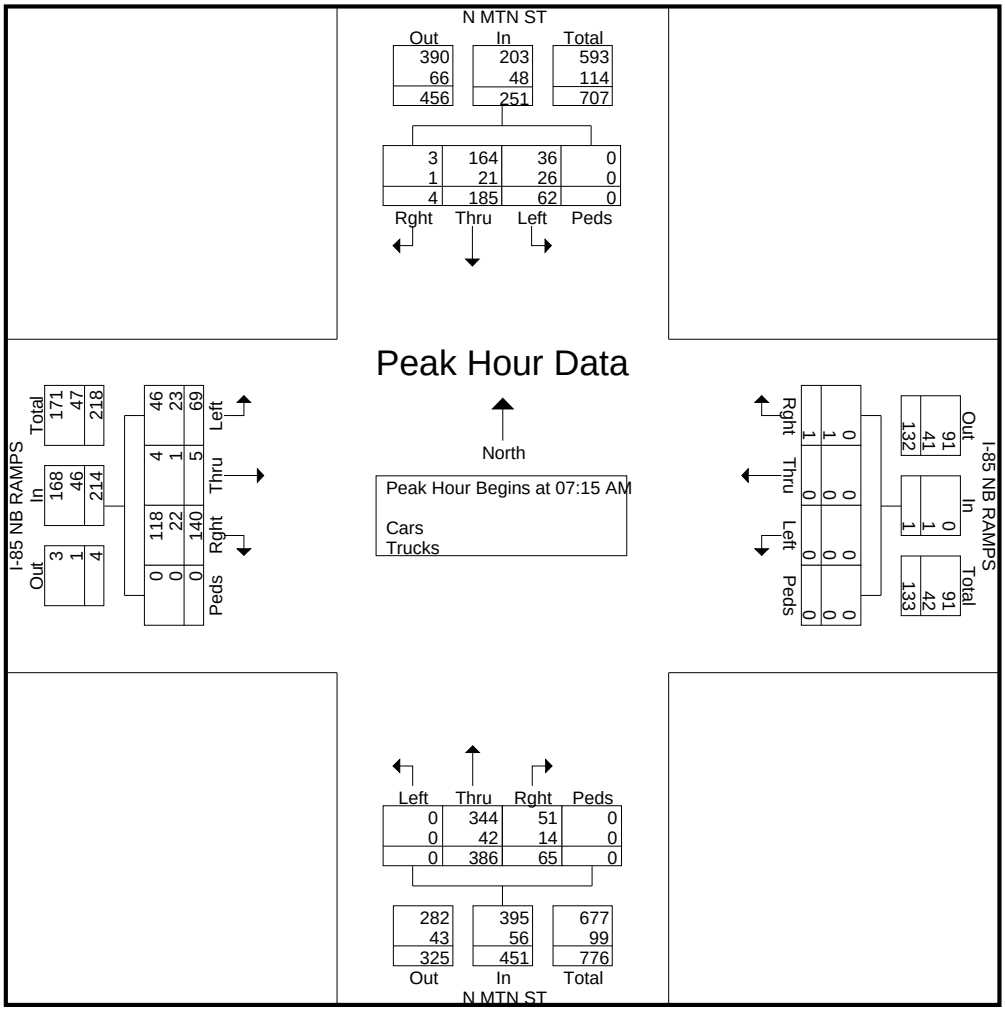


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #15 NMtnSt@I-85NBRampsAM
Site Code :
Start Date : 5/26/2015
Page No : 2

	N MTN ST Southbound					I-85 NB RAMPS Westbound					N MTN ST Northbound					I-85 NB RAMPS Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	**59**	17	0	**76**	0	0	0	0	0	**24**	92	0	0	116	**38**	1	16	0	55	**247**
07:30 AM	1	41	15	0	57	0	0	0	0	0	12	**112**	0	0	**124**	37	**2**	17	0	56	237
07:45 AM	1	47	12	0	60	0	0	0	0	0	14	107	0	0	121	34	1	11	0	46	227
08:00 AM	**2**	38	**18**	0	58	**1**	0	0	0	**1**	15	75	0	0	90	31	1	**25**	0	**57**	206
Total Volume	4	185	62	0	251	1	0	0	0	1	65	386	0	0	451	140	5	69	0	214	917
% App. Total	1.6	73.7	24.7	0		100	0	0	0		14.4	85.6	0	0		65.4	2.3	32.2	0		
PHF	.500	.784	.861	.000	.826	.250	.000	.000	.000	.250	.677	.862	.000	.000	.909	.921	.625	.690	.000	.939	.928
Cars	3	164	36	0	203	0	0	0	0	0	51	344	0	0	395	118	4	46	0	168	766
% Cars	75.0	88.6	58.1	0	80.9	0	0	0	0	0	78.5	89.1	0	0	87.6	84.3	80.0	66.7	0	78.5	83.5
Trucks	1	21	26	0	48	1	0	0	0	1	14	42	0	0	56	22	1	23	0	46	151
% Trucks	25.0	11.4	41.9	0	19.1	100	0	0	0	100	21.5	10.9	0	0	12.4	15.7	20.0	33.3	0	21.5	16.5

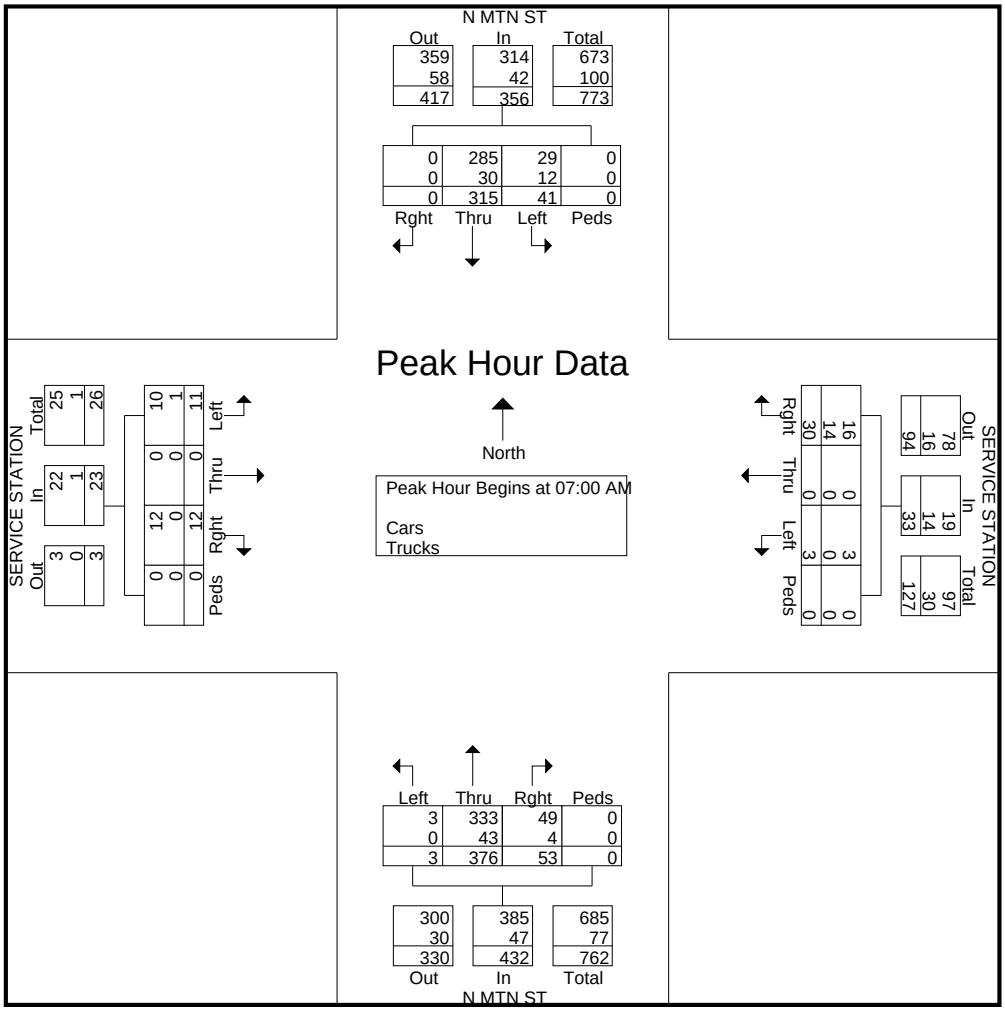


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #16 NMtnSt@ServiceStationAM
Site Code :
Start Date : 5/26/2015
Page No : 2

	N MTN ST Southbound					SERVICE STATION Westbound					N MTN ST Northbound					SERVICE STATION Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	69	10	0	79	6	0	0	0	6	8	66	**1**	0	75	2	0	3	0	5	165
07:15 AM	0	80	9	0	89	7	0	1	0	8	10	93	1	0	104	3	0	3	0	6	207
07:30 AM	0	**86**	9	0	**95**	**12**	0	**2**	0	**14**	**21**	**109**	1	0	**131**	2	0	1	0	3	**243**
07:45 AM	0	80	**13**	0	93	5	0	0	0	5	14	108	0	0	122	**5**	0	**4**	0	**9**	229
Total Volume	0	315	41	0	356	30	0	3	0	33	53	376	3	0	432	12	0	11	0	23	844
% App. Total	0	88.5	11.5	0		90.9	0	9.1	0		12.3	87	0.7	0		52.2	0	47.8	0		
PHF	.000	.916	.788	.000	.937	.625	.000	.375	.000	.589	.631	.862	.750	.000	.824	.600	.000	.688	.000	.639	.868
Cars	0	285	29	0	314	16	0	3	0	19	49	333	3	0	385	12	0	10	0	22	740
% Cars	0	90.5	70.7	0	88.2	53.3	0	100	0	57.6	92.5	88.6	100	0	89.1	100	0	90.9	0	95.7	87.7
Trucks	0	30	12	0	42	14	0	0	0	14	4	43	0	0	47	0	0	1	0	1	104
% Trucks	0	9.5	29.3	0	11.8	46.7	0	0	0	42.4	7.5	11.4	0	0	10.9	0	0	9.1	0	4.3	12.3

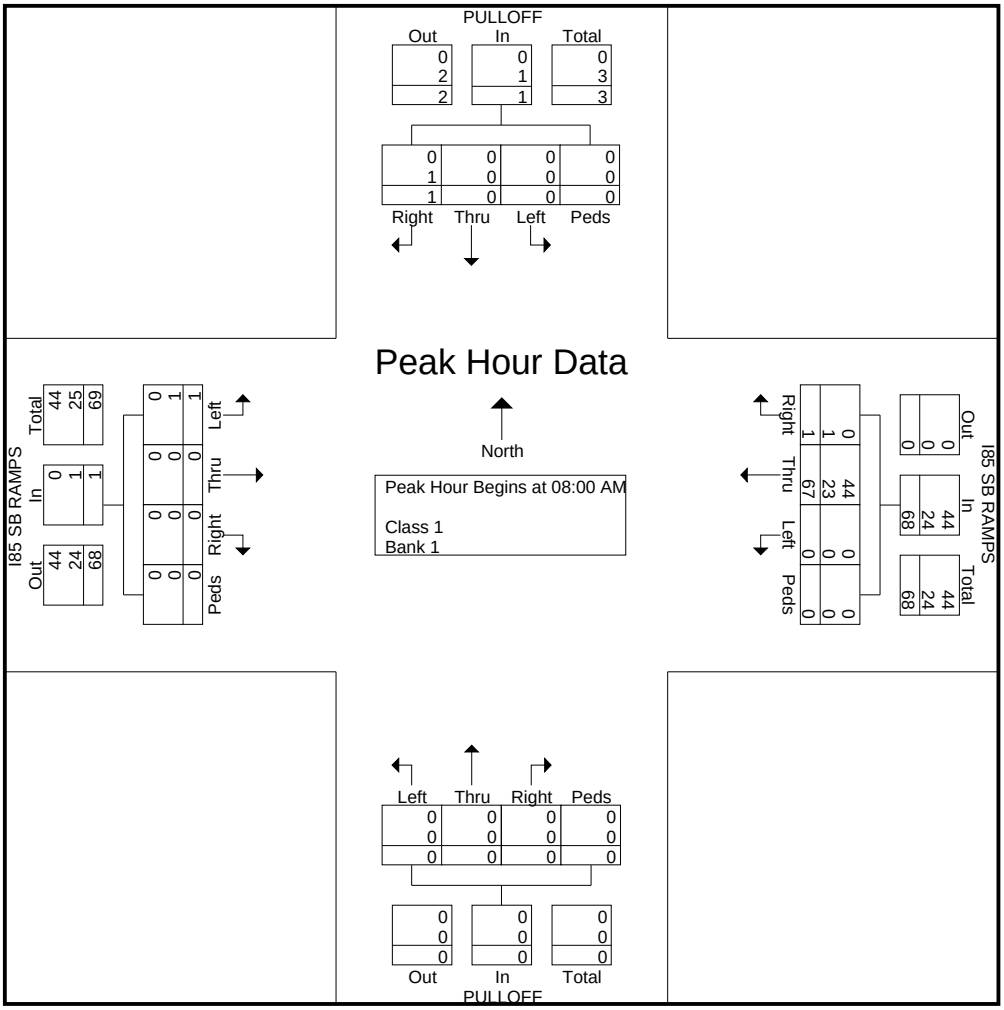


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #17 Truck Pull off&I-85 SB RampsAM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	PULLOFF Southbound					I85 SB RAMPS Westbound					PULLOFF Northbound					I85 SB RAMPS Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	0	0	0	0	0	16
08:15 AM	0	0	0	0	0	0	**22**	0	0	**22**	0	0	0	0	0	0	0	0	0	0	**22**
08:30 AM	0	0	0	0	0	**1**	17	0	0	18	0	0	0	0	0	0	0	**1**	0	**1**	19
08:45 AM	**1**	0	0	0	**1**	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	13
Total Volume	1	0	0	0	1	1	67	0	0	68	0	0	0	0	0	0	0	1	0	1	70
% App. Total	100	0	0	0		1.5	98.5	0	0		0	0	0	0		0	0	100	0		
PHF	.250	.000	.000	.000	.250	.250	.761	.000	.000	.773	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.795
Class 1	0	0	0	0	0	0	44	0	0	44	0	0	0	0	0	0	0	0	0	0	44
% Class 1							65.7	0	0	64.7	0	0	0	0	0	0	0	0	0	0	62.9
Bank 1	1	0	0	0	1	1	23	0	0	24	0	0	0	0	0	0	0	1	0	1	26
% Bank 1	100	0	0	0	100	100	34.3	0	0	35.3	0	0	0	0	0	0	0	100	0	100	37.1

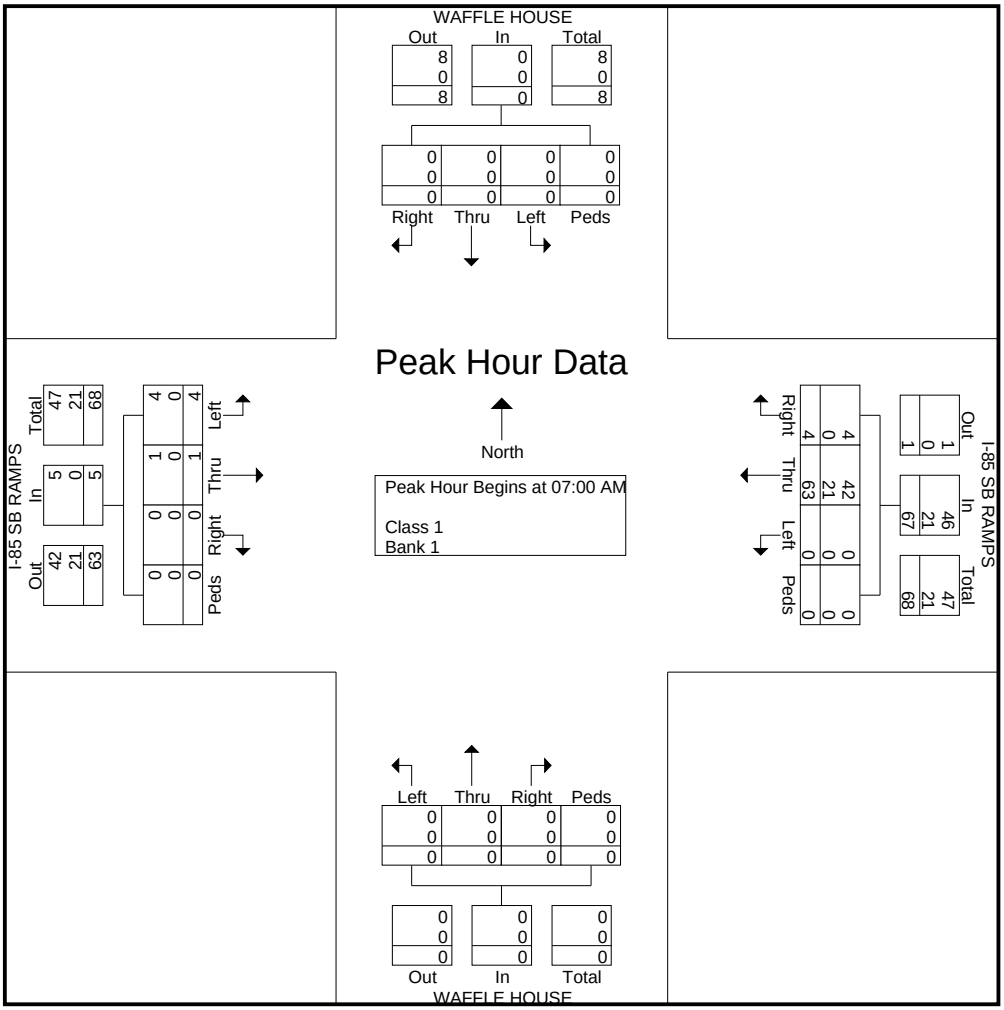


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #18 WAFFLEHOUSE&I85SBRAMPSAM
Site Code : 18
Start Date : 5/26/2015
Page No : 2

	WAFFLE HOUSE Southbound					I-85 SB RAMPS Westbound					WAFFLE HOUSE Northbound					I-85 SB RAMPS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	**2**	13	0	0	15	0	0	0	0	0	0	0	**2**	0	**2**	17
07:15 AM	0	0	0	0	0	1	**23**	0	0	**24**	0	0	0	0	0	0	**1**	0	0	1	**25**
07:30 AM	0	0	0	0	0	1	15	0	0	16	0	0	0	0	0	0	0	1	0	1	17
07:45 AM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	0	1	0	1	13
Total Volume	0	0	0	0	0	4	63	0	0	67	0	0	0	0	0	0	1	4	0	5	72
% App. Total	0	0	0	0		6	94	0	0		0	0	0	0		0	20	80	0		
PHF	.000	.000	.000	.000	.000	.500	.685	.000	.000	.698	.000	.000	.000	.000	.000	.000	.250	.500	.000	.625	.720
Class 1	0	0	0	0	0	4	42	0	0	46	0	0	0	0	0	0	1	4	0	5	51
% Class 1							66.7	0	0	68.7	0	0	0	0	0	0	100	100	0	100	70.8
Bank 1	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	0	0	0	0	21
% Bank 1	0	0	0	0	0	0	33.3	0	0	31.3	0	0	0	0	0	0	0	0	0	0	29.2

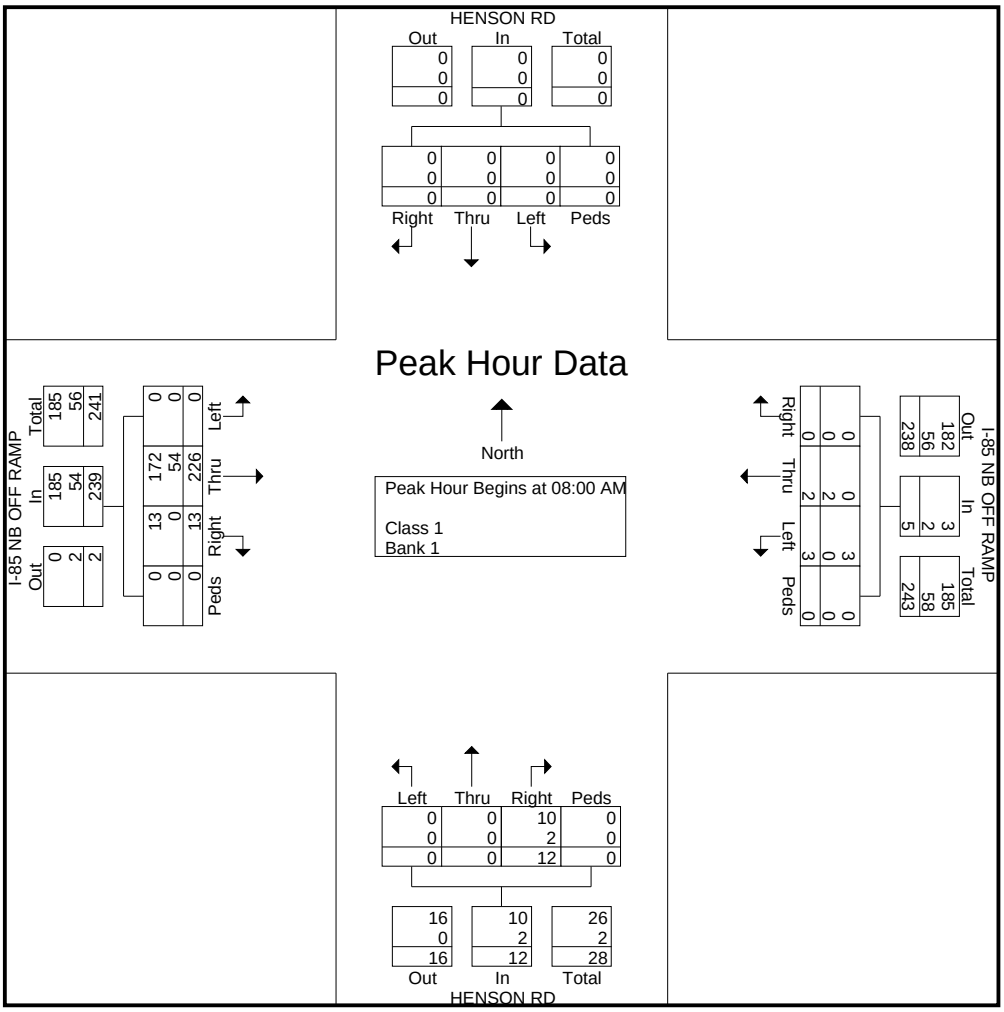


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #19 HENSON&I85NBOFFRAMPAM
Site Code : 19
Start Date : 5/26/2015
Page No : 2

	HENSON RD Southbound					I-85 NB OFF RAMP Westbound					HENSON RD Northbound					I-85 NB OFF RAMP Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	0	**1**	0	1	2	0	0	0	2	1	53	0	0	54	57
08:15 AM	0	0	0	0	0	0	**2**	1	0	**3**	1	0	0	0	1	**9**	55	0	0	**64**	**68**
08:30 AM	0	0	0	0	0	0	0	0	0	0	**5**	0	0	0	**5**	2	**59**	0	0	61	66
08:45 AM	0	0	0	0	0	0	0	1	0	1	4	0	0	0	4	1	59	0	0	60	65
Total Volume	0	0	0	0	0	0	2	3	0	5	12	0	0	0	12	13	226	0	0	239	256
% App. Total	0	0	0	0		0	40	60	0		100	0	0	0		5.4	94.6	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.750	.000	.417	.600	.000	.000	.000	.600	.361	.958	.000	.000	.934	.941
Class 1	0	0	0	0	0	0	0	3	0	3	10	0	0	0	10	13	172	0	0	185	198
% Class 1											83.3	0	0	0	83.3	100	76.1	0	0	77.4	77.3
Bank 1	0	0	0	0	0	0	2	0	0	2	2	0	0	0	2	0	54	0	0	54	58
% Bank 1	0	0	0	0	0	0	100	0	0	40.0	16.7	0	0	0	16.7	0	23.9	0	0	22.6	22.7

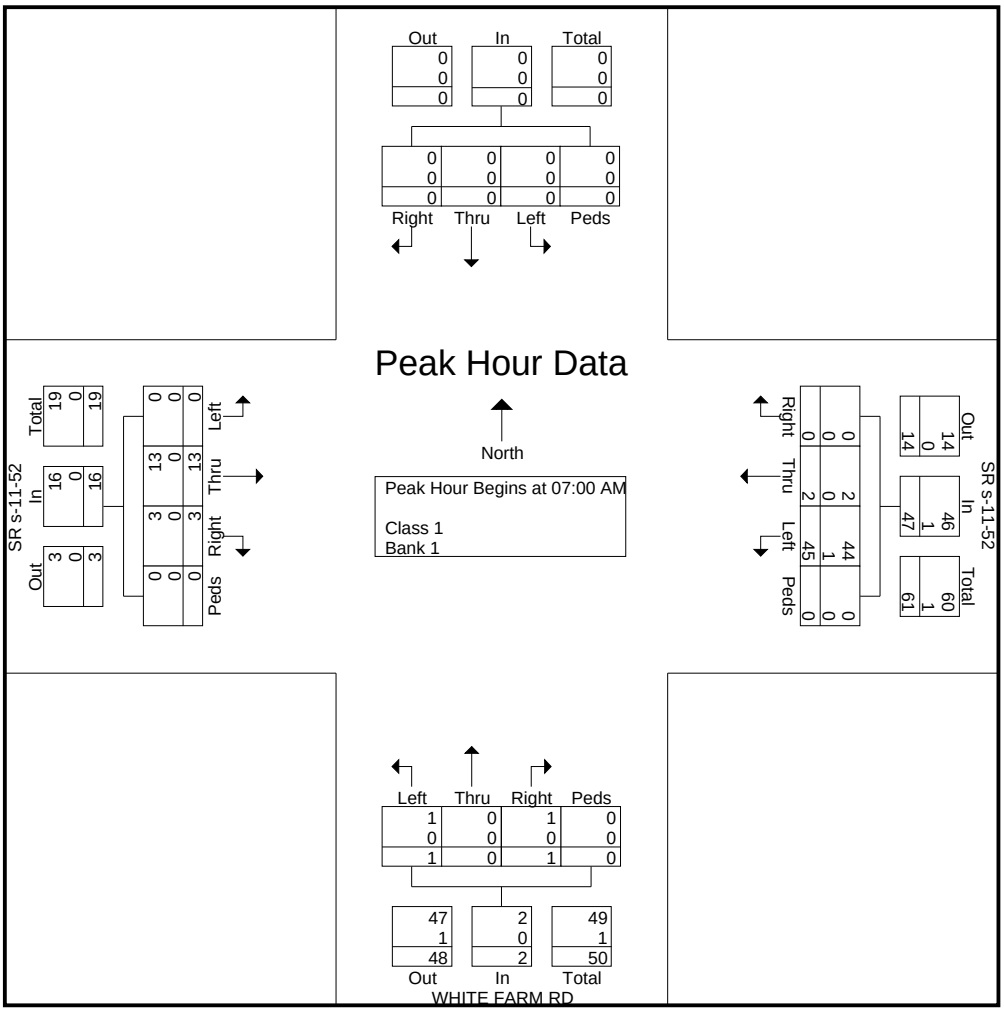


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #20 WhiteFarmRd&SR s-11-52AM
Site Code : 20
Start Date : 5/27/2015
Page No : 2

	Southbound					SR s-11-52 Westbound					WHITE FARM RD Northbound					SR s-11-52 Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	9	0	9	0	0	0	0	0	1	**6**	0	0	**7**	16
07:15 AM	0	0	0	0	0	0	0	**18**	0	**18**	**1**	0	0	0	**1**	0	2	0	0	2	**21**
07:30 AM	0	0	0	0	0	0	**2**	10	0	12	0	0	**1**	0	1	**2**	4	0	0	6	19
07:45 AM	0	0	0	0	0	0	0	8	0	8	0	0	0	0	0	0	1	0	0	1	9
Total Volume	0	0	0	0	0	0	2	45	0	47	1	0	1	0	2	3	13	0	0	16	65
% App. Total	0	0	0	0		0	4.3	95.7	0		50	0	50	0		18.8	81.2	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.625	.000	.653	.250	.000	.250	.000	.500	.375	.542	.000	.000	.571	.774
Class 1	0	0	0	0	0	0	2	44	0	46	1	0	1	0	2	3	13	0	0	16	64
% Class 1								97.8	0	97.9	100	0	100	0	100	100	100	0	0	100	98.5
Bank 1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
% Bank 1	0	0	0	0	0	0	0	2.2	0	2.1	0	0	0	0	0	0	0	0	0	0	1.5

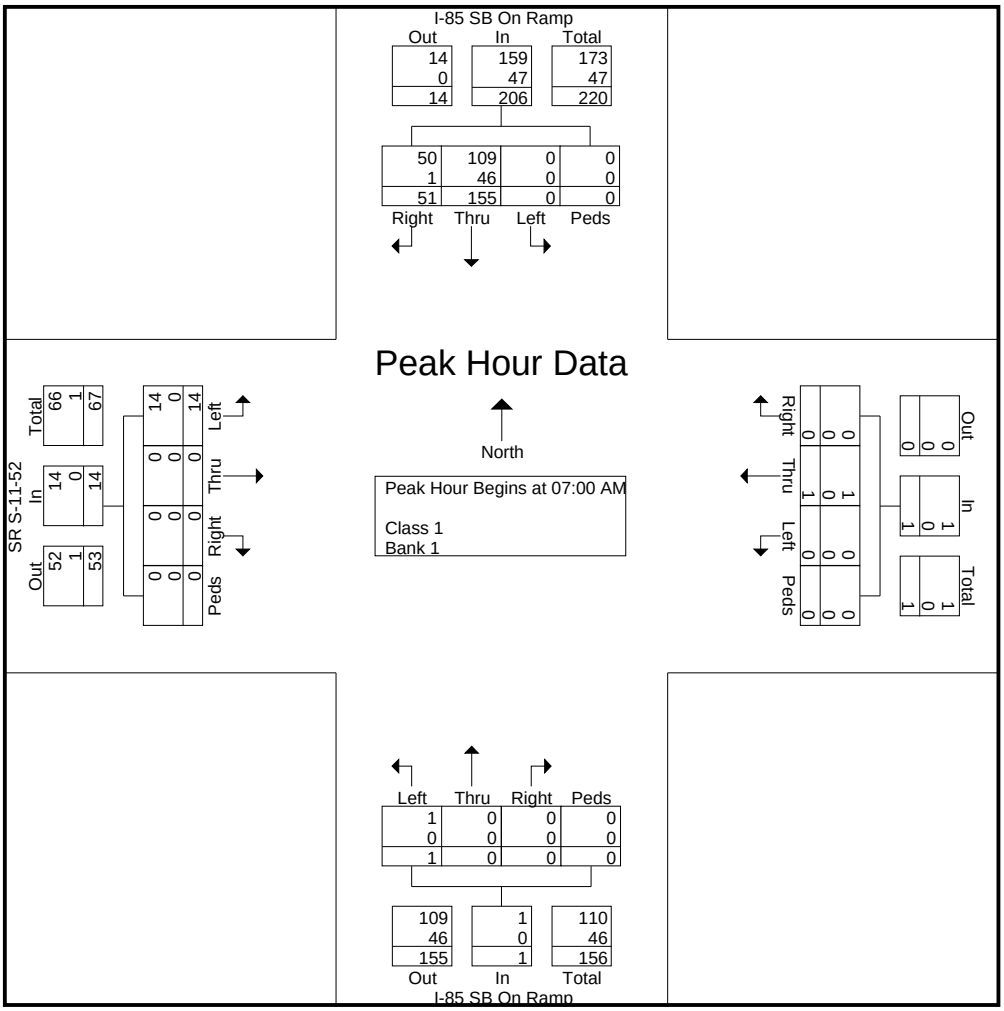


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #21 SRS-11-52&I-85SBOnRampAM
Site Code : 21
Start Date : 5/27/2015
Page No : 2

	I-85 SB On Ramp Southbound					Westbound					I-85 SB On Ramp Northbound					SR S-11-52 Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	9	35	0	0	44	0	**1**	0	0	**1**	0	0	**1**	0	**1**	0	0	**6**	0	**6**	52
07:15 AM	**17**	**41**	0	0	**58**	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	**61**
07:30 AM	15	41	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	60
07:45 AM	10	38	0	0	48	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	49
Total Volume	51	155	0	0	206	0	1	0	0	1	0	0	1	0	1	0	0	14	0	14	222
% App. Total	24.8	75.2	0	0		0	100	0	0		0	0	100	0		0	0	100	0		
PHF	.750	.945	.000	.000	.888	.000	.250	.000	.000	.250	.000	.000	.250	.000	.250	.000	.000	.583	.000	.583	.910
Class 1	50	109	0	0	159	0	1	0	0	1	0	0	1	0	1	0	0	14	0	14	175
% Class 1	98.0	70.3	0	0	77.2	0	100	0	0	100	0	0	100	0	100	0	0	100	0	100	78.8
Bank 1	1	46	0	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47
% Bank 1	2.0	29.7	0	0	22.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21.2

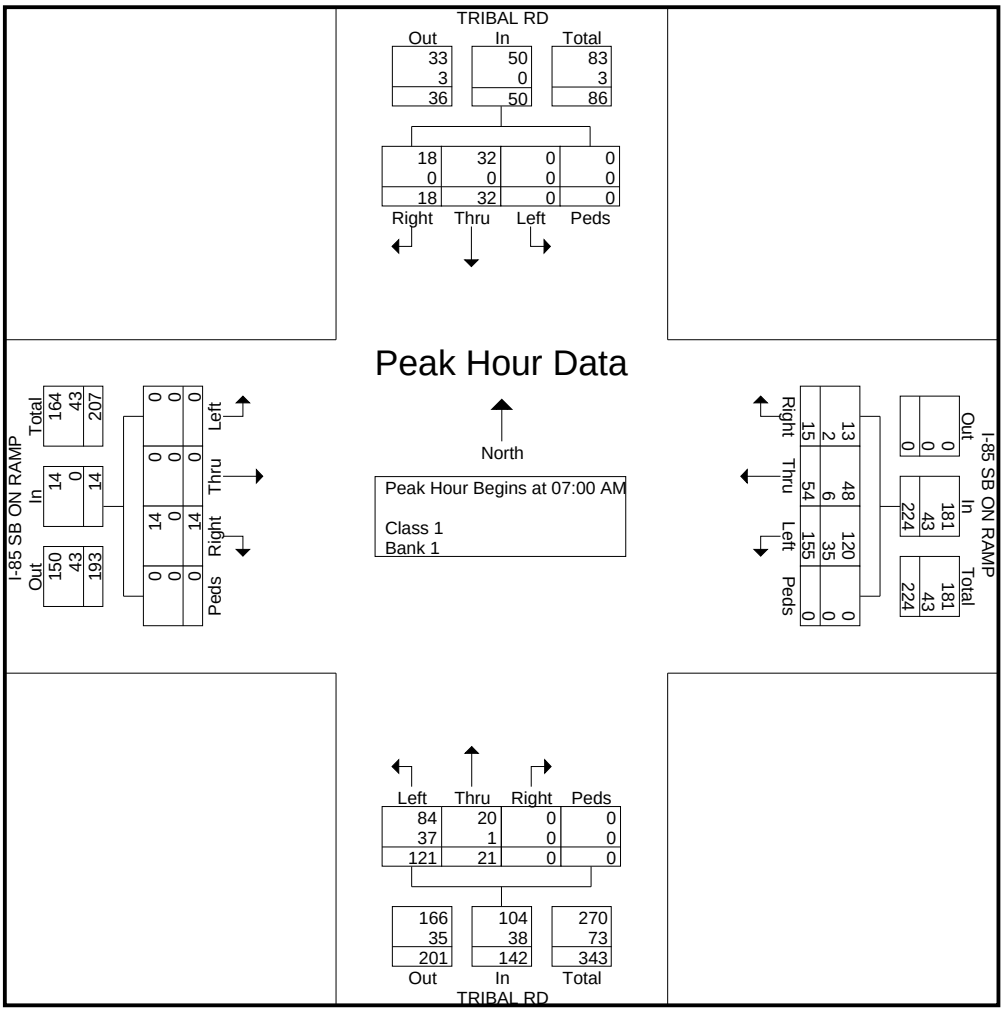


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #22 TRIBAL&I85SBONRAMPAM
Site Code : 22
Start Date : 5/27/2015
Page No : 2

	TRIBAL RD Southbound					I-85 SB ON RAMP Westbound					TRIBAL RD Northbound					I-85 SB ON RAMP Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	5	7	0	0	12	**9**	12	33	0	54	0	3	29	0	32	**6**	0	0	0	**6**	104
07:15 AM	**9**	**11**	0	0	**20**	1	**18**	44	0	63	0	3	36	0	39	2	0	0	0	2	124
07:30 AM	3	8	0	0	11	3	14	**50**	0	**67**	0	**10**	**38**	0	**48**	5	0	0	0	5	**131**
07:45 AM	1	6	0	0	7	2	10	28	0	40	0	5	18	0	23	1	0	0	0	1	71
Total Volume	18	32	0	0	50	15	54	155	0	224	0	21	121	0	142	14	0	0	0	14	430
% App. Total	36	64	0	0		6.7	24.1	69.2	0		0	14.8	85.2	0		100	0	0	0		
PHF	.500	.727	.000	.000	.625	.417	.750	.775	.000	.836	.000	.525	.796	.000	.740	.583	.000	.000	.000	.583	.821
Class 1	18	32	0	0	50	13	48	120	0	181	0	20	84	0	104	14	0	0	0	14	349
% Class 1						86.7	88.9	77.4	0	80.8	0	95.2	69.4	0	73.2	100	0	0	0	100	81.2
Bank 1	0	0	0	0	0	2	6	35	0	43	0	1	37	0	38	0	0	0	0	0	81
% Bank 1	0	0	0	0	0	13.3	11.1	22.6	0	19.2	0	4.8	30.6	0	26.8	0	0	0	0	0	18.8

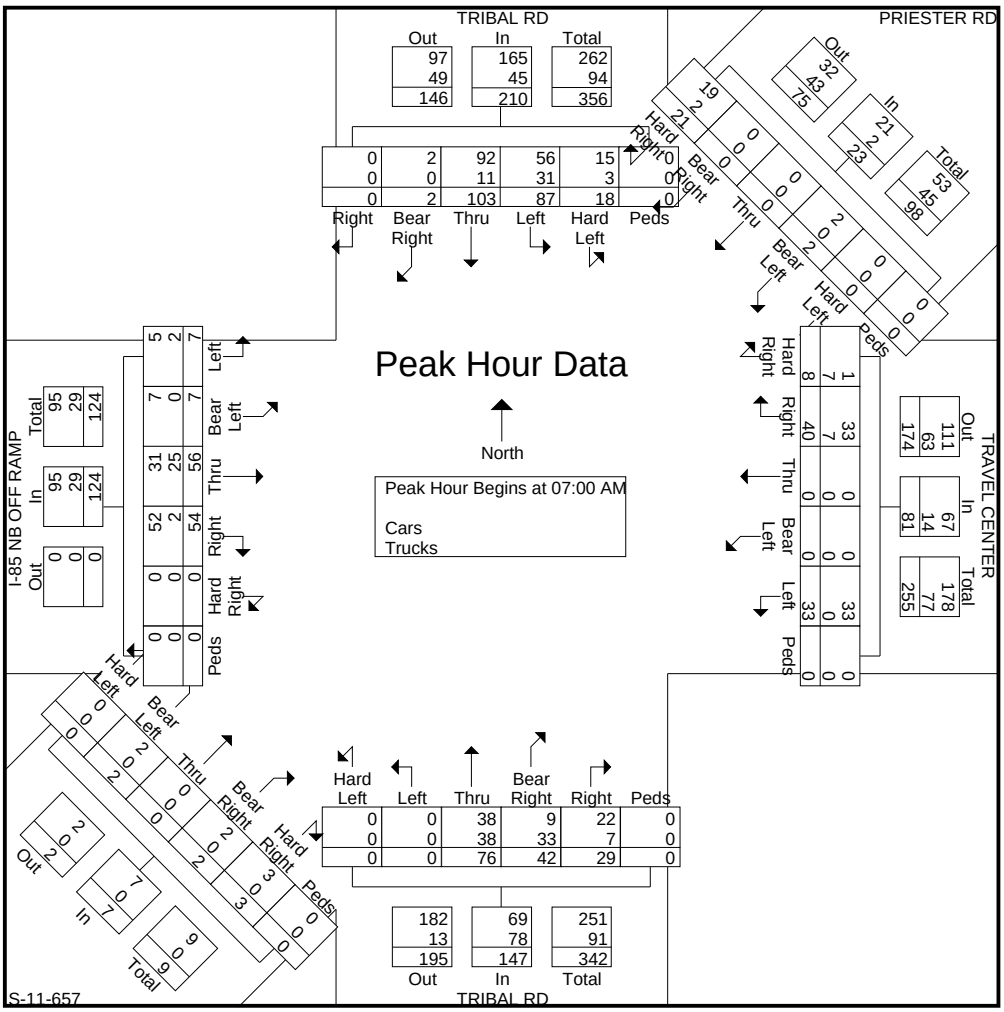


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #23 TribalRd@I-85NBRamps-PriesterRdAM
Site Code :
Start Date : 5/27/2015
Page No : 3

	TRIBAL RD Southbound							PRIESTER RD Southwestbound							TRAVEL CENTER Westbound							TRIBAL RD Northbound							S-11-657 Northeastbound							I-85 NB OFF RAMP Eastbound							
Start Time							App. Total							App. Total							App. Total							App. Total							App. Total							App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																																											
Peak Hour for Entire Intersection Begins at 07:00 AM																																											
07:00 AM						7	37							6		12					17							22							0							21	103
07:15 AM		1		35			62			2				8					13		25	9						41			2				2			5				27	165
07:30 AM					26		66	7						7	3						26		15	24				43	2						2				15		3	39	183
07:45 AM							45							2							13							41		2					3		22					37	141
Total Volume % App. Total							210							23							81							147							7							124	592
PHF	.000	.500	.736	.837	.643	.000	.795	.750	.000	.000	.250	.000	.000	.719	.667	.833	.000	.000	.635	.000	.779	.806	.700	.792	.000	.000	.000	.855	.375	.250	.000	.250	.000	.000	.583	.000	.614	.933	.350	.583	.000	.795	.809
Cars							165							21							67							69							7							95	424
% Cars							78.6							91.3							82.7							46.9							100							76.6	71.6
Trucks							45							2	8	1	0	0	0	0	14							78							0							29	168
% Trucks							21.4							8.7							17.3							53.1							0							23.4	28.4



All Traffic Data Service, Inc

1336 Farmer Road
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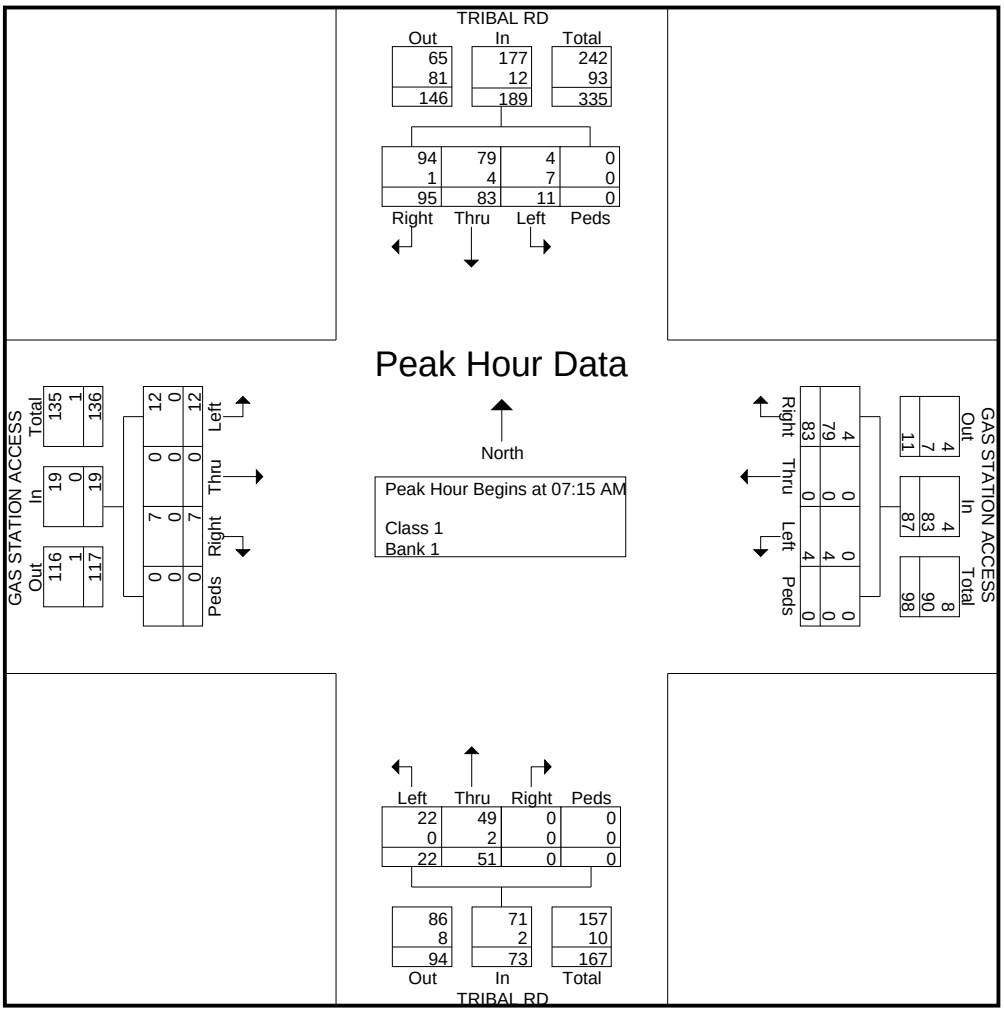
404-374-1283

File Name : #24 TRIBAL&GASSTATIONAM
Site Code : 24
Start Date : 5/27/2015
Page No : 2

	TRIBAL RD Southbound					GAS STATION ACCESS Westbound					TRIBAL RD Northbound					GAS STATION ACCESS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	17	**33**	2	0	52	**25**	0	0	0	**25**	0	11	2	0	13	0	0	1	0	1	91
07:30 AM	37	27	**4**	0	**68**	18	0	0	0	18	0	**22**	**10**	0	**32**	3	0	4	0	7	**125**
07:45 AM	**38**	11	4	0	53	24	0	1	0	25	0	10	9	0	19	**4**	0	**7**	0	**11**	108
08:00 AM	3	12	1	0	16	16	0	**3**	0	19	0	8	1	0	9	0	0	0	0	0	44
Total Volume	95	83	11	0	189	83	0	4	0	87	0	51	22	0	73	7	0	12	0	19	368
% App. Total	50.3	43.9	5.8	0		95.4	0	4.6	0		0	69.9	30.1	0		36.8	0	63.2	0		
PHF	.625	.629	.688	.000	.695	.830	.000	.333	.000	.870	.000	.580	.550	.000	.570	.438	.000	.429	.000	.432	.736
Class 1	94	79	4	0	177	4	0	0	0	4	0	49	22	0	71	7	0	12	0	19	271
% Class 1	98.9	95.2	36.4	0	93.7	4.8	0	0	0	4.6	0	96.1	100	0	97.3	100	0	100	0	100	73.6
Bank 1	1	4	7	0	12	79	0	4	0	83	0	2	0	0	2	0	0	0	0	0	97
% Bank 1	1.1	4.8	63.6	0	6.3	95.2	0	100	0	95.4	0	3.9	0	0	2.7	0	0	0	0	0	26.4



All Traffic Data Service, Inc

1336 Farmer Road
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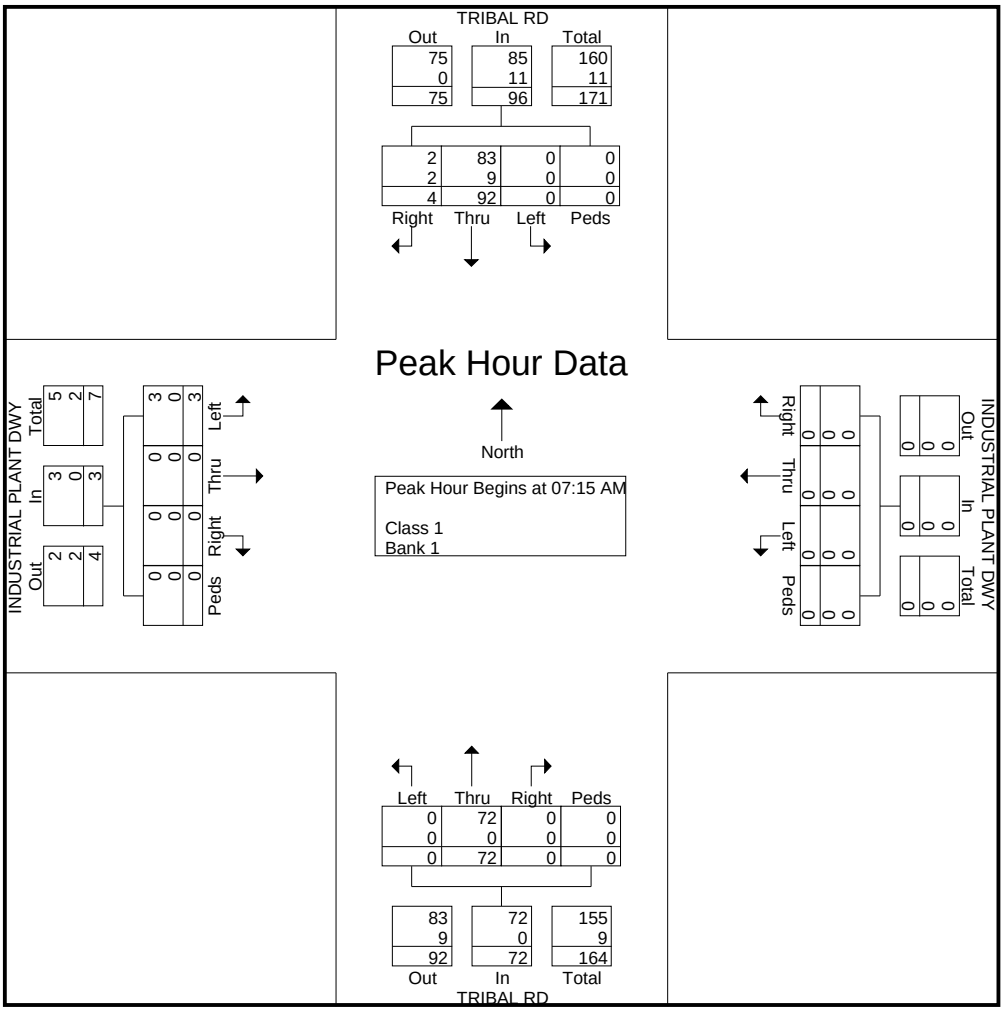
File Name : #25 TRIBALRD&INDUSTRIALPLANTAM
Site Code : 25
Start Date : 5/27/2015
Page No : 2

	TRIBAL RD Southbound					INDUSTRIAL PLANT DWY Westbound					TRIBAL RD Northbound					INDUSTRIAL PLANT DWY Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**1**	**33**	0	0	**34**	0	0	0	0	0	0	15	0	0	15	0	0	**1**	0	**1**	50
07:30 AM	1	29	0	0	30	0	0	0	0	0	0	**33**	0	0	**33**	0	0	1	0	1	**64**
07:45 AM	1	14	0	0	15	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	32
08:00 AM	1	16	0	0	17	0	0	0	0	0	0	7	0	0	7	0	0	1	0	1	25
Total Volume	4	92	0	0	96	0	0	0	0	0	0	72	0	0	72	0	0	3	0	3	171
% App. Total	4.2	95.8	0	0		0	0	0	0		0	100	0	0		0	0	100	0		
PHF	1.00	.697	.000	.000	.706	.000	.000	.000	.000	.000	.000	.545	.000	.000	.545	.000	.000	.750	.000	.750	.668
Class 1	2	83	0	0	85	0	0	0	0	0	0	72	0	0	72	0	0	3	0	3	160
% Class 1	50.0	90.2	0	0	88.5	0	0	0	0	0	0	100	0	0	100	0	0	100	0	100	93.6
Bank 1	2	9	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
% Bank 1	50.0	9.8	0	0	11.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.4



All Traffic Data Service, Inc

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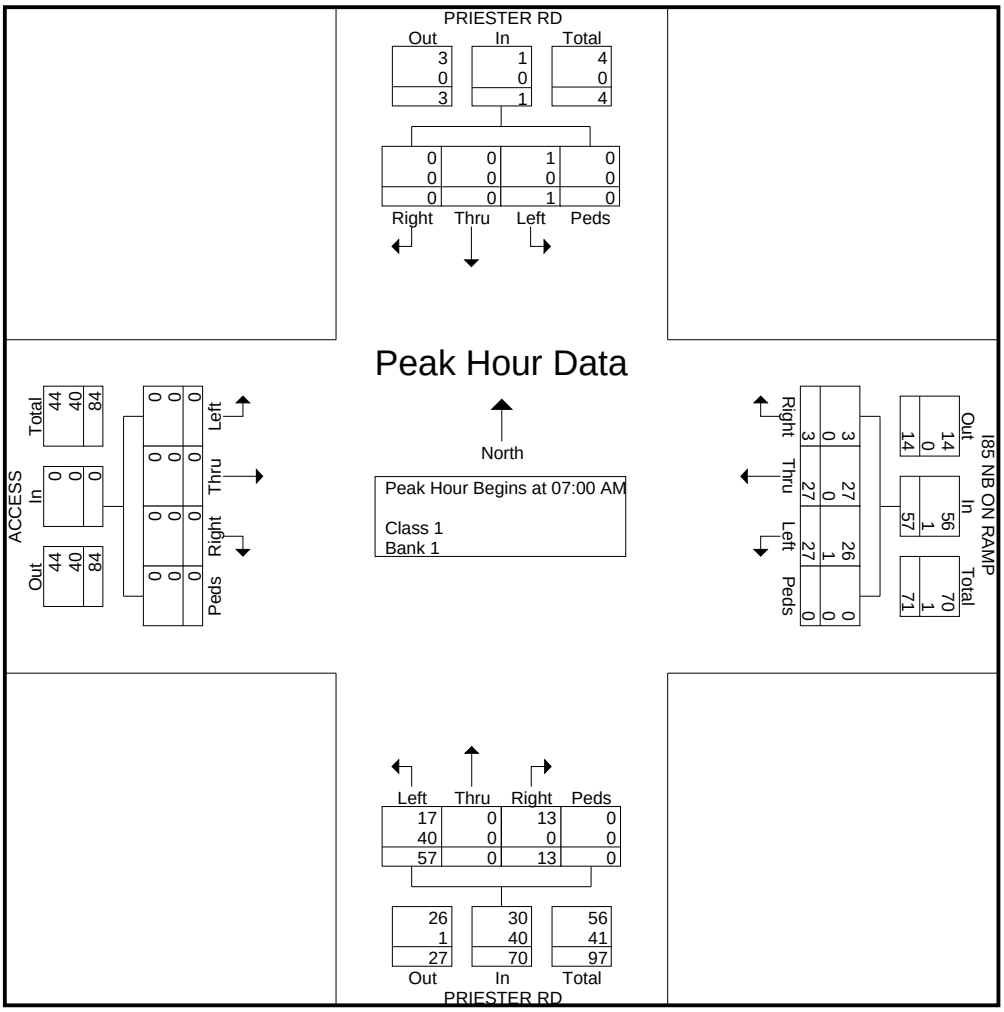
Conyers, Ga 30012
404-374-1283

File Name : #26 PriesterRd@I-85 NBO RampAM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	PRIESTER RD Southbound					I85 NB ON RAMP Westbound					PRIESTER RD Northbound					ACCESS Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	**3**	7	7	0	**17**	0	0	13	0	13	0	0	0	0	0	30
07:15 AM	0	0	0	0	0	0	**9**	**8**	0	17	**7**	0	16	0	**23**	0	0	0	0	0	**40**
07:30 AM	0	0	**1**	0	**1**	0	5	7	0	12	5	0	**17**	0	22	0	0	0	0	0	35
07:45 AM	0	0	0	0	0	0	6	5	0	11	1	0	11	0	12	0	0	0	0	0	23
Total Volume	0	0	1	0	1	3	27	27	0	57	13	0	57	0	70	0	0	0	0	0	128
% App. Total	0	0	100	0		5.3	47.4	47.4	0		18.6	0	81.4	0		0	0	0	0		
PHF	.000	.000	.250	.000	.250	.250	.750	.844	.000	.838	.464	.000	.838	.000	.761	.000	.000	.000	.000	.000	.800
Class 1	0	0	1	0	1	3	27	26	0	56	13	0	17	0	30	0	0	0	0	0	87
% Class 1								96.3	0	98.2	100	0	29.8	0	42.9	0	0	0	0	0	68.0
Bank 1	0	0	0	0	0	0	0	1	0	1	0	0	40	0	40	0	0	0	0	0	41
% Bank 1	0	0	0	0	0	0	0	3.7	0	1.8	0	0	70.2	0	57.1	0	0	0	0	0	32.0



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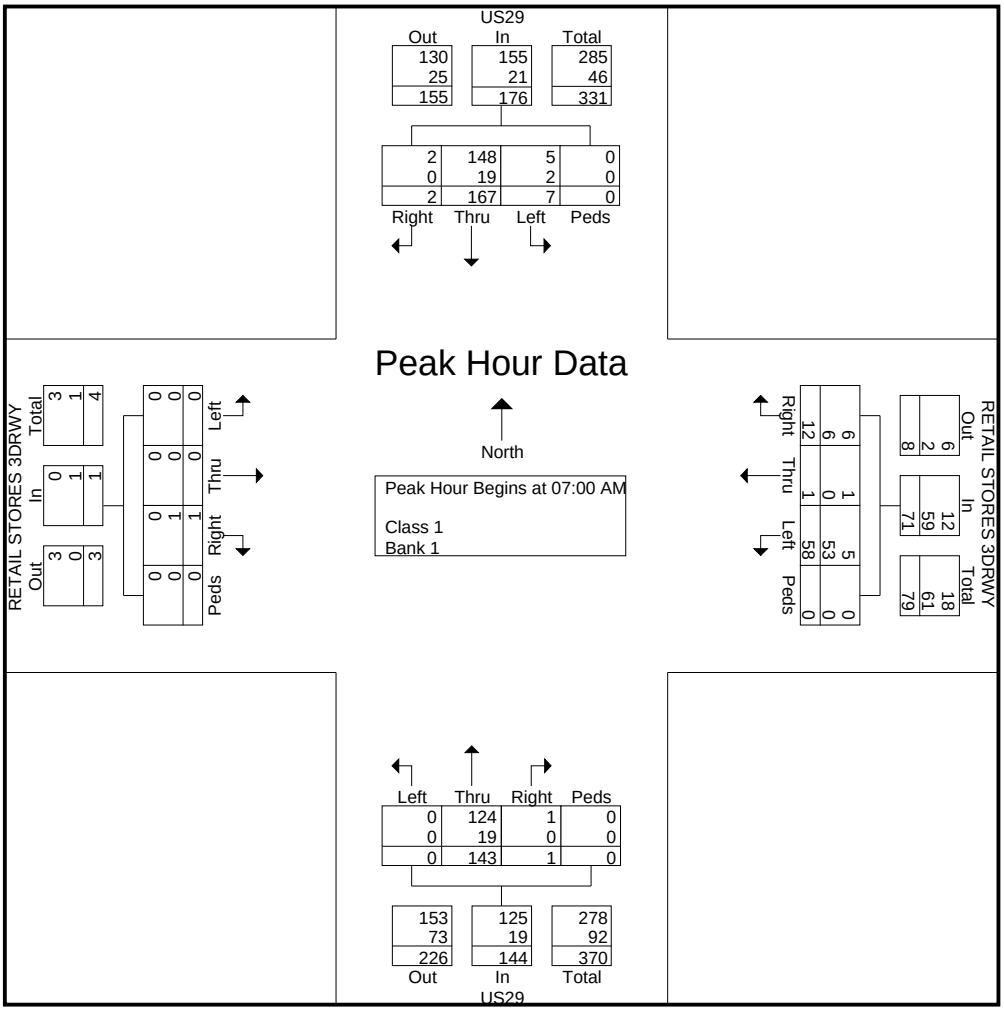
Conyers, Ga 30012
404-374-1283

File Name : #27 US29&RETAILSTORES3DRIVEWAYAM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	US29 Southbound					RETAIL STORES 3DRWY Westbound					US29 Northbound					RETAIL STORES 3DRWY Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	40	**3**	0	43	3	**1**	**20**	0	**24**	0	27	0	0	27	0	0	0	0	0	94
07:15 AM	0	43	2	0	45	**5**	0	13	0	18	**1**	36	0	0	37	0	0	0	0	0	100
07:30 AM	0	**48**	0	0	**48**	3	0	11	0	14	0	**42**	0	0	**42**	**1**	0	0	0	**1**	**105**
07:45 AM	**2**	36	2	0	40	1	0	14	0	15	0	38	0	0	38	0	0	0	0	0	93
Total Volume	2	167	7	0	176	12	1	58	0	71	1	143	0	0	144	1	0	0	0	1	392
% App. Total	1.1	94.9	4	0		16.9	1.4	81.7	0		0.7	99.3	0	0		100	0	0	0		
PHF	.250	.870	.583	.000	.917	.600	.250	.725	.000	.740	.250	.851	.000	.000	.857	.250	.000	.000	.000	.250	.933
Class 1	2	148	5	0	155	6	1	5	0	12	1	124	0	0	125	0	0	0	0	0	292
% Class 1		88.6	71.4	0	88.1	50.0	100	8.6	0	16.9	100	86.7	0	0	86.8	0	0	0	0	0	74.5
Bank 1	0	19	2	0	21	6	0	53	0	59	0	19	0	0	19	1	0	0	0	1	100
% Bank 1	0	11.4	28.6	0	11.9	50.0	0	91.4	0	83.1	0	13.3	0	0	13.2	100	0	0	0	100	25.5

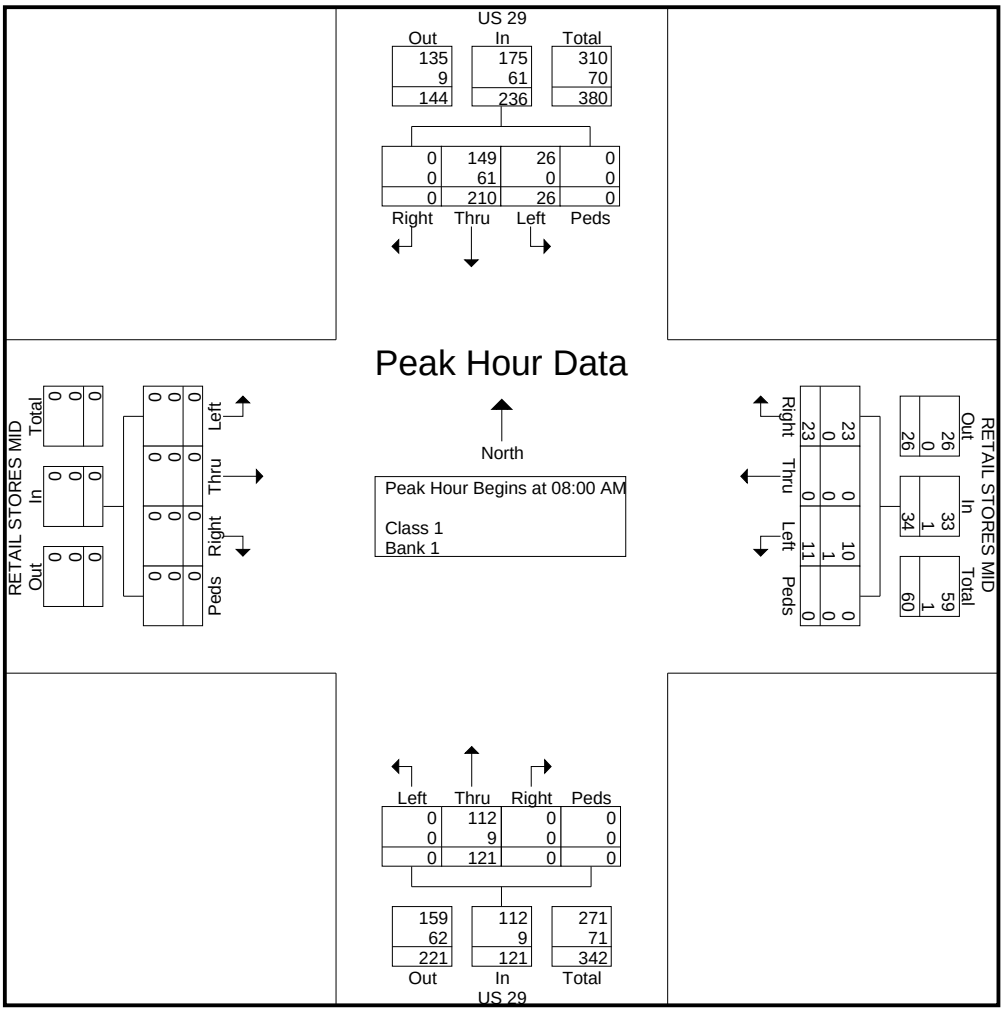


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #28 US29&RETAILSTORESAM
Site Code : 28
Start Date : 5/27/2015
Page No : 2

	US 29 Southbound					RETAIL STORES MID Westbound					US 29 Northbound					RETAIL STORES MID Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	57	**7**	0	64	5	0	2	0	7	0	21	0	0	21	0	0	0	0	0	92
08:15 AM	0	**59**	7	0	**66**	**7**	0	**4**	0	**11**	0	32	0	0	32	0	0	0	0	0	**109**
08:30 AM	0	51	5	0	56	6	0	1	0	7	0	**35**	0	0	**35**	0	0	0	0	0	98
08:45 AM	0	43	7	0	50	5	0	4	0	9	0	33	0	0	33	0	0	0	0	0	92
Total Volume	0	210	26	0	236	23	0	11	0	34	0	121	0	0	121	0	0	0	0	0	391
% App. Total	0	89	11	0		67.6	0	32.4	0		0	100	0	0		0	0	0	0		
PHF	.000	.890	.929	.000	.894	.821	.000	.688	.000	.773	.000	.864	.000	.000	.864	.000	.000	.000	.000	.000	.897
Class 1	0	149	26	0	175	23	0	10	0	33	0	112	0	0	112	0	0	0	0	0	320
% Class 1		71.0	100	0	74.2	100	0	90.9	0	97.1	0	92.6	0	0	92.6	0	0	0	0	0	81.8
Bank 1	0	61	0	0	61	0	0	1	0	1	0	9	0	0	9	0	0	0	0	0	71
% Bank 1	0	29.0	0	0	25.8	0	0	9.1	0	2.9	0	7.4	0	0	7.4	0	0	0	0	0	18.2

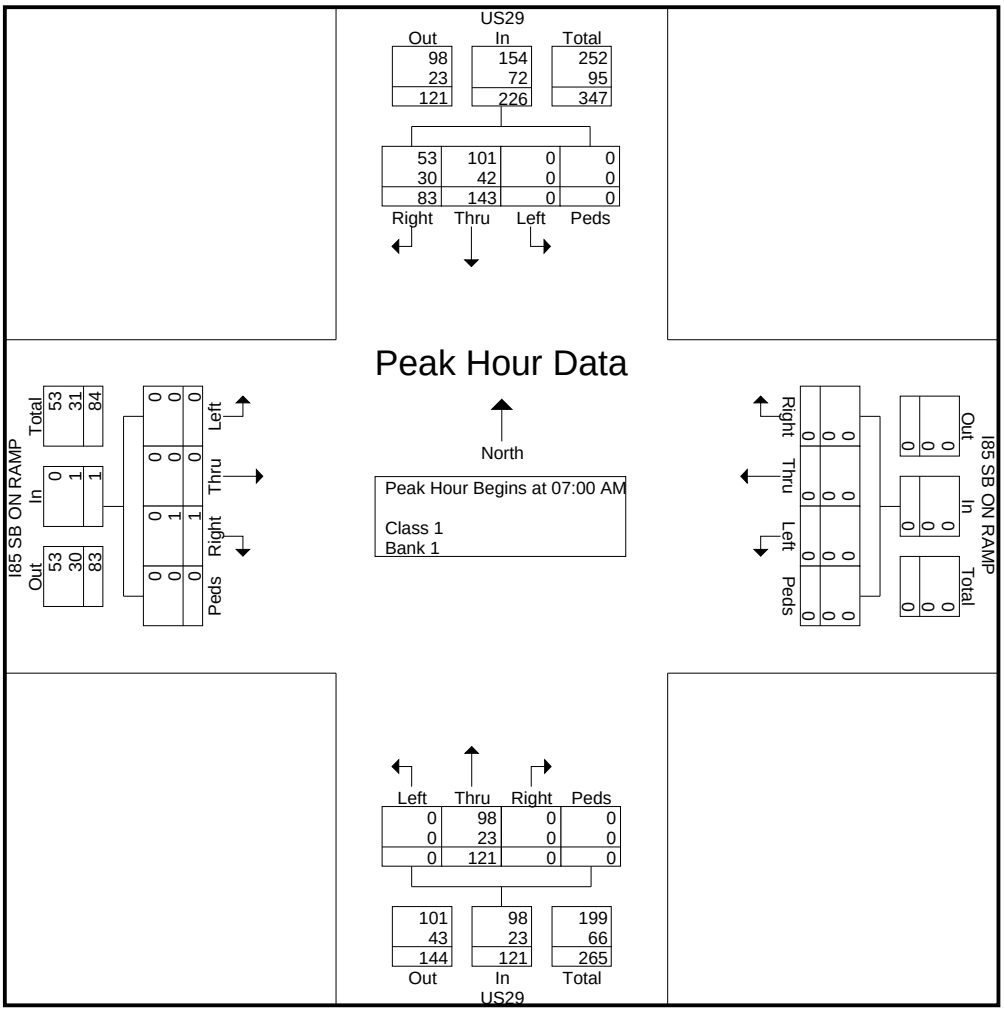


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #29 US29&I85SBONRAMPAM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	US29 Southbound					I85 SB ON RAMP Westbound					US29 Northbound					I85 SB ON RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	18	**40**	0	0	58	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	79
07:15 AM	**26**	39	0	0	**65**	0	0	0	0	0	0	32	0	0	32	0	0	0	0	0	**97**
07:30 AM	19	34	0	0	53	0	0	0	0	0	0	**34**	0	0	**34**	**1**	0	0	0	**1**	88
07:45 AM	20	30	0	0	50	0	0	0	0	0	0	34	0	0	34	0	0	0	0	0	84
Total Volume	83	143	0	0	226	0	0	0	0	0	0	121	0	0	121	1	0	0	0	1	348
% App. Total	36.7	63.3	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
PHF	.798	.894	.000	.000	.869	.000	.000	.000	.000	.000	.000	.890	.000	.000	.890	.250	.000	.000	.000	.250	.897
Class 1	53	101	0	0	154	0	0	0	0	0	0	98	0	0	98	0	0	0	0	0	252
% Class 1	63.9	70.6	0	0	68.1	0	0	0	0	0	0	81.0	0	0	81.0	0	0	0	0	0	72.4
Bank 1	30	42	0	0	72	0	0	0	0	0	0	23	0	0	23	1	0	0	0	1	96
% Bank 1	36.1	29.4	0	0	31.9	0	0	0	0	0	0	19.0	0	0	19.0	100	0	0	0	100	27.6

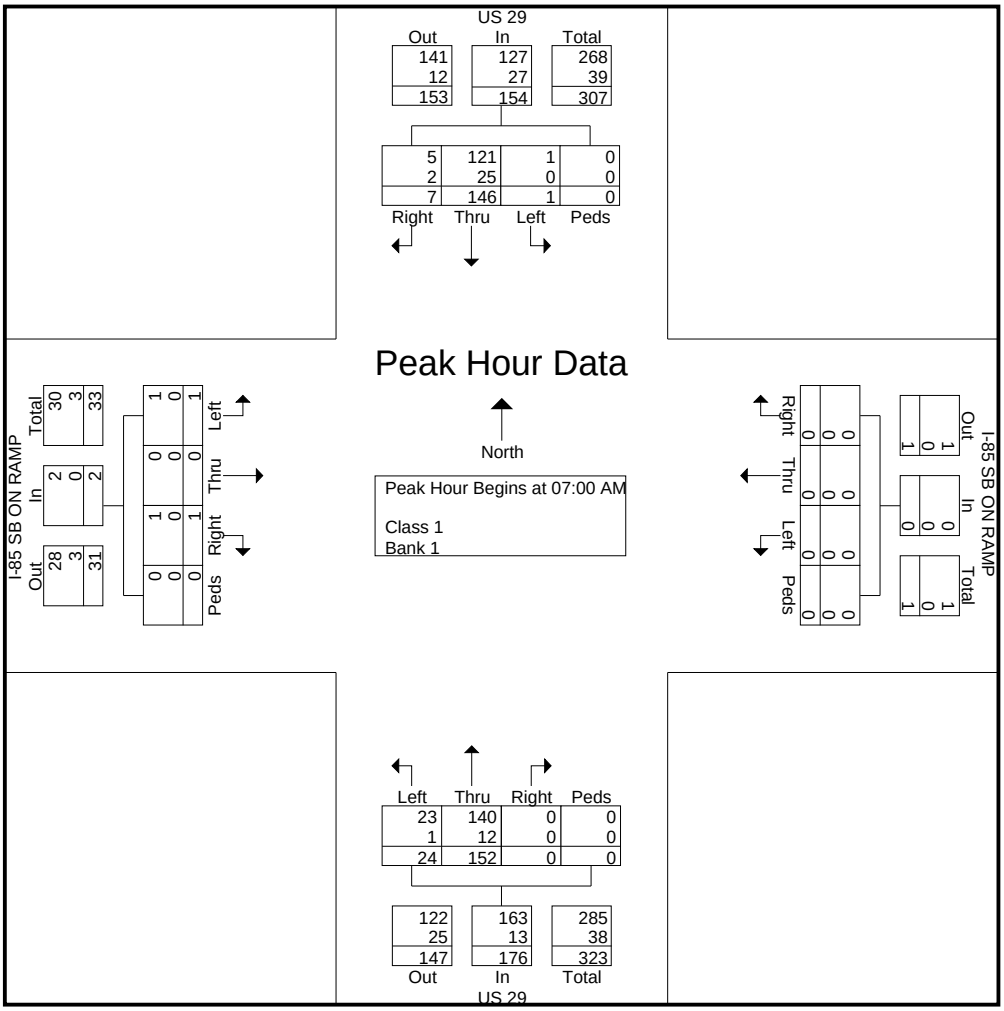


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #30 US29&I85 SBOnRampAM
Site Code : 30
Start Date : 5/27/2015
Page No : 2

	US 29 Southbound					I-85 SB ON RAMP Westbound					US 29 Northbound					I-85 SB ON RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	**3**	**45**	0	0	**48**	0	0	0	0	0	0	25	6	0	31	**1**	0	0	0	**1**	80
07:15 AM	0	34	**1**	0	35	0	0	0	0	0	0	41	**8**	0	**49**	0	0	**1**	0	1	85
07:30 AM	1	31	0	0	32	0	0	0	0	0	0	**43**	4	0	47	0	0	0	0	0	79
07:45 AM	3	36	0	0	39	0	0	0	0	0	0	43	6	0	49	0	0	0	0	0	**88**
Total Volume	7	146	1	0	154	0	0	0	0	0	0	152	24	0	176	1	0	1	0	2	332
% App. Total	4.5	94.8	0.6	0		0	0	0	0		0	86.4	13.6	0		50	0	50	0		
PHF	.583	.811	.250	.000	.802	.000	.000	.000	.000	.000	.000	.884	.750	.000	.898	.250	.000	.250	.000	.500	.943
Class 1	5	121	1	0	127	0	0	0	0	0	0	140	23	0	163	1	0	1	0	2	292
% Class 1	71.4	82.9	100	0	82.5	0	0	0	0	0	0	92.1	95.8	0	92.6	100	0	100	0	100	88.0
Bank 1	2	25	0	0	27	0	0	0	0	0	0	12	1	0	13	0	0	0	0	0	40
% Bank 1	28.6	17.1	0	0	17.5	0	0	0	0	0	0	7.9	4.2	0	7.4	0	0	0	0	0	12.0

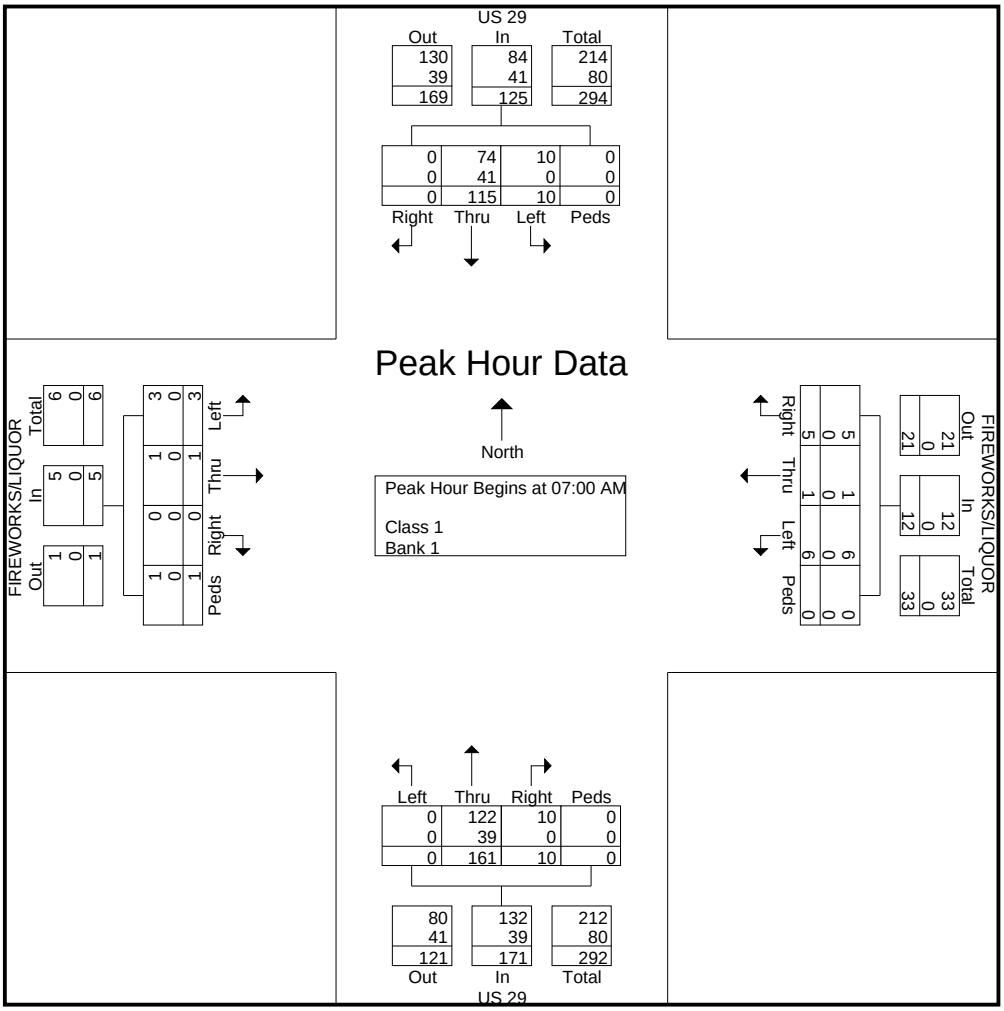


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #31 US29@Fireworks-LiquorAM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	US 29 Southbound					FIREWORKS/LIQUOR Westbound					US 29 Northbound					FIREWORKS/LIQUOR Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	**45**	0	0	**45**	1	**1**	1	0	3	2	26	0	0	28	0	0	**1**	0	1	77
07:15 AM	0	21	**5**	0	26	1	0	1	0	2	2	42	0	0	44	0	**1**	1	0	**2**	74
07:30 AM	0	25	0	0	25	**2**	0	**2**	0	**4**	2	**47**	0	0	49	0	0	0	**1**	1	79
07:45 AM	0	24	5	0	29	1	0	2	0	3	**4**	46	0	0	**50**	0	0	1	0	1	**83**
Total Volume	0	115	10	0	125	5	1	6	0	12	10	161	0	0	171	0	1	3	1	5	313
% App. Total	0	92	8	0		41.7	8.3	50	0		5.8	94.2	0	0		0	20	60	20		
PHF	.000	.639	.500	.000	.694	.625	.250	.750	.000	.750	.625	.856	.000	.000	.855	.000	.250	.750	.250	.625	.943
Class 1	0	74	10	0	84	5	1	6	0	12	10	122	0	0	132	0	1	3	1	5	233
% Class 1		64.3	100	0	67.2	100	100	100	0	100	100	75.8	0	0	77.2	0	100	100	100	100	74.4
Bank 1	0	41	0	0	41	0	0	0	0	0	0	39	0	0	39	0	0	0	0	0	80
% Bank 1	0	35.7	0	0	32.8	0	0	0	0	0	0	24.2	0	0	22.8	0	0	0	0	0	25.6

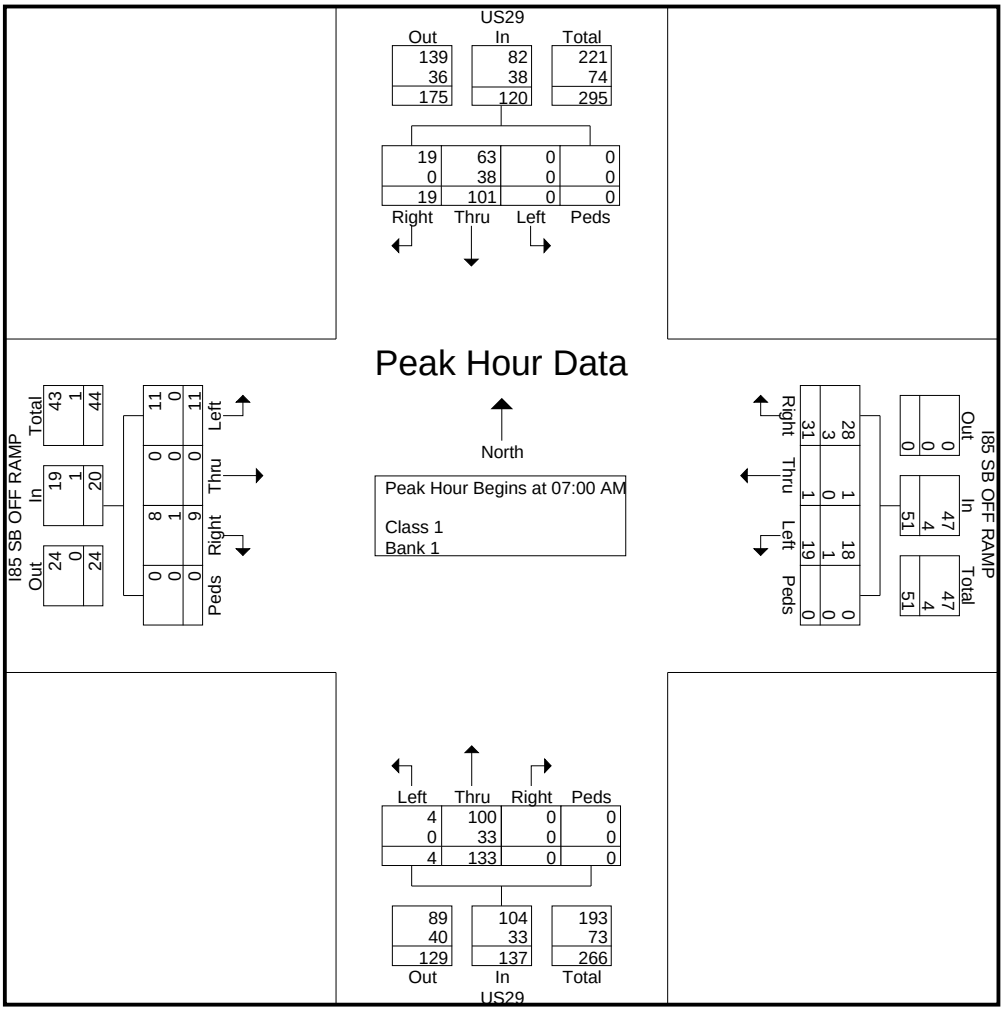


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #32 US29&I85SBOFFRAMPAM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	US29 Southbound					I85 SB OFF RAMP Westbound					US29 Northbound					I85 SB OFF RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	**7**	**28**	0	0	**35**	5	**1**	4	0	10	0	22	**2**	0	24	**5**	0	3	0	**8**	77
07:15 AM	5	23	0	0	28	6	0	**5**	0	11	0	39	2	0	**41**	2	0	**5**	0	7	**87**
07:30 AM	5	28	0	0	33	**12**	0	5	0	**17**	0	32	0	0	32	0	0	3	0	3	85
07:45 AM	2	22	0	0	24	8	0	5	0	13	0	**40**	0	0	40	2	0	0	0	2	79
Total Volume	19	101	0	0	120	31	1	19	0	51	0	133	4	0	137	9	0	11	0	20	328
% App. Total	15.8	84.2	0	0		60.8	2	37.3	0		0	97.1	2.9	0		45	0	55	0		
PHF	.679	.902	.000	.000	.857	.646	.250	.950	.000	.750	.000	.831	.500	.000	.835	.450	.000	.550	.000	.625	.943
Class 1	19	63	0	0	82	28	1	18	0	47	0	100	4	0	104	8	0	11	0	19	252
% Class 1		62.4	0	0	68.3	90.3	100	94.7	0	92.2	0	75.2	100	0	75.9	88.9	0	100	0	95.0	76.8
Bank 1	0	38	0	0	38	3	0	1	0	4	0	33	0	0	33	1	0	0	0	1	76
% Bank 1	0	37.6	0	0	31.7	9.7	0	5.3	0	7.8	0	24.8	0	0	24.1	11.1	0	0	0	5.0	23.2

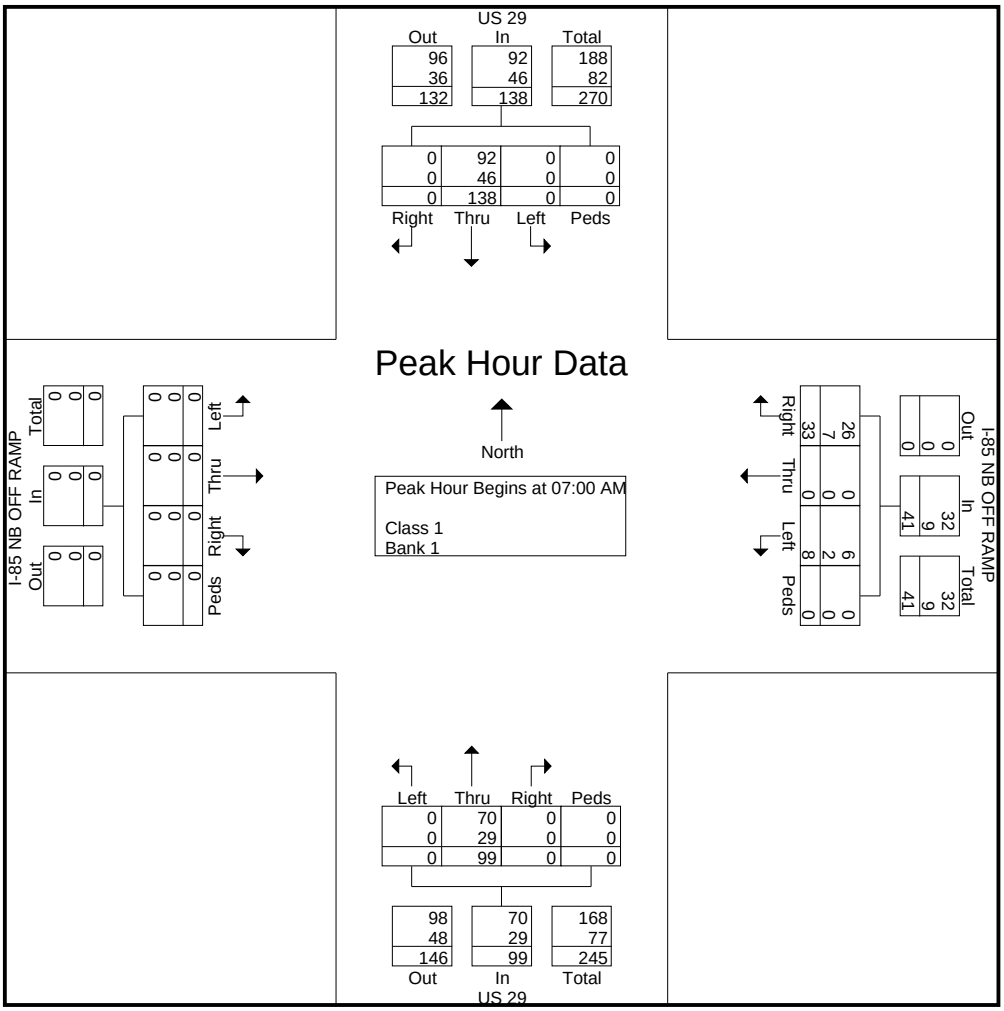


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #33 US29&I85NBOFFAM
Site Code : 33
Start Date : 5/27/2015
Page No : 2

	US 29 Southbound					I-85 NB OFF RAMP Westbound					US 29 Northbound					I-85 NB OFF RAMP Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	**37**	0	0	**37**	6	0	2	0	8	0	16	0	0	16	0	0	0	0	0	61
07:15 AM	0	37	0	0	37	8	0	2	0	10	0	28	0	0	28	0	0	0	0	0	75
07:30 AM	0	32	0	0	32	7	0	1	0	8	0	25	0	0	25	0	0	0	0	0	65
07:45 AM	0	32	0	0	32	**12**	0	**3**	0	**15**	0	**30**	0	0	**30**	0	0	0	0	0	**77**
Total Volume	0	138	0	0	138	33	0	8	0	41	0	99	0	0	99	0	0	0	0	0	278
% App. Total	0	100	0	0		80.5	0	19.5	0		0	100	0	0		0	0	0	0		
PHF	.000	.932	.000	.000	.932	.688	.000	.667	.000	.683	.000	.825	.000	.000	.825	.000	.000	.000	.000	.000	.903
Class 1	0	92	0	0	92	26	0	6	0	32	0	70	0	0	70	0	0	0	0	0	194
% Class 1		66.7	0	0	66.7	78.8	0	75.0	0	78.0	0	70.7	0	0	70.7	0	0	0	0	0	69.8
Bank 1	0	46	0	0	46	7	0	2	0	9	0	29	0	0	29	0	0	0	0	0	84
% Bank 1	0	33.3	0	0	33.3	21.2	0	25.0	0	22.0	0	29.3	0	0	29.3	0	0	0	0	0	30.2

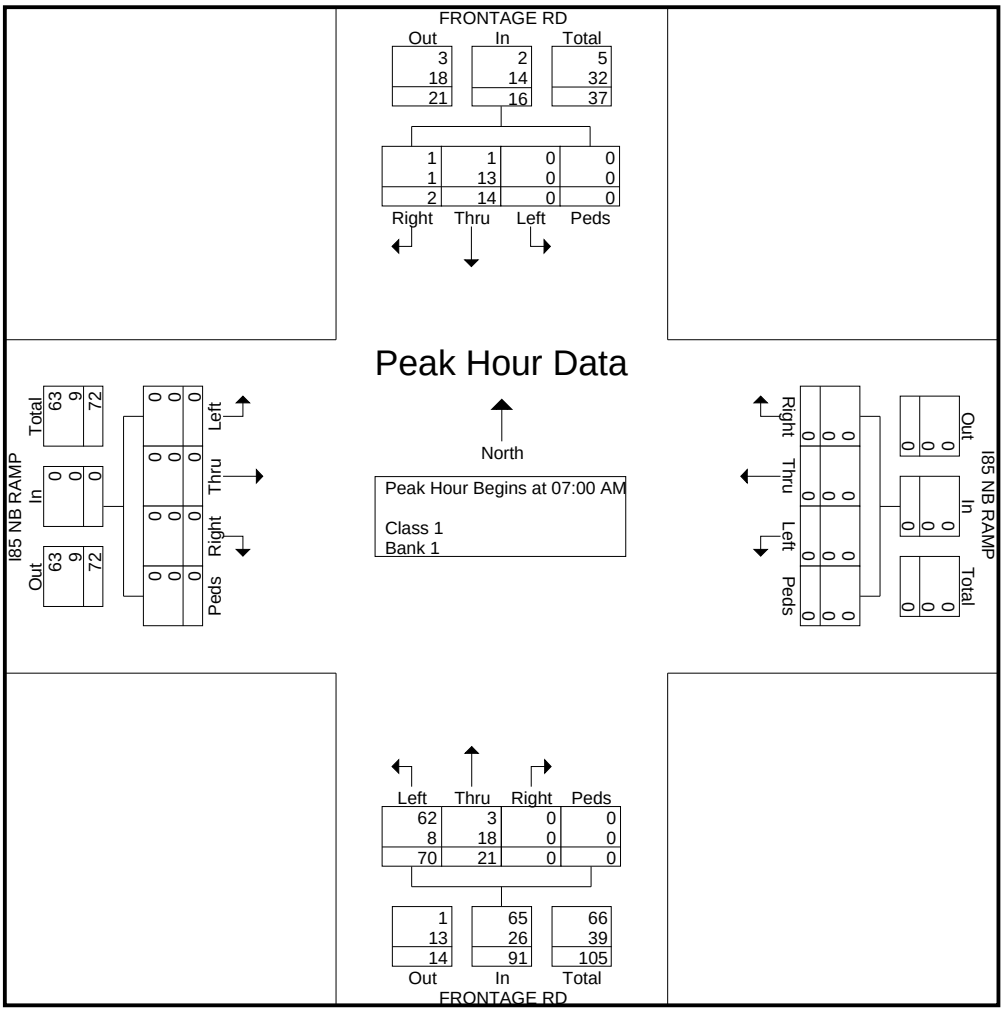


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #34 FrontageRd@ I-85NBOnRampam
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	FRONTAGE RD Southbound					I85 NB RAMP Westbound					FRONTAGE RD Northbound					I85 NB RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	**1**	2	0	0	3	0	0	0	0	0	0	**11**	17	0	**28**	0	0	0	0	0	**31**
07:15 AM	0	4	0	0	4	0	0	0	0	0	0	3	**20**	0	23	0	0	0	0	0	27
07:30 AM	0	3	0	0	3	0	0	0	0	0	0	2	14	0	16	0	0	0	0	0	19
07:45 AM	1	**5**	0	0	**6**	0	0	0	0	0	0	5	19	0	24	0	0	0	0	0	30
Total Volume	2	14	0	0	16	0	0	0	0	0	0	21	70	0	91	0	0	0	0	0	107
% App. Total	12.5	87.5	0	0		0	0	0	0		0	23.1	76.9	0		0	0	0	0		
PHF	.500	.700	.000	.000	.667	.000	.000	.000	.000	.000	.000	.477	.875	.000	.813	.000	.000	.000	.000	.000	.863
Class 1	1	1	0	0	2	0	0	0	0	0	0	3	62	0	65	0	0	0	0	0	67
% Class 1	50.0	7.1	0	0	12.5	0	0	0	0	0	0	14.3	88.6	0	71.4	0	0	0	0	0	62.6
Bank 1	1	13	0	0	14	0	0	0	0	0	0	18	8	0	26	0	0	0	0	0	40
% Bank 1	50.0	92.9	0	0	87.5	0	0	0	0	0	0	85.7	11.4	0	28.6	0	0	0	0	0	37.4

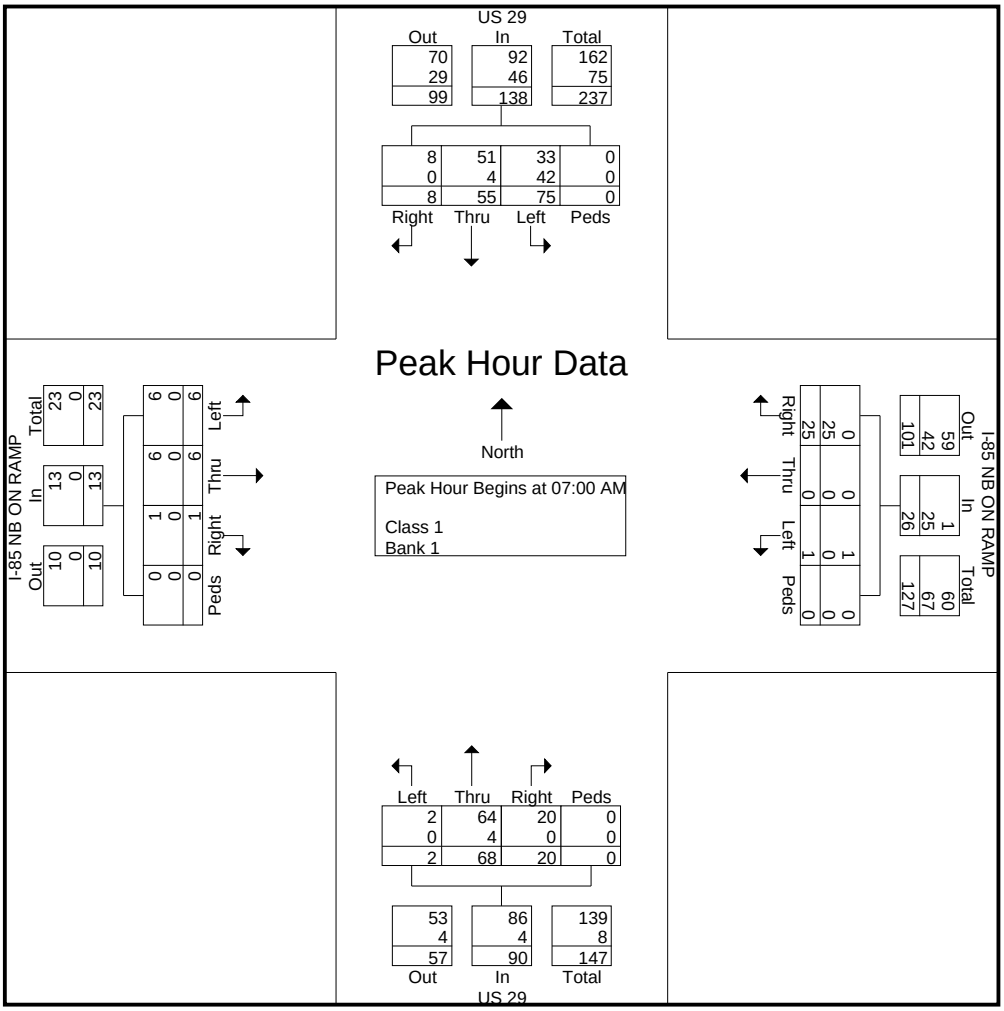


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #35 US29&I85NBONAM
Site Code : 35
Start Date : 5/28/2015
Page No : 2

	US 29 Southbound					I-85 NB ON RAMP Westbound					US 29 Northbound					I-85 NB ON RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	**3**	13	21	0	**37**	0	0	0	0	0	5	16	0	0	21	**1**	**2**	0	0	3	61
07:15 AM	3	10	**24**	0	37	7	0	0	0	7	6	**19**	0	0	25	0	2	**2**	0	**4**	**73**
07:30 AM	1	**16**	15	0	32	6	0	0	0	6	**8**	17	**2**	0	**27**	0	2	2	0	4	69
07:45 AM	1	16	15	0	32	**12**	0	**1**	0	**13**	1	16	0	0	17	0	0	2	0	2	64
Total Volume	8	55	75	0	138	25	0	1	0	26	20	68	2	0	90	1	6	6	0	13	267
% App. Total	5.8	39.9	54.3	0		96.2	0	3.8	0		22.2	75.6	2.2	0		7.7	46.2	46.2	0		
PHF	.667	.859	.781	.000	.932	.521	.000	.250	.000	.500	.625	.895	.250	.000	.833	.250	.750	.750	.000	.813	.914
Class 1	8	51	33	0	92	0	0	1	0	1	20	64	2	0	86	1	6	6	0	13	192
% Class 1		92.7	44.0	0	66.7	0	0	100	0	3.8	100	94.1	100	0	95.6	100	100	100	0	100	71.9
Bank 1	0	4	42	0	46	25	0	0	0	25	0	4	0	0	4	0	0	0	0	0	75
% Bank 1	0	7.3	56.0	0	33.3	100	0	0	0	96.2	0	5.9	0	0	4.4	0	0	0	0	0	28.1

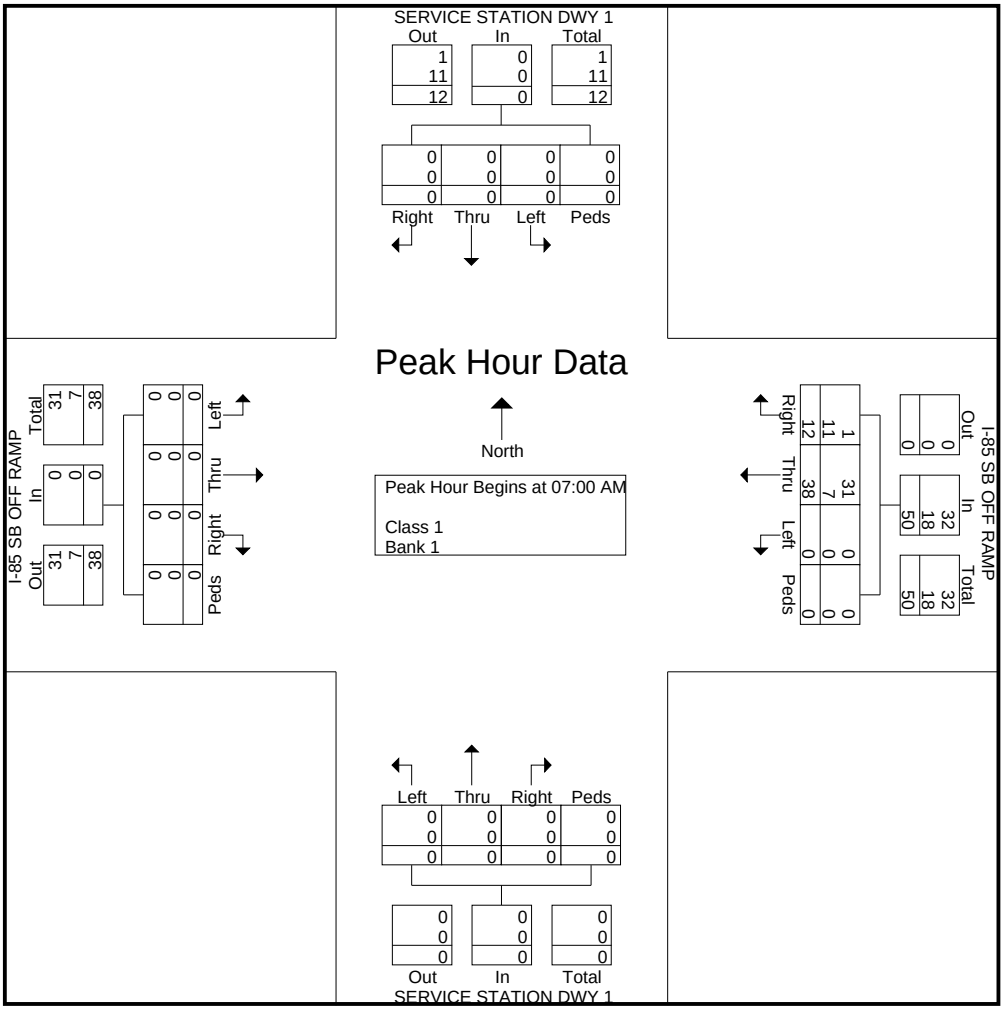


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #36 SERVICESTATION&I85SBOFFAM
Site Code : 36
Start Date : 5/27/2015
Page No : 2

	SERVICE STATION DWY 1 Southbound					I-85 SB OFF RAMP Westbound					SERVICE STATION DWY 1 Northbound					I-85 SB OFF RAMP Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	**5**	**10**	0	0	**15**	0	0	0	0	0	0	0	0	0	0	**15**
07:15 AM	0	0	0	0	0	2	10	0	0	12	0	0	0	0	0	0	0	0	0	0	12
07:30 AM	0	0	0	0	0	3	9	0	0	12	0	0	0	0	0	0	0	0	0	0	12
07:45 AM	0	0	0	0	0	2	9	0	0	11	0	0	0	0	0	0	0	0	0	0	11
Total Volume	0	0	0	0	0	12	38	0	0	50	0	0	0	0	0	0	0	0	0	0	50
% App. Total	0	0	0	0		24	76	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.600	.950	.000	.000	.833	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.833
Class 1	0	0	0	0	0	1	31	0	0	32	0	0	0	0	0	0	0	0	0	0	32
% Class 1							81.6	0	0	64.0	0	0	0	0	0	0	0	0	0	0	64.0
Bank 1	0	0	0	0	0	11	7	0	0	18	0	0	0	0	0	0	0	0	0	0	18
% Bank 1	0	0	0	0	0	91.7	18.4	0	0	36.0	0	0	0	0	0	0	0	0	0	0	36.0

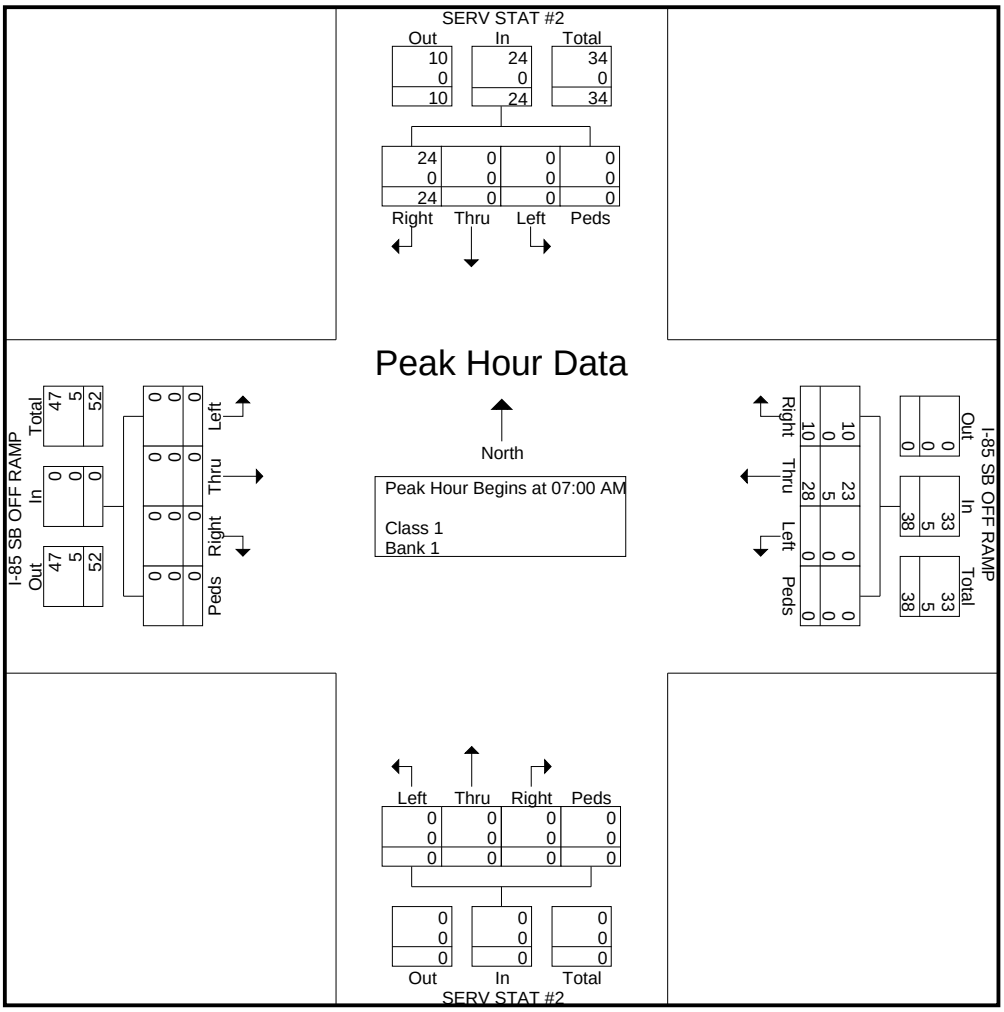


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #37 ServiceStatDwy2@I-85SBOffRampAM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	SERV STAT #2 Southbound					I-85 SB OFF RAMP Westbound					SERV STAT #2 Northbound					I-85 SB OFF RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	3	0	0	0	3	2	**8**	0	0	10	0	0	0	0	0	0	0	0	0	0	13
07:15 AM	5	0	0	0	5	3	7	0	0	10	0	0	0	0	0	0	0	0	0	0	15
07:30 AM	**9**	0	0	0	**9**	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	16
07:45 AM	7	0	0	0	7	**4**	7	0	0	**11**	0	0	0	0	0	0	0	0	0	0	**18**
Total Volume	24	0	0	0	24	10	28	0	0	38	0	0	0	0	0	0	0	0	0	0	62
% App. Total	100	0	0	0		26.3	73.7	0	0		0	0	0	0		0	0	0	0		
PHF	.667	.000	.000	.000	.667	.625	.875	.000	.000	.864	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.861
Class 1	24	0	0	0	24	10	23	0	0	33	0	0	0	0	0	0	0	0	0	0	57
% Class 1							82.1	0	0	86.8	0	0	0	0	0	0	0	0	0	0	91.9
Bank 1	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	5
% Bank 1	0	0	0	0	0	0	17.9	0	0	13.2	0	0	0	0	0	0	0	0	0	0	8.1

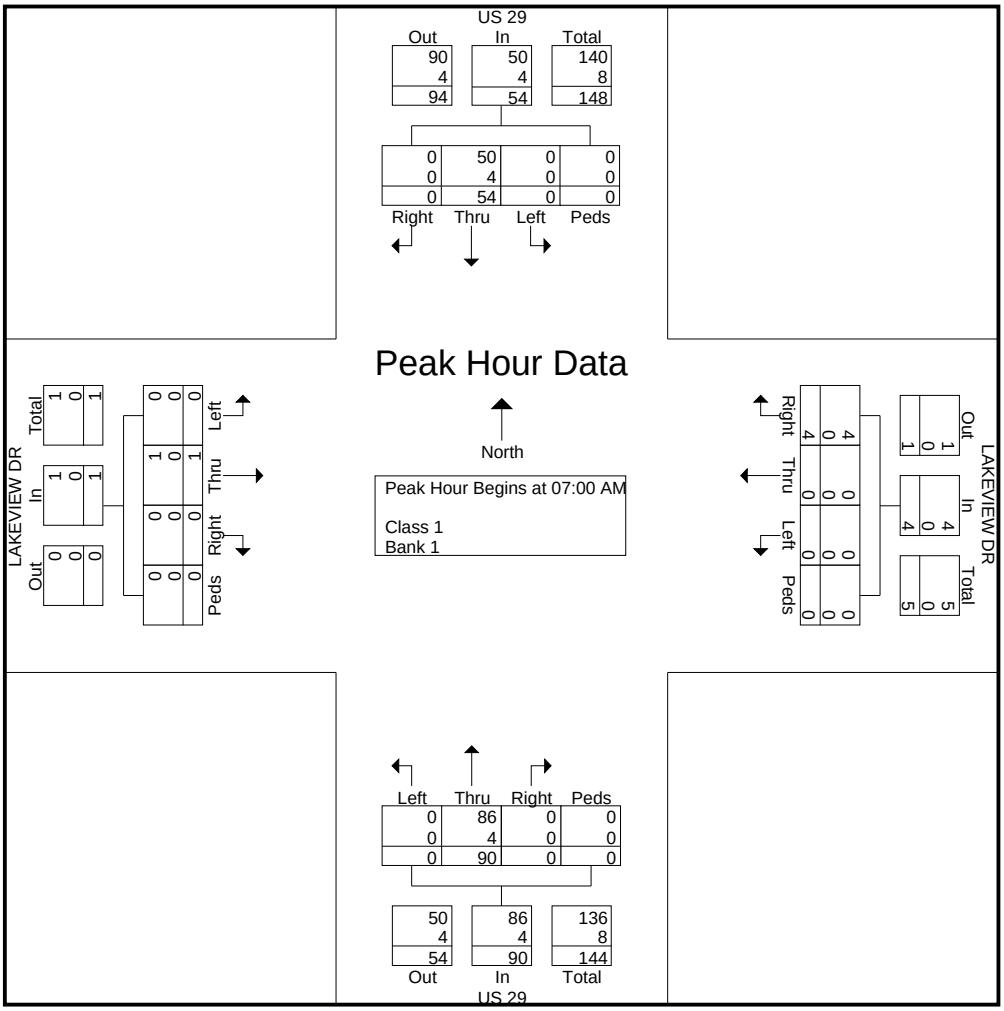


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #38 US29&LAKEVIEWAM
Site Code : 38
Start Date : 5/28/2015
Page No : 2

	US 29 Southbound					LAKEVIEW DR Westbound					US 29 Northbound					LAKEVIEW DR Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	15	0	0	15	0	0	0	0	0	0	20	0	0	20	0	**1**	0	0	**1**	36
07:15 AM	0	7	0	0	7	**2**	0	0	0	**2**	0	**26**	0	0	**26**	0	0	0	0	0	35
07:30 AM	0	**16**	0	0	**16**	2	0	0	0	2	0	25	0	0	25	0	0	0	0	0	**43**
07:45 AM	0	16	0	0	16	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	35
Total Volume	0	54	0	0	54	4	0	0	0	4	0	90	0	0	90	0	1	0	0	1	149
% App. Total	0	100	0	0		100	0	0	0		0	100	0	0		0	100	0	0		
PHF	.000	.844	.000	.000	.844	.500	.000	.000	.000	.500	.000	.865	.000	.000	.865	.000	.250	.000	.000	.250	.866
Class 1	0	50	0	0	50	4	0	0	0	4	0	86	0	0	86	0	1	0	0	1	141
% Class 1		92.6	0	0	92.6	100	0	0	0	100	0	95.6	0	0	95.6	0	100	0	0	100	94.6
Bank 1	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
% Bank 1	0	7.4	0	0	7.4	0	0	0	0	0	0	4.4	0	0	4.4	0	0	0	0	0	5.4

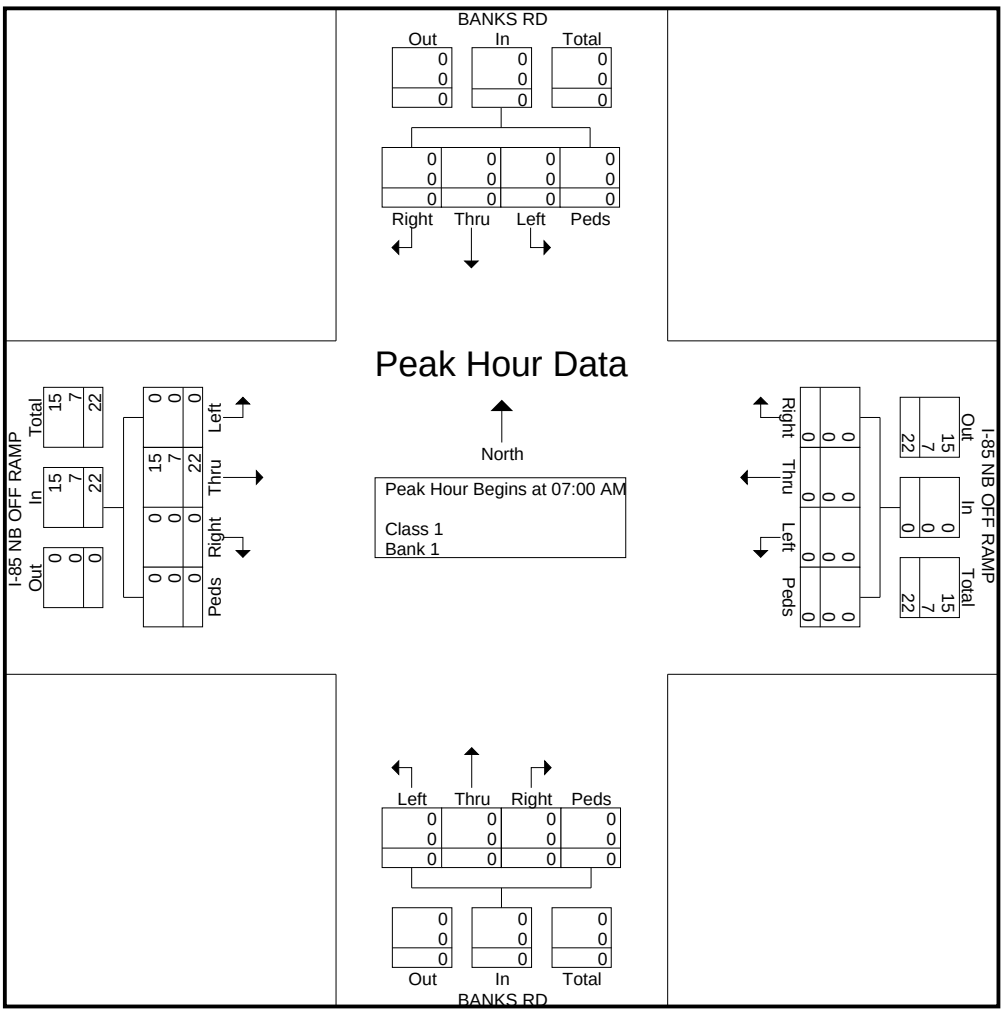


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #39 BANKS&I85NBOFFAM
Site Code : 39
Start Date : 5/27/2015
Page No : 2

	BANKS RD Southbound					I-85 NB OFF RAMP Westbound					BANKS RD Northbound					I-85 NB OFF RAMP Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**7**	0	0	**7**	**7**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	22	22
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.786	.000	.000	.786	.786
Class 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	15	15
% Class 1																	68.2	0	0	68.2	68.2
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	7
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31.8	0	0	31.8	31.8

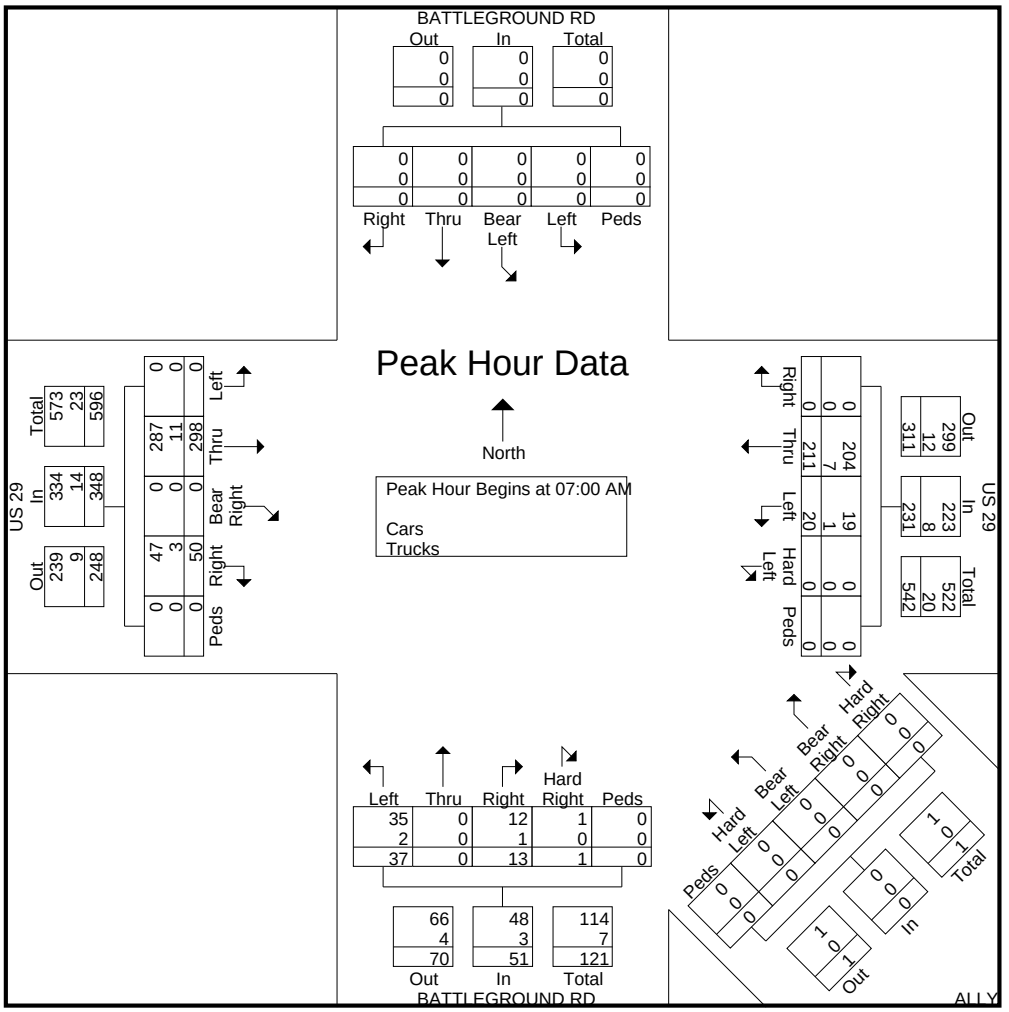


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #40 BattlegroundRd@US29AM
Site Code :
Start Date : 5/28/2015
Page No : 2

	BATTLEGROUND RD Southbound						US 29 Westbound						ALLY Northwestbound						BATTLEGROUND RD Northbound						US 29 Eastbound						
Start Time	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:00 AM																															
07:00 AM	0	0	0	0	0	0	0	38	4	0	0	42	0	0	0	0	0	0	0	3	0	5	0	8	11	0	51	0	0	62	112
07:15 AM	0	0	0	0	0	0	0	32	4	0	0	36	0	0	0	0	0	0	0	**5**							**90**				
07:30 AM	0	0	0	0	0	0	0	62	**6**	0	0	68	0	0	0	0	0	0	0	3	0	**14**	0	**17**	14	0	90	0	0	**104**	**189**
07:45 AM	0	0	0	0	0	0	0	**79**	6	0	0	**85**	0	0	0	0	0	0	**1**	2	0	9	0	12	**16**	0	67	0	0	83	180
Total Volume	0	0	0	0	0	0	0	211	20	0	0	231	0	0	0	0	0	0	1	13	0	37	0	51	50	0	298	0	0	348	630
% App. Total	0	0	0	0	0		0	91.3	8.7	0	0		0	0	0	0	0		2	25.5	0	72.5	0		14.4	0	85.6	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.668	.833	.000	.000	.679	.000	.000	.000	.000	.000	.000	.250	.650	.000	.661	.000	.750	.781	.000	.828	.000	.000	.837	.833
Cars	0	0	0	0	0	0	0	204	19	0	0	223	0	0	0	0	0	0	1	12	0	35	0	48	47	0	287	0	0	334	605
% Cars	0	0	0	0	0	0	0	96.7	95.0	0	0	96.5	0	0	0	0	0	0	100	92.3	0	94.6	0	94.1	94.0	0	96.3	0	0	96.0	96.0
Trucks	0	0	0	0	0	0	0	7	1	0	0	8	0	0	0	0	0	0	0	1	0	2	0	3	3	0	11	0	0	14	25
% Trucks	0	0	0	0	0	0	0	3.3	5.0	0	0	3.5	0	0	0	0	0	0	0	7.7	0	5.4	0	5.9	6.0	0	3.7	0	0	4.0	4.0

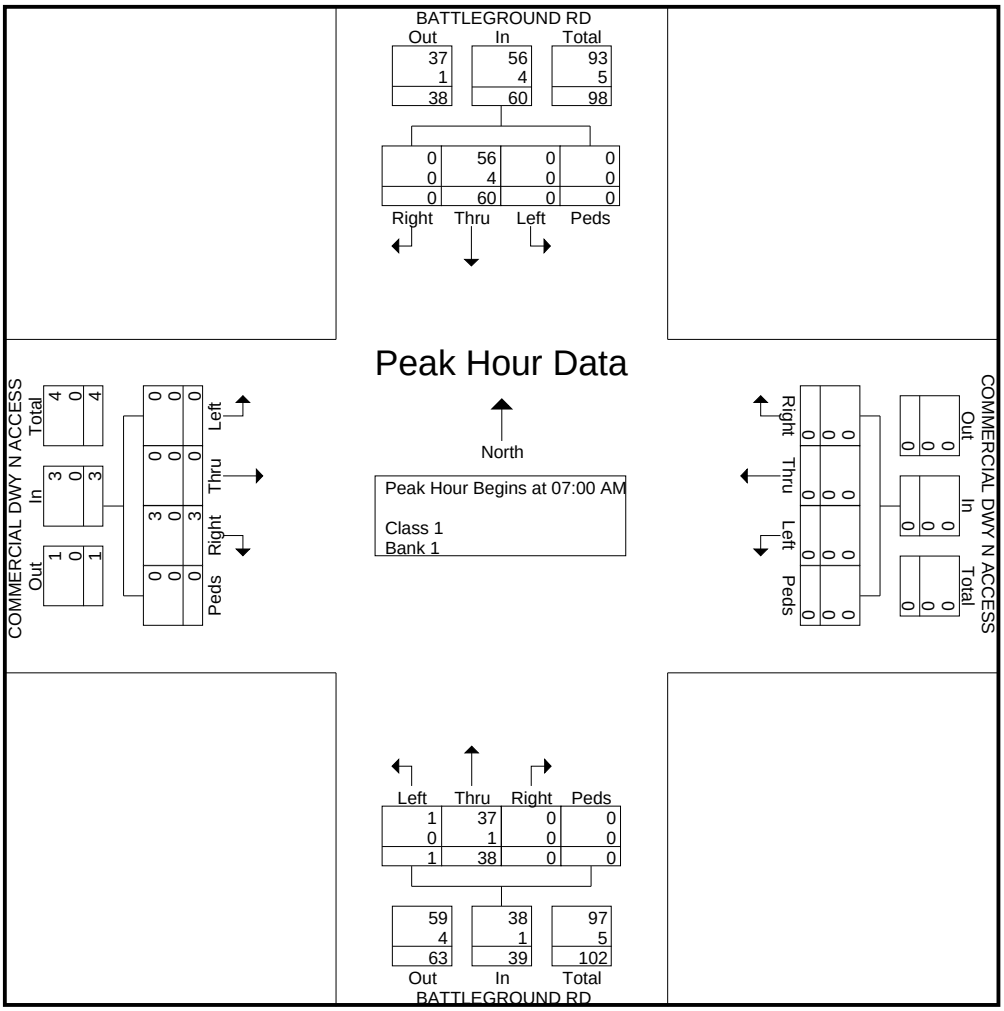


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #41 BATTLEGROUND&COMMERCIALNAM
Site Code : 41
Start Date : 5/27/2015
Page No : 2

	BATTLEGROUND RD Southbound					COMMERCIAL DWY N ACCESS Westbound					BATTLEGROUND RD Northbound					COMMERCIAL DWY N ACCESS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	**2**	0	0	0	**2**	19
07:15 AM	0	13	0	0	13	0	0	0	0	0	0	11	**1**	0	12	1	0	0	0	1	26
07:30 AM	0	18	0	0	18	0	0	0	0	0	0	**13**	0	0	**13**	0	0	0	0	0	**31**
07:45 AM	0	**20**	0	0	**20**	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	26
Total Volume	0	60	0	0	60	0	0	0	0	0	0	38	1	0	39	3	0	0	0	3	102
% App. Total	0	100	0	0		0	0	0	0		0	97.4	2.6	0		100	0	0	0		
PHF	.000	.750	.000	.000	.750	.000	.000	.000	.000	.000	.000	.731	.250	.000	.750	.375	.000	.000	.000	.375	.823
Class 1	0	56	0	0	56	0	0	0	0	0	0	37	1	0	38	3	0	0	0	3	97
% Class 1		93.3	0	0	93.3	0	0	0	0	0	0	97.4	100	0	97.4	100	0	0	0	100	95.1
Bank 1	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
% Bank 1	0	6.7	0	0	6.7	0	0	0	0	0	0	2.6	0	0	2.6	0	0	0	0	0	4.9

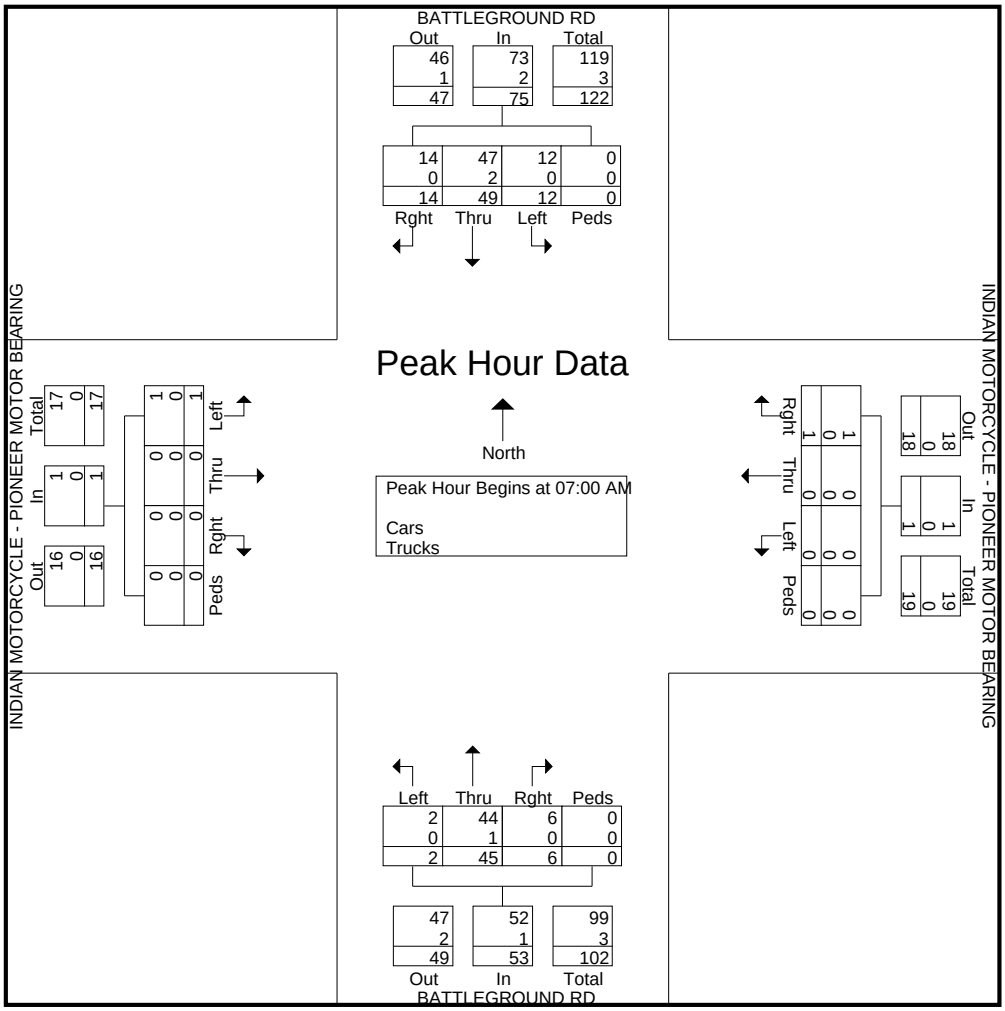


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #42 BattlegroundRd@IndianMotorcycleAM
Site Code :
Start Date : 5/27/2015
Page No : 2

	BATTLEGROUND RD Southbound					INDIAN MOTORCYCLE - PIONEER MOTOR BEARING Westbound					BATTLEGROUND RD Northbound					INDIAN MOTORCYCLE - PIONEER MOTOR BEARING Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	**7**	9	1	0	17	0	0	0	0	0	1	7	**1**	0	9	0	0	**1**	0	**1**	27
07:15 AM	5	9	0	0	14	**1**	0	0	0	**1**	0	12	0	0	12	0	0	0	0	0	27
07:30 AM	1	**18**	3	0	**22**	0	0	0	0	0	0	**16**	1	0	**17**	0	0	0	0	0	**39**
07:45 AM	1	13	**8**	0	22	0	0	0	0	0	**5**	10	0	0	15	0	0	0	0	0	37
Total Volume	14	49	12	0	75	1	0	0	0	1	6	45	2	0	53	0	0	1	0	1	130
% App. Total	18.7	65.3	16	0		100	0	0	0		11.3	84.9	3.8	0		0	0	100	0		
PHF	.500	.681	.375	.000	.852	.250	.000	.000	.000	.250	.300	.703	.500	.000	.779	.000	.000	.250	.000	.250	.833
Cars	14	47	12	0	73	1	0	0	0	1	6	44	2	0	52	0	0	1	0	1	127
% Cars	100	95.9	100	0	97.3	100	0	0	0	100	100	97.8	100	0	98.1	0	0	100	0	100	97.7
Trucks	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
% Trucks	0	4.1	0	0	2.7	0	0	0	0	0	0	2.2	0	0	1.9	0	0	0	0	0	2.3

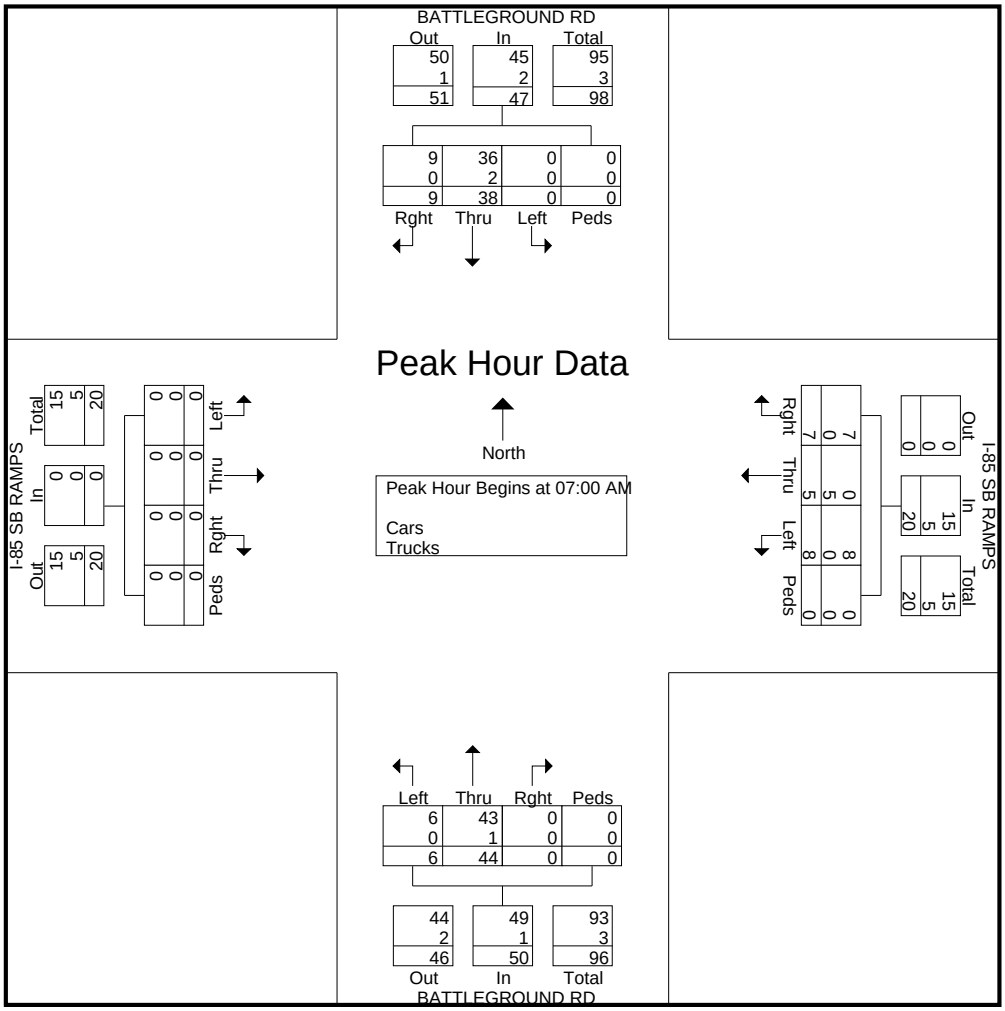


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #43 BattlegroundRd@I-85SBRampsAM
Site Code :
Start Date : 5/27/2015
Page No : 2

	BATTLEGROUND RD Southbound					I-85 SB RAMPS Westbound					BATTLEGROUND RD Northbound					I-85 SB RAMPS Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	2	8	0	0	10	**2**	**4**	2	0	**8**	0	6	0	0	6	0	0	0	0	0	24
07:15 AM	0	8	0	0	8	1	1	1	0	3	0	10	1	0	11	0	0	0	0	0	22
07:30 AM	**5**	**11**	0	0	**16**	2	0	**3**	0	5	0	**16**	**3**	0	**19**	0	0	0	0	0	**40**
07:45 AM	2	11	0	0	13	2	0	2	0	4	0	12	2	0	14	0	0	0	0	0	31
Total Volume	9	38	0	0	47	7	5	8	0	20	0	44	6	0	50	0	0	0	0	0	117
% App. Total	19.1	80.9	0	0		35	25	40	0		0	88	12	0		0	0	0	0		
PHF	.450	.864	.000	.000	.734	.875	.313	.667	.000	.625	.000	.688	.500	.000	.658	.000	.000	.000	.000	.000	.731
Cars	9	36	0	0	45	7	0	8	0	15	0	43	6	0	49	0	0	0	0	0	109
% Cars	100	94.7	0	0	95.7	100	0	100	0	75.0	0	97.7	100	0	98.0	0	0	0	0	0	93.2
Trucks	0	2	0	0	2	0	5	0	0	5	0	1	0	0	1	0	0	0	0	0	8
% Trucks	0	5.3	0	0	4.3	0	100	0	0	25.0	0	2.3	0	0	2.0	0	0	0	0	0	6.8

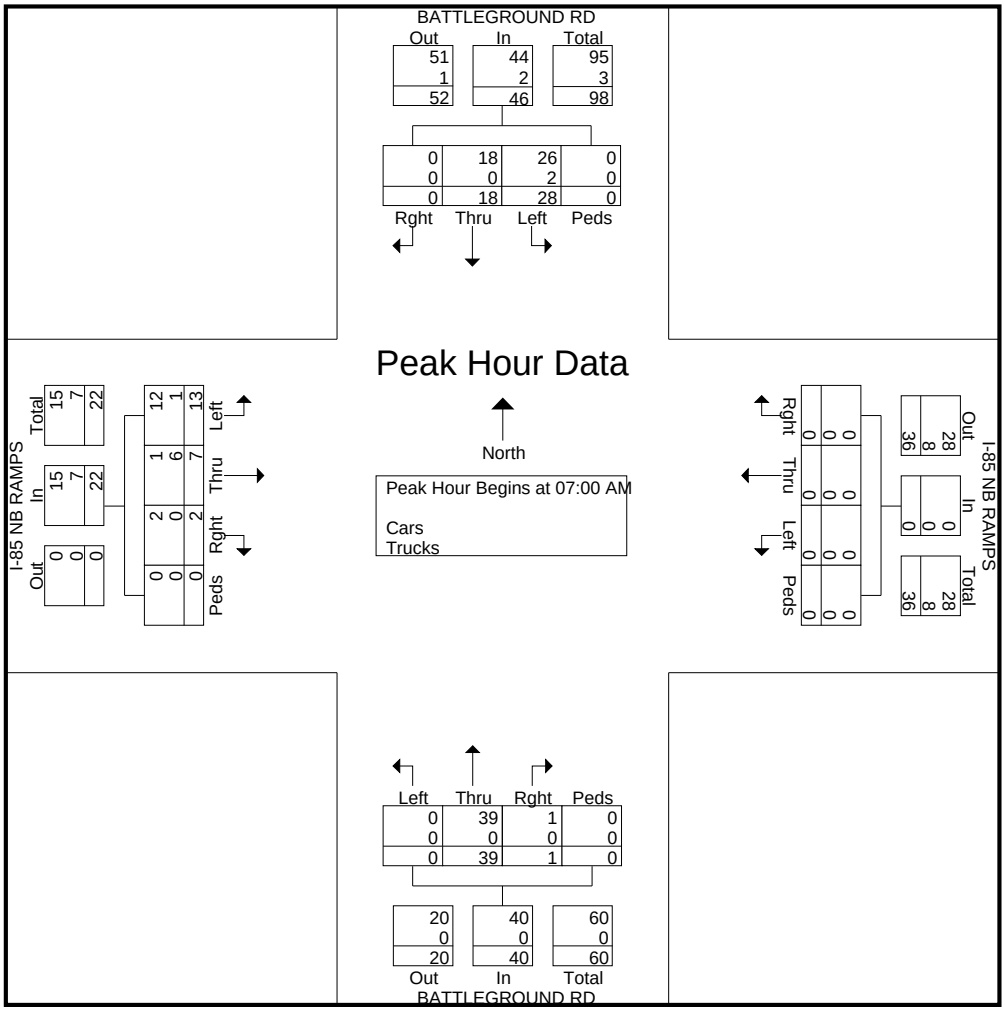


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #44 BattlegroundRd@I-85NBRampsAM
Site Code :
Start Date : 5/27/2015
Page No : 2

	BATTLEGROUND RD Southbound					I-85 NB RAMPS Westbound					BATTLEGROUND RD Northbound					I-85 NB RAMPS Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	1	**10**	0	11	0	0	0	0	0	0	5	0	0	5	0	**4**	2	0	6	22
07:15 AM	0	1	7	0	8	0	0	0	0	0	0	11	0	0	11	0	0	**4**	0	4	23
07:30 AM	0	6	8	0	**14**	0	0	0	0	0	**1**	**12**	0	0	**13**	**1**	2	4	0	**7**	**34**
07:45 AM	0	**10**	3	0	13	0	0	0	0	0	0	11	0	0	11	1	1	3	0	5	29
Total Volume	0	18	28	0	46	0	0	0	0	0	1	39	0	0	40	2	7	13	0	22	108
% App. Total	0	39.1	60.9	0		0	0	0	0		2.5	97.5	0	0		9.1	31.8	59.1	0		
PHF	.000	.450	.700	.000	.821	.000	.000	.000	.000	.000	.250	.813	.000	.000	.769	.500	.438	.813	.000	.786	.794
Cars	0	18	26	0	44	0	0	0	0	0	1	39	0	0	40	2	1	12	0	15	99
% Cars	0	100	92.9	0	95.7	0	0	0	0	0	100	100	0	0	100	100	14.3	92.3	0	68.2	91.7
Trucks	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	6	1	0	7	9
% Trucks	0	0	7.1	0	4.3	0	0	0	0	0	0	0	0	0	0	0	85.7	7.7	0	31.8	8.3

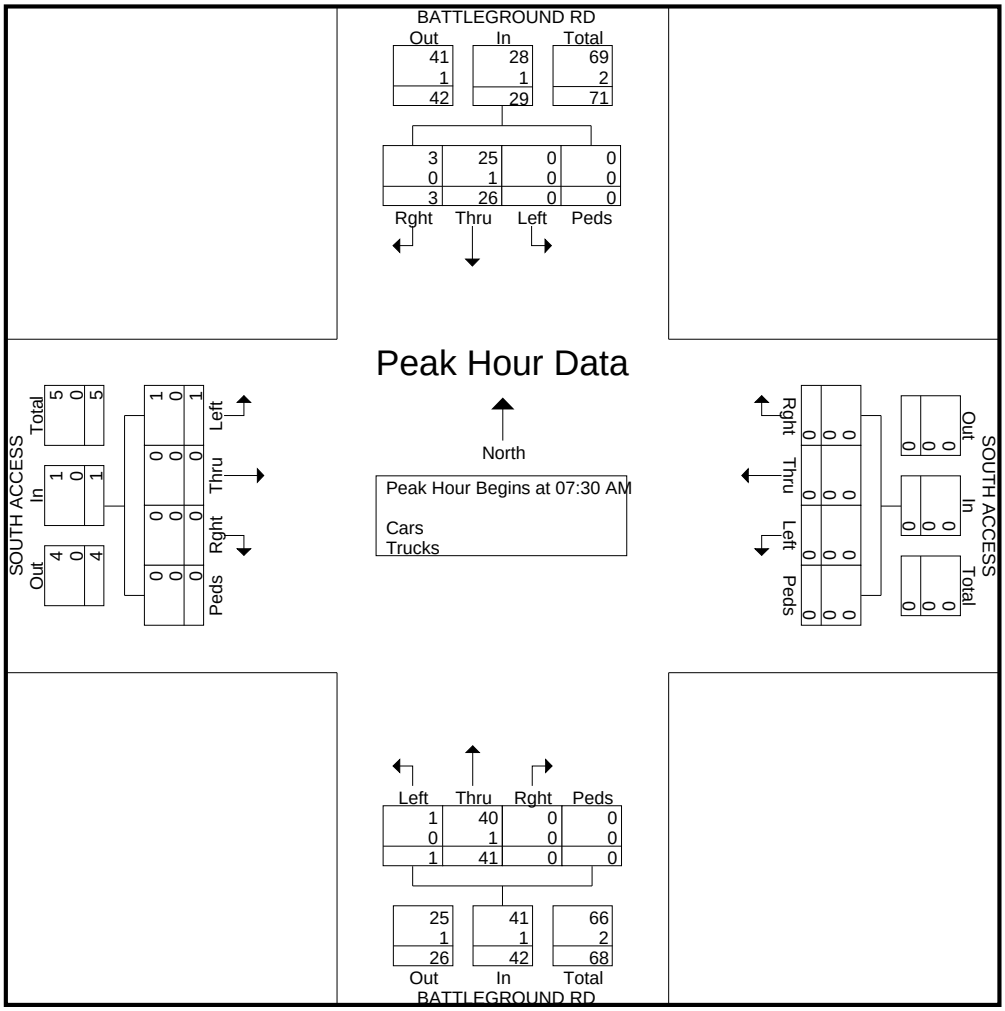


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #45 BattlegroundRd@SouthAccessAM
Site Code :
Start Date : 5/28/2015
Page No : 2

	BATTLEGROUND RD Southbound					SOUTH ACCESS Westbound					BATTLEGROUND RD Northbound					SOUTH ACCESS Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	6	0	0	6	0	0	0	0	0	0	**13**	**1**	0	**14**	0	0	0	0	0	20
07:45 AM	**1**	**10**	0	0	**11**	0	0	0	0	0	0	11	0	0	11	0	0	**1**	0	**1**	**23**
08:00 AM	1	6	0	0	7	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	13
08:15 AM	1	4	0	0	5	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	16
Total Volume	3	26	0	0	29	0	0	0	0	0	0	41	1	0	42	0	0	1	0	1	72
% App. Total	10.3	89.7	0	0		0	0	0	0		0	97.6	2.4	0		0	0	100	0		
PHF	.750	.650	.000	.000	.659	.000	.000	.000	.000	.000	.000	.788	.250	.000	.750	.000	.000	.250	.000	.250	.783
Cars	3	25	0	0	28	0	0	0	0	0	0	40	1	0	41	0	0	1	0	1	70
% Cars	100	96.2	0	0	96.6	0	0	0	0	0	0	97.6	100	0	97.6	0	0	100	0	100	97.2
Trucks	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Trucks	0	3.8	0	0	3.4	0	0	0	0	0	0	2.4	0	0	2.4	0	0	0	0	0	2.8

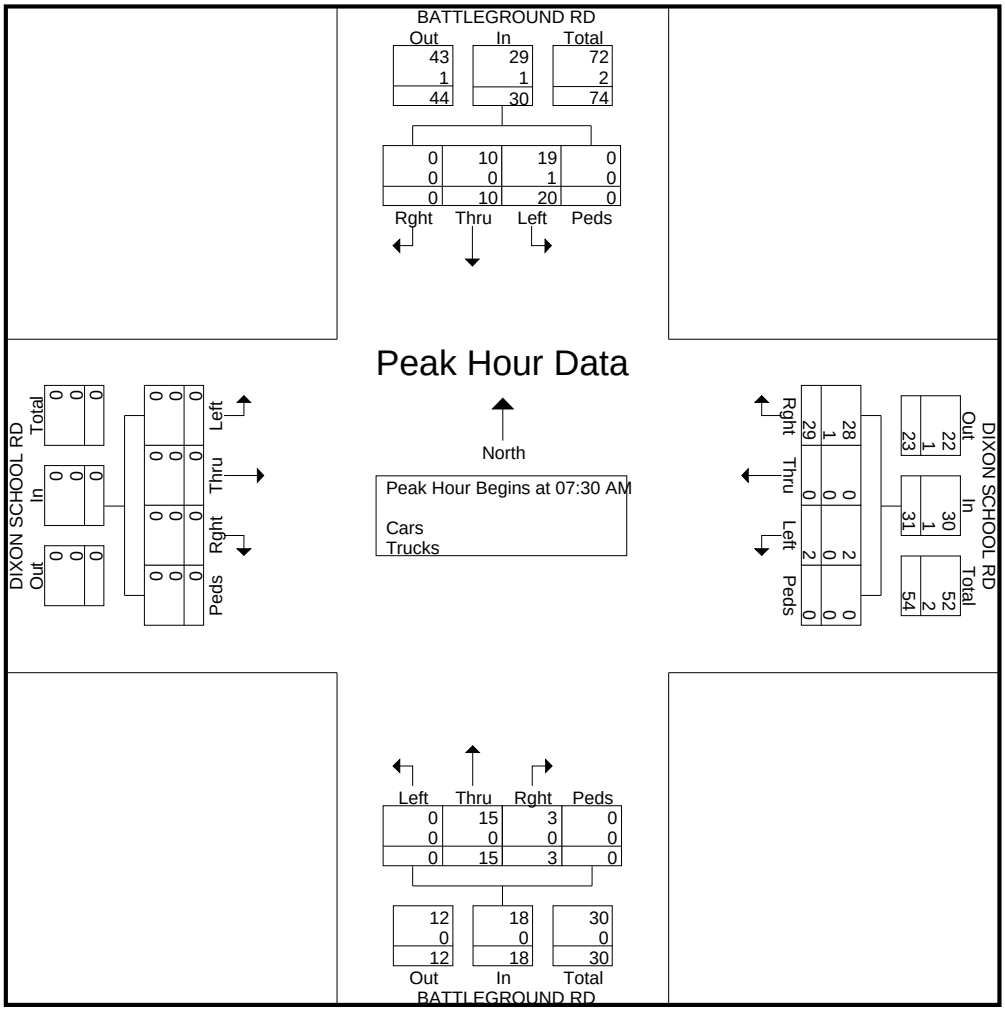


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #46 BattlegroundRd@DixonSchoolRdAM
Site Code :
Start Date : 5/28/2015
Page No : 2

	BATTLEGROUND RD Southbound					DIXON SCHOOL RD Westbound					BATTLEGROUND RD Northbound					DIXON SCHOOL RD Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	**4**	4	0	8	**14**	0	**1**	0	**15**	0	3	0	0	3	0	0	0	0	0	**26**
07:45 AM	0	1	**10**	0	**11**	6	0	0	0	6	0	2	0	0	2	0	0	0	0	0	19
08:00 AM	0	2	5	0	7	2	0	0	0	2	**2**	**6**	0	0	**8**	0	0	0	0	0	17
08:15 AM	0	3	1	0	4	7	0	1	0	8	1	4	0	0	5	0	0	0	0	0	17
Total Volume	0	10	20	0	30	29	0	2	0	31	3	15	0	0	18	0	0	0	0	0	79
% App. Total	0	33.3	66.7	0		93.5	0	6.5	0		16.7	83.3	0	0		0	0	0	0		
PHF	.000	.625	.500	.000	.682	.518	.000	.500	.000	.517	.375	.625	.000	.000	.563	.000	.000	.000	.000	.000	.760
Cars	0	10	19	0	29	28	0	2	0	30	3	15	0	0	18	0	0	0	0	0	77
% Cars	0	100	95.0	0	96.7	96.6	0	100	0	96.8	100	100	0	0	100	0	0	0	0	0	97.5
Trucks	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
% Trucks	0	0	5.0	0	3.3	3.4	0	0	0	3.2	0	0	0	0	0	0	0	0	0	0	2.5



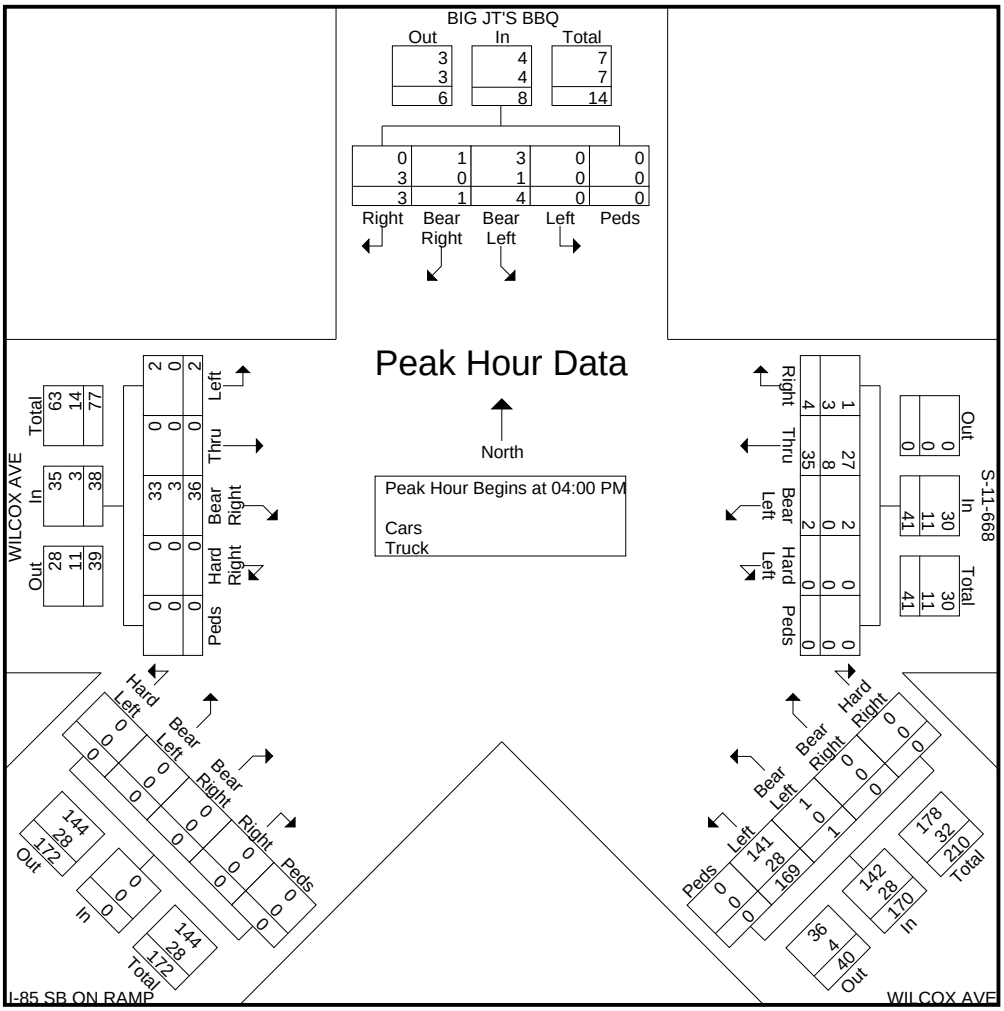
AFTERNOON PEAK HOUR TURNING MOVEMENT COUNT DATA

All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #1RampAccess@WilcoxAvePM
Site Code :
Start Date : 5/26/2015
Page No : 2

	BIG JT'S BBQ Southbound						S-11-668 Westbound						WILCOX AVE Northwestbound						I-85 SB ON RAMP Northeastbound						WILCOX AVE Eastbound						
Start Time	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:00 PM																															
04:00 PM	0	0	1	0	0	1	1	9	**1**	0	0	11	0	0	**1**	40	0	41	0	0	0	0	0	0	0	10	0	0	0	10	63
04:15 PM	**1**	0	0	0	0	1	**2**	9	0	0	0	11	0	0	0	41	0	41	0	0	0	0	0	0	0	9	0	0	0	9	62
04:30 PM	1	**1**	1	0	0	**3**	1	5	1	0	0	7	0	0	0	**46**	0	**46**	0	0	0	0	0	0	0	**13**	0	**2**	0	**15**	**71**
04:45 PM	1	0	**2**	0	0	3	0	**12**	0	0	0	**12**	0	0	0	42	0	42	0	0	0	0	0	0	0	4	0	0	0	4	61
Total Volume	3	1	4	0	0	8	4	35	2	0	0	41	0	0	1	169	0	170	0	0	0	0	0	0	0	36	0	2	0	38	257
% App. Total	37.5	12.5	50	0	0		9.8	85.4	4.9	0	0		0	0	0.6	99.4	0		0	0	0	0	0		0	94.7	0	5.3	0		
PHF	.750	.250	.500	.000	.000	.667	.500	.729	.500	.000	.000	.854	.000	.000	.250	.918	.000	.924	.000	.000	.000	.000	.000	.000	.000	.692	.000	.250	.000	.633	.905
Cars	0	1	3	0	0	4	1	27	2	0	0	30	0	0	1	141	0	142	0	0	0	0	0	0	0	33	0	2	0	35	211
% Cars	0	100	75.0	0	0	50.0	25.0	77.1	100	0	0	73.2	0	0	100	83.4	0	83.5	0	0	0	0	0	0	0	91.7	0	100	0	92.1	82.1
Truck	3	0	1	0	0	4	3	8	0	0	0	11	0	0	0	28	0	28	0	0	0	0	0	0	0	3	0	0	0	3	46
% Truck	100	0	25.0	0	0	50.0	75.0	22.9	0	0	0	26.8	0	0	0	16.6	0	16.5	0	0	0	0	0	0	0	8.3	0	0	0	7.9	17.9



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

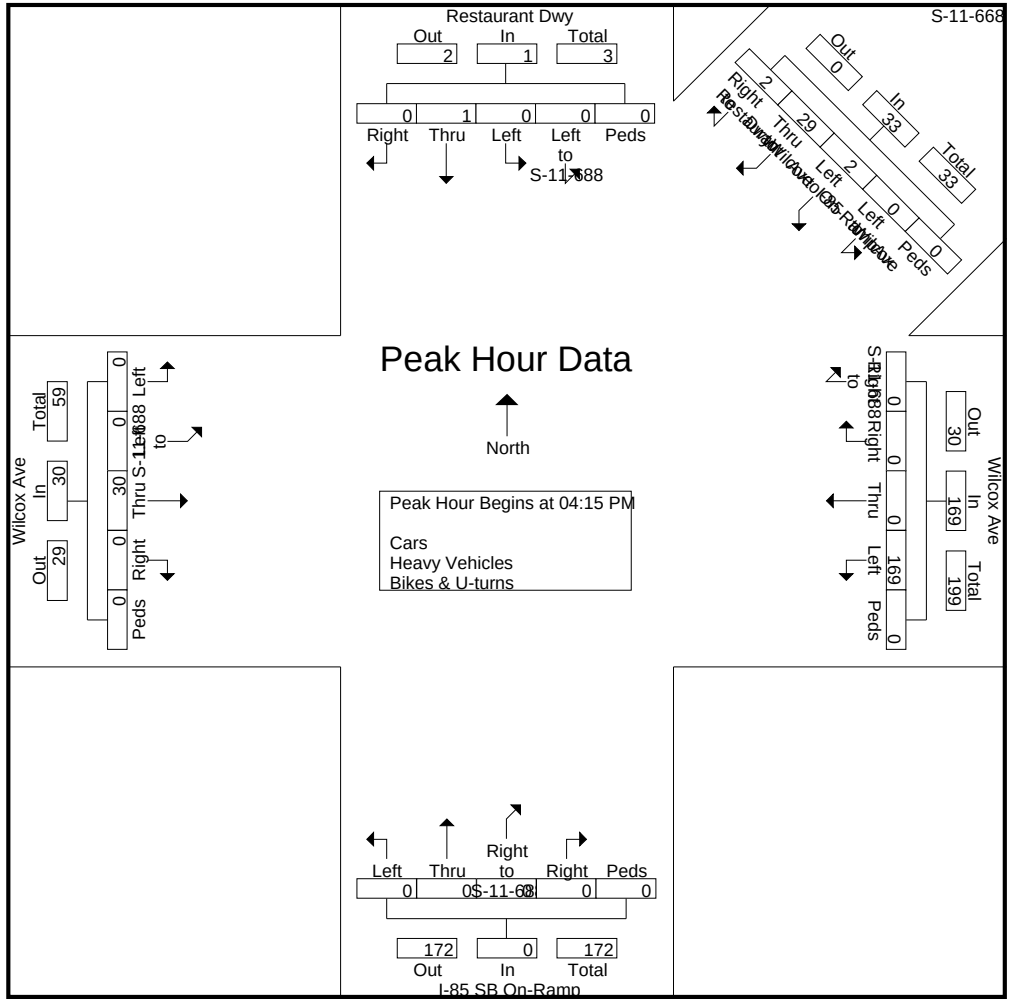
File Name : 12896534 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896534
Start Date : 9/25/2014
Page No : 3

	Restaurant Dwy Southbound						S-11-668						Wilcox Ave Westbound						I-85 SB On-Ramp Northbound						Wilcox Ave Eastbound						
Start Time	Right	Thru	Left	Left to S-11-688	Peds	App. Total	Right to Restaurant Dwy	Thru to Wilcox Ave	Left to I-85 On-Ramp	Left to Wilcox Ave	Peds	App. Total	Right to S-11-688	Right	Thru	Left	Peds	App. Total	Right	Right to S-11-688	Thru	Left	Peds	App. Total	Right	Thru	Left to S-11-688	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:15 PM																															
04:15 PM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	40	0	40	0	0	0	0	0	0	0	11				11	
04:30 PM	0	0	0	0	0	0	1	9	0	0	0	**10**	0	0	0	32	0	32	0	0	0	0	0	0	0	5	0	0	0	5	47
04:45 PM	0	**1**	0	0	0	**1**	1	4	**2**	0	0	7	0	0	0	43	0	43	0	0	0	0	0	0	0	8	0	0	0	8	59
05:00 PM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	**54**	0	**54**	0	0	0	0	0	0	0	6	0	0	0	6	**68**
Total Volume	0	1	0	0	0	1	2	29	2	0	0	33	0	0	0	169	0	169	0	0	0	0	0	0	0	30	0	0	0	30	233
% App. Total	0	100	0	0	0		6.1	87.9	6.1	0	0		0	0	0	100	0		0	0	0	0	0		0	100	0	0	0		
PHF	.000	.250	.000	.000	.000	.250	.500	.806	.250	.000	.000	.825	.000	.000	.000	.782	.000	.782	.000	.000	.000	.000	.000	.000	.000	.682	.000	.000	.000	.682	.857

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896534 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896534
Start Date : 9/25/2014
Page No : 4



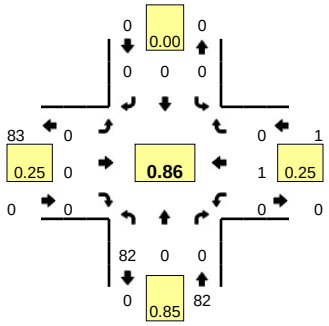
Type of peak hour being reported: Intersection Peak

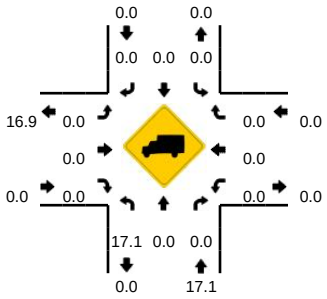
Method for determining peak hour: Total Entering Volume

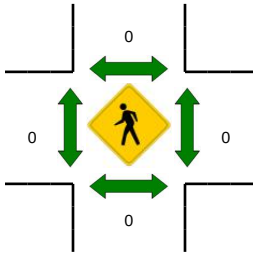
LOCATION: I-85 SB Off-Ramp -- Wilcox Ave
CITY/STATE: Gaffney, SC

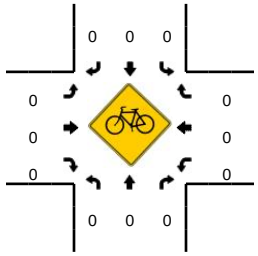
QC JOB #: 12896532
DATE: Thu, Sep 25 2014

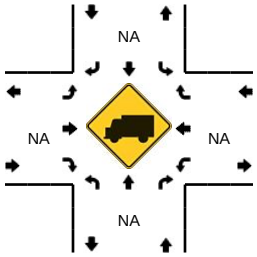
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

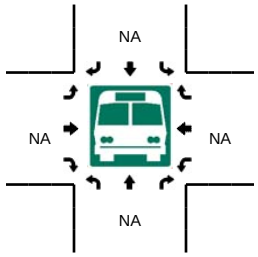












15-Min Count Period Beginning At	I-85 SB Off-Ramp (Northbound)				I-85 SB Off-Ramp (Southbound)				Wilcox Ave (Eastbound)				Wilcox Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
4:15 PM	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	
4:30 PM	18	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	19	
4:45 PM	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	83
5:00 PM	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	69
5:15 PM	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	67
5:30 PM	15	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	18	66
5:45 PM	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	58

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96
Heavy Trucks	12	0	0		0	0	0		0	0	0		0	0	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

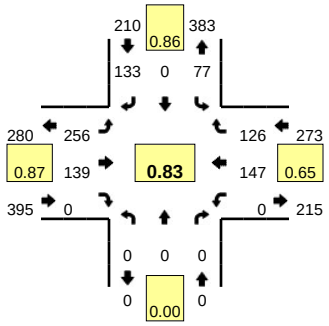
Type of peak hour being reported: Intersection Peak

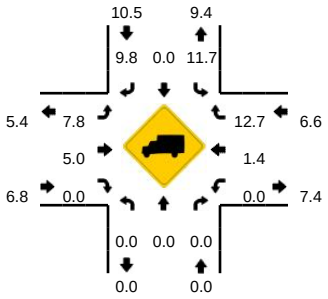
Method for determining peak hour: Total Entering Volume

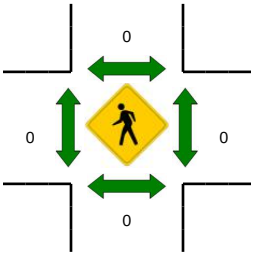
LOCATION: Shelby Hwy -- Victory Trail Rd/Shelby Hwy
CITY/STATE: Gaffney, SC

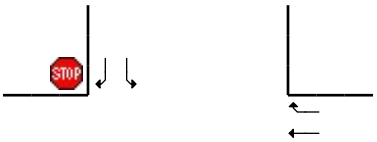
QC JOB #: 12896548
DATE: Thu, Sep 25 2014

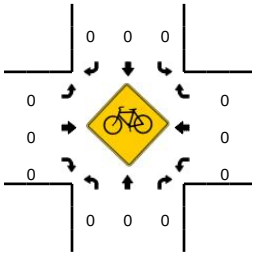
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

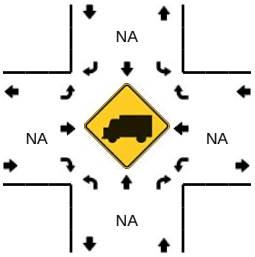


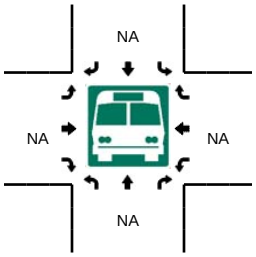












15-Min Count Period Beginning At	Shelby Hwy (Northbound)				Shelby Hwy (Southbound)				Victory Trail Rd/Shelby Hwy (Eastbound)				Victory Trail Rd/Shelby Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	11	0	36	1	70	43	0	0	0	69	36	0	266	
4:15 PM	0	0	0	0	19	0	38	0	61	40	0	0	0	36	40	0	234	
4:30 PM	0	0	0	0	18	0	33	0	61	33	0	0	0	21	29	0	195	
4:45 PM	0	0	0	0	28	0	26	0	64	23	0	0	0	21	21	0	183	878
5:00 PM	0	0	0	0	14	0	38	1	58	37	0	0	0	29	41	0	218	830
5:15 PM	0	0	0	0	19	0	35	0	82	33	0	0	0	26	21	0	216	812
5:30 PM	0	0	0	0	27	0	43	0	59	37	0	0	0	24	28	0	218	835
5:45 PM	0	0	0	0	20	0	43	0	60	22	0	0	0	22	23	0	190	842

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	44	0	144	4	280	172	0	0	0	276	144	0	1064
Heavy Trucks	0	0	0		4	0	8		24	0	0		0	8	16		60
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

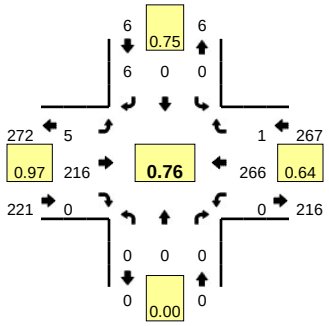
Type of peak hour being reported: Intersection Peak

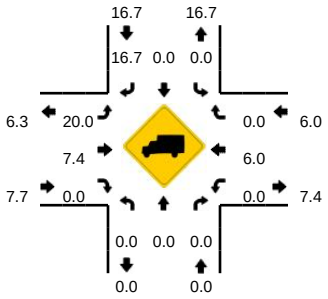
Method for determining peak hour: Total Entering Volume

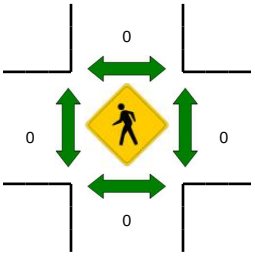
LOCATION: SC 18 -- Wind Hill Rd
CITY/STATE: Gaffney, SC

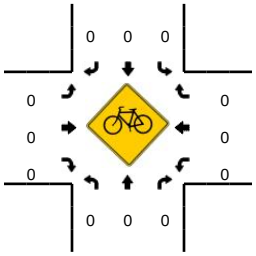
QC JOB #: 12896536
DATE: Thu, Sep 25 2014

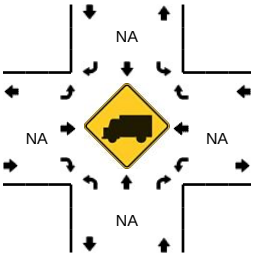
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

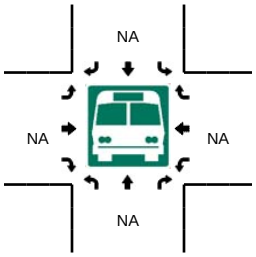












15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Wind Hill Rd (Eastbound)				Wind Hill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	1	0	0	57	0	0	0	104	0	0	162	
4:15 PM	0	0	0	0	0	0	1	0	2	55	0	0	0	73	0	0	131	
4:30 PM	0	0	0	0	0	0	2	0	1	53	0	0	0	50	1	0	107	
4:45 PM	0	0	0	0	0	0	2	0	2	51	0	0	0	39	0	0	94	494
5:00 PM	0	0	0	0	0	0	0	0	1	48	0	0	0	71	0	0	120	452
5:15 PM	0	0	0	0	0	0	1	0	0	50	0	0	0	46	0	0	97	418
5:30 PM	0	0	0	0	1	0	0	0	2	65	0	0	0	53	0	0	121	432
5:45 PM	0	0	0	0	0	0	1	0	0	43	0	0	0	44	0	0	88	426

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	4	0	0	228	0	0	0	416	0	0	648
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	24	0		28
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

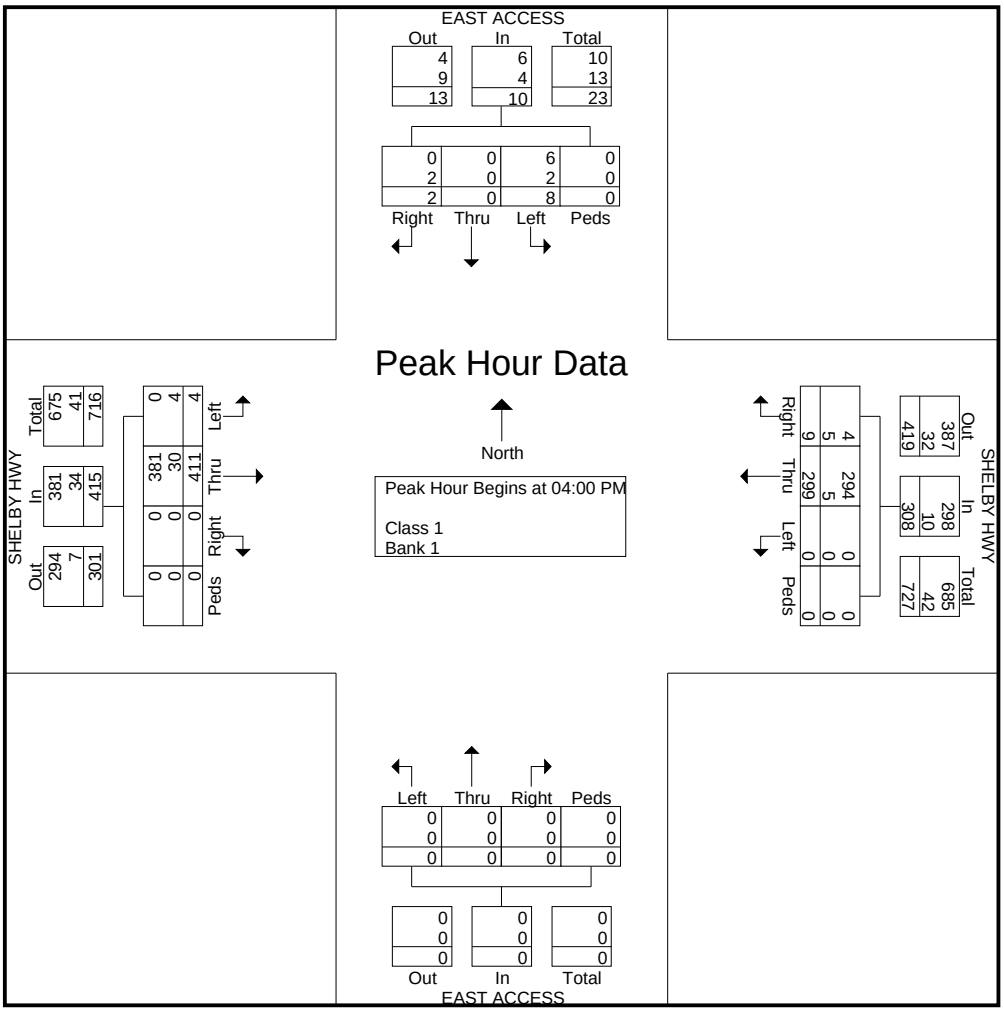
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #2 EACCESS&SHELBYPM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	EAST ACCESS Southbound					SHELBY HWY Westbound					EAST ACCESS Northbound					SHELBY HWY Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	2	0	2	3	**116**	0	0	**119**	0	0	0	0	0	0	101	0	0	101	**222**
04:15 PM	0	0	2	0	2	**4**	48	0	0	52	0	0	0	0	0	0	**122**	**2**	0	**124**	178
04:30 PM	0	0	1	0	1	1	72	0	0	73	0	0	0	0	0	0	108	1	0	109	183
04:45 PM	**2**	0	**3**	0	**5**	1	63	0	0	64	0	0	0	0	0	0	80	1	0	81	150
Total Volume	2	0	8	0	10	9	299	0	0	308	0	0	0	0	0	0	411	4	0	415	733
% App. Total	20	0	80	0		2.9	97.1	0	0		0	0	0	0		0	99	1	0		
PHF	.250	.000	.667	.000	.500	.563	.644	.000	.000	.647	.000	.000	.000	.000	.000	.000	.842	.500	.000	.837	.825
Class 1	0	0	6	0	6	4	294	0	0	298	0	0	0	0	0	0	381	0	0	381	685
% Class 1			75.0	0	60.0	44.4	98.3	0	0	96.8	0	0	0	0	0	0	92.7	0	0	91.8	93.5
Bank 1	2	0	2	0	4	5	5	0	0	10	0	0	0	0	0	0	30	4	0	34	48
% Bank 1	100	0	25.0	0	40.0	55.6	1.7	0	0	3.2	0	0	0	0	0	0	7.3	100	0	8.2	6.5

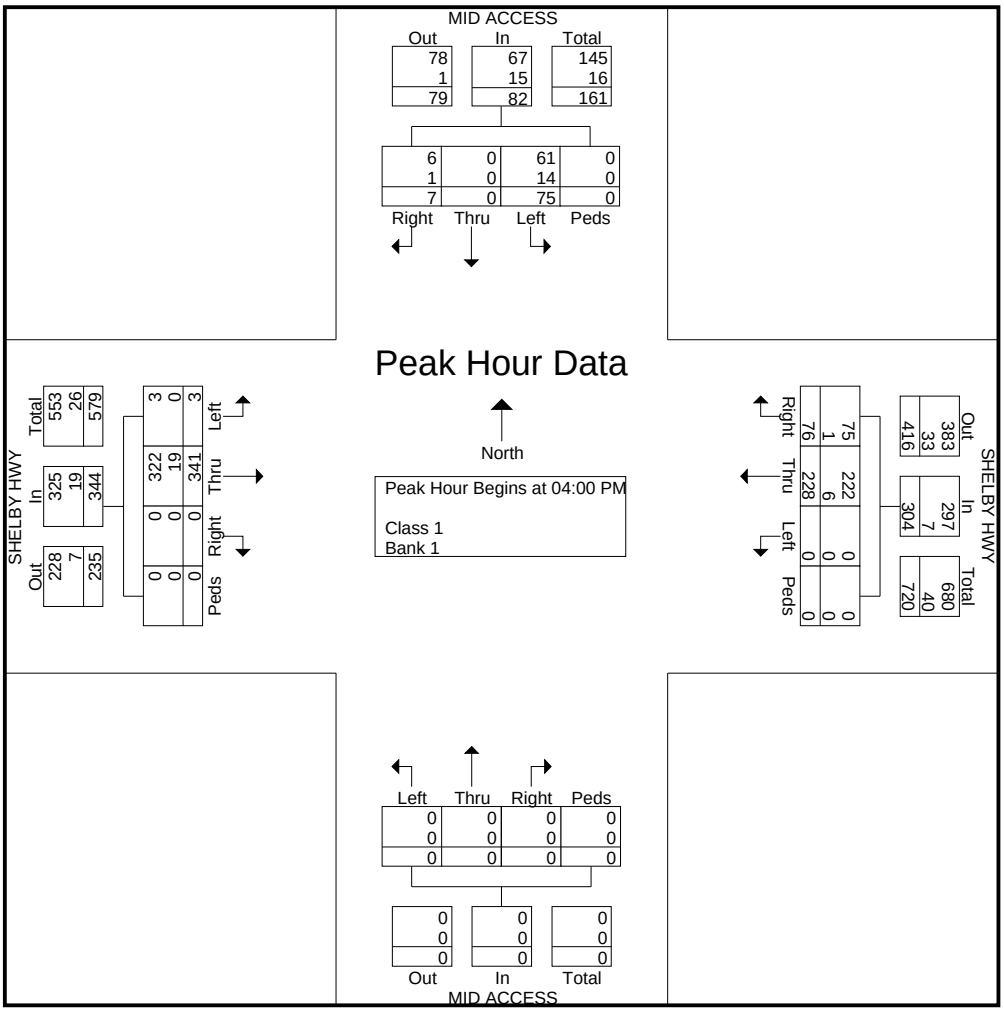


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #2 MACCESS&SHELBYPM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	MID ACCESS Southbound					SHELBY HWY Westbound					MID ACCESS Northbound					SHELBY HWY Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**2**	0	21	0	23	**28**	**79**	0	0	**107**	0	0	0	0	0	0	79	1	0	80	**210**
04:15 PM	1	0	**23**	0	**24**	17	44	0	0	61	0	0	0	0	0	0	92	0	0	92	177
04:30 PM	2	0	18	0	20	17	51	0	0	68	0	0	0	0	0	0	**94**	**2**	0	**96**	184
04:45 PM	2	0	13	0	15	14	54	0	0	68	0	0	0	0	0	0	76	0	0	76	159
Total Volume	7	0	75	0	82	76	228	0	0	304	0	0	0	0	0	0	341	3	0	344	730
% App. Total	8.5	0	91.5	0		25	75	0	0		0	0	0	0		0	99.1	0.9	0		
PHF	.875	.000	.815	.000	.854	.679	.722	.000	.000	.710	.000	.000	.000	.000	.000	.000	.907	.375	.000	.896	.869
Class 1	6	0	61	0	67	75	222	0	0	297	0	0	0	0	0	0	322	3	0	325	689
% Class 1	85.7	0	81.3	0	81.7	98.7	97.4	0	0	97.7	0	0	0	0	0	0	94.4	100	0	94.5	94.4
Bank 1	1	0	14	0	15	1	6	0	0	7	0	0	0	0	0	0	19	0	0	19	41
% Bank 1	14.3	0	18.7	0	18.3	1.3	2.6	0	0	2.3	0	0	0	0	0	0	5.6	0	0	5.5	5.6

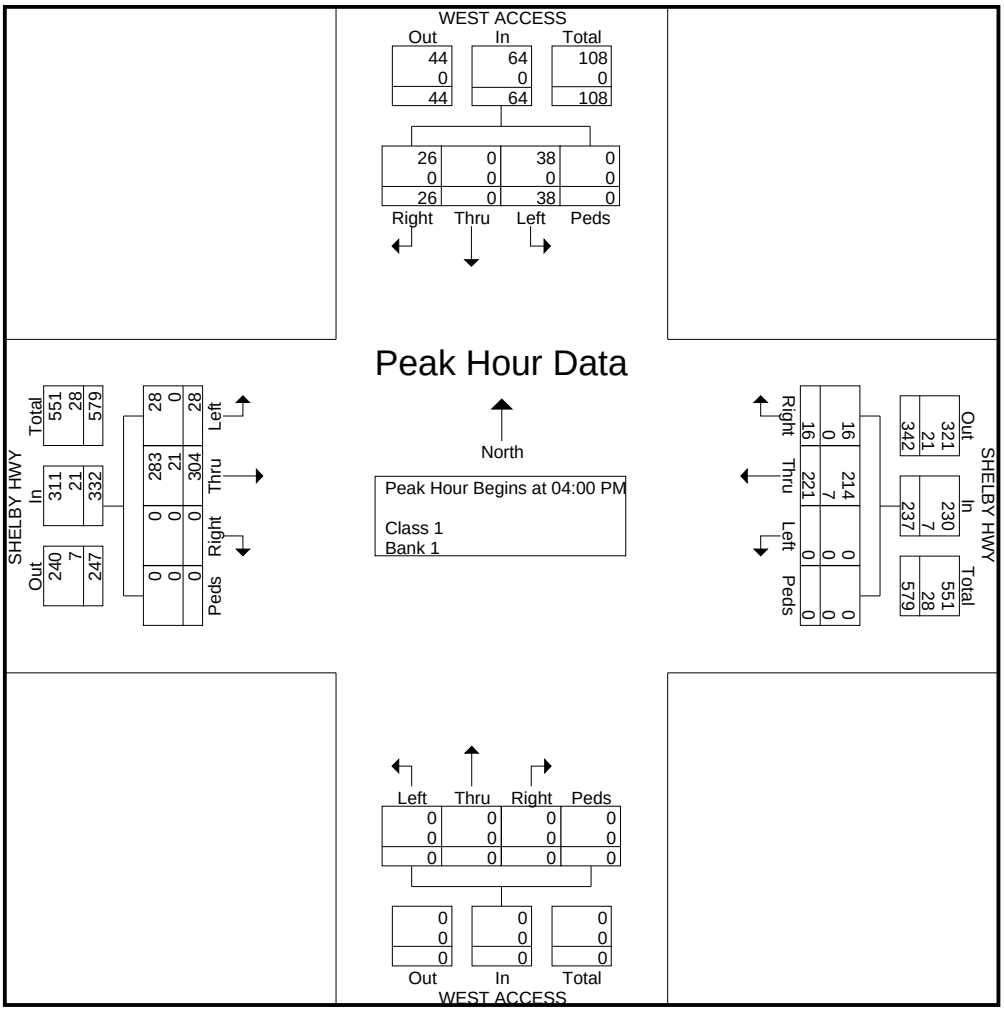


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #3 WACCESS&SHELBYHWYPM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	WEST ACCESS Southbound					SHELBY HWY Westbound					WEST ACCESS Northbound					SHELBY HWY Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**10**	0	10	0	**20**	**8**	**76**	0	0	**84**	0	0	0	0	0	0	66	6	0	72	**176**
04:15 PM	6	0	**12**	0	18	1	44	0	0	45	0	0	0	0	0	0	**86**	**11**	0	**97**	160
04:30 PM	6	0	12	0	18	4	50	0	0	54	0	0	0	0	0	0	82	8	0	90	162
04:45 PM	4	0	4	0	8	3	51	0	0	54	0	0	0	0	0	0	70	3	0	73	135
Total Volume	26	0	38	0	64	16	221	0	0	237	0	0	0	0	0	0	304	28	0	332	633
% App. Total	40.6	0	59.4	0		6.8	93.2	0	0		0	0	0	0		0	91.6	8.4	0		
PHF	.650	.000	.792	.000	.800	.500	.727	.000	.000	.705	.000	.000	.000	.000	.000	.000	.884	.636	.000	.856	.899
Class 1	26	0	38	0	64	16	214	0	0	230	0	0	0	0	0	0	283	28	0	311	605
% Class 1							96.8	0	0	97.0	0	0	0	0	0	0	93.1	100	0	93.7	95.6
Bank 1	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	21	0	0	21	28
% Bank 1	0	0	0	0	0	0	3.2	0	0	3.0	0	0	0	0	0	0	6.9	0	0	6.3	4.4



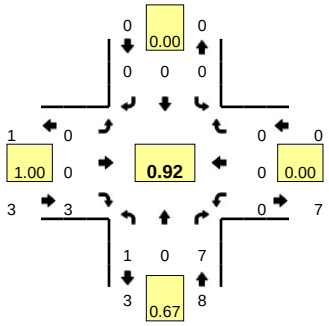
Type of peak hour being reported: Intersection Peak

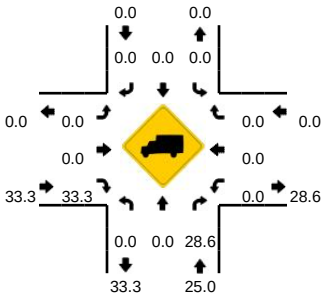
Method for determining peak hour: Total Entering Volume

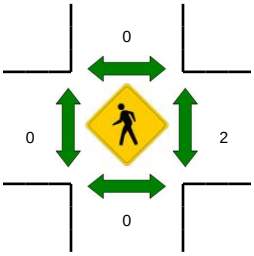
LOCATION: Frontage Rd -- Gaffney Ferry Rd
CITY/STATE: Gaffney, SC

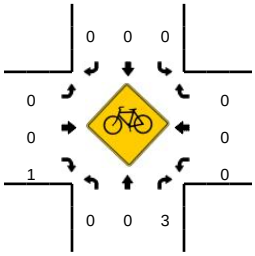
QC JOB #: 12896546
DATE: Thu, Sep 25 2014

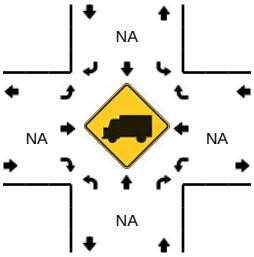
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

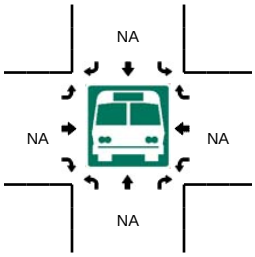












15-Min Count Period Beginning At	Frontage Rd (Northbound)				Frontage Rd (Southbound)				Gaffney Ferry Rd (Eastbound)				Gaffney Ferry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	3	
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
4:45 PM	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	3	7
5:00 PM	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	3	10
5:15 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10
5:30 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	11
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	8	0	0	0	0	0	0	0	4	0	0	0	0	0	12
Heavy Trucks	0	0	0		0	0	0		0	0	4		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	1		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

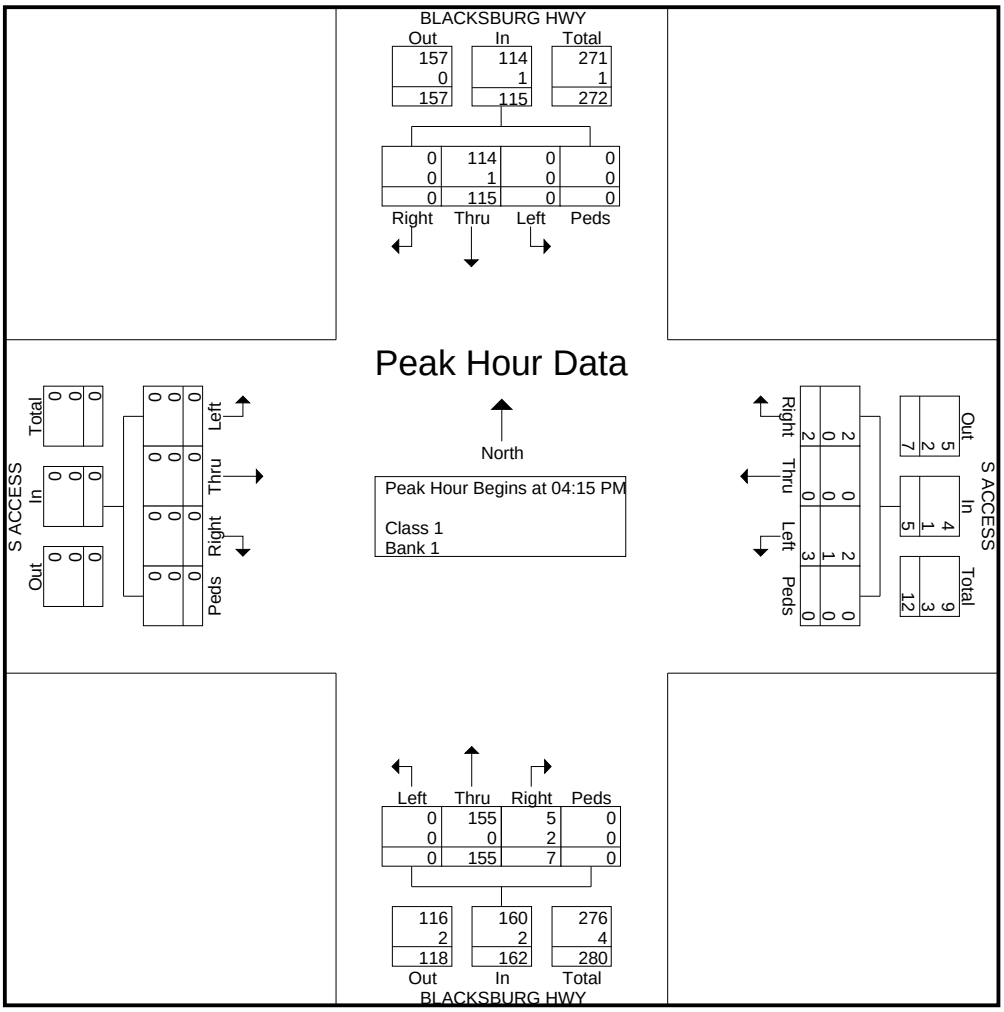
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #4 Blacksburg Hwy&Station Dw 1PM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	BLACKSBURG HWY Southbound					S ACCESS Westbound					BLACKSBURG HWY Northbound					S ACCESS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	**31**	0	0	**31**	**1**	0	**1**	0	**2**	0	32	0	0	32	0	0	0	0	0	65
04:30 PM	0	24	0	0	24	0	0	1	0	1	**4**	44	0	0	48	0	0	0	0	0	73
04:45 PM	0	29	0	0	29	0	0	1	0	1	2	25	0	0	27	0	0	0	0	0	57
05:00 PM	0	31	0	0	31	1	0	0	0	1	1	**54**	0	0	**55**	0	0	0	0	0	**87**
Total Volume	0	115	0	0	115	2	0	3	0	5	7	155	0	0	162	0	0	0	0	0	282
% App. Total	0	100	0	0		40	0	60	0		4.3	95.7	0	0		0	0	0	0		
PHF	.000	.927	.000	.000	.927	.500	.000	.750	.000	.625	.438	.718	.000	.000	.736	.000	.000	.000	.000	.000	.810
Class 1	0	114	0	0	114	2	0	2	0	4	5	155	0	0	160	0	0	0	0	0	278
% Class 1		99.1	0	0	99.1	100	0	66.7	0	80.0	71.4	100	0	0	98.8	0	0	0	0	0	98.6
Bank 1	0	1	0	0	1	0	0	1	0	1	2	0	0	0	2	0	0	0	0	0	4
% Bank 1	0	0.9	0	0	0.9	0	0	33.3	0	20.0	28.6	0	0	0	1.2	0	0	0	0	0	1.4

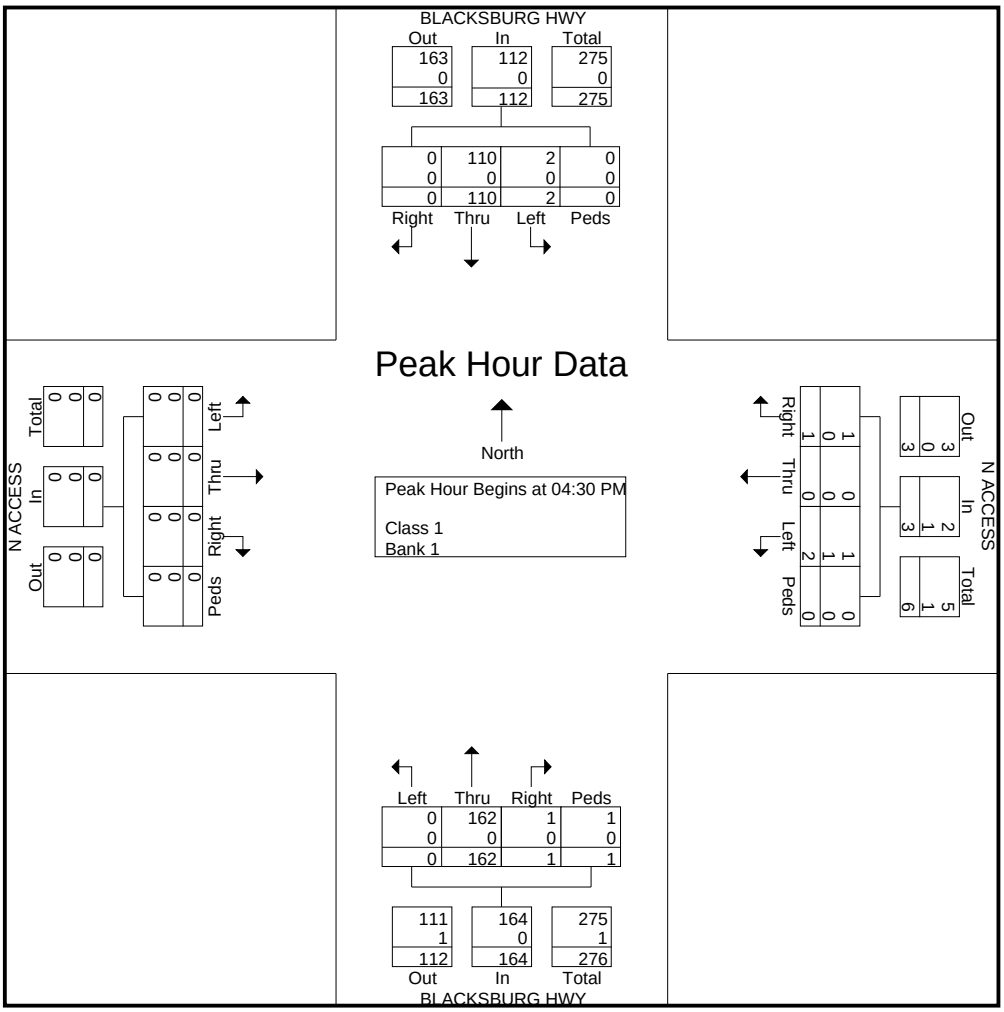


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #5 Blacksburg Hwy&Station DW 2PM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	BLACKSBURG HWY Southbound					N ACCESS Westbound					BLACKSBURG HWY Northbound					N ACCESS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	25	**1**	0	26	0	0	**1**	0	1	0	46	0	0	46	0	0	0	0	0	73
04:45 PM	0	**30**	0	0	**30**	0	0	0	0	0	0	26	0	0	26	0	0	0	0	0	56
05:00 PM	0	28	0	0	28	**1**	0	1	0	**2**	0	**54**	0	**1**	**55**	0	0	0	0	0	**85**
05:15 PM	0	27	1	0	28	0	0	0	0	0	**1**	36	0	0	37	0	0	0	0	0	65
Total Volume	0	110	2	0	112	1	0	2	0	3	1	162	0	1	164	0	0	0	0	0	279
% App. Total	0	98.2	1.8	0		33.3	0	66.7	0		0.6	98.8	0	0.6		0	0	0	0		
PHF	.000	.917	.500	.000	.933	.250	.000	.500	.000	.375	.250	.750	.000	.250	.745	.000	.000	.000	.000	.000	.821
Class 1	0	110	2	0	112	1	0	1	0	2	1	162	0	1	164	0	0	0	0	0	278
% Class 1								50.0	0	66.7	100	100	0	100	100	0	0	0	0	0	99.6
Bank 1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
% Bank 1	0	0	0	0	0	0	0	50.0	0	33.3	0	0	0	0	0	0	0	0	0	0	0.4

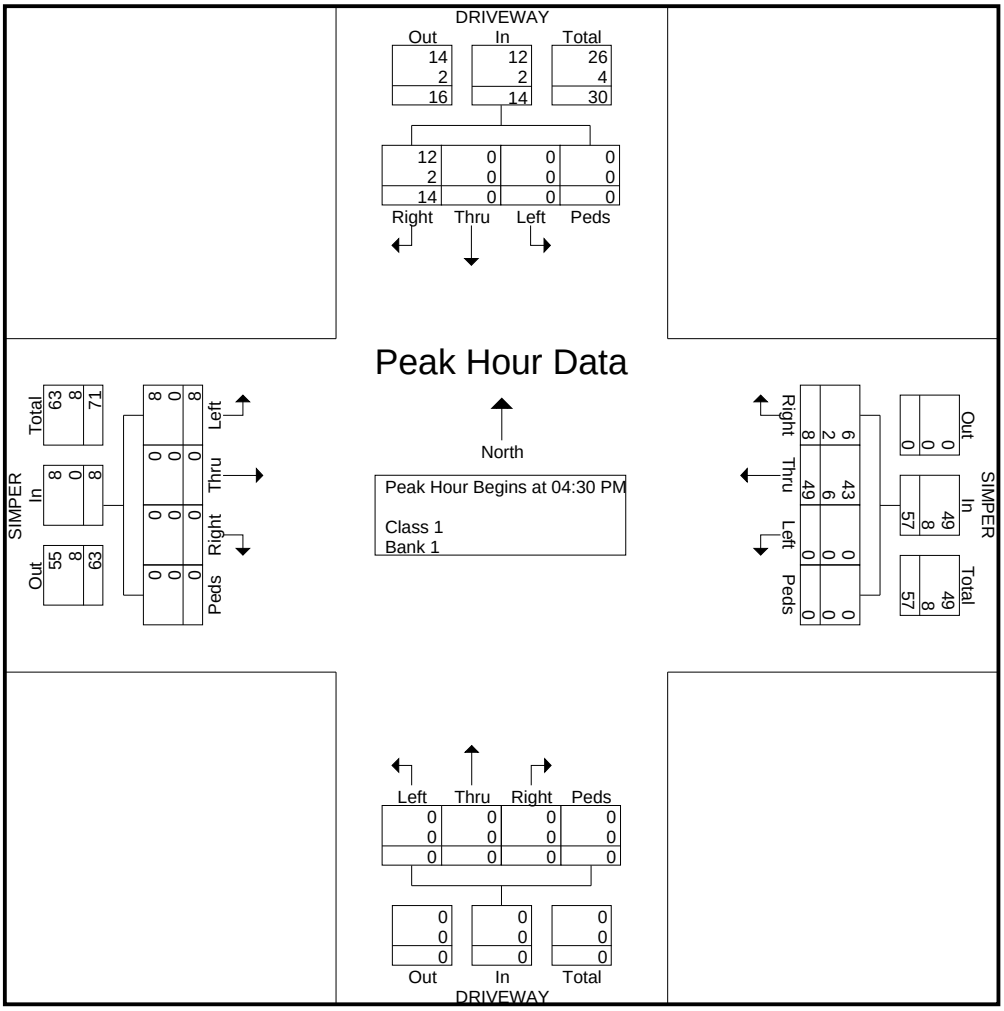


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #6 Retail Store&I-85 SB Off RampPM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	DRIVEWAY Southbound					SIMPER Westbound					DRIVEWAY Northbound					SIMPER Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	1	0	0	0	1	1	15	0	0	16	0	0	0	0	0	0	0	**2**	0	**2**	19
04:45 PM	**5**	0	0	0	**5**	2	5	0	0	7	0	0	0	0	0	0	0	2	0	2	14
05:00 PM	5	0	0	0	5	0	11	0	0	11	0	0	0	0	0	0	0	2	0	2	18
05:15 PM	3	0	0	0	3	**5**	**18**	0	0	**23**	0	0	0	0	0	0	0	2	0	2	**28**
Total Volume	14	0	0	0	14	8	49	0	0	57	0	0	0	0	0	0	0	8	0	8	79
% App. Total	100	0	0	0		14	86	0	0		0	0	0	0		0	0	100	0		
PHF	.700	.000	.000	.000	.700	.400	.681	.000	.000	.620	.000	.000	.000	.000	.000	.000	.000	1.00	.000	1.00	.705
Class 1	12	0	0	0	12	6	43	0	0	49	0	0	0	0	0	0	0	8	0	8	69
% Class 1	85.7	0	0	0	85.7	75.0	87.8	0	0	86.0	0	0	0	0	0	0	0	100	0	100	87.3
Bank 1	2	0	0	0	2	2	6	0	0	8	0	0	0	0	0	0	0	0	0	0	10
% Bank 1	14.3	0	0	0	14.3	25.0	12.2	0	0	14.0	0	0	0	0	0	0	0	0	0	0	12.7

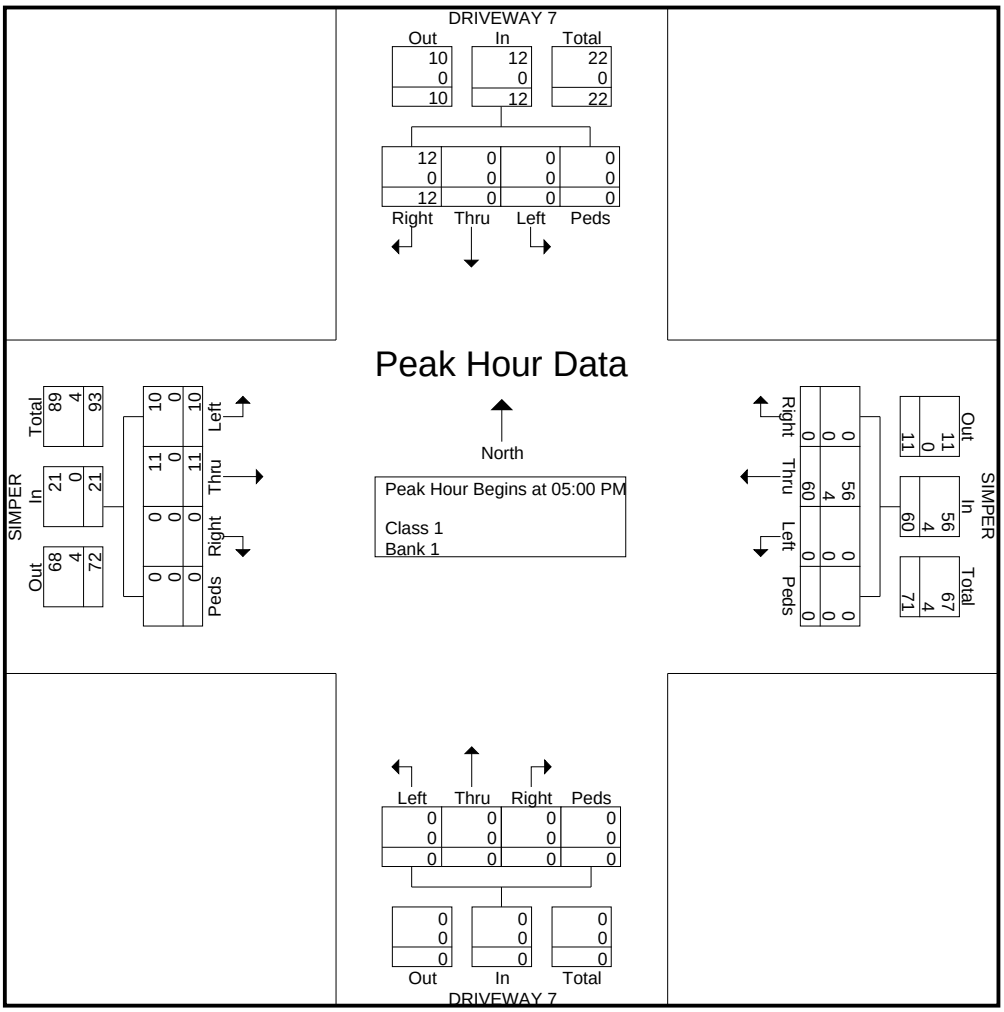


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #7 Service Dw 1&I-85 SB Off RampPM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	DRIVEWAY 7 Southbound					SIMPER Westbound					DRIVEWAY 7 Northbound					SIMPER Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	4	0	0	0	4	0	17	0	0	17	0	0	0	0	0	0	2	3	0	5	**26**
05:15 PM	0	0	0	0	0	0	**18**	0	0	**18**	0	0	0	0	0	0	1	2	0	3	21
05:30 PM	**5**	0	0	0	**5**	0	14	0	0	14	0	0	0	0	0	0	3	1	0	4	23
05:45 PM	3	0	0	0	3	0	11	0	0	11	0	0	0	0	0	0	**5**	**4**	0	**9**	23
Total Volume	12	0	0	0	12	0	60	0	0	60	0	0	0	0	0	0	11	10	0	21	93
% App. Total	100	0	0	0		0	100	0	0		0	0	0	0		0	52.4	47.6	0		
PHF	.600	.000	.000	.000	.600	.000	.833	.000	.000	.833	.000	.000	.000	.000	.000	.000	.550	.625	.000	.583	.894
Class 1	12	0	0	0	12	0	56	0	0	56	0	0	0	0	0	0	11	10	0	21	89
% Class 1							93.3	0	0	93.3	0	0	0	0	0	0	100	100	0	100	95.7
Bank 1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
% Bank 1	0	0	0	0	0	0	6.7	0	0	6.7	0	0	0	0	0	0	0	0	0	0	4.3

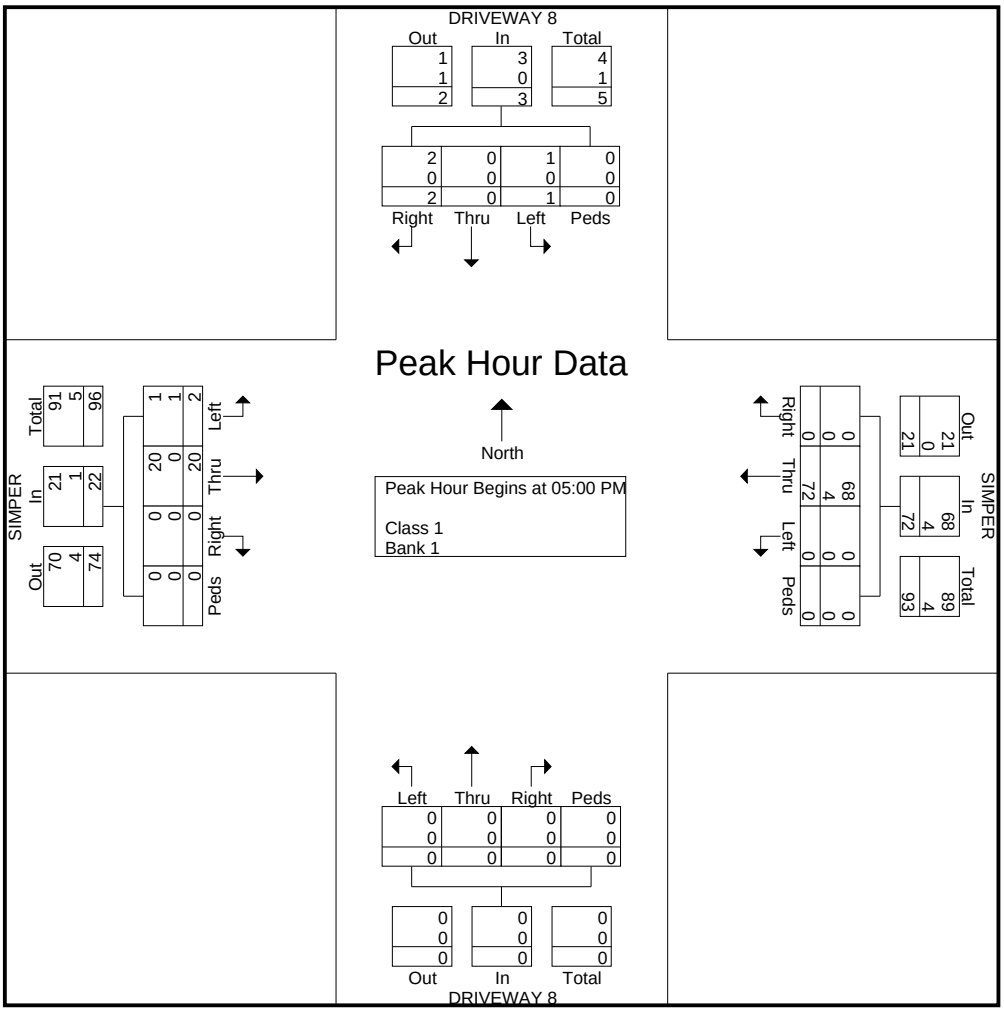


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #8 Service DW2 @ I-85 SB off RampPM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	DRIVEWAY 8 Southbound					SIMPER Westbound					DRIVEWAY 8 Northbound					SIMPER Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	**19**	0	0	**19**	0	0	0	0	0	0	5	0	0	5	24
05:15 PM	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	0	4	0	0	4	23
05:30 PM	**1**	0	0	0	1	0	18	0	0	18	0	0	0	0	0	0	4	**1**	0	5	24
05:45 PM	1	0	**1**	0	**2**	0	16	0	0	16	0	0	0	0	0	0	**7**	1	0	**8**	**26**
Total Volume	2	0	1	0	3	0	72	0	0	72	0	0	0	0	0	0	20	2	0	22	97
% App. Total	66.7	0	33.3	0		0	100	0	0		0	0	0	0		0	90.9	9.1	0		
PHF	.500	.000	.250	.000	.375	.000	.947	.000	.000	.947	.000	.000	.000	.000	.000	.000	.714	.500	.000	.688	.933
Class 1	2	0	1	0	3	0	68	0	0	68	0	0	0	0	0	0	20	1	0	21	92
% Class 1							94.4	0	0	94.4	0	0	0	0	0	0	100	50.0	0	95.5	94.8
Bank 1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	5
% Bank 1	0	0	0	0	0	0	5.6	0	0	5.6	0	0	0	0	0	0	0	50.0	0	4.5	5.2



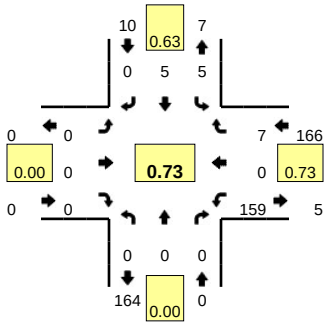
Type of peak hour being reported: Intersection Peak

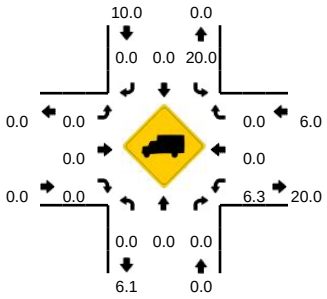
Method for determining peak hour: Total Entering Volume

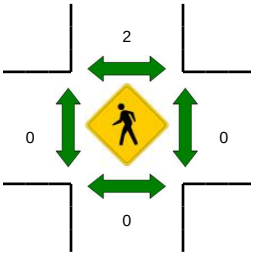
LOCATION: I-85 SB On-Ramp -- Crawford Rd
CITY/STATE: Blacksburg, SC

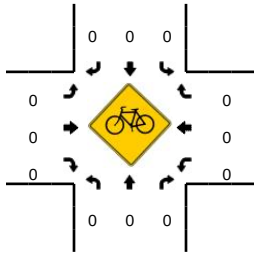
QC JOB #: 12896544
DATE: Thu, Sep 25 2014

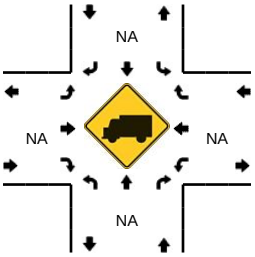
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

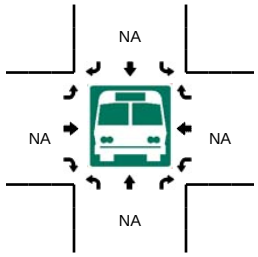












15-Min Count Period Beginning At	I-85 SB On-Ramp (Northbound)				I-85 SB On-Ramp (Southbound)				Crawford Rd (Eastbound)				Crawford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	2	1	0	0	0	0	0	0	53	0	4	0	60	
4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	35	0	0	0	36	
4:30 PM	0	0	0	0	1	3	0	0	0	0	0	0	35	0	0	0	39	
4:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	36	0	3	0	41	176
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	56	0	0	0	57	173
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	24	0	2	0	27	164
5:30 PM	0	0	0	0	1	1	0	0	0	0	0	0	19	0	3	0	24	149
5:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	29	0	1	0	32	140

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	8	4	0	0	0	0	0	0	212	0	16	0	240
Heavy Trucks	0	0	0		4	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Include EBR from Crawford to I-85.

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

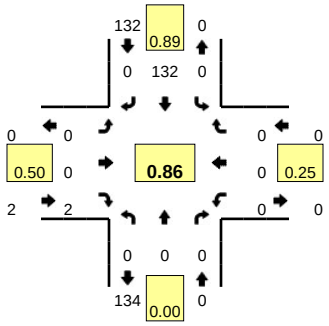
LOCATION: I-85 NB Off-Ramp/Frontage Rd -- Frontage Rd/Milliken Rd

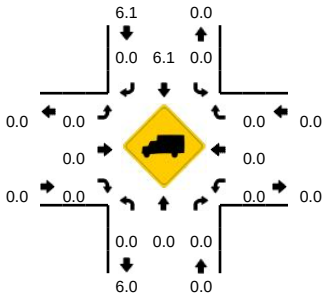
QC JOB #: 12896538

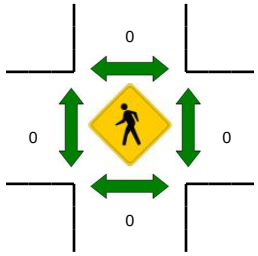
CITY/STATE: Blacksburg, SC

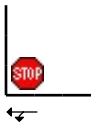
DATE: Thu, Sep 25 2014

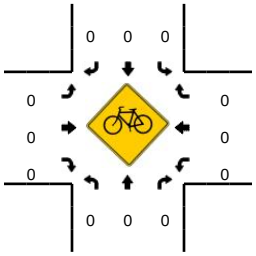
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

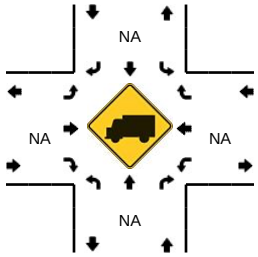


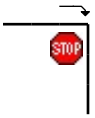


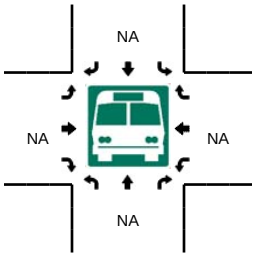












15-Min Count Period Beginning At	I-85 NB Off-Ramp/Frontage Rd (Northbound)				I-85 NB Off-Ramp/Frontage Rd (Southbound)				Frontage Rd/Milliken Rd (Eastbound)				Frontage Rd/Milliken Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	24	0	0	0	0	2	0	0	1	0	0	27	
4:15 PM	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	24	
4:30 PM	0	0	0	0	0	31	0	0	0	0	0	0	0	0	0	0	31	
4:45 PM	0	0	0	0	0	35	0	0	0	0	0	0	0	0	0	0	35	117
5:00 PM	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	37	127
5:15 PM	0	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0	23	126
5:30 PM	0	0	0	0	0	37	0	0	0	0	2	0	0	0	0	0	39	134
5:45 PM	0	0	0	0	0	26	0	0	0	0	2	0	0	0	0	0	28	127

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	148	0	0	0	0	8	0	0	0	0	0	156
Heavy Trucks	0	0	0		0	8	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

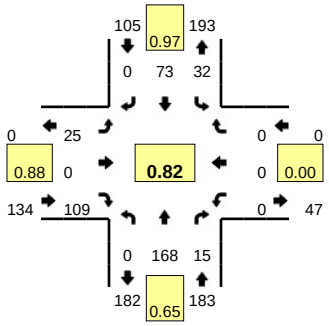
LOCATION: Blacksburg Hwy -- I-85 NB On-Ramp/Frontage Rd/Mill

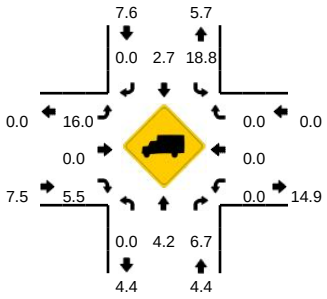
QC JOB #: 12896540

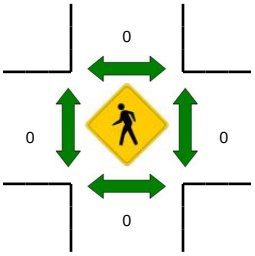
CITY/STATE: Blacksburg, SC

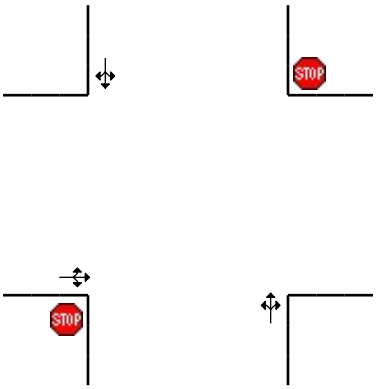
DATE: Thu, Sep 25 2014

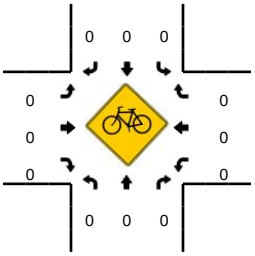
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

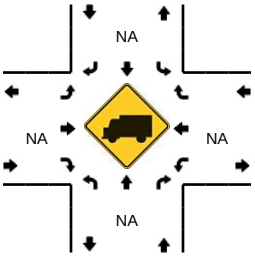


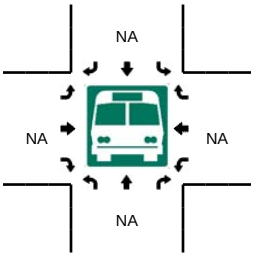












15-Min Count Period Beginning At	Blacksburg Hwy (Northbound)				Blacksburg Hwy (Southbound)				I-85 NB On-Ramp/Frontage Rd/Mill (Eastbound)				I-85 NB On-Ramp/Frontage Rd/Mill (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	76	9	0	4	15	1	0	7	0	20	0	0	0	0	0	132	
4:15 PM	0	42	7	0	6	16	0	0	3	0	21	0	0	0	0	0	95	
4:30 PM	0	41	2	0	4	17	0	0	11	0	19	0	0	0	0	0	94	
4:45 PM	0	40	3	0	3	18	0	0	6	0	30	0	0	0	0	0	100	421
5:00 PM	0	56	7	0	9	20	0	0	5	0	31	0	0	0	0	0	128	417
5:15 PM	0	44	4	0	8	18	0	0	4	0	20	0	0	0	0	0	98	420
5:30 PM	0	28	1	0	12	17	0	0	10	0	28	0	0	0	0	0	96	422
5:45 PM	0	38	1	0	5	23	0	0	9	0	21	0	0	0	0	0	97	419

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	224	28	0	36	80	0	0	20	0	124	0	0	0	0	0	512
Heavy Trucks	0	8	0		0	0	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

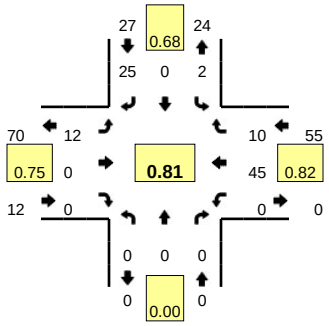
Type of peak hour being reported: Intersection Peak

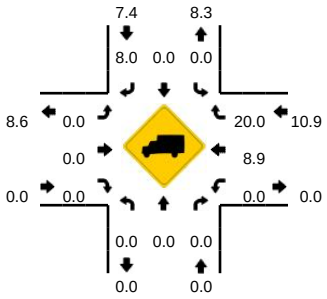
Method for determining peak hour: Total Entering Volume

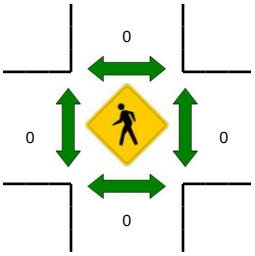
LOCATION: Store Dwys (Entire Frontage) -- I-85 SB Off-Ramp
CITY/STATE: Blacksburg, SC

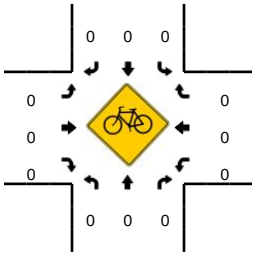
QC JOB #: 12896542
DATE: Thu, Sep 25 2014

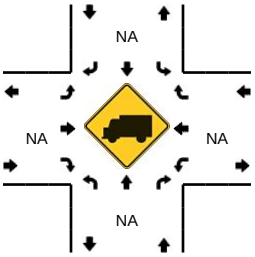
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

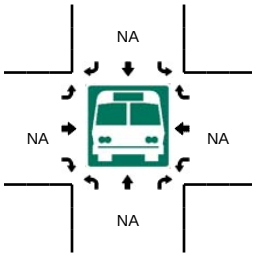












15-Min Count Period Beginning At	Store Dwys (Entire Frontage) (Northbound)				Store Dwys (Entire Frontage) (Southbound)				I-85 SB Off-Ramp (Eastbound)				I-85 SB Off-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	7	1	5	0	0	0	0	10	2	0	25	
4:15 PM	0	0	0	0	0	0	2	1	2	0	0	0	0	7	5	0	17	
4:30 PM	0	0	0	0	0	0	9	1	3	0	0	0	0	7	3	0	23	
4:45 PM	0	0	0	0	0	0	4	0	1	0	0	0	0	14	3	0	22	87
5:00 PM	0	0	0	0	0	0	7	1	5	0	0	0	0	13	3	0	29	91
5:15 PM	0	0	0	0	0	0	5	0	3	0	0	0	0	11	1	0	20	94
5:30 PM	0	0	0	0	0	0	4	1	4	0	0	0	0	8	3	0	20	91
5:45 PM	0	0	0	0	0	0	4	0	3	0	0	0	0	9	4	0	20	89

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	28	4	20	0	0	0	0	52	12	0	116
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	4		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Try to get best coverage of ramps/driveways in case driveway volumes are needed.

Report generated on 10/7/2014 1:32 AM

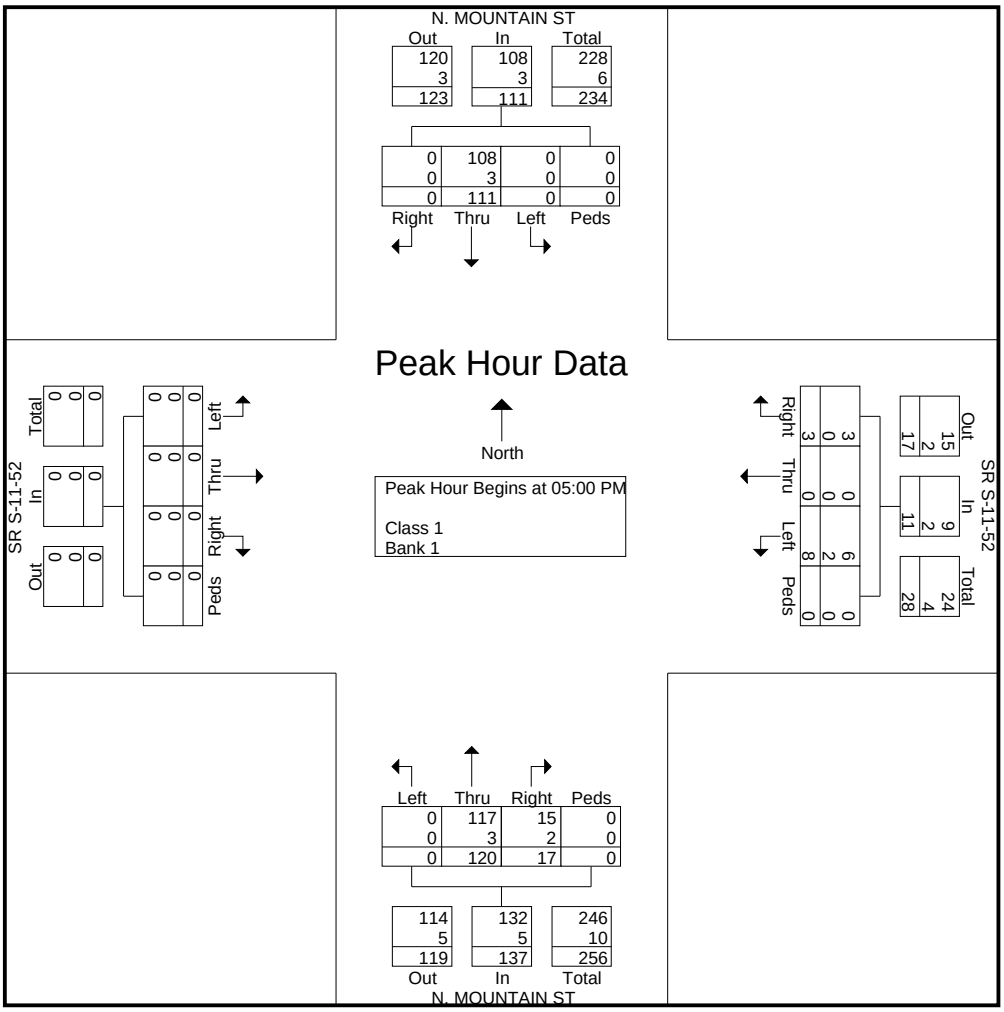
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #9 N Mtn St&R S-11PM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	N. MOUNTAIN ST Southbound					SR S-11-52 Westbound					N. MOUNTAIN ST Northbound					SR S-11-52 Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	**29**	0	0	**29**	**1**	0	2	0	3	3	24	0	0	27	0	0	0	0	0	59
05:15 PM	0	24	0	0	24	1	0	**3**	0	**4**	3	31	0	0	34	0	0	0	0	0	62
05:30 PM	0	29	0	0	29	0	0	3	0	3	**7**	**33**	0	0	**40**	0	0	0	0	0	**72**
05:45 PM	0	29	0	0	29	1	0	0	0	1	4	32	0	0	36	0	0	0	0	0	66
Total Volume	0	111	0	0	111	3	0	8	0	11	17	120	0	0	137	0	0	0	0	0	259
% App. Total	0	100	0	0		27.3	0	72.7	0		12.4	87.6	0	0		0	0	0	0		
PHF	.000	.957	.000	.000	.957	.750	.000	.667	.000	.688	.607	.909	.000	.000	.856	.000	.000	.000	.000	.000	.899
Class 1	0	108	0	0	108	3	0	6	0	9	15	117	0	0	132	0	0	0	0	0	249
% Class 1		97.3	0	0	97.3	100	0	75.0	0	81.8	88.2	97.5	0	0	96.4	0	0	0	0	0	96.1
Bank 1	0	3	0	0	3	0	0	2	0	2	2	3	0	0	5	0	0	0	0	0	10
% Bank 1	0	2.7	0	0	2.7	0	0	25.0	0	18.2	11.8	2.5	0	0	3.6	0	0	0	0	0	3.9

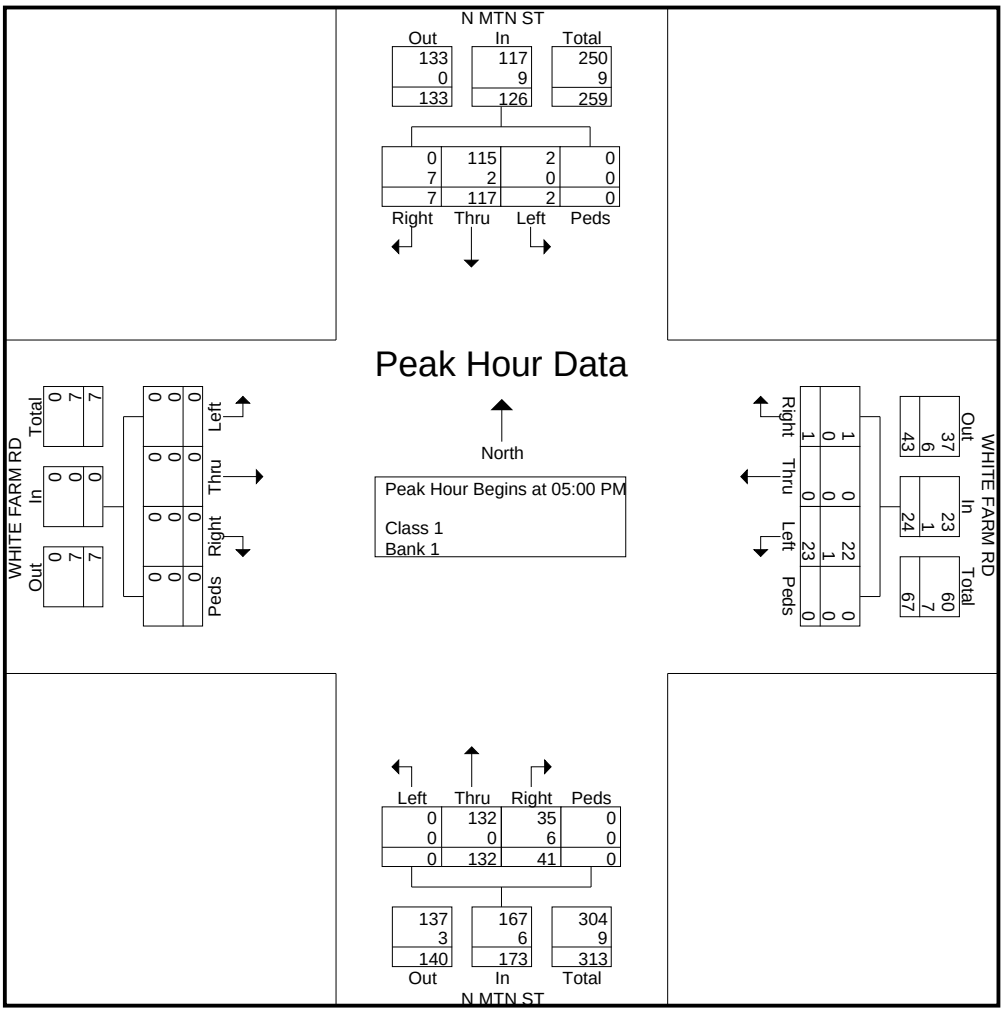


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #10 MTN&WHITEFARMPM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	N MTN ST Southbound					WHITE FARM RD Westbound					N MTN ST Northbound					WHITE FARM RD Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	2	**32**	**1**	0	**35**	0	0	3	0	3	9	24	0	0	33	0	0	0	0	0	71
05:15 PM	**3**	25	1	0	29	0	0	7	0	7	10	35	0	0	45	0	0	0	0	0	81
05:30 PM	2	30	0	0	32	0	0	4	0	4	**13**	36	0	0	**49**	0	0	0	0	0	85
05:45 PM	0	30	0	0	30	**1**	0	**9**	0	**10**	9	**37**	0	0	46	0	0	0	0	0	**86**
Total Volume	7	117	2	0	126	1	0	23	0	24	41	132	0	0	173	0	0	0	0	0	323
% App. Total	5.6	92.9	1.6	0		4.2	0	95.8	0		23.7	76.3	0	0		0	0	0	0		
PHF	.583	.914	.500	.000	.900	.250	.000	.639	.000	.600	.788	.892	.000	.000	.883	.000	.000	.000	.000	.000	.939
Class 1	0	115	2	0	117	1	0	22	0	23	35	132	0	0	167	0	0	0	0	0	307
% Class 1		98.3	100	0	92.9	100	0	95.7	0	95.8	85.4	100	0	0	96.5	0	0	0	0	0	95.0
Bank 1	7	2	0	0	9	0	0	1	0	1	6	0	0	0	6	0	0	0	0	0	16
% Bank 1	100	1.7	0	0	7.1	0	0	4.3	0	4.2	14.6	0	0	0	3.5	0	0	0	0	0	5.0

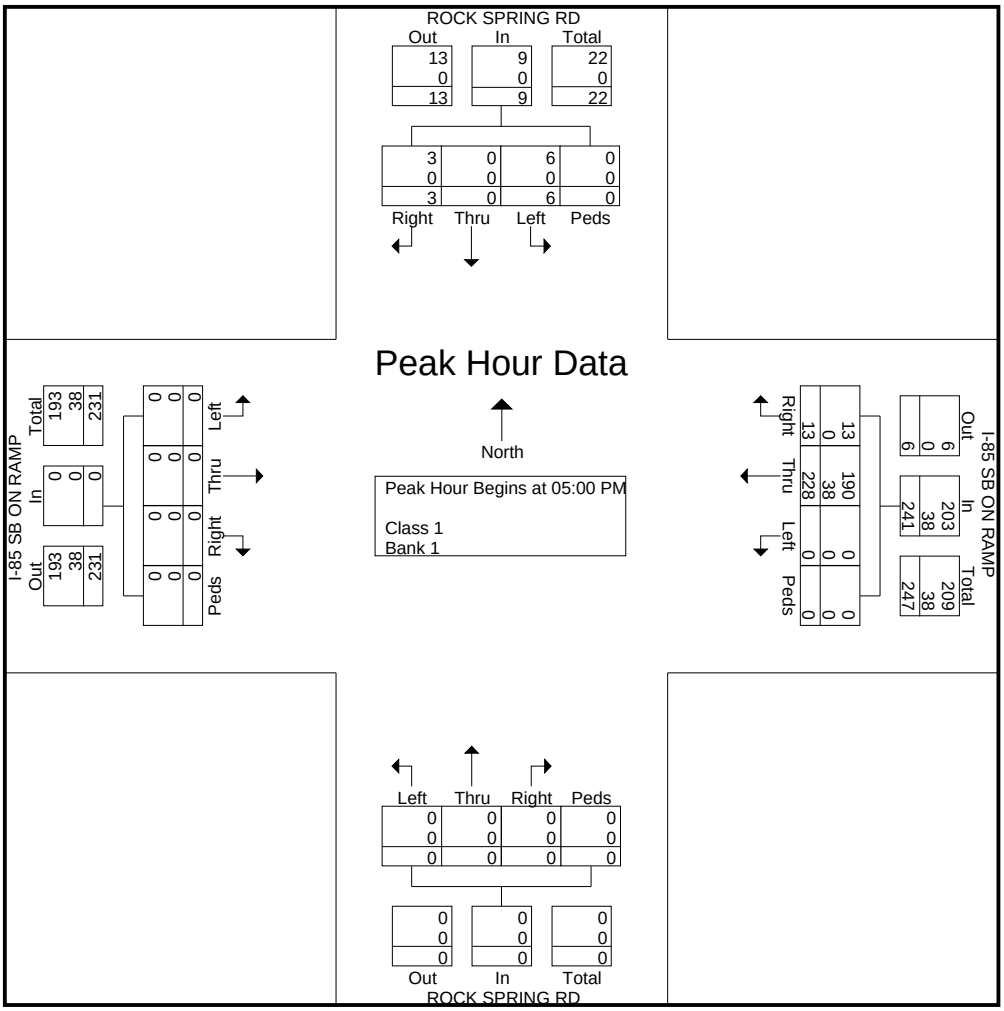


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #11 ROCKSPRING&I85SBRAMPPM
Site Code : 11
Start Date : 5/27/2015
Page No : 2

	ROCK SPRING RD Southbound					I-85 SB ON RAMP Westbound					ROCK SPRING RD Northbound					I-85 SB ON RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**2**	0	**2**	0	**4**	3	**64**	0	0	67	0	0	0	0	0	0	0	0	0	0	**71**
05:15 PM	0	0	2	0	2	2	51	0	0	53	0	0	0	0	0	0	0	0	0	0	55
05:30 PM	1	0	1	0	2	3	49	0	0	52	0	0	0	0	0	0	0	0	0	0	54
05:45 PM	0	0	1	0	1	**5**	64	0	0	**69**	0	0	0	0	0	0	0	0	0	0	70
Total Volume	3	0	6	0	9	13	228	0	0	241	0	0	0	0	0	0	0	0	0	0	250
% App. Total	33.3	0	66.7	0		5.4	94.6	0	0		0	0	0	0		0	0	0	0		
PHF	.375	.000	.750	.000	.563	.650	.891	.000	.000	.873	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.880
Class 1	3	0	6	0	9	13	190	0	0	203	0	0	0	0	0	0	0	0	0	0	212
% Class 1							83.3	0	0	84.2	0	0	0	0	0	0	0	0	0	0	84.8
Bank 1	0	0	0	0	0	0	38	0	0	38	0	0	0	0	0	0	0	0	0	0	38
% Bank 1	0	0	0	0	0	0	16.7	0	0	15.8	0	0	0	0	0	0	0	0	0	0	15.2

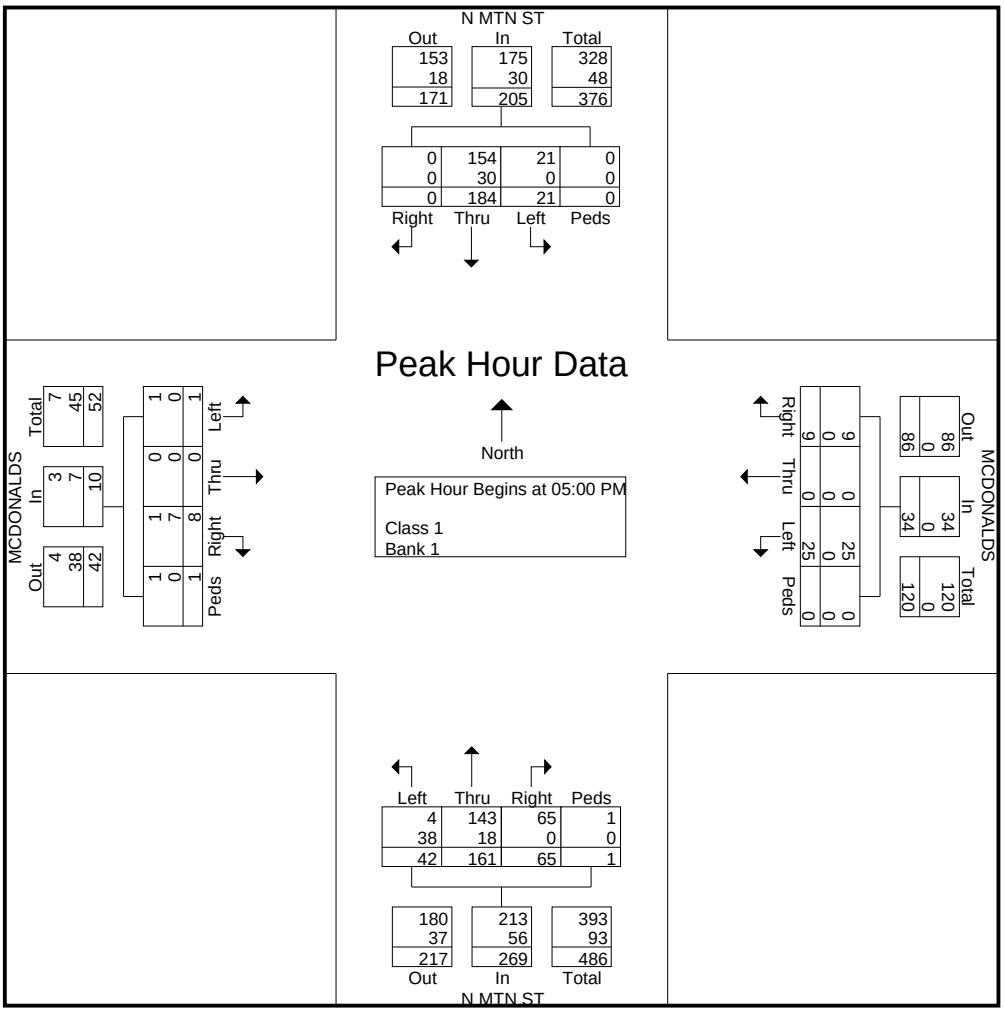


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #12 N Mtn St&McDonalds-Gas StationPM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	N MTN ST Southbound					MCDONALDS Westbound					N MTN ST Northbound					MCDONALDS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	46	5	0	51	2	0	5	0	7	12	30	11	0	53	**3**	0	0	0	**3**	114
05:15 PM	0	46	5	0	51	2	0	6	0	8	18	43	**17**	0	**78**	1	0	0	0	1	138
05:30 PM	0	**47**	5	0	**52**	**4**	0	3	0	7	**21**	**51**	6	0	78	3	0	0	0	3	**140**
05:45 PM	0	45	**6**	0	51	1	0	**11**	0	**12**	14	37	8	**1**	60	1	0	**1**	**1**	3	126
Total Volume	0	184	21	0	205	9	0	25	0	34	65	161	42	1	269	8	0	1	1	10	518
% App. Total	0	89.8	10.2	0		26.5	0	73.5	0		24.2	59.9	15.6	0.4		80	0	10	10		
PHF	.000	.979	.875	.000	.986	.563	.000	.568	.000	.708	.774	.789	.618	.250	.862	.667	.000	.250	.250	.833	.925
Class 1	0	154	21	0	175	9	0	25	0	34	65	143	4	1	213	1	0	1	1	3	425
% Class 1		83.7	100	0	85.4	100	0	100	0	100	100	88.8	9.5	100	79.2	12.5	0	100	100	30.0	82.0
Bank 1	0	30	0	0	30	0	0	0	0	0	0	18	38	0	56	7	0	0	0	7	93
% Bank 1	0	16.3	0	0	14.6	0	0	0	0	0	0	11.2	90.5	0	20.8	87.5	0	0	0	70.0	18.0

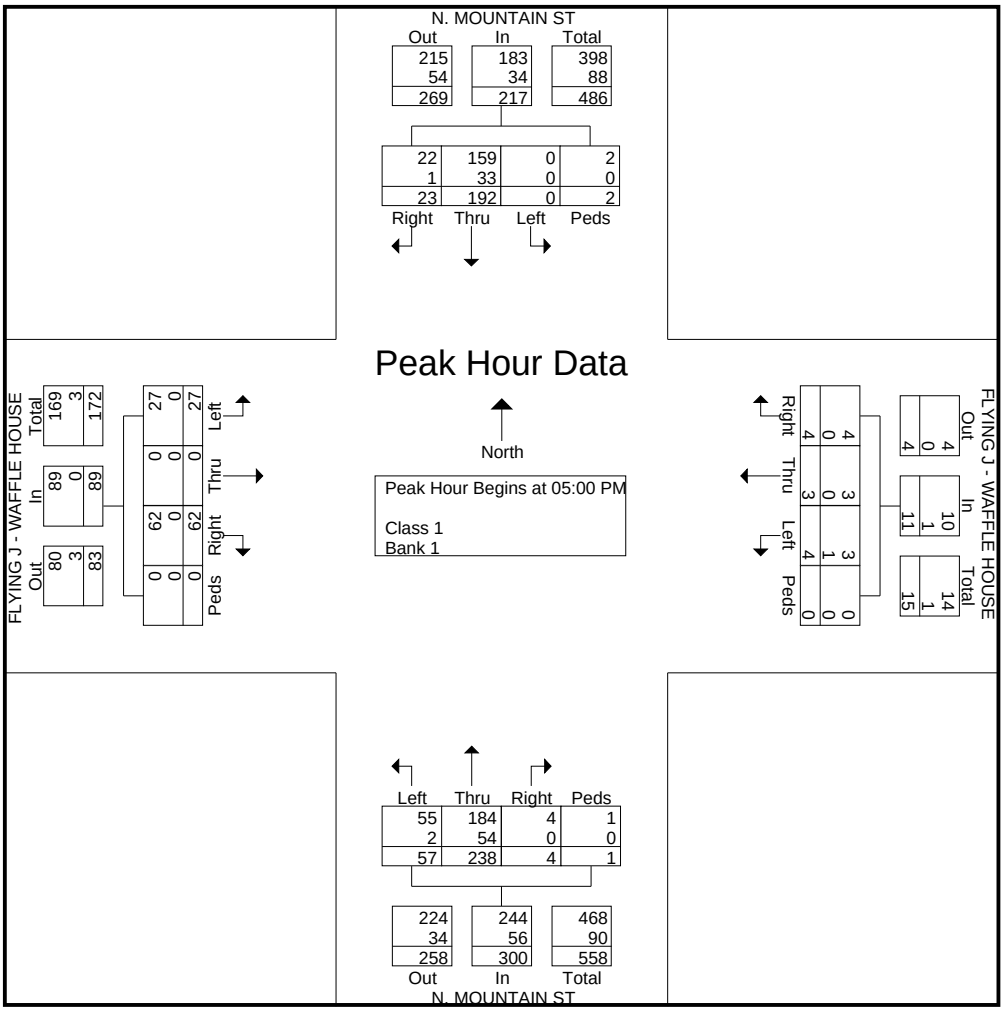


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #13 N. MTN ST&FLYING J - WAFFLEPM
Site Code : 2
Start Date : 5/26/2015
Page No : 2

	N. MOUNTAIN ST Southbound					FLYING J - WAFFLE HOUSE Westbound					N. MOUNTAIN ST Northbound					FLYING J - WAFFLE HOUSE Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	4	45	0	0	49	**2**	**1**	1	0	**4**	0	46	15	**1**	62	**19**	0	3	0	22	137
05:15 PM	**9**	48	0	0	57	2	1	0	0	3	0	**68**	14	0	82	17	0	**9**	0	**26**	**168**
05:30 PM	6	45	0	**1**	52	0	0	**2**	0	2	**3**	68	**19**	0	**90**	14	0	9	0	23	167
05:45 PM	4	**54**	0	1	**59**	0	1	1	0	2	1	56	9	0	66	12	0	6	0	18	145
Total Volume	23	192	0	2	217	4	3	4	0	11	4	238	57	1	300	62	0	27	0	89	617
% App. Total	10.6	88.5	0	0.9		36.4	27.3	36.4	0		1.3	79.3	19	0.3		69.7	0	30.3	0		
PHF	.639	.889	.000	.500	.919	.500	.750	.500	.000	.688	.333	.875	.750	.250	.833	.816	.000	.750	.000	.856	.918
Class 1	22	159	0	2	183	4	3	3	0	10	4	184	55	1	244	62	0	27	0	89	526
% Class 1	95.7	82.8	0	100	84.3	100	100	75.0	0	90.9	100	77.3	96.5	100	81.3	100	0	100	0	100	85.3
Bank 1	1	33	0	0	34	0	0	1	0	1	0	54	2	0	56	0	0	0	0	0	91
% Bank 1	4.3	17.2	0	0	15.7	0	0	25.0	0	9.1	0	22.7	3.5	0	18.7	0	0	0	0	0	14.7

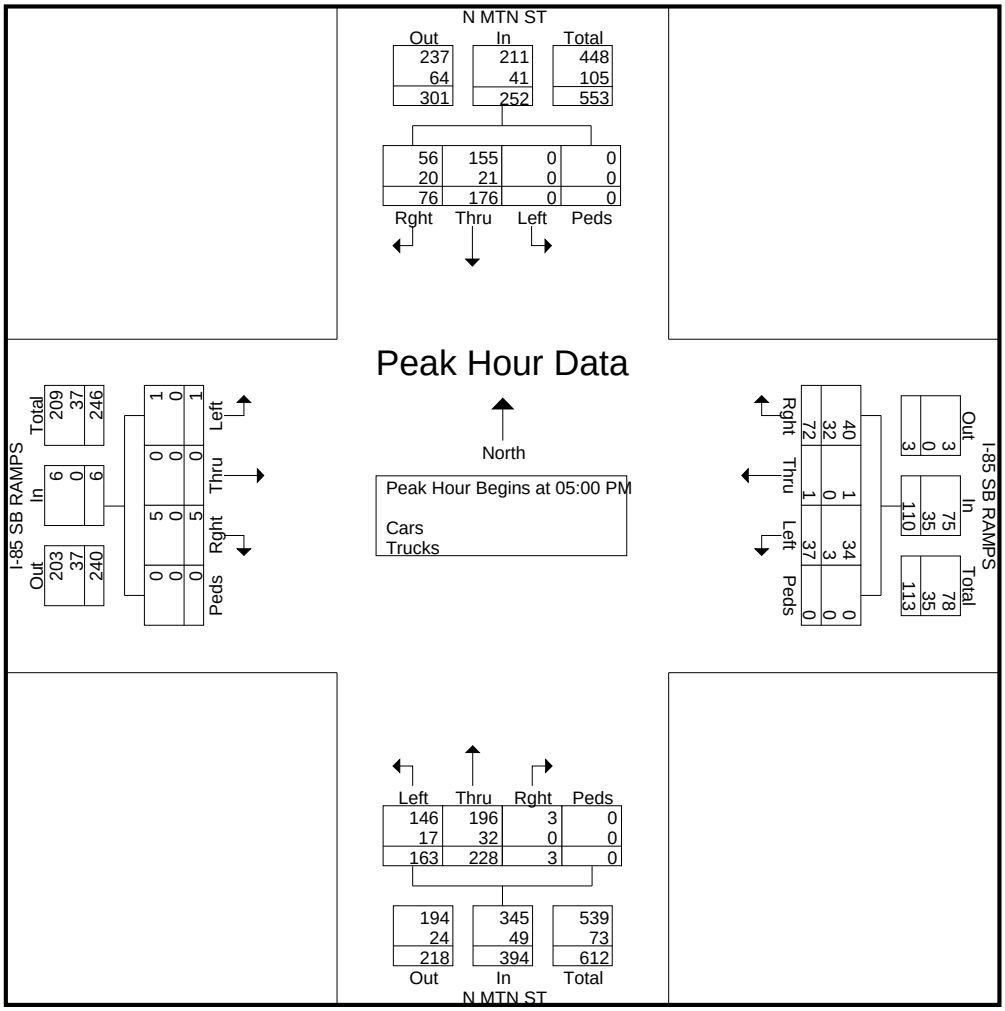


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #14 NMtnSt@I-85SBRampsPM
Site Code :
Start Date : 5/26/2015
Page No : 2

	N MTN ST Southbound					I-85 SB RAMPS Westbound					N MTN ST Northbound					I-85 SB RAMPS Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**23**	38	0	0	61	18	0	**13**	0	**31**	**1**	54	44	0	99	**2**	0	0	0	**2**	193
05:15 PM	18	43	0	0	61	16	**1**	8	0	25	1	**67**	34	0	**102**	2	0	0	0	2	190
05:30 PM	19	**48**	0	0	**67**	**21**	0	6	0	27	1	66	32	0	99	1	0	0	0	1	**194**
05:45 PM	16	47	0	0	63	17	0	10	0	27	0	41	**53**	0	94	0	0	**1**	0	1	185
Total Volume	76	176	0	0	252	72	1	37	0	110	3	228	163	0	394	5	0	1	0	6	762
% App. Total	30.2	69.8	0	0		65.5	0.9	33.6	0		0.8	57.9	41.4	0		83.3	0	16.7	0		
PHF	.826	.917	.000	.000	.940	.857	.250	.712	.000	.887	.750	.851	.769	.000	.966	.625	.000	.250	.000	.750	.982
Cars	56	155	0	0	211	40	1	34	0	75	3	196	146	0	345	5	0	1	0	6	637
% Cars	73.7	88.1	0	0	83.7	55.6	100	91.9	0	68.2	100	86.0	89.6	0	87.6	100	0	100	0	100	83.6
Trucks	20	21	0	0	41	32	0	3	0	35	0	32	17	0	49	0	0	0	0	0	125
% Trucks	26.3	11.9	0	0	16.3	44.4	0	8.1	0	31.8	0	14.0	10.4	0	12.4	0	0	0	0	0	16.4

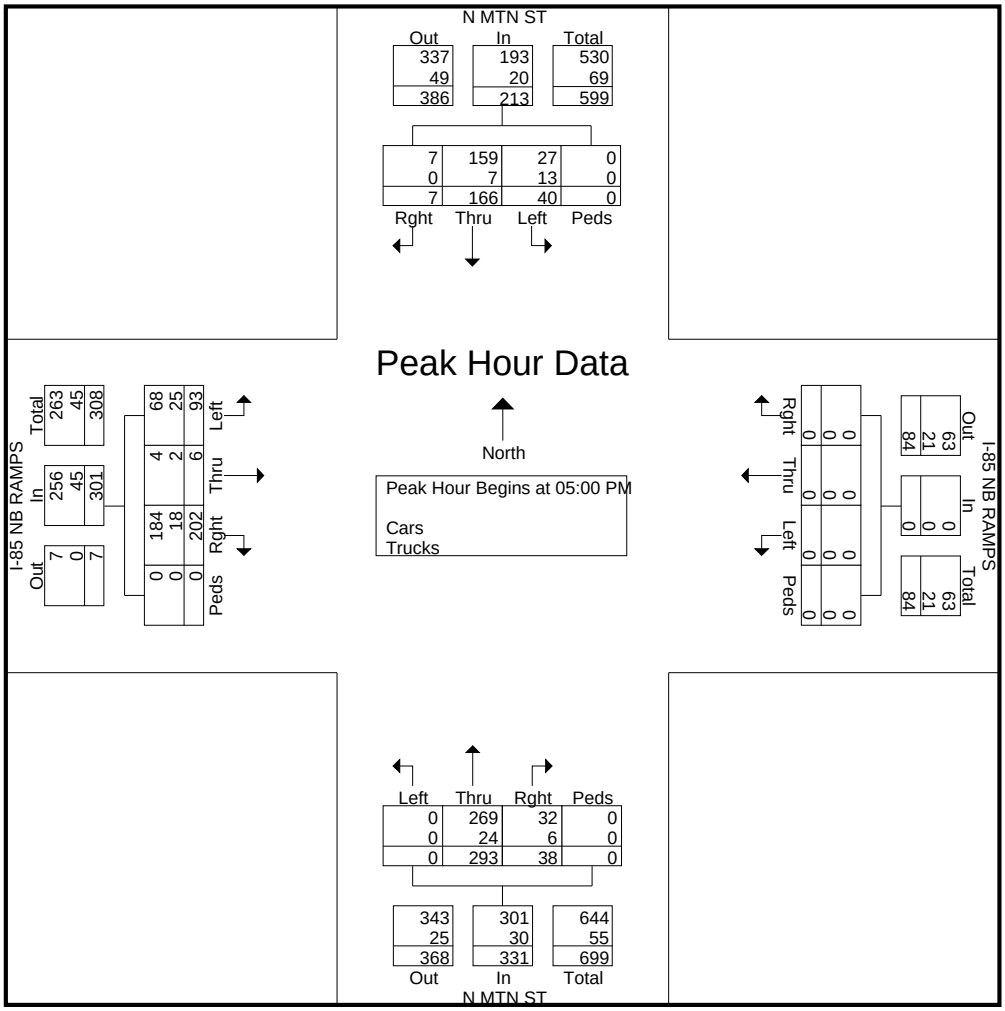


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #15 NMtnSt@I-85NBRampsPM
Site Code :
Start Date : 5/26/2015
Page No : 2

	N MTN ST Southbound					I-85 NB RAMPS Westbound					N MTN ST Northbound					I-85 NB RAMPS Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	40	9	0	50	0	0	0	0	0	**11**	74	0	0	**85**	46	0	23	0	69	204
05:15 PM	**2**	38	**11**	0	51	0	0	0	0	0	8	**75**	0	0	83	**55**	**3**	24	0	**82**	216
05:30 PM	2	42	11	0	55	0	0	0	0	0	10	75	0	0	85	53	1	**25**	0	79	**219**
05:45 PM	2	**46**	9	0	**57**	0	0	0	0	0	9	69	0	0	78	48	2	21	0	71	206
Total Volume	7	166	40	0	213	0	0	0	0	0	38	293	0	0	331	202	6	93	0	301	845
% App. Total	3.3	77.9	18.8	0		0	0	0	0		11.5	88.5	0	0		67.1	2	30.9	0		
PHF	.875	.902	.909	.000	.934	.000	.000	.000	.000	.000	.864	.977	.000	.000	.974	.918	.500	.930	.000	.918	.965
Cars	7	159	27	0	193	0	0	0	0	0	32	269	0	0	301	184	4	68	0	256	750
% Cars	100	95.8	67.5	0	90.6	0	0	0	0	0	84.2	91.8	0	0	90.9	91.1	66.7	73.1	0	85.0	88.8
Trucks	0	7	13	0	20	0	0	0	0	0	6	24	0	0	30	18	2	25	0	45	95
% Trucks	0	4.2	32.5	0	9.4	0	0	0	0	0	15.8	8.2	0	0	9.1	8.9	33.3	26.9	0	15.0	11.2

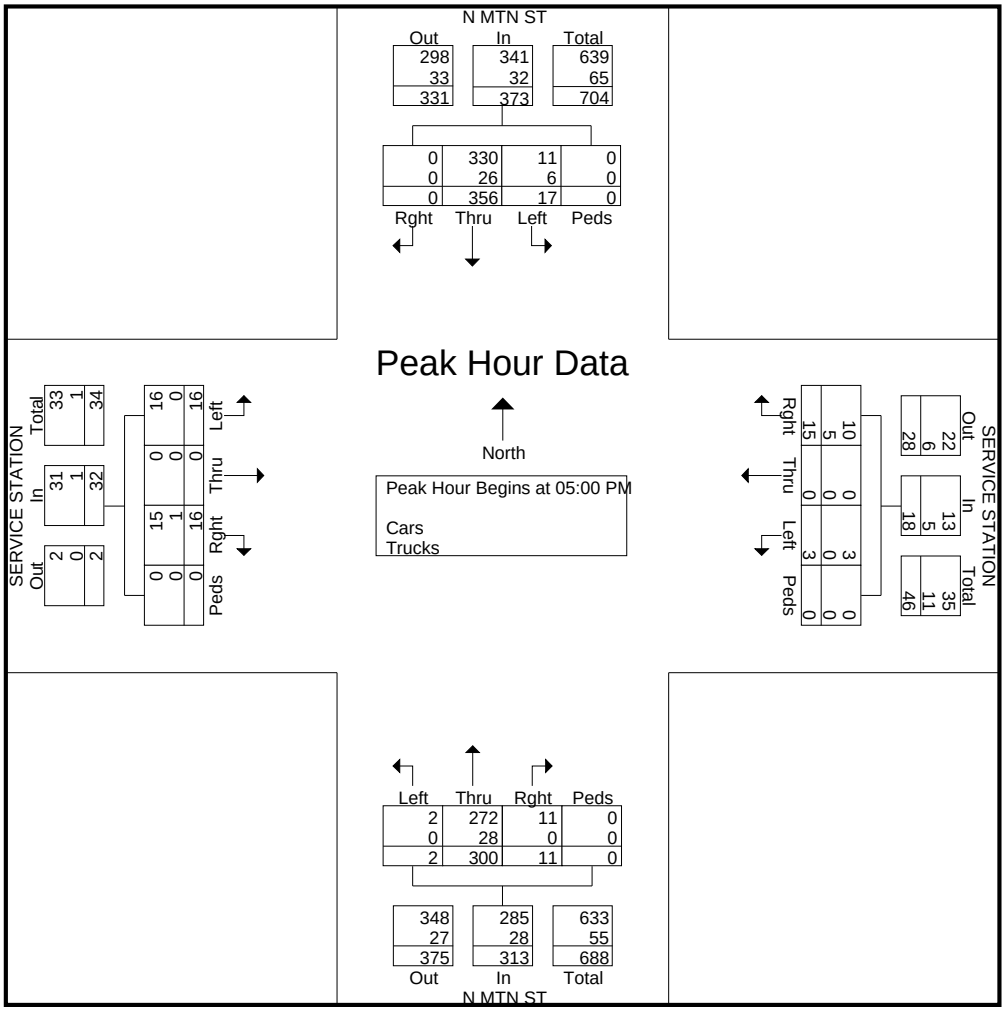


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #16 NMtnSt@ServiceStationPM
Site Code :
Start Date : 5/26/2015
Page No : 2

	N MTN ST Southbound					SERVICE STATION Westbound					N MTN ST Northbound					SERVICE STATION Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	84	6	0	90	3	0	**2**	0	5	2	79	**1**	0	82	5	0	3	0	8	185
05:15 PM	0	95	2	0	97	2	0	0	0	2	**3**	71	0	0	74	3	0	4	0	7	180
05:30 PM	0	81	**7**	0	88	**6**	0	1	0	**7**	3	**83**	0	0	**86**	2	0	2	0	4	185
05:45 PM	0	**96**	2	0	**98**	4	0	0	0	4	3	67	1	0	71	**6**	0	**7**	0	**13**	**186**
Total Volume	0	356	17	0	373	15	0	3	0	18	11	300	2	0	313	16	0	16	0	32	736
% App. Total	0	95.4	4.6	0		83.3	0	16.7	0		3.5	95.8	0.6	0		50	0	50	0		
PHF	.000	.927	.607	.000	.952	.625	.000	.375	.000	.643	.917	.904	.500	.000	.910	.667	.000	.571	.000	.615	.989
Cars	0	330	11	0	341	10	0	3	0	13	11	272	2	0	285	15	0	16	0	31	670
% Cars	0	92.7	64.7	0	91.4	66.7	0	100	0	72.2	100	90.7	100	0	91.1	93.8	0	100	0	96.9	91.0
Trucks	0	26	6	0	32	5	0	0	0	5	0	28	0	0	28	1	0	0	0	1	66
% Trucks	0	7.3	35.3	0	8.6	33.3	0	0	0	27.8	0	9.3	0	0	8.9	6.3	0	0	0	3.1	9.0

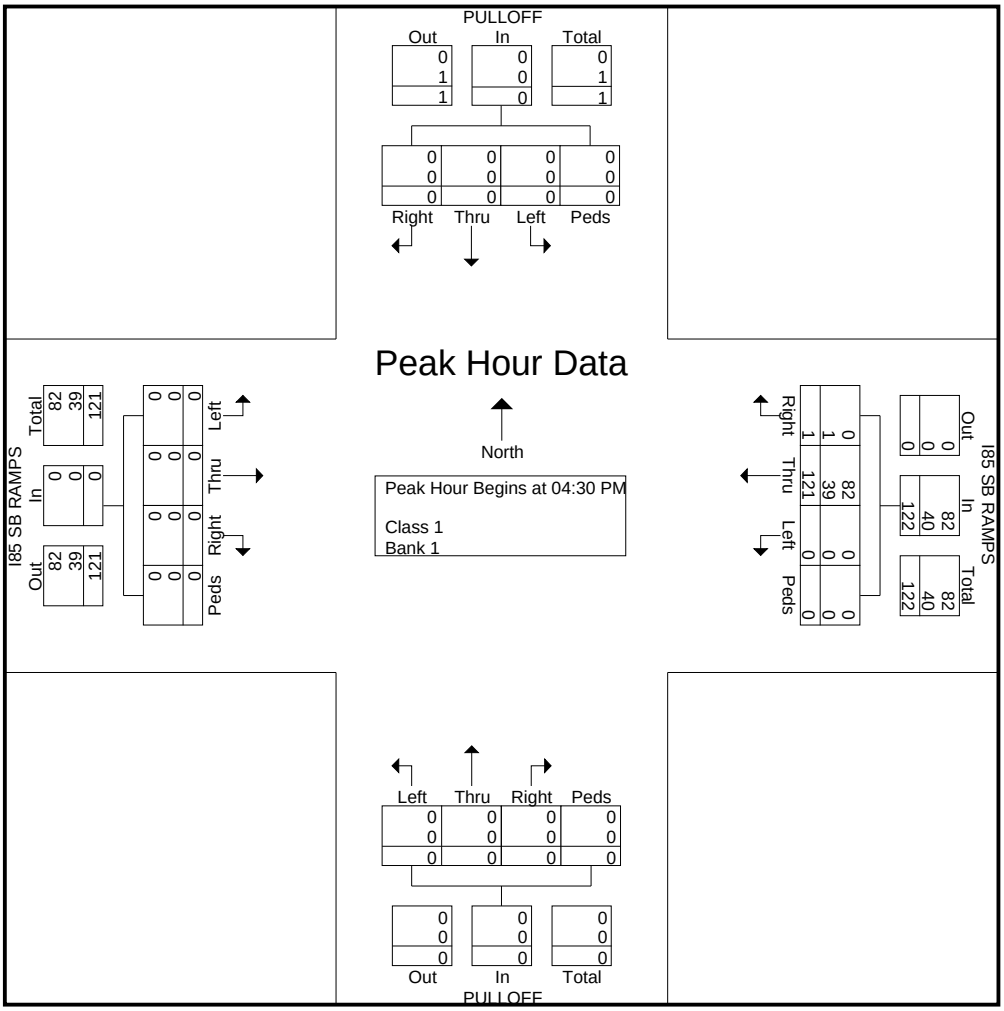


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #17 Truck Pull off&I-85 SB RampsPM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	PULLOFF Southbound					I85 SB RAMPS Westbound					PULLOFF Northbound					I85 SB RAMPS Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	31	0	0	31	0	0	0	0	0	0	0	0	0	0	31
04:45 PM	0	0	0	0	0	0	**34**	0	0	**34**	0	0	0	0	0	0	0	0	0	0	**34**
05:00 PM	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	0	0	0	0	0	29
05:15 PM	0	0	0	0	0	**1**	27	0	0	28	0	0	0	0	0	0	0	0	0	0	28
Total Volume	0	0	0	0	0	1	121	0	0	122	0	0	0	0	0	0	0	0	0	0	122
% App. Total	0	0	0	0		0.8	99.2	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.890	.000	.000	.897	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.897
Class 1	0	0	0	0	0	0	82	0	0	82	0	0	0	0	0	0	0	0	0	0	82
% Class 1							67.8	0	0	67.2	0	0	0	0	0	0	0	0	0	0	67.2
Bank 1	0	0	0	0	0	1	39	0	0	40	0	0	0	0	0	0	0	0	0	0	40
% Bank 1	0	0	0	0	0	100	32.2	0	0	32.8	0	0	0	0	0	0	0	0	0	0	32.8

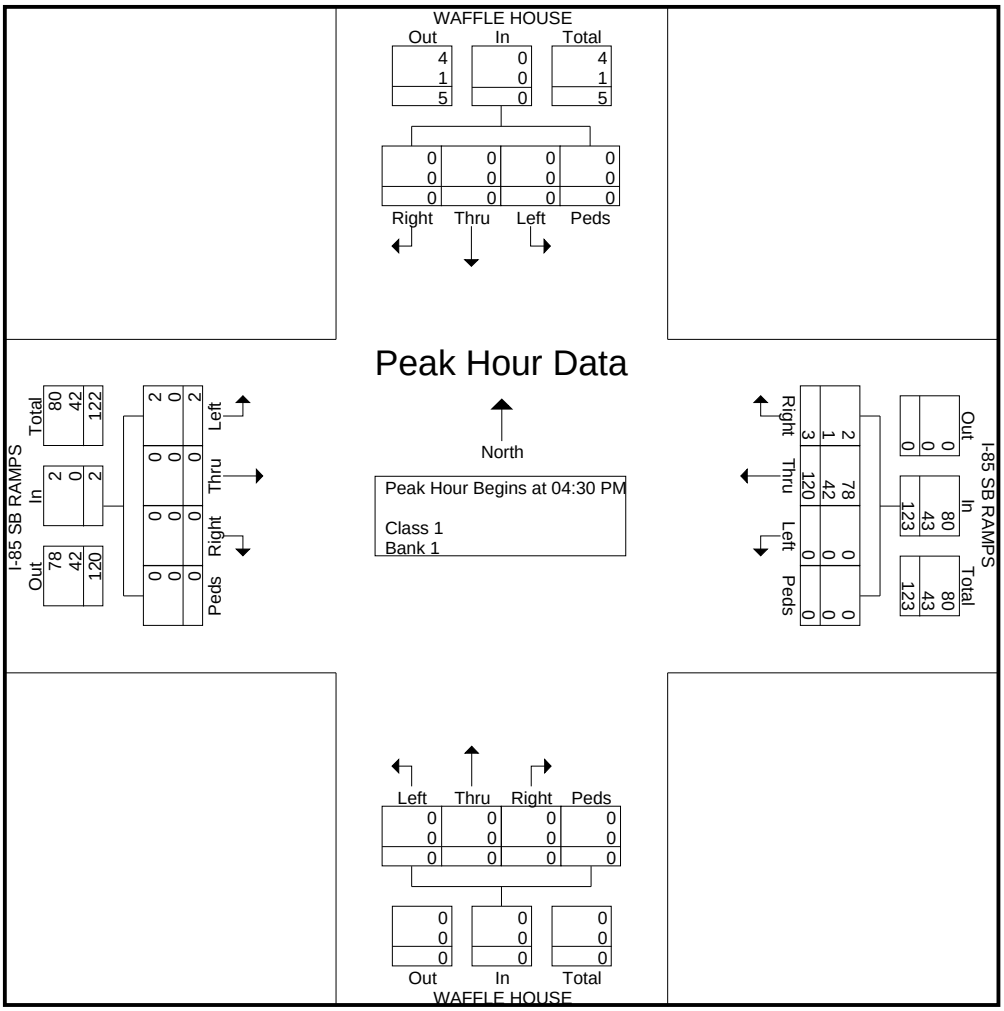


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #18 WAFFLEHOUSE&I85SBRAMPSPM
Site Code : 18
Start Date : 5/26/2015
Page No : 2

	WAFFLE HOUSE Southbound					I-85 SB RAMPS Westbound					WAFFLE HOUSE Northbound					I-85 SB RAMPS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	**34**	0	0	**34**	0	0	0	0	0	0	0	0	0	0	**34**
04:45 PM	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	0	0	0	0	0	29
05:00 PM	0	0	0	0	0	**2**	31	0	0	33	0	0	0	0	0	0	0	**1**	0	**1**	34
05:15 PM	0	0	0	0	0	1	26	0	0	27	0	0	0	0	0	0	0	1	0	1	28
Total Volume	0	0	0	0	0	3	120	0	0	123	0	0	0	0	0	0	0	2	0	2	125
% App. Total	0	0	0	0		2.4	97.6	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.000	.000	.000	.000	.375	.882	.000	.000	.904	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.919
Class 1	0	0	0	0	0	2	78	0	0	80	0	0	0	0	0	0	0	2	0	2	82
% Class 1						66.7	65.0	0	0	65.0	0	0	0	0	0	0	0	100	0	100	65.6
Bank 1	0	0	0	0	0	1	42	0	0	43	0	0	0	0	0	0	0	0	0	0	43
% Bank 1	0	0	0	0	0	33.3	35.0	0	0	35.0	0	0	0	0	0	0	0	0	0	0	34.4

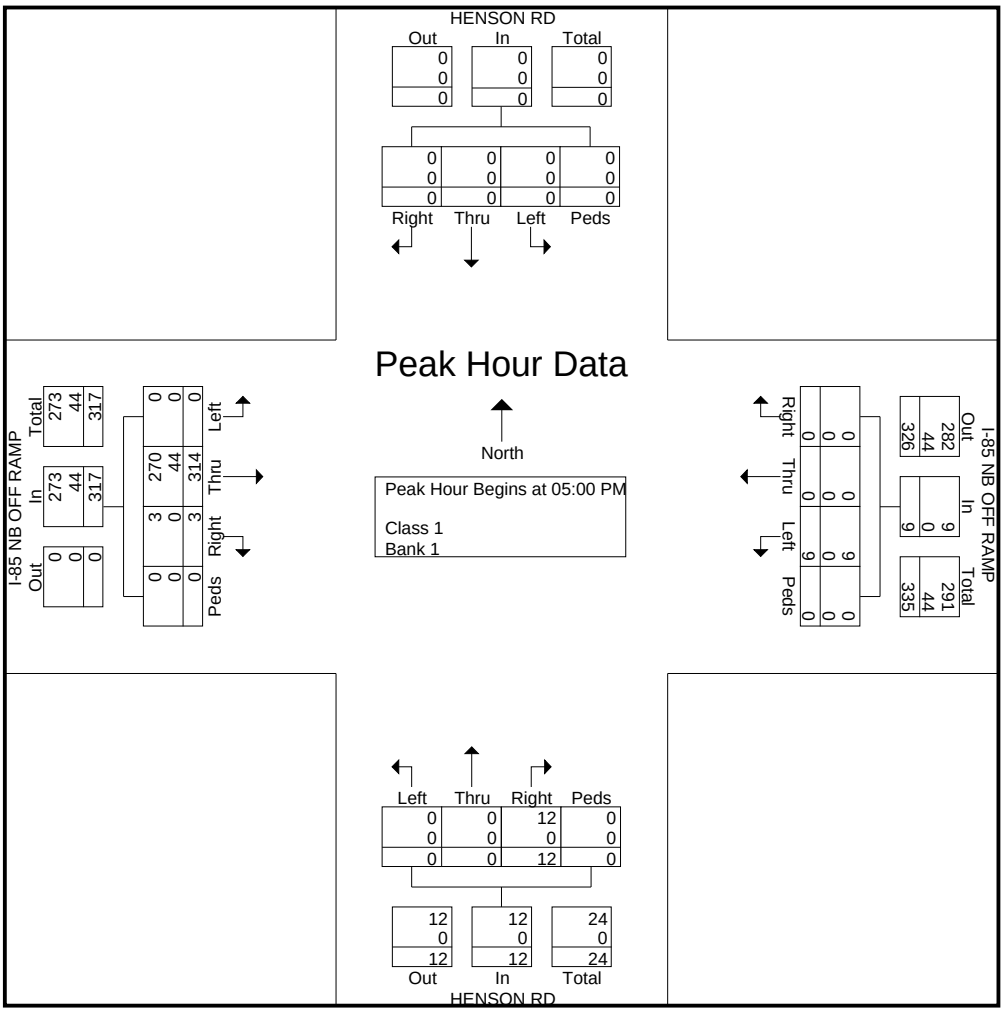


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #19 HENSON&I85NBOFFRAMPPM
Site Code : 19
Start Date : 5/26/2015
Page No : 2

	HENSON RD Southbound					I-85 NB OFF RAMP Westbound					HENSON RD Northbound					I-85 NB OFF RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	68	0	0	68	70
05:15 PM	0	0	0	0	0	0	0	**4**	0	**4**	1	0	0	0	1	0	**95**	0	0	**95**	**100**
05:30 PM	0	0	0	0	0	0	0	2	0	2	4	0	0	0	4	1	76	0	0	77	83
05:45 PM	0	0	0	0	0	0	0	2	0	2	**6**	0	0	0	**6**	**2**	75	0	0	77	85
Total Volume	0	0	0	0	0	0	0	9	0	9	12	0	0	0	12	3	314	0	0	317	338
% App. Total	0	0	0	0		0	0	100	0		100	0	0	0		0.9	99.1	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.563	.000	.563	.500	.000	.000	.000	.500	.375	.826	.000	.000	.834	.845
Class 1	0	0	0	0	0	0	0	9	0	9	12	0	0	0	12	3	270	0	0	273	294
% Class 1																	86.0	0	0	86.1	87.0
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	0	0	44	44
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14.0	0	0	13.9	13.0

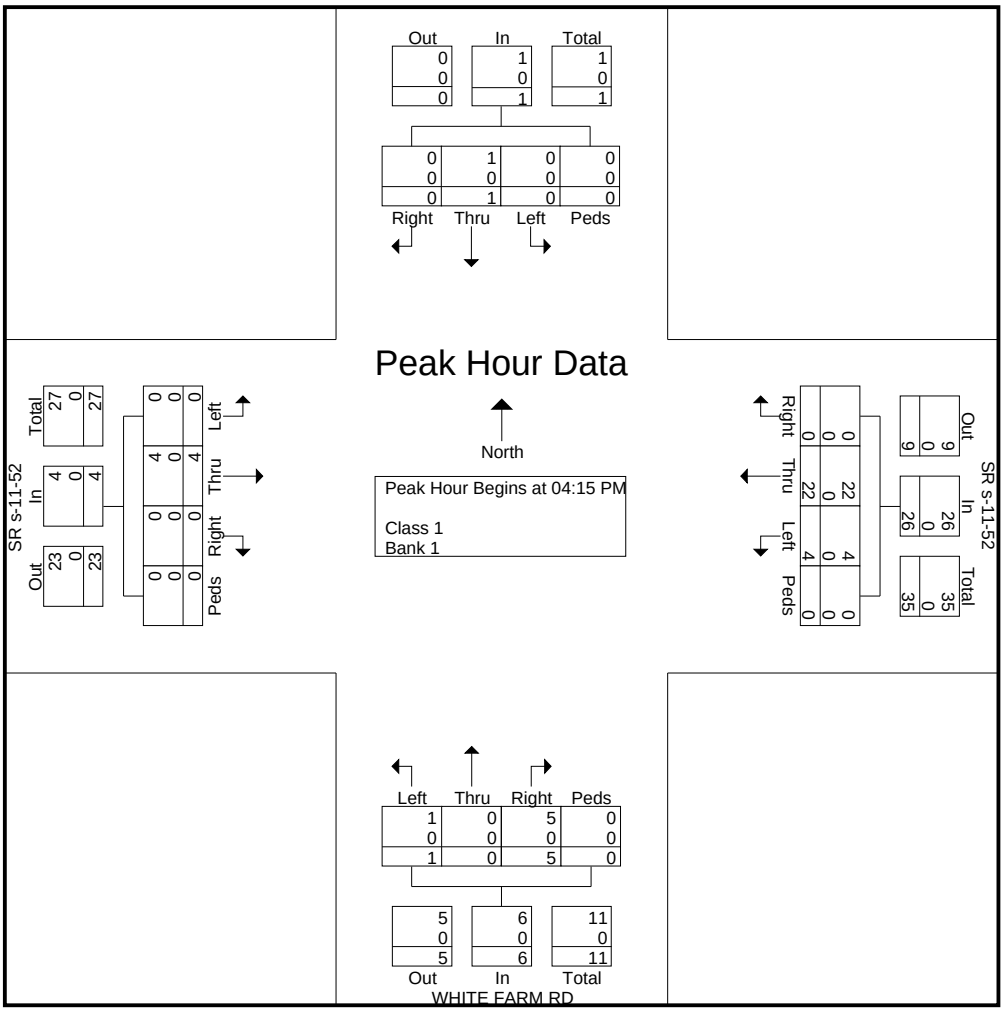


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #20 WhiteFarmRd&SR s-11-52PM
Site Code : 20
Start Date : 5/27/2015
Page No : 2

	Southbound					SR s-11-52 Westbound					WHITE FARM RD Northbound					SR s-11-52 Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	**6**	1	0	**7**	**3**	0	**1**	0	**4**	0	0	0	0	0	**11**
04:30 PM	0	0	0	0	0	0	6	1	0	7	0	0	0	0	0	0	0	0	0	0	7
04:45 PM	0	0	0	0	0	0	5	**2**	0	7	1	0	0	0	1	0	1	0	0	1	9
05:00 PM	0	**1**	0	0	**1**	0	5	0	0	5	1	0	0	0	1	0	**3**	0	0	**3**	10
Total Volume	0	1	0	0	1	0	22	4	0	26	5	0	1	0	6	0	4	0	0	4	37
% App. Total	0	100	0	0		0	84.6	15.4	0		83.3	0	16.7	0		0	100	0	0		
PHF	.000	.250	.000	.000	.250	.000	.917	.500	.000	.929	.417	.000	.250	.000	.375	.000	.333	.000	.000	.333	.841
Class 1	0	1	0	0	1	0	22	4	0	26	5	0	1	0	6	0	4	0	0	4	37
% Class 1																					
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

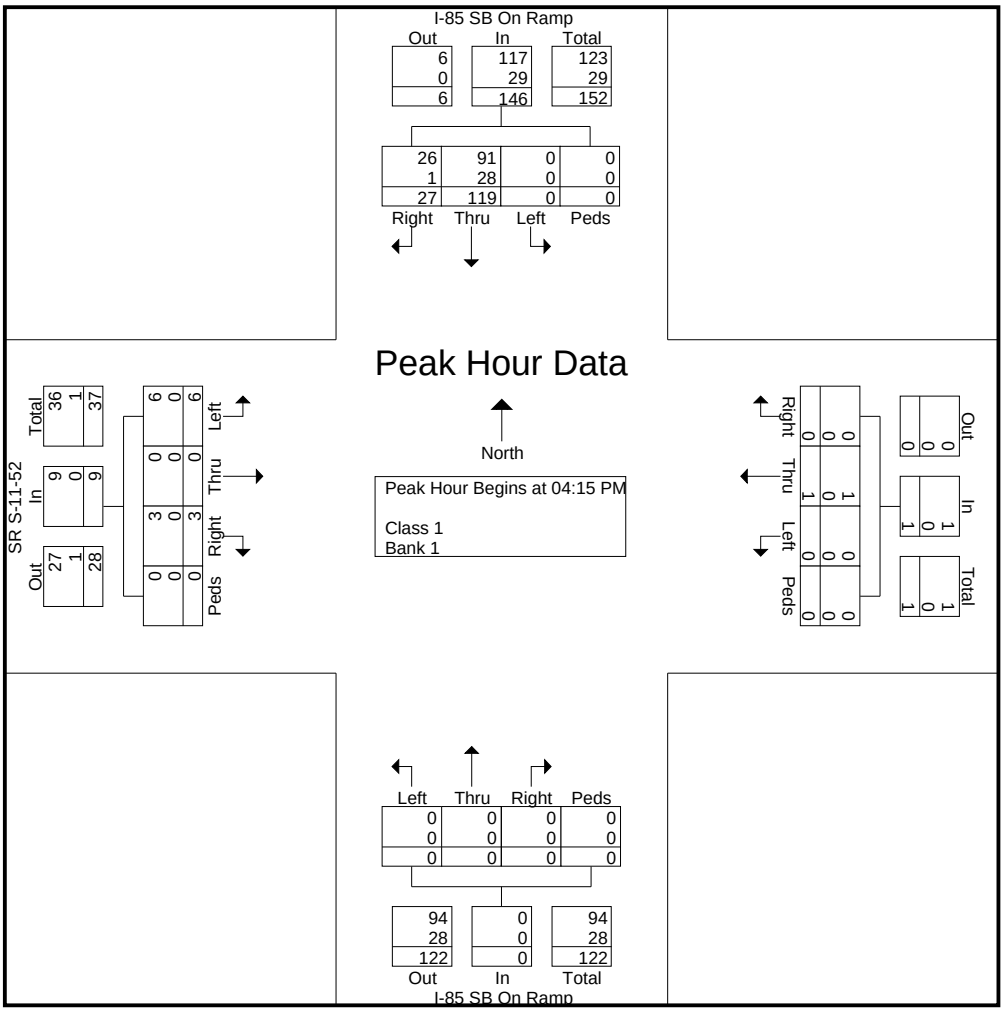


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #21 SRS-11-52&I-85SBOnRampPM
Site Code : 21
Start Date : 5/27/2015
Page No : 2

	I-85 SB On Ramp Southbound					Westbound					I-85 SB On Ramp Northbound					SR S-11-52 Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	**8**	20	0	0	28	0	0	0	0	0	0	0	0	0	0	**1**	0	2	0	3	31
04:30 PM	8	**56**	0	0	**64**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**64**
04:45 PM	7	25	0	0	32	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	34
05:00 PM	4	18	0	0	22	0	**1**	0	0	**1**	0	0	0	0	0	1	0	**3**	0	**4**	27
Total Volume	27	119	0	0	146	0	1	0	0	1	0	0	0	0	0	3	0	6	0	9	156
% App. Total	18.5	81.5	0	0		0	100	0	0		0	0	0	0		33.3	0	66.7	0		
PHF	.844	.531	.000	.000	.570	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.750	.000	.500	.000	.563	.609
Class 1	26	91	0	0	117	0	1	0	0	1	0	0	0	0	0	3	0	6	0	9	127
% Class 1	96.3	76.5	0	0	80.1	0	100	0	0	100	0	0	0	0	0	100	0	100	0	100	81.4
Bank 1	1	28	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
% Bank 1	3.7	23.5	0	0	19.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18.6

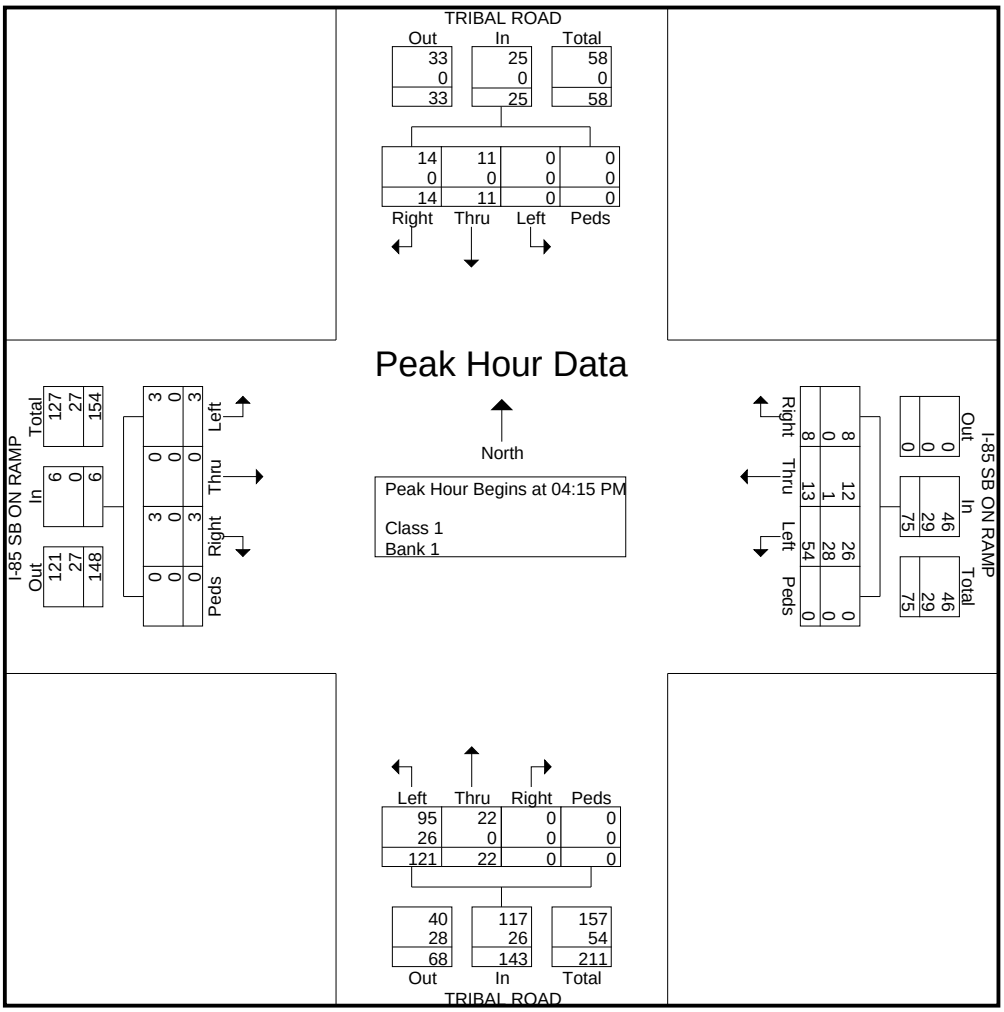


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #22 TRIBAL&I85SBONRAMPPM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	TRIBAL ROAD Southbound					I-85 SB ON RAMP Westbound					TRIBAL ROAD Northbound					I-85 SB ON RAMP Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	3	3	0	0	6	1	**4**	**16**	0	**21**	0	2	23	0	25	1	0	**1**	0	2	54
04:30 PM	3	**5**	0	0	**8**	2	4	13	0	19	0	**12**	**58**	0	**70**	0	0	0	0	0	**97**
04:45 PM	**5**	2	0	0	7	**3**	2	9	0	14	0	4	22	0	26	0	0	1	0	1	48
05:00 PM	3	1	0	0	4	2	3	16	0	21	0	4	18	0	22	**2**	0	1	0	**3**	50
Total Volume	14	11	0	0	25	8	13	54	0	75	0	22	121	0	143	3	0	3	0	6	249
% App. Total	56	44	0	0		10.7	17.3	72	0		0	15.4	84.6	0		50	0	50	0		
PHF	.700	.550	.000	.000	.781	.667	.813	.844	.000	.893	.000	.458	.522	.000	.511	.375	.000	.750	.000	.500	.642
Class 1	14	11	0	0	25	8	12	26	0	46	0	22	95	0	117	3	0	3	0	6	194
% Class 1							92.3	48.1	0	61.3	0	100	78.5	0	81.8	100	0	100	0	100	77.9
Bank 1	0	0	0	0	0	0	1	28	0	29	0	0	26	0	26	0	0	0	0	0	55
% Bank 1	0	0	0	0	0	0	7.7	51.9	0	38.7	0	0	21.5	0	18.2	0	0	0	0	0	22.1

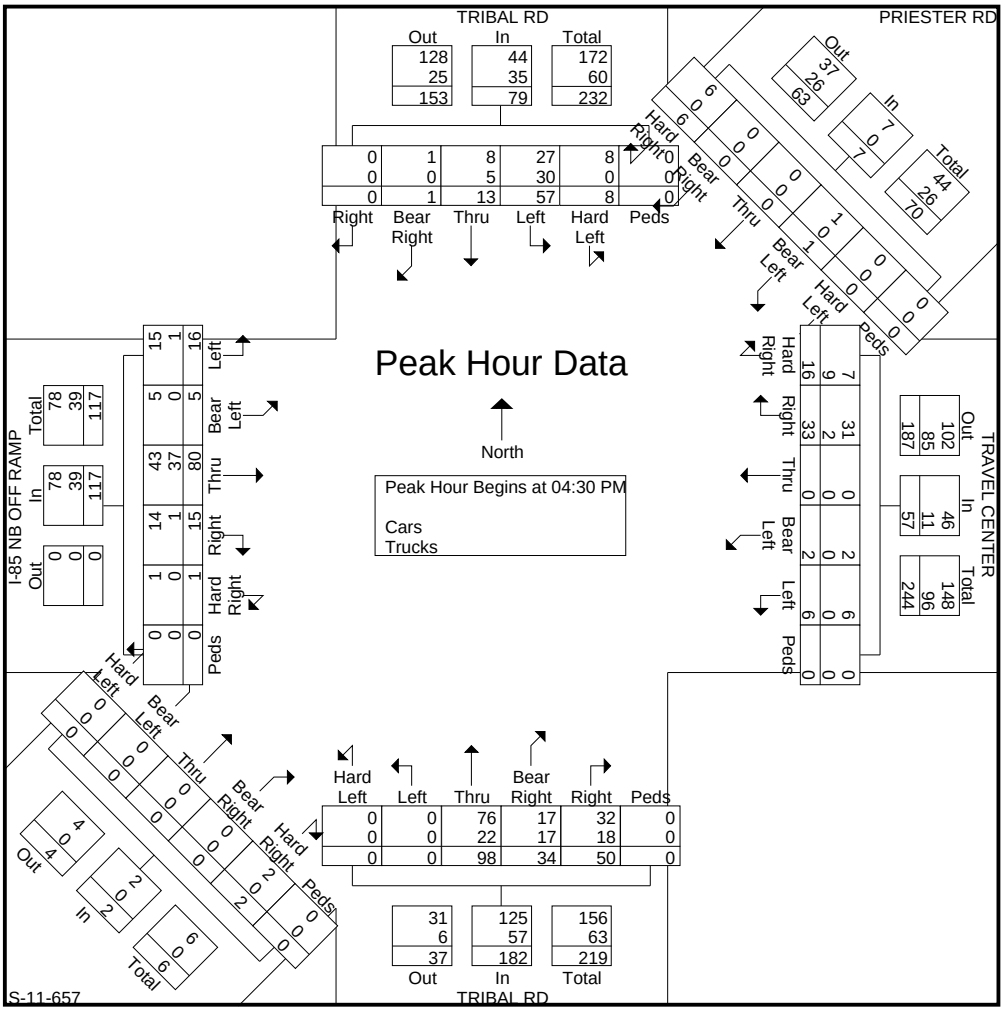


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #23 TribalRd@I-85NBRamps-PriesterRdPM
Site Code :
Start Date : 5/26/2015
Page No : 3

	TRIBAL RD Southbound							PRIESTER RD Southwestbound							TRAVEL CENTER Westbound							TRIBAL RD Northbound							S-11-657 Northeastbound							I-85 NB OFF RAMP Eastbound							
Start Time				Left			App. Total							App. Total					Left		App. Total				Left			App. Total							App. Total					Left		App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																																												
Peak Hour for Entire Intersection Begins at 04:30 PM																																												
04:30 PM	0	0	**5**	15	1	0	21	**2**	0	0	**1**	0	0	**3**	3	**14**	0	**2**	**2**	0	**21**	**22**	**14**	**56**	0	0	0	**92**	0	0	0	0	0	0	0	0	3	18	1	1	0	23	**160**
04:45 PM	0	0	2	10	2	0	14	1	0	0	0	0	0	1	**5**	9	0	0	1	0	15	9	6	19	0	0	0	34	0	0	0	0	0	0	0	**1**	4	20	**2**	3	0	30	94
05:00 PM	0	0	2	**17**	2	0	21	1	0	0	0	0	0	1	3	6	0	0	2	0	11	12	8	12	0	0	0	32	0	0	0	0	0	0	0	0	3	20	1	3	0	27	92
05:15 PM	0	**1**	4	15	**3**	0	**23**	2	0	0	0	0	0	2	5	4	0	0	1	0	10	7	6	11	0	0	0	24	**2**	0	0	0	0	0	**2**	0	**5**	**22**	1	**9**	0	**37**	98
Total Volume	0	1	13	57	8	0	79	6	0	0	1	0	0	7	16	33	0	2	6	0	57	50	34	98	0	0	0	182	2	0	0	0	0	0	2	1	15	80	5	16	0	117	444
% App. Total	0	1.3	16.5	72.2	10.1	0		85.7	0	0	14.3	0	0		28.1	57.9	0	3.5	10.5	0		27.5	18.7	53.8	0	0	0		100	0	0	0	0	0		0.9	12.8	68.4	4.3	13.7	0		
PHF	.000	.250	.650	.838	.667	.000	.859	.750	.000	.000	.250	.000	.000	.583	.800	.589	.000	.250	.750	.000	.679	.568	.607	.438	.000	.000	.000	.495	.250	.000	.000	.000	.000	.000	.250	.250	.750	.909	.625	.444	.000	.791	.694
Cars	0	1	8	27	8	0	44	6	0	0	1	0	0	7	7	31	0	2	6	0	46	32	17	76	0	0	0	125	2	0	0	0	0	0	2	1	14	43	5	15	0	78	302
% Cars	0	100	61.5	47.4	100	0	55.7	100	0	0	100	0	0	100	43.8	93.9	0	100	100	0	80.7	64.0	50.0	77.6	0	0	0	68.7	100	0	0	0	0	0	100	100	93.3	53.8	100	93.8	0	66.7	68.0
Trucks	0	0	5	30	0	0	35	0	0	0	0	0	0	0	9	2	0	0	0	0	11	18	17	22	0	0	0	57	0	0	0	0	0	0	0	0	1	37	0	1	0	39	142
% Trucks	0	0	38.5	52.6	0	0	44.3	0	0	0	0	0	0	0	56.3	6.1	0	0	0	0	19.3	36.0	50.0	22.4	0	0	0	31.3	0	0	0	0	0	0	0	0	6.7	46.3	0	6.3	0	33.3	32.0

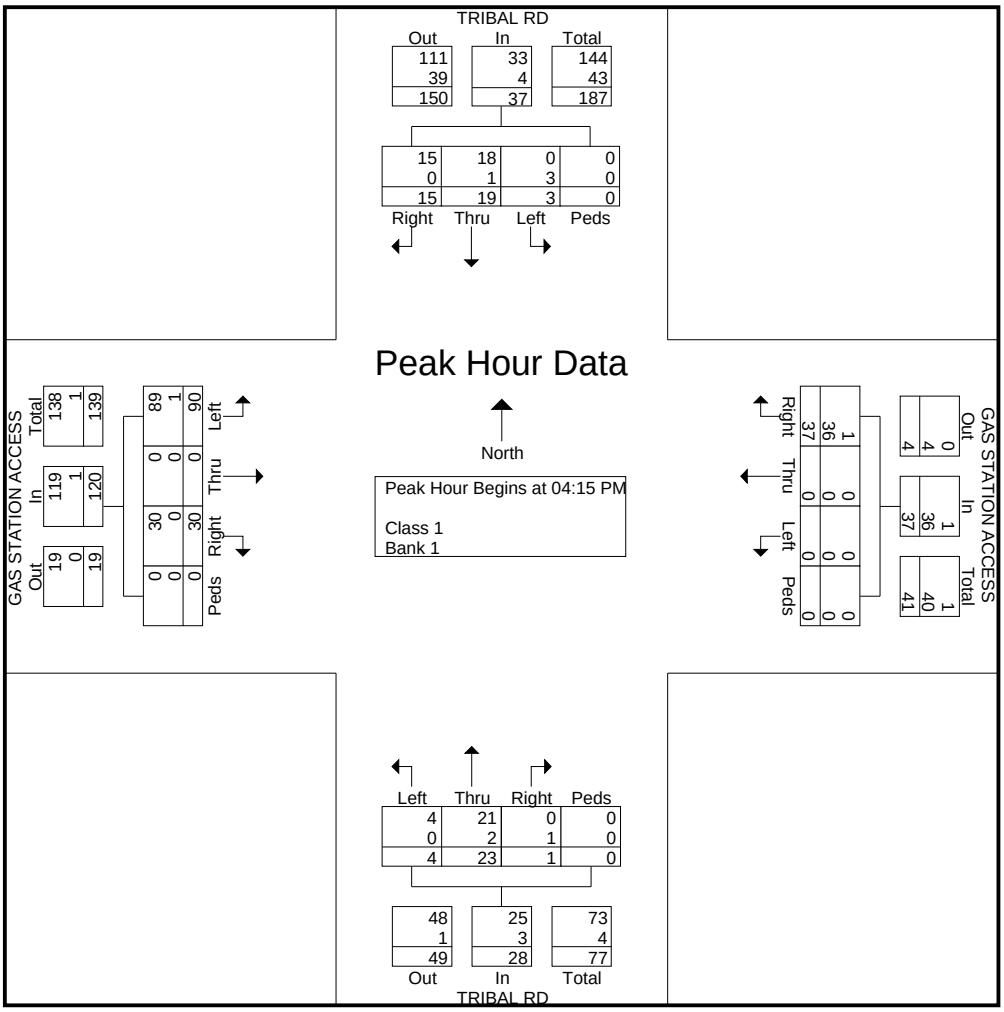


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #24 TRIBAL&GASSTATIONPM
Site Code : 24
Start Date : 5/27/2015
Page No : 2

	TRIBAL RD Southbound					GAS STATION ACCESS Westbound					TRIBAL RD Northbound					GAS STATION ACCESS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	**9**	3	0	0	**12**	**12**	0	0	0	**12**	0	**6**	1	0	7	2	0	4	0	6	37
04:30 PM	5	5	**2**	0	12	6	0	0	0	6	**1**	5	**2**	0	**8**	**24**	0	**68**	0	**92**	**118**
04:45 PM	1	5	0	0	6	8	0	0	0	8	0	6	1	0	7	3	0	12	0	15	36
05:00 PM	0	**6**	1	0	7	11	0	0	0	11	0	6	0	0	6	1	0	6	0	7	31
Total Volume	15	19	3	0	37	37	0	0	0	37	1	23	4	0	28	30	0	90	0	120	222
% App. Total	40.5	51.4	8.1	0		100	0	0	0		3.6	82.1	14.3	0		25	0	75	0		
PHF	.417	.792	.375	.000	.771	.771	.000	.000	.000	.771	.250	.958	.500	.000	.875	.313	.000	.331	.000	.326	.470
Class 1	15	18	0	0	33	1	0	0	0	1	0	21	4	0	25	30	0	89	0	119	178
% Class 1		94.7	0	0	89.2	2.7	0	0	0	2.7	0	91.3	100	0	89.3	100	0	98.9	0	99.2	80.2
Bank 1	0	1	3	0	4	36	0	0	0	36	1	2	0	0	3	0	0	1	0	1	44
% Bank 1	0	5.3	100	0	10.8	97.3	0	0	0	97.3	100	8.7	0	0	10.7	0	0	1.1	0	0.8	19.8

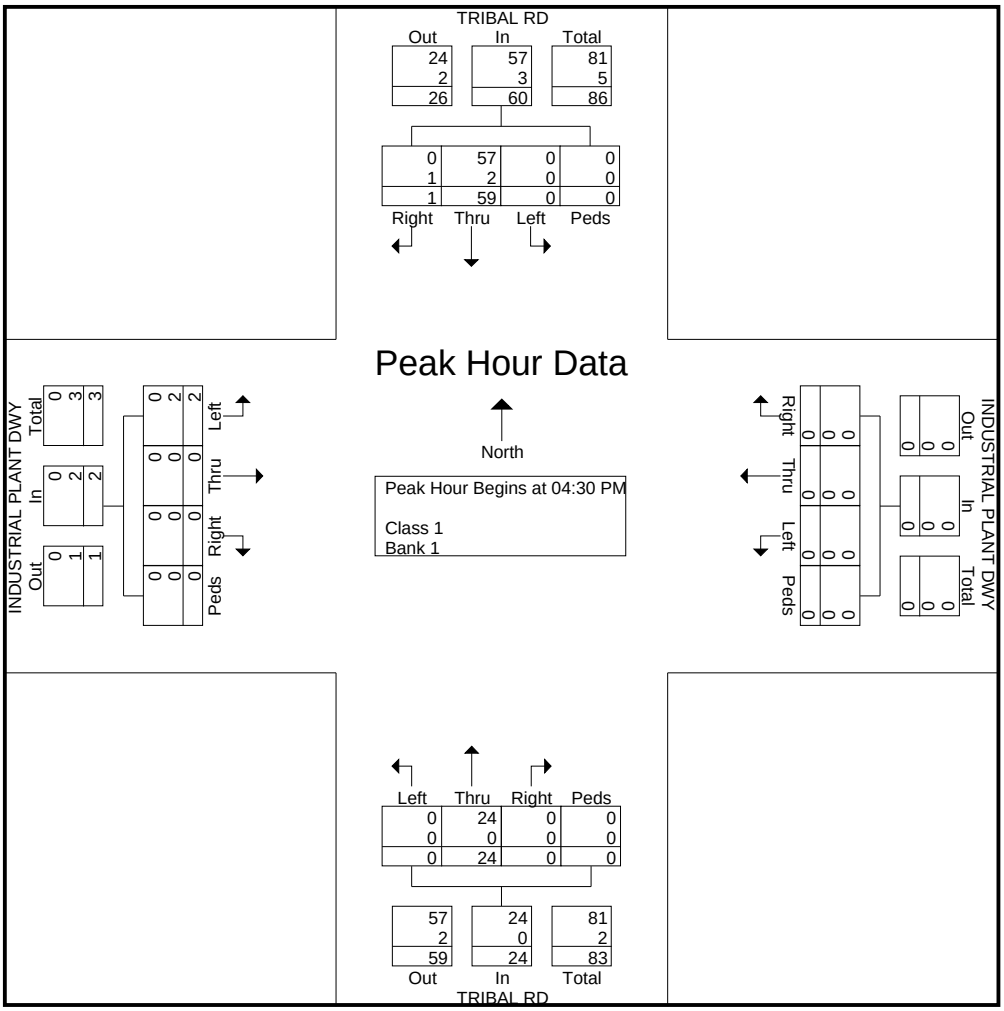


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #25 TRIBALRD&INDUSTRIALPLANTPM
Site Code : 25
Start Date : 5/27/2015
Page No : 2

	TRIBAL RD Southbound					INDUSTRIAL PLANT DWY Westbound					TRIBAL RD Northbound					INDUSTRIAL PLANT DWY Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	**30**	0	0	**30**	0	0	0	0	0	0	**8**	0	0	**8**	0	0	**1**	0	**1**	**39**
04:45 PM	**1**	8	0	0	9	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	15
05:00 PM	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	12
05:15 PM	0	14	0	0	14	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	20
Total Volume	1	59	0	0	60	0	0	0	0	0	0	24	0	0	24	0	0	2	0	2	86
% App. Total	1.7	98.3	0	0		0	0	0	0		0	100	0	0		0	0	100	0		
PHF	.250	.492	.000	.000	.500	.000	.000	.000	.000	.000	.000	.750	.000	.000	.750	.000	.000	.500	.000	.500	.551
Class 1	0	57	0	0	57	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	81
% Class 1		96.6	0	0	95.0	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	94.2
Bank 1	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	5
% Bank 1	100	3.4	0	0	5.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	5.8

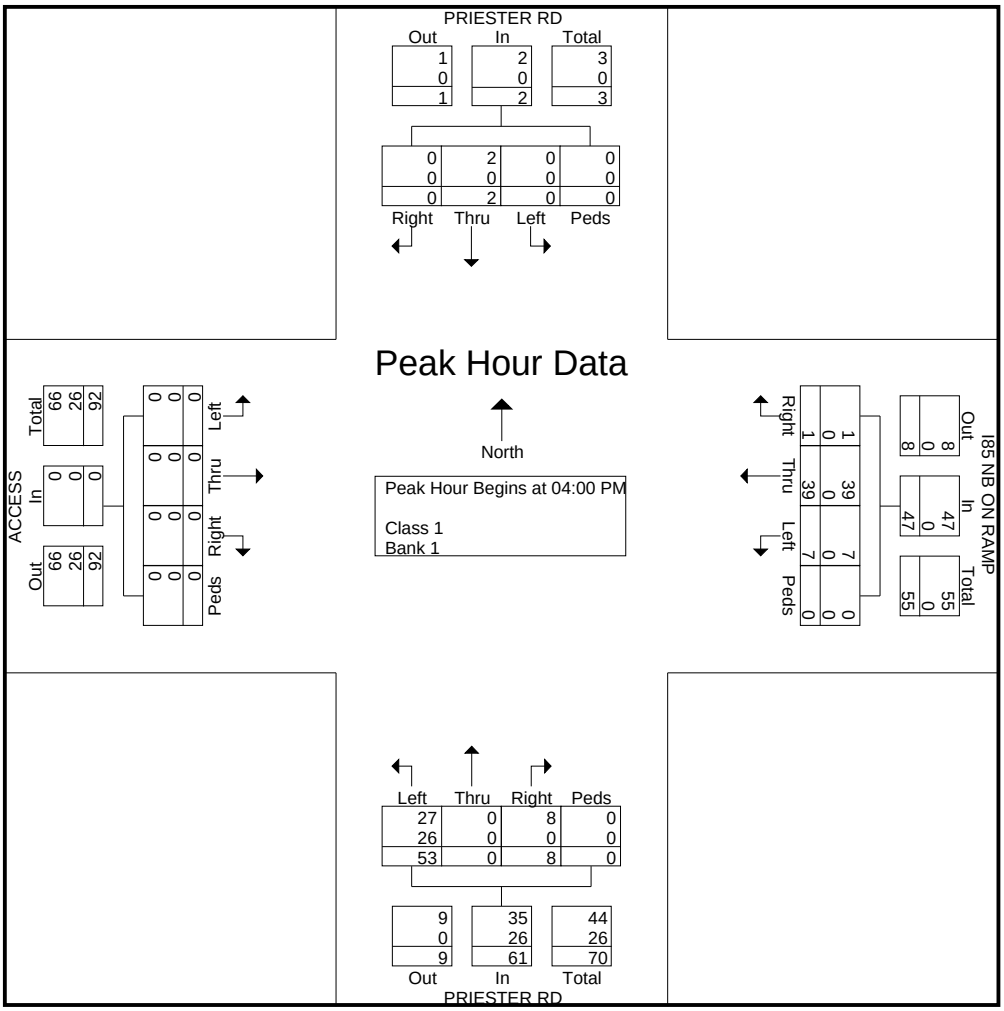


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #26 PriesterRd@I-85 NBO RampPM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	PRIESTER RD Southbound					I85 NB ON RAMP Westbound					PRIESTER RD Northbound					ACCESS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	7	**3**	0	10	**3**	0	14	0	17	0	0	0	0	0	27
04:15 PM	0	0	0	0	0	0	13	1	0	14	2	0	9	0	11	0	0	0	0	0	25
04:30 PM	0	**1**	0	0	**1**	**1**	**14**	2	0	**17**	2	0	**20**	0	**22**	0	0	0	0	0	**40**
04:45 PM	0	1	0	0	1	0	5	1	0	6	1	0	10	0	11	0	0	0	0	0	18
Total Volume	0	2	0	0	2	1	39	7	0	47	8	0	53	0	61	0	0	0	0	0	110
% App. Total	0	100	0	0		2.1	83	14.9	0		13.1	0	86.9	0		0	0	0	0		
PHF	.000	.500	.000	.000	.500	.250	.696	.583	.000	.691	.667	.000	.663	.000	.693	.000	.000	.000	.000	.000	.688
Class 1	0	2	0	0	2	1	39	7	0	47	8	0	27	0	35	0	0	0	0	0	84
% Class 1													50.9	0	57.4	0	0	0	0	0	76.4
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	26	0	26	0	0	0	0	0	26
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	49.1	0	42.6	0	0	0	0	0	23.6

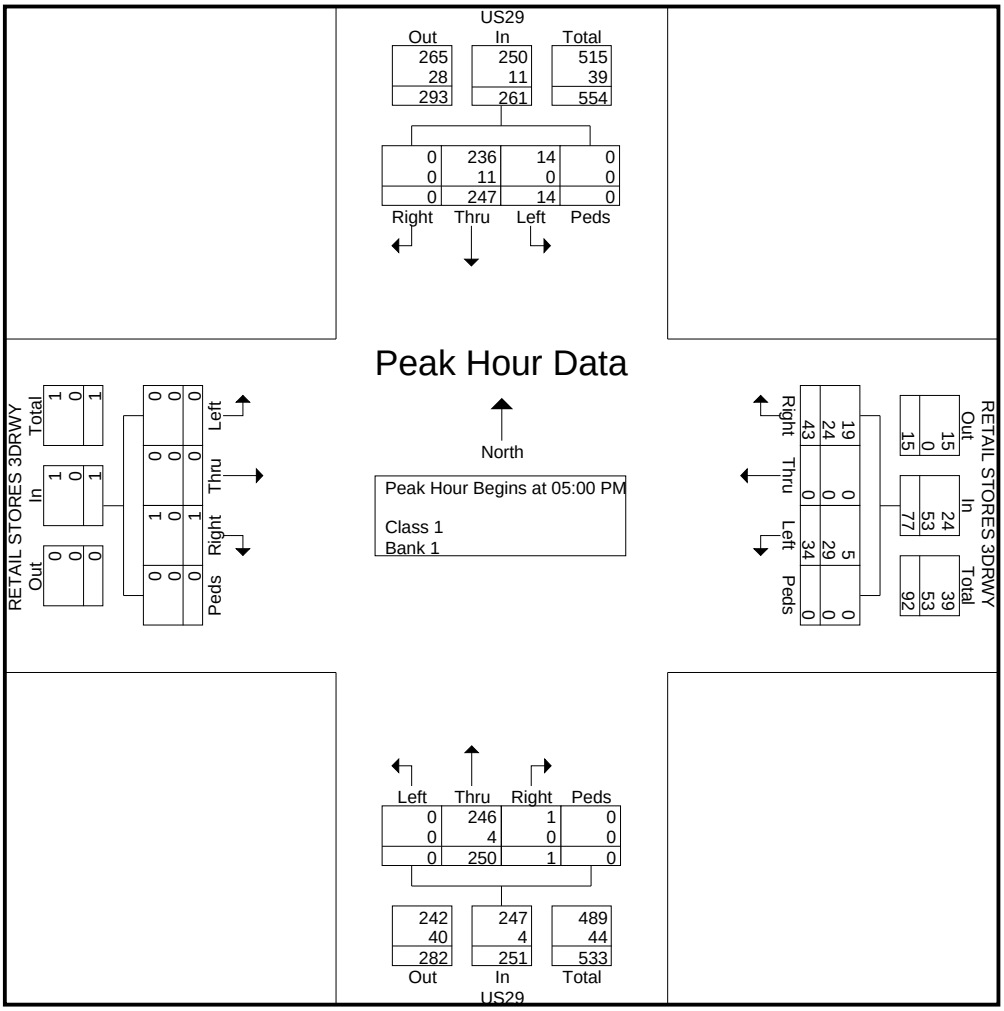


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #27 US29&RETAILSTORES3DRIVEWAYPM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	US29 Southbound					RETAIL STORES 3DRWY Westbound					US29 Northbound					RETAIL STORES 3DRWY Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	60	**5**	0	65	9	0	7	0	16	0	62	0	0	62	0	0	0	0	0	143
05:15 PM	0	59	2	0	61	**15**	0	**12**	0	**27**	0	58	0	0	58	0	0	0	0	0	146
05:30 PM	0	**74**	3	0	**77**	10	0	7	0	17	**1**	64	0	0	65	**1**	0	0	0	**1**	**160**
05:45 PM	0	54	4	0	58	9	0	8	0	17	0	**66**	0	0	**66**	0	0	0	0	0	141
Total Volume	0	247	14	0	261	43	0	34	0	77	1	250	0	0	251	1	0	0	0	1	590
% App. Total	0	94.6	5.4	0		55.8	0	44.2	0		0.4	99.6	0	0		100	0	0	0		
PHF	.000	.834	.700	.000	.847	.717	.000	.708	.000	.713	.250	.947	.000	.000	.951	.250	.000	.000	.000	.250	.922
Class 1	0	236	14	0	250	19	0	5	0	24	1	246	0	0	247	1	0	0	0	1	522
% Class 1		95.5	100	0	95.8	44.2	0	14.7	0	31.2	100	98.4	0	0	98.4	100	0	0	0	100	88.5
Bank 1	0	11	0	0	11	24	0	29	0	53	0	4	0	0	4	0	0	0	0	0	68
% Bank 1	0	4.5	0	0	4.2	55.8	0	85.3	0	68.8	0	1.6	0	0	1.6	0	0	0	0	0	11.5

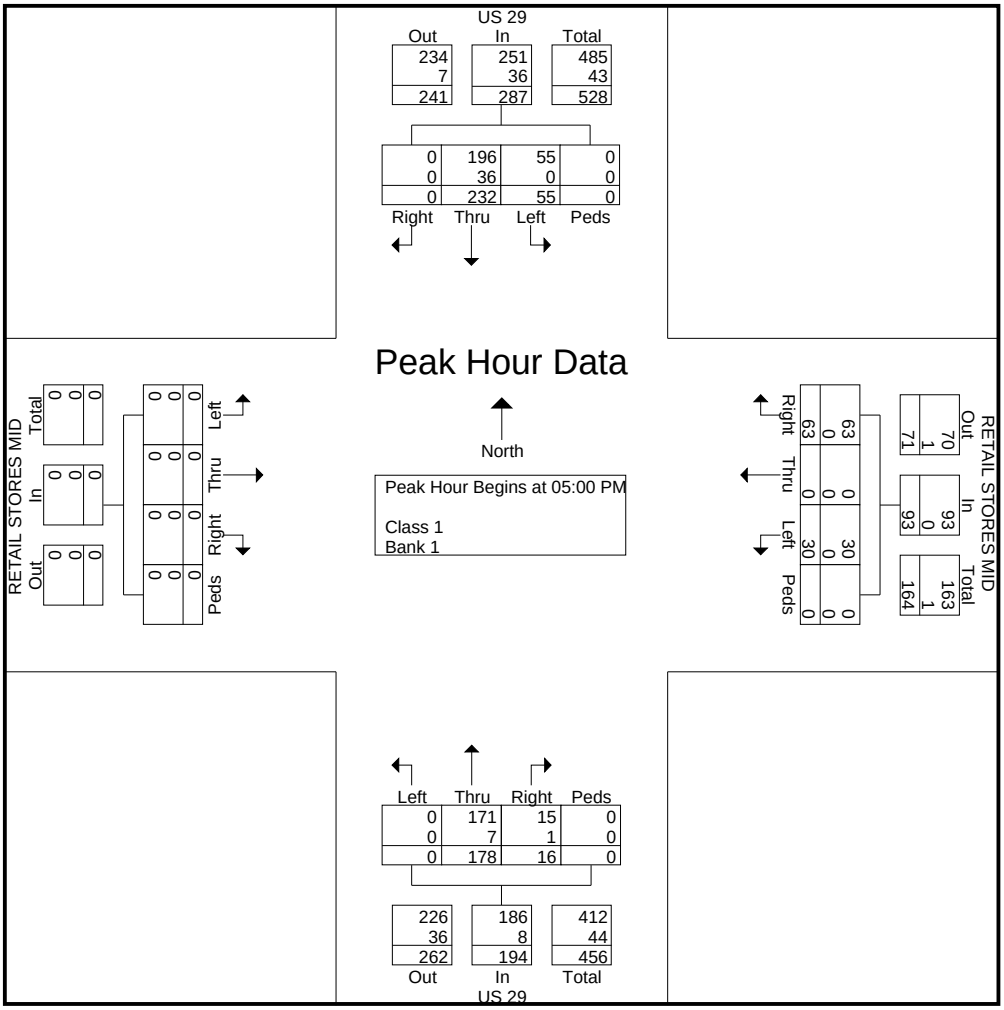


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #28 US29&RETAILSTORESPM
Site Code : 28
Start Date : 5/27/2015
Page No : 2

	US 29 Southbound					RETAIL STORES MID Westbound					US 29 Northbound					RETAIL STORES MID Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	59	13	0	72	12	0	6	0	18	2	42	0	0	44	0	0	0	0	0	134
05:15 PM	0	62	13	0	75	16	0	8	0	24	4	**48**	0	0	**52**	0	0	0	0	0	151
05:30 PM	0	**66**	14	0	**80**	16	0	**9**	0	25	**5**	47	0	0	52	0	0	0	0	0	**157**
05:45 PM	0	45	**15**	0	60	**19**	0	7	0	**26**	5	41	0	0	46	0	0	0	0	0	132
Total Volume	0	232	55	0	287	63	0	30	0	93	16	178	0	0	194	0	0	0	0	0	574
% App. Total	0	80.8	19.2	0		67.7	0	32.3	0		8.2	91.8	0	0		0	0	0	0		
PHF	.000	.879	.917	.000	.897	.829	.000	.833	.000	.894	.800	.927	.000	.000	.933	.000	.000	.000	.000	.000	.914
Class 1	0	196	55	0	251	63	0	30	0	93	15	171	0	0	186	0	0	0	0	0	530
% Class 1		84.5	100	0	87.5	100	0	100	0	100	93.8	96.1	0	0	95.9	0	0	0	0	0	92.3
Bank 1	0	36	0	0	36	0	0	0	0	0	1	7	0	0	8	0	0	0	0	0	44
% Bank 1	0	15.5	0	0	12.5	0	0	0	0	0	6.3	3.9	0	0	4.1	0	0	0	0	0	7.7

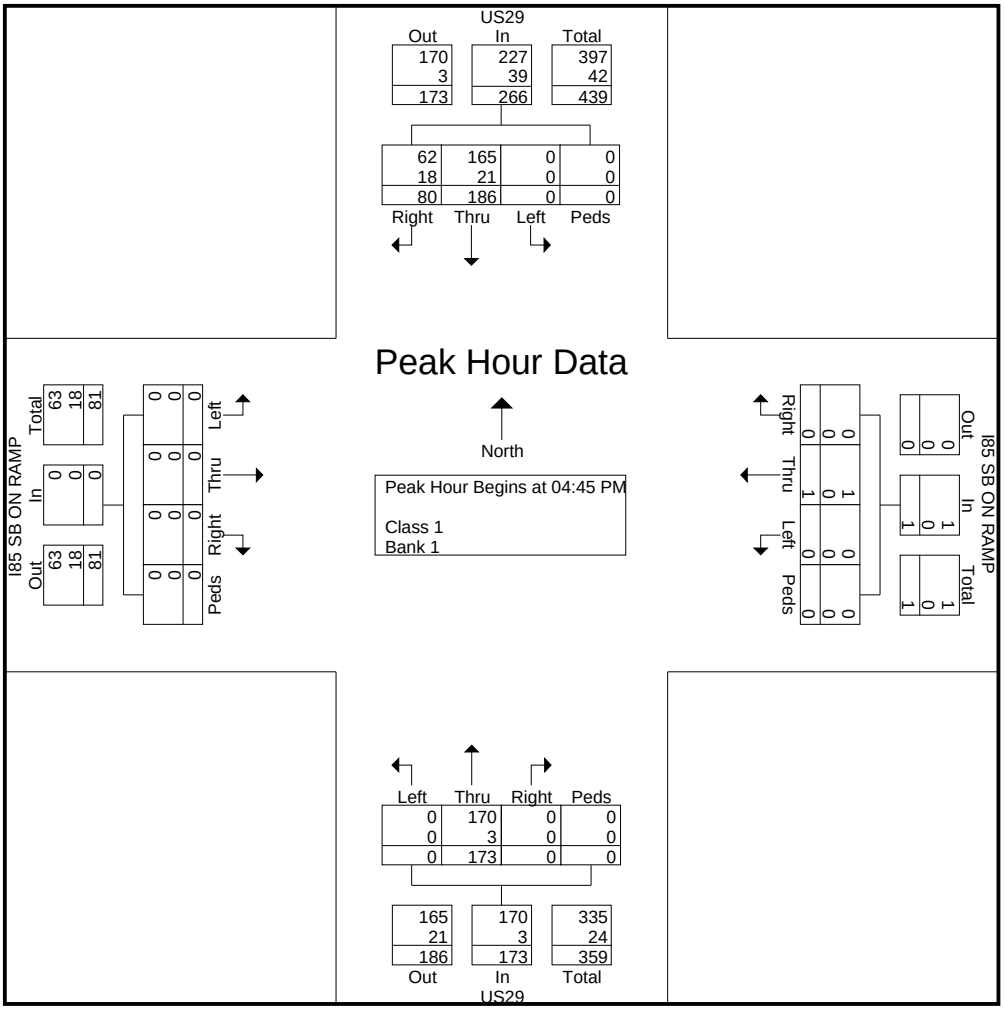


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #29 US29&I85SBONRAMPPM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	US29 Southbound					I85 SB ON RAMP Westbound					US29 Northbound					I85 SB ON RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	17	46	0	0	63	0	0	0	0	0	0	36	0	0	36	0	0	0	0	0	99
05:00 PM	21	39	0	0	60	0	**1**	0	0	**1**	0	40	0	0	40	0	0	0	0	0	101
05:15 PM	**22**	39	0	0	61	0	0	0	0	0	0	**50**	0	0	**50**	0	0	0	0	0	111
05:30 PM	20	**62**	0	0	**82**	0	0	0	0	0	0	47	0	0	47	0	0	0	0	0	**129**
Total Volume	80	186	0	0	266	0	1	0	0	1	0	173	0	0	173	0	0	0	0	0	440
% App. Total	30.1	69.9	0	0		0	100	0	0		0	100	0	0		0	0	0	0		
PHF	.909	.750	.000	.000	.811	.000	.250	.000	.000	.250	.000	.865	.000	.000	.865	.000	.000	.000	.000	.000	.853
Class 1	62	165	0	0	227	0	1	0	0	1	0	170	0	0	170	0	0	0	0	0	398
% Class 1	77.5	88.7	0	0	85.3	0	100	0	0	100	0	98.3	0	0	98.3	0	0	0	0	0	90.5
Bank 1	18	21	0	0	39	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	42
% Bank 1	22.5	11.3	0	0	14.7	0	0	0	0	0	0	1.7	0	0	1.7	0	0	0	0	0	9.5



All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #30 US29&I85 SBOnRampPM
Site Code : 30
Start Date : 5/27/2015
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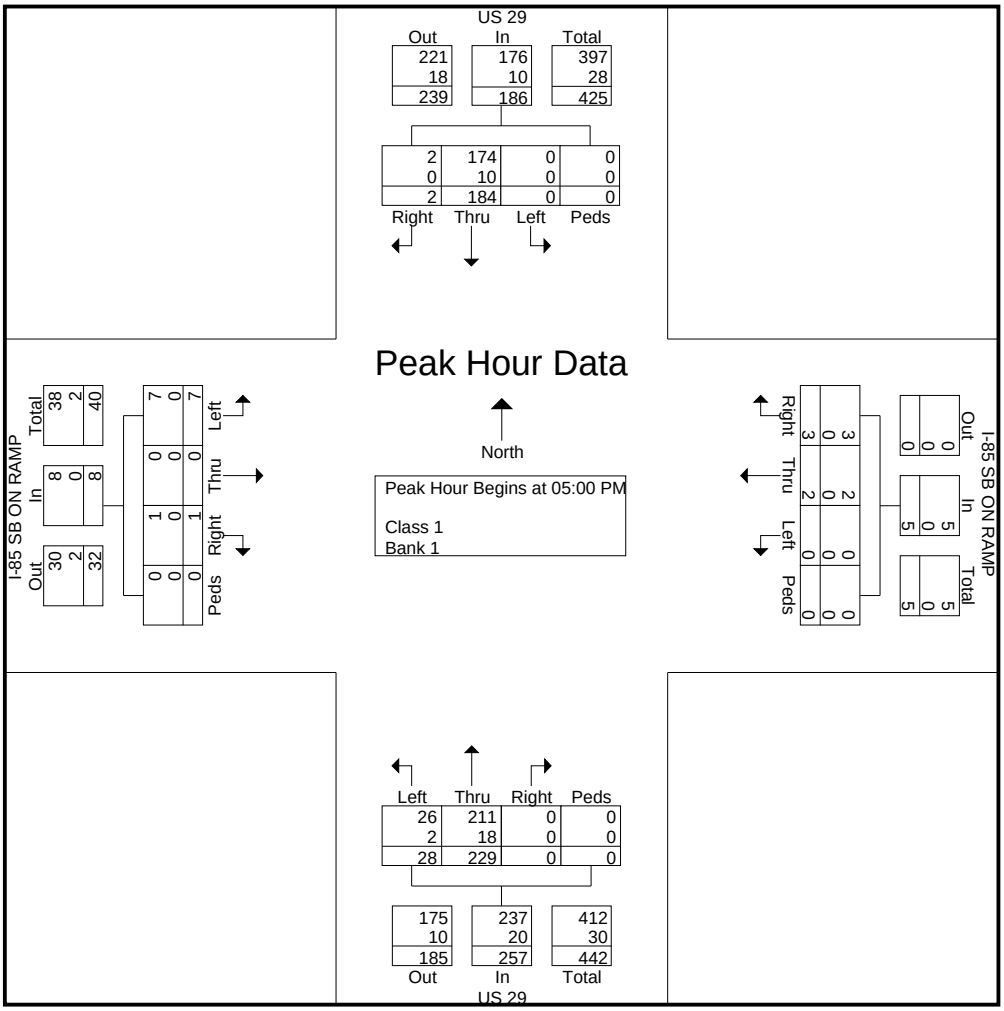
	US 29 Southbound					I-85 SB ON RAMP Westbound					US 29 Northbound					I-85 SB ON RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**1**	44	0	0	45	0	0	0	0	0	0	56	**10**	0	66	0	0	**4**	0	**4**	115
05:15 PM	1	42	0	0	43	0	0	0	0	0	0	**62**	8	0	**70**	0	0	0	0	0	113
05:30 PM	0	**59**	0	0	**59**	**2**	0	0	0	2	0	50	7	0	57	**1**	0	2	0	3	**121**
05:45 PM	0	39	0	0	39	1	**2**	0	0	**3**	0	61	3	0	64	0	0	1	0	1	107
Total Volume	2	184	0	0	186	3	2	0	0	5	0	229	28	0	257	1	0	7	0	8	456
% App. Total	1.1	98.9	0	0		60	40	0	0		0	89.1	10.9	0		12.5	0	87.5	0		
PHF	.500	.780	.000	.000	.788	.375	.250	.000	.000	.417	.000	.923	.700	.000	.918	.250	.000	.438	.000	.500	.942
Class 1	2	174	0	0	176	3	2	0	0	5	0	211	26	0	237	1	0	7	0	8	426
% Class 1		94.6	0	0	94.6	100	100	0	0	100	0	92.1	92.9	0	92.2	100	0	100	0	100	93.4
Bank 1	0	10	0	0	10	0	0	0	0	0	0	18	2	0	20	0	0	0	0	0	30
% Bank 1	0	5.4	0	0	5.4	0	0	0	0	0	0	7.9	7.1	0	7.8	0	0	0	0	0	6.6

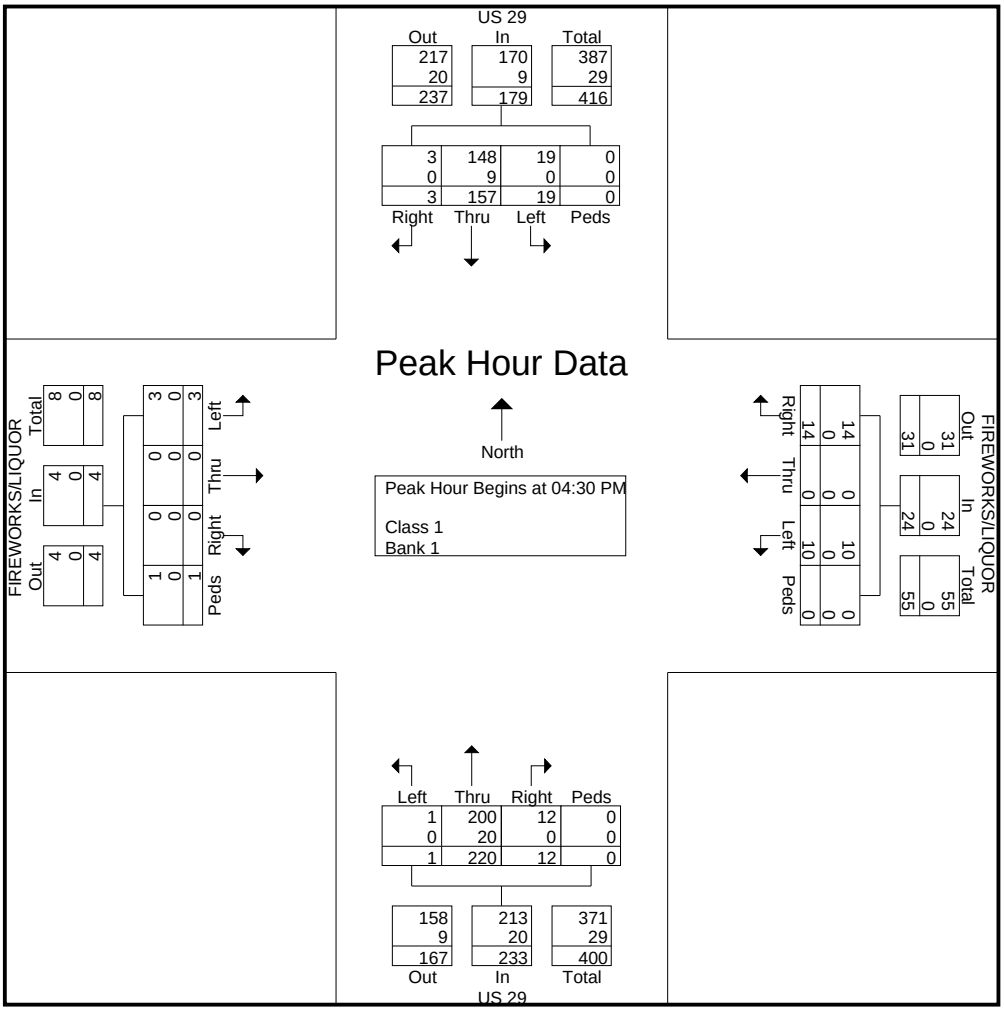


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #31 US29@Fireworks-LiquorPM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	US 29 Southbound					FIREWORKS/LIQUOR Westbound					US 29 Northbound					FIREWORKS/LIQUOR Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**1**	**48**	5	0	**54**	4	0	2	0	6	3	48	0	0	51	0	0	**1**	**1**	**2**	**113**
04:45 PM	1	34	**6**	0	41	**5**	0	3	0	**8**	2	58	**1**	0	61	0	0	0	0	0	110
05:00 PM	0	37	4	0	41	1	0	**4**	0	5	**5**	54	0	0	59	0	0	1	0	1	106
05:15 PM	1	38	4	0	43	4	0	1	0	5	2	**60**	0	0	**62**	0	0	1	0	1	111
Total Volume	3	157	19	0	179	14	0	10	0	24	12	220	1	0	233	0	0	3	1	4	440
% App. Total	1.7	87.7	10.6	0		58.3	0	41.7	0		5.2	94.4	0.4	0		0	0	75	25		
PHF	.750	.818	.792	.000	.829	.700	.000	.625	.000	.750	.600	.917	.250	.000	.940	.000	.000	.750	.250	.500	.973
Class 1	3	148	19	0	170	14	0	10	0	24	12	200	1	0	213	0	0	3	1	4	411
% Class 1		94.3	100	0	95.0	100	0	100	0	100	100	90.9	100	0	91.4	0	0	100	100	100	93.4
Bank 1	0	9	0	0	9	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	29
% Bank 1	0	5.7	0	0	5.0	0	0	0	0	0	0	9.1	0	0	8.6	0	0	0	0	0	6.6

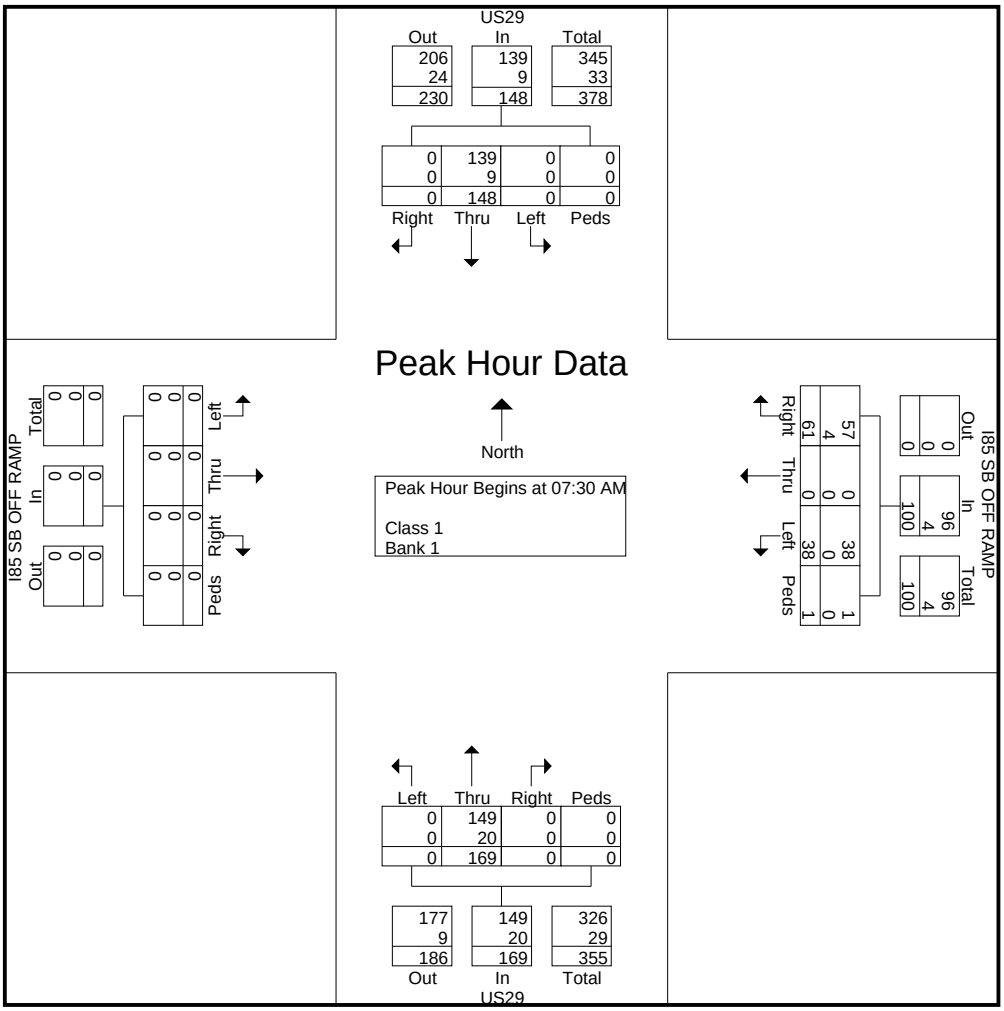


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #32 US29&I85SBOFFRAMPPM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	US29 Southbound					I85 SB OFF RAMP Westbound					US29 Northbound					I85 SB OFF RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	**45**	0	0	**45**	13	0	9	0	22	0	39	0	0	39	0	0	0	0	0	**106**
07:45 AM	0	37	0	0	37	14	0	**10**	0	24	0	41	0	0	41	0	0	0	0	0	102
08:00 AM	0	33	0	0	33	**17**	0	9	0	26	0	**47**	0	0	**47**	0	0	0	0	0	106
08:15 AM	0	33	0	0	33	17	0	10	**1**	**28**	0	42	0	0	42	0	0	0	0	0	103
Total Volume	0	148	0	0	148	61	0	38	1	100	0	169	0	0	169	0	0	0	0	0	417
% App. Total	0	100	0	0		61	0	38	1		0	100	0	0		0	0	0	0		
PHF	.000	.822	.000	.000	.822	.897	.000	.950	.250	.893	.000	.899	.000	.000	.899	.000	.000	.000	.000	.000	.983
Class 1	0	139	0	0	139	57	0	38	1	96	0	149	0	0	149	0	0	0	0	0	384
% Class 1		93.9	0	0	93.9	93.4	0	100	100	96.0	0	88.2	0	0	88.2	0	0	0	0	0	92.1
Bank 1	0	9	0	0	9	4	0	0	0	4	0	20	0	0	20	0	0	0	0	0	33
% Bank 1	0	6.1	0	0	6.1	6.6	0	0	0	4.0	0	11.8	0	0	11.8	0	0	0	0	0	7.9

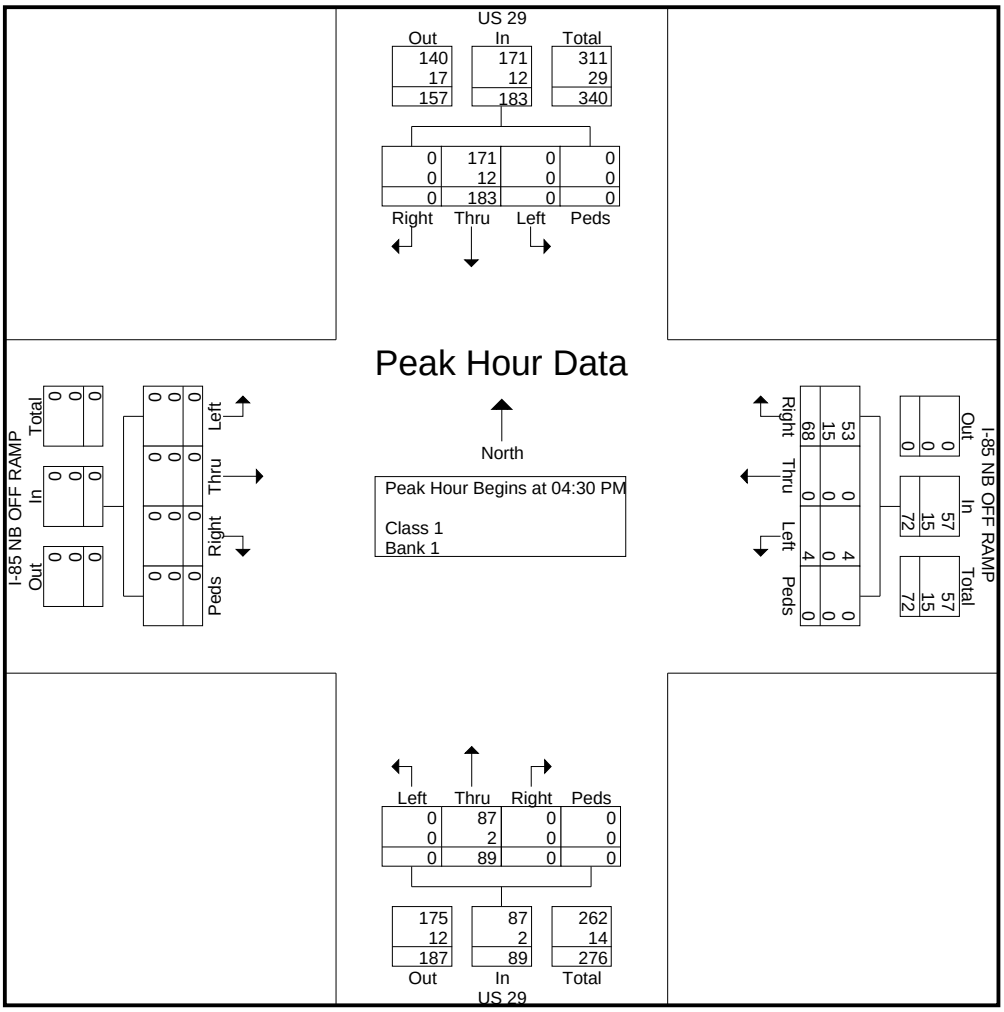


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #33 US29&I85NBOFFPM
Site Code : 33
Start Date : 5/27/2015
Page No : 2

	US 29 Southbound					I-85 NB OFF RAMP Westbound					US 29 Northbound					I-85 NB OFF RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	**53**	0	0	**53**	14	0	1	0	15	0	19	0	0	19	0	0	0	0	0	87
04:45 PM	0	45	0	0	45	12	0	0	0	12	0	**26**	0	0	**26**	0	0	0	0	0	83
05:00 PM	0	43	0	0	43	19	0	1	0	20	0	23	0	0	23	0	0	0	0	0	86
05:15 PM	0	42	0	0	42	**23**	0	**2**	0	**25**	0	21	0	0	21	0	0	0	0	0	**88**
Total Volume	0	183	0	0	183	68	0	4	0	72	0	89	0	0	89	0	0	0	0	0	344
% App. Total	0	100	0	0		94.4	0	5.6	0		0	100	0	0		0	0	0	0		
PHF	.000	.863	.000	.000	.863	.739	.000	.500	.000	.720	.000	.856	.000	.000	.856	.000	.000	.000	.000	.000	.977
Class 1	0	171	0	0	171	53	0	4	0	57	0	87	0	0	87	0	0	0	0	0	315
% Class 1		93.4	0	0	93.4	77.9	0	100	0	79.2	0	97.8	0	0	97.8	0	0	0	0	0	91.6
Bank 1	0	12	0	0	12	15	0	0	0	15	0	2	0	0	2	0	0	0	0	0	29
% Bank 1	0	6.6	0	0	6.6	22.1	0	0	0	20.8	0	2.2	0	0	2.2	0	0	0	0	0	8.4

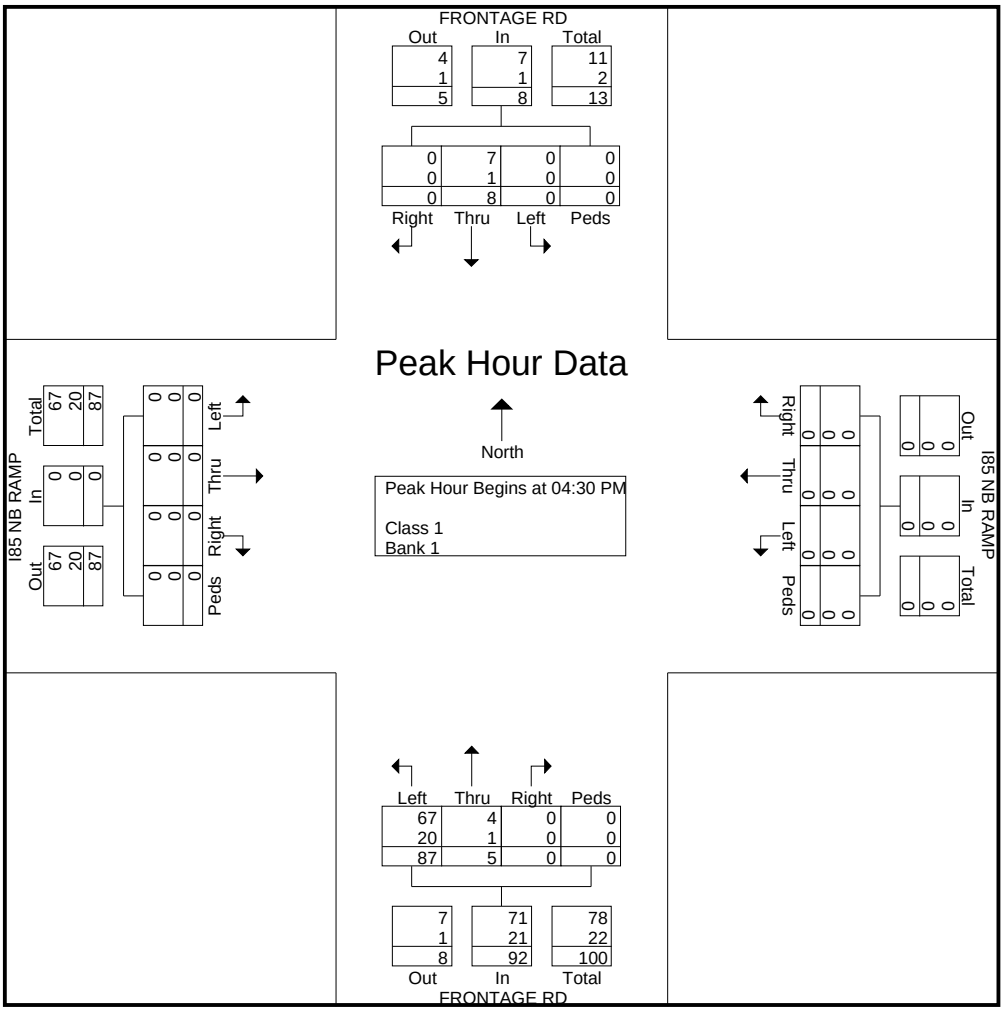


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #34 FrontageRd@ I-85NBOnRampPM
Site Code :
Start Date : 5/27/2015
Page No : 2

	FRONTAGE RD Southbound					I85 NB RAMP Westbound					FRONTAGE RD Northbound					I85 NB RAMP Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	2	0	0	2	0	0	0	0	0	0	**3**	**29**	0	**32**	0	0	0	0	0	**34**
04:45 PM	0	**3**	0	0	**3**	0	0	0	0	0	0	0	22	0	22	0	0	0	0	0	25
05:00 PM	0	3	0	0	3	0	0	0	0	0	0	1	16	0	17	0	0	0	0	0	20
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	20	0	21	0	0	0	0	0	21
Total Volume	0	8	0	0	8	0	0	0	0	0	0	5	87	0	92	0	0	0	0	0	100
% App. Total	0	100	0	0		0	0	0	0		0	5.4	94.6	0		0	0	0	0		
PHF	.000	.667	.000	.000	.667	.000	.000	.000	.000	.000	.000	.417	.750	.000	.719	.000	.000	.000	.000	.000	.735
Class 1	0	7	0	0	7	0	0	0	0	0	0	4	67	0	71	0	0	0	0	0	78
% Class 1		87.5	0	0	87.5	0	0	0	0	0	0	80.0	77.0	0	77.2	0	0	0	0	0	78.0
Bank 1	0	1	0	0	1	0	0	0	0	0	0	1	20	0	21	0	0	0	0	0	22
% Bank 1	0	12.5	0	0	12.5	0	0	0	0	0	0	20.0	23.0	0	22.8	0	0	0	0	0	22.0

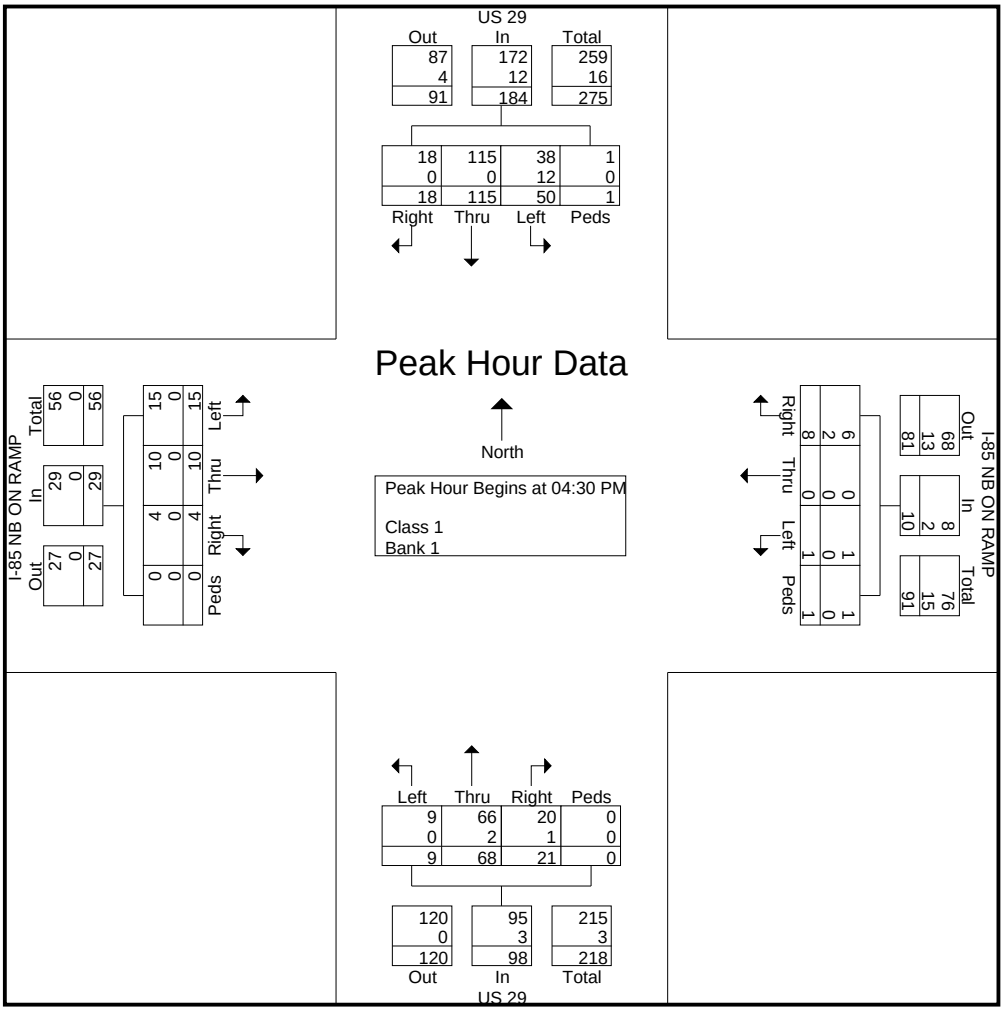


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #35 US29&I85NBONPM
Site Code : 35
Start Date : 5/28/2015
Page No : 2

	US 29 Southbound					I-85 NB ON RAMP Westbound					US 29 Northbound					I-85 NB ON RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**8**	27	**18**	0	**53**	1	0	0	0	1	3	15	**4**	0	22	1	**4**	4	0	**9**	**85**
04:45 PM	5	26	14	**1**	46	2	0	0	**1**	3	5	18	0	0	23	0	3	**6**	0	9	81
05:00 PM	2	**34**	7	0	43	**5**	0	**1**	0	**6**	5	16	2	0	23	**2**	2	3	0	7	79
05:15 PM	3	28	11	0	42	0	0	0	0	0	**8**	**19**	3	0	**30**	1	1	2	0	4	76
Total Volume	18	115	50	1	184	8	0	1	1	10	21	68	9	0	98	4	10	15	0	29	321
% App. Total	9.8	62.5	27.2	0.5		80	0	10	10		21.4	69.4	9.2	0		13.8	34.5	51.7	0		
PHF	.563	.846	.694	.250	.868	.400	.000	.250	.250	.417	.656	.895	.563	.000	.817	.500	.625	.625	.000	.806	.944
Class 1	18	115	38	1	172	6	0	1	1	8	20	66	9	0	95	4	10	15	0	29	304
% Class 1			76.0	100	93.5	75.0	0	100	100	80.0	95.2	97.1	100	0	96.9	100	100	100	0	100	94.7
Bank 1	0	0	12	0	12	2	0	0	0	2	1	2	0	0	3	0	0	0	0	0	17
% Bank 1	0	0	24.0	0	6.5	25.0	0	0	0	20.0	4.8	2.9	0	0	3.1	0	0	0	0	0	5.3

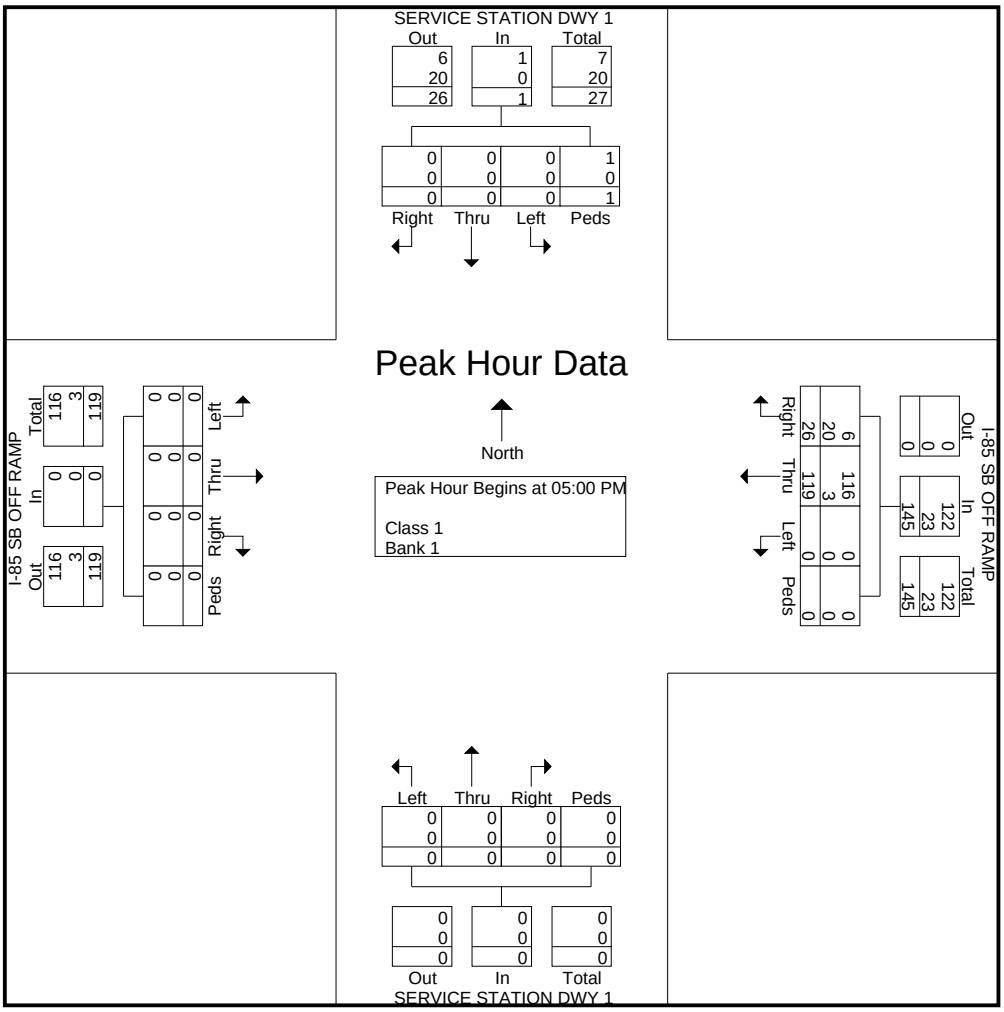


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #36 SERVICESTATION&I85SBOFFPM
Site Code : 36
Start Date : 5/27/2015
Page No : 2

	SERVICE STATION DWY 1 Southbound					I-85 SB OFF RAMP Westbound					SERVICE STATION DWY 1 Northbound					I-85 SB OFF RAMP Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	**10**	28	0	0	38	0	0	0	0	0	0	0	0	0	0	38
05:15 PM	0	0	0	0	0	9	26	0	0	35	0	0	0	0	0	0	0	0	0	0	35
05:30 PM	0	0	0	0	0	3	**37**	0	0	**40**	0	0	0	0	0	0	0	0	0	0	**40**
05:45 PM	0	0	0	**1**	**1**	4	28	0	0	32	0	0	0	0	0	0	0	0	0	0	33
Total Volume	0	0	0	1	1	26	119	0	0	145	0	0	0	0	0	0	0	0	0	0	146
% App. Total	0	0	0	100		17.9	82.1	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.250	.250	.650	.804	.000	.000	.906	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.913
Class 1	0	0	0	1	1	6	116	0	0	122	0	0	0	0	0	0	0	0	0	0	123
% Class 1						23.1	97.5	0	0	84.1	0	0	0	0	0	0	0	0	0	0	84.2
Bank 1	0	0	0	0	0	20	3	0	0	23	0	0	0	0	0	0	0	0	0	0	23
% Bank 1	0	0	0	0	0	76.9	2.5	0	0	15.9	0	0	0	0	0	0	0	0	0	0	15.8

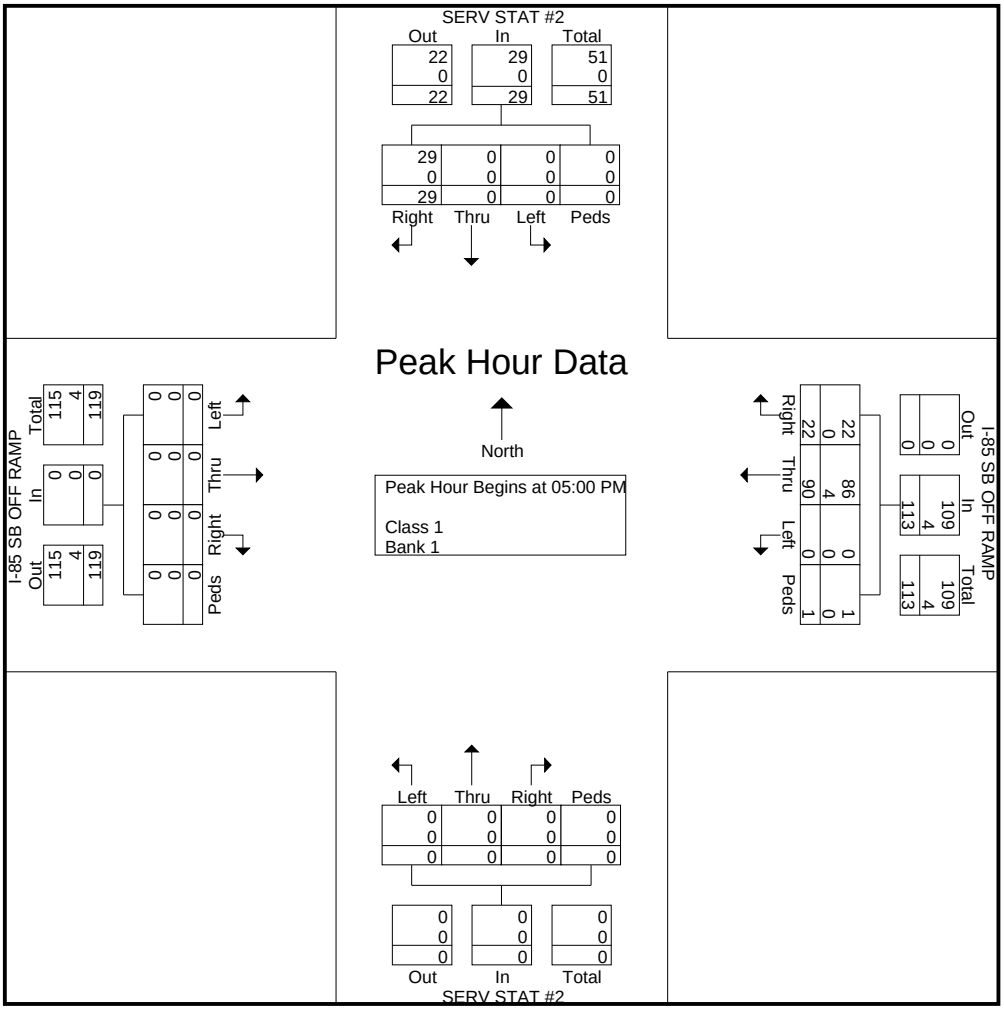


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #37 ServiceStatDwy2@I-85SBOffRampPM
Site Code : 10
Start Date : 5/27/2015
Page No : 2

	SERV STAT #2 Southbound					I-85 SB OFF RAMP Westbound					SERV STAT #2 Northbound					I-85 SB OFF RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	5	0	0	0	5	6	24	0	0	30	0	0	0	0	0	0	0	0	0	0	35
05:15 PM	**10**	0	0	0	**10**	**9**	16	0	0	25	0	0	0	0	0	0	0	0	0	0	35
05:30 PM	8	0	0	0	8	2	**29**	0	0	**31**	0	0	0	0	0	0	0	0	0	0	**39**
05:45 PM	6	0	0	0	6	5	21	0	**1**	27	0	0	0	0	0	0	0	0	0	0	33
Total Volume	29	0	0	0	29	22	90	0	1	113	0	0	0	0	0	0	0	0	0	0	142
% App. Total	100	0	0	0		19.5	79.6	0	0.9		0	0	0	0		0	0	0	0		
PHF	.725	.000	.000	.000	.725	.611	.776	.000	.250	.911	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.910
Class 1	29	0	0	0	29	22	86	0	1	109	0	0	0	0	0	0	0	0	0	0	138
% Class 1							95.6	0	100	96.5	0	0	0	0	0	0	0	0	0	0	97.2
Bank 1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
% Bank 1	0	0	0	0	0	0	4.4	0	0	3.5	0	0	0	0	0	0	0	0	0	0	2.8

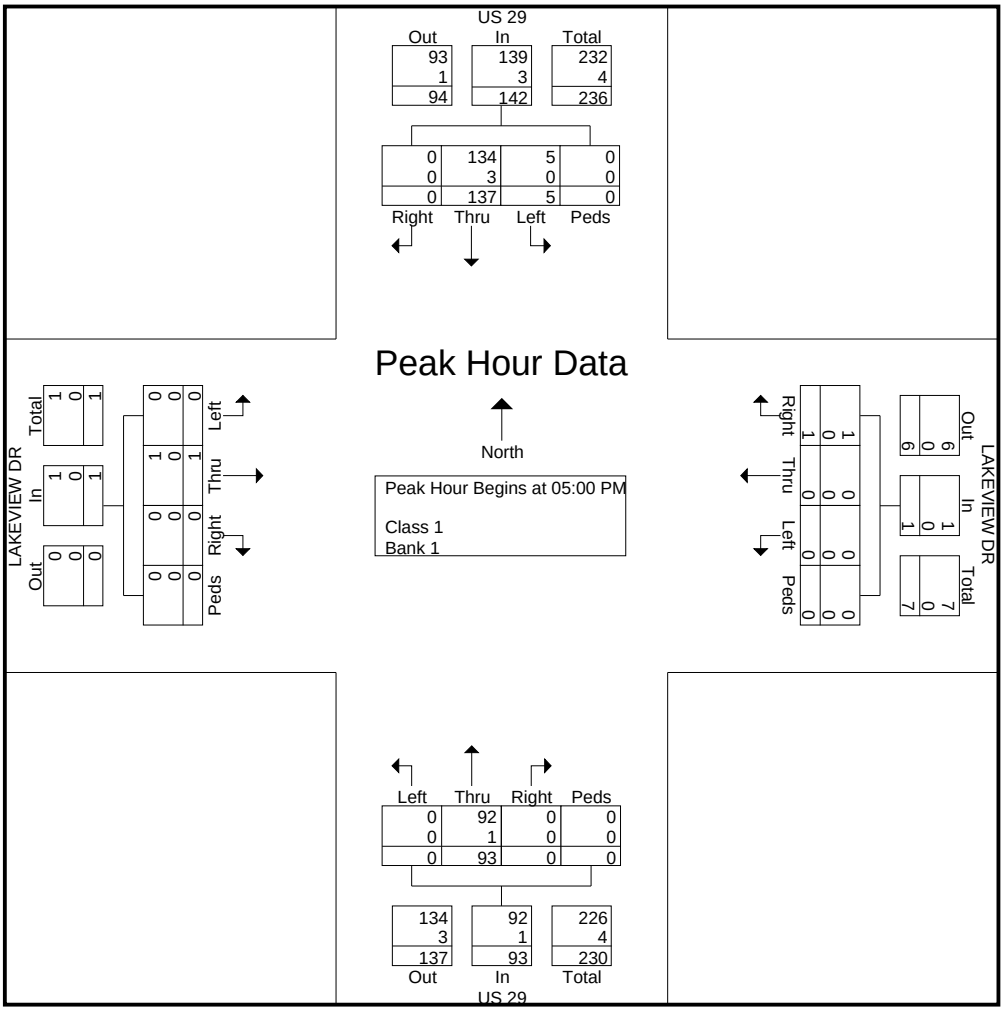


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #38 US29&LAKEVIEWPM
Site Code : 38
Start Date : 5/28/2015
Page No : 2

	US 29 Southbound					LAKEVIEW DR Westbound					US 29 Northbound					LAKEVIEW DR Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	37	1	0	38	0	0	0	0	0	0	23	0	0	23	0	**1**	0	0	**1**	**62**
05:15 PM	0	27	0	0	27	0	0	0	0	0	0	**29**	0	0	**29**	0	0	0	0	0	56
05:30 PM	0	**40**	**2**	0	**42**	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	60
05:45 PM	0	33	2	0	35	**1**	0	0	0	**1**	0	23	0	0	23	0	0	0	0	0	59
Total Volume	0	137	5	0	142	1	0	0	0	1	0	93	0	0	93	0	1	0	0	1	237
% App. Total	0	96.5	3.5	0		100	0	0	0		0	100	0	0		0	100	0	0		
PHF	.000	.856	.625	.000	.845	.250	.000	.000	.000	.250	.000	.802	.000	.000	.802	.000	.250	.000	.000	.250	.956
Class 1	0	134	5	0	139	1	0	0	0	1	0	92	0	0	92	0	1	0	0	1	233
% Class 1		97.8	100	0	97.9	100	0	0	0	100	0	98.9	0	0	98.9	0	100	0	0	100	98.3
Bank 1	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
% Bank 1	0	2.2	0	0	2.1	0	0	0	0	0	0	1.1	0	0	1.1	0	0	0	0	0	1.7

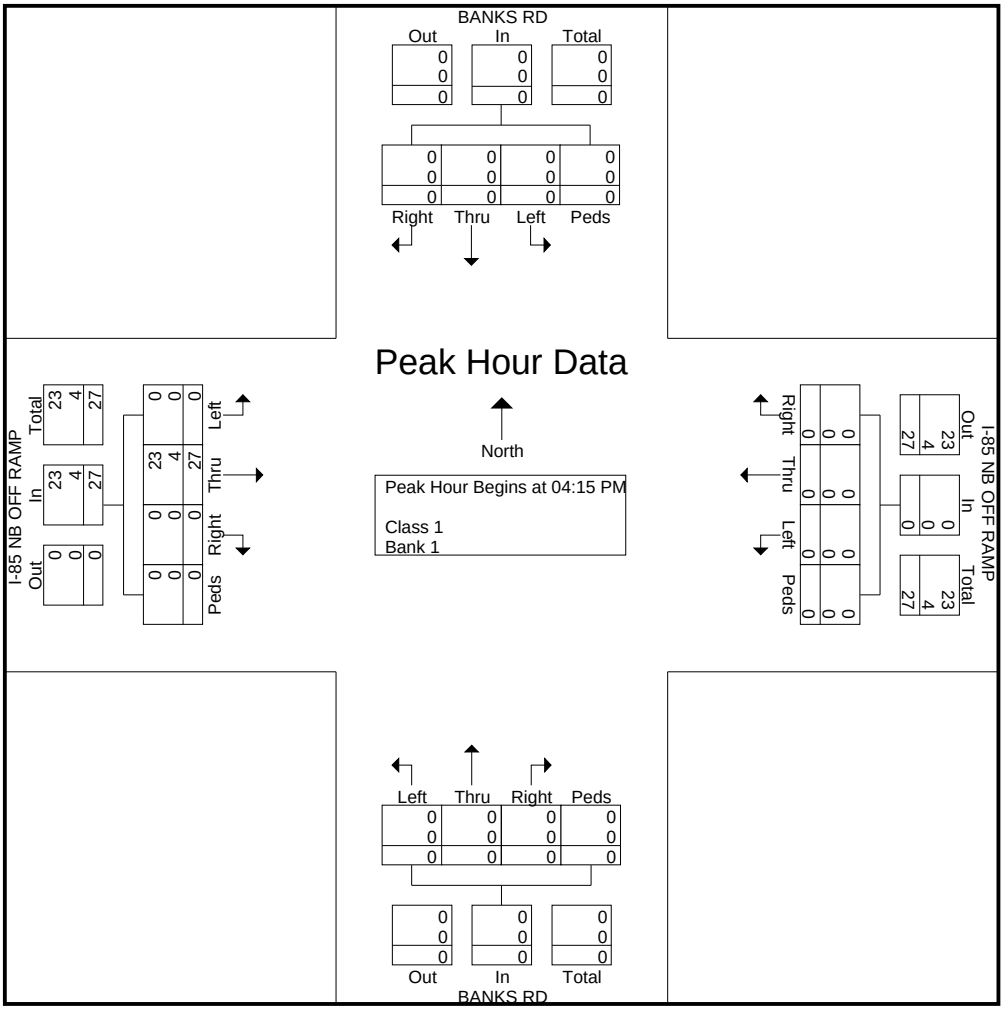


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #39 BANKS&I85NBOFFPM
Site Code : 39
Start Date : 5/27/2015
Page No : 2

	BANKS RD Southbound					I-85 NB OFF RAMP Westbound					BANKS RD Northbound					I-85 NB OFF RAMP Eastbound					
Start Time	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes.**	**App. Total**	**Right**	**Thru**	**Left**	**Bikes**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**11**	0	0	**11**	**11**
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	8
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	0	27	27
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.614	.000	.000	.614	.614
Class 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	0	23	23
% Class 1																	85.2	0	0	85.2	85.2
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14.8	0	0	14.8	14.8

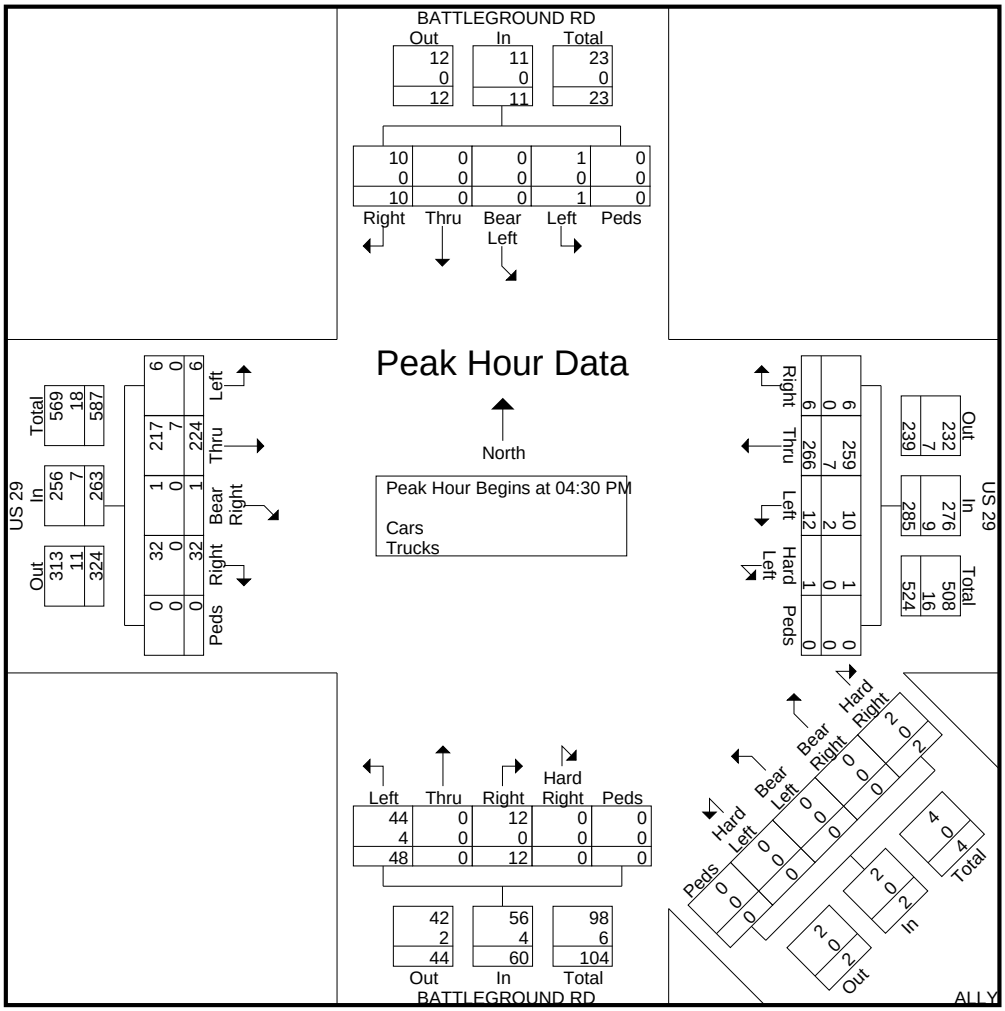


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #40 BattlegroundRd@US29PM
Site Code :
Start Date : 5/27/2015
Page No : 2

	BATTLEGROUND RD Southbound						US 29 Westbound						ALLY Northwestbound						BATTLEGROUND RD Northbound						US 29 Eastbound						
Start Time	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:30 PM																															
04:30 PM	1	0	0	0	0	1	1	**75**	**4**	0	0	**80**	**2**	0	0	0	0	**2**	0	3	0	**17**	0	**20**	6	0	56	1	0	63	**166**
04:45 PM	**4**	0	0	0	0	**4**	1	63	3	**1**	0	68	0	0	0	0	0	0	0	3	0	6	0	9	8	0	**61**	1	0	**70**	151
05:00 PM	2	0	0	**1**	0	3	**4**	62	3	0	0	69	0	0	0	0	0	0	0	**4**	0	11	0	15	**9**	0	54	1	0	64	151
05:15 PM	3	0	0	0	0	3	0	66	2	0	0	68	0	0	0	0	0	0	0	2	0	14	0	16	9	**1**	53	**3**	0	66	153
Total Volume	10	0	0	1	0	11	6	266	12	1	0	285	2	0	0	0	0	2	0	12	0	48	0	60	32	1	224	6	0	263	621
% App. Total	90.9	0	0	9.1	0		2.1	93.3	4.2	0.4	0		100	0	0	0	0		0	20	0	80	0		12.2	0.4	85.2	2.3	0		
PHF	.625	.000	.000	.250	.000	.688	.375	.887	.750	.250	.000	.891	.250	.000	.000	.000	.000	.250	.000	.750	.000	.706	.000	.750	.889	.250	.918	.500	.000	.939	.935
Cars	10	0	0	1	0	11	6	259	10	1	0	276	2	0	0	0	0	2	0	12	0	44	0	56	32	1	217	6	0	256	601
% Cars	100	0	0	100	0	100	100	97.4	83.3	100	0	96.8	100	0	0	0	0	100	0	100	0	91.7	0	93.3	100	100	96.9	100	0	97.3	96.8
Trucks	0	0	0	0	0	0	0	7	2	0	0	9	0	0	0	0	0	0	0	0	0	4	0	4	0	0	7	0	0	7	20
% Trucks	0	0	0	0	0	0	0	2.6	16.7	0	0	3.2	0	0	0	0	0	0	0	0	0	8.3	0	6.7	0	0	3.1	0	0	2.7	3.2

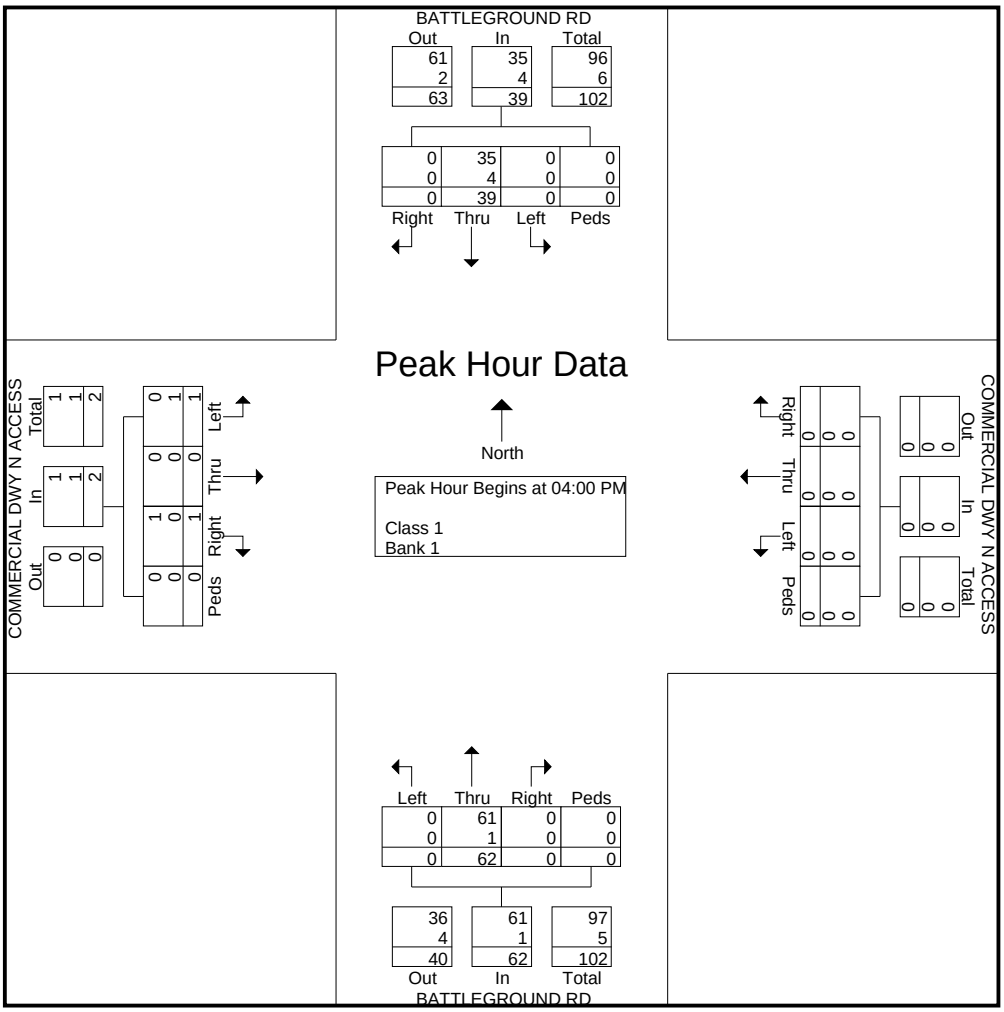


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #41 BATTLEGROUND&COMMERCIALNPM
Site Code : 41
Start Date : 5/27/2015
Page No : 2

	BATTLEGROUND RD Southbound					COMMERCIAL DWY N ACCESS Westbound					BATTLEGROUND RD Northbound					COMMERCIAL DWY N ACCESS Eastbound					
Start Time	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes.	App. Total	Right	Thru	Left	Bikes	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	**13**	0	0	**13**	0	0	0	0	0	0	**21**	0	0	**21**	**1**	0	0	0	**1**	**35**
04:15 PM	0	9	0	0	9	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	20
04:30 PM	0	7	0	0	7	0	0	0	0	0	0	20	0	0	20	0	0	**1**	0	1	28
04:45 PM	0	10	0	0	10	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	20
Total Volume	0	39	0	0	39	0	0	0	0	0	0	62	0	0	62	1	0	1	0	2	103
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		50	0	50	0		
PHF	.000	.750	.000	.000	.750	.000	.000	.000	.000	.000	.000	.738	.000	.000	.738	.250	.000	.250	.000	.500	.736
Class 1	0	35	0	0	35	0	0	0	0	0	0	61	0	0	61	1	0	0	0	1	97
% Class 1		89.7	0	0	89.7	0	0	0	0	0	0	98.4	0	0	98.4	100	0	0	0	50.0	94.2
Bank 1	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	6
% Bank 1	0	10.3	0	0	10.3	0	0	0	0	0	0	1.6	0	0	1.6	0	0	100	0	50.0	5.8

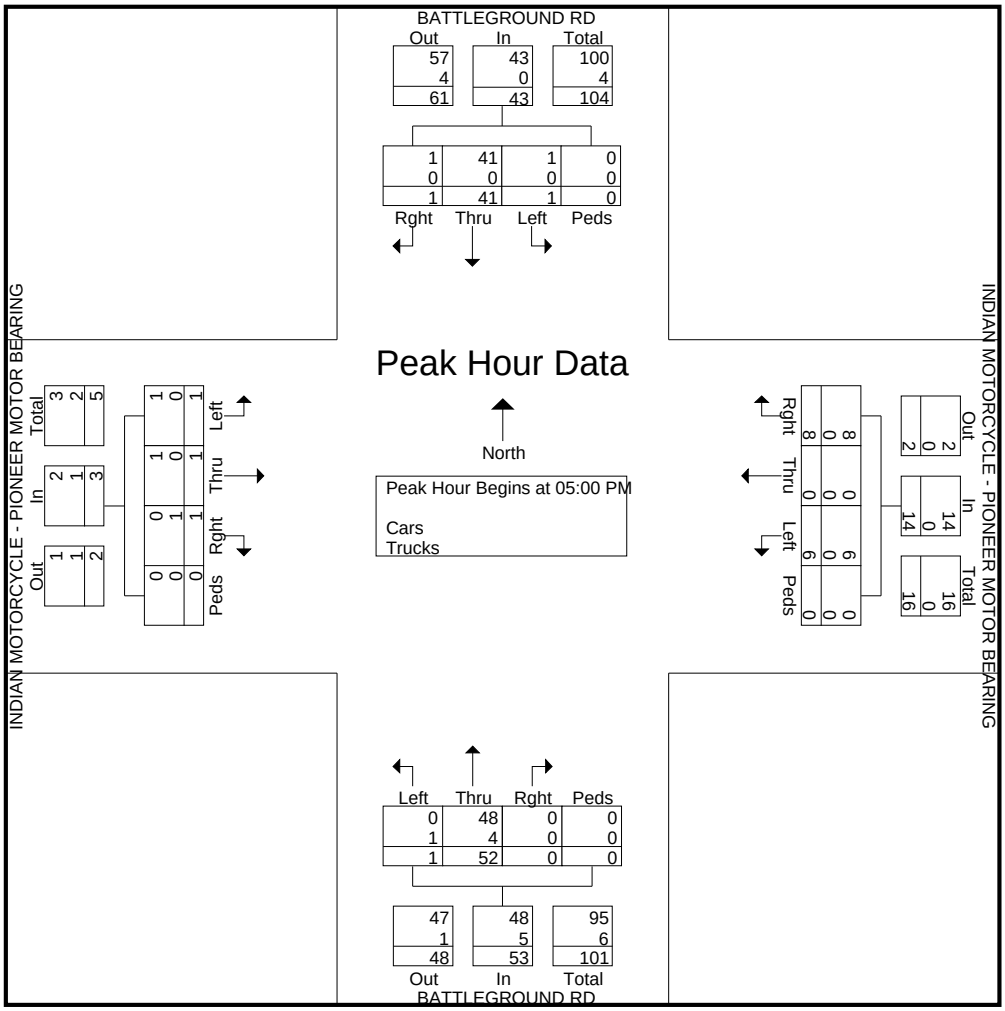


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #42 BattlegroundRd@IndianMotorcyclePM
Site Code :
Start Date : 5/27/2015
Page No : 2

	BATTLEGROUND RD Southbound					INDIAN MOTORCYCLE - PIONEER MOTOR BEARING Westbound					BATTLEGROUND RD Northbound					INDIAN MOTORCYCLE - PIONEER MOTOR BEARING Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	10	0	0	10	2	0	**3**	0	**5**	0	14	**1**	0	15	0	0	0	0	0	30
05:15 PM	**1**	8	**1**	0	10	**4**	0	1	0	5	0	12	0	0	12	0	**1**	0	0	1	28
05:30 PM	0	**12**	0	0	**12**	2	0	2	0	4	0	**16**	0	0	**16**	**1**	0	**1**	0	**2**	**34**
05:45 PM	0	11	0	0	11	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	21
Total Volume	1	41	1	0	43	8	0	6	0	14	0	52	1	0	53	1	1	1	0	3	113
% App. Total	2.3	95.3	2.3	0		57.1	0	42.9	0		0	98.1	1.9	0		33.3	33.3	33.3	0		
PHF	.250	.854	.250	.000	.896	.500	.000	.500	.000	.700	.000	.813	.250	.000	.828	.250	.250	.250	.000	.375	.831
Cars	1	41	1	0	43	8	0	6	0	14	0	48	0	0	48	0	1	1	0	2	107
% Cars	100	100	100	0	100	100	0	100	0	100	0	92.3	0	0	90.6	0	100	100	0	66.7	94.7
Trucks	0	0	0	0	0	0	0	0	0	0	0	4	1	0	5	1	0	0	0	1	6
% Trucks	0	0	0	0	0	0	0	0	0	0	0	7.7	100	0	9.4	100	0	0	0	33.3	5.3

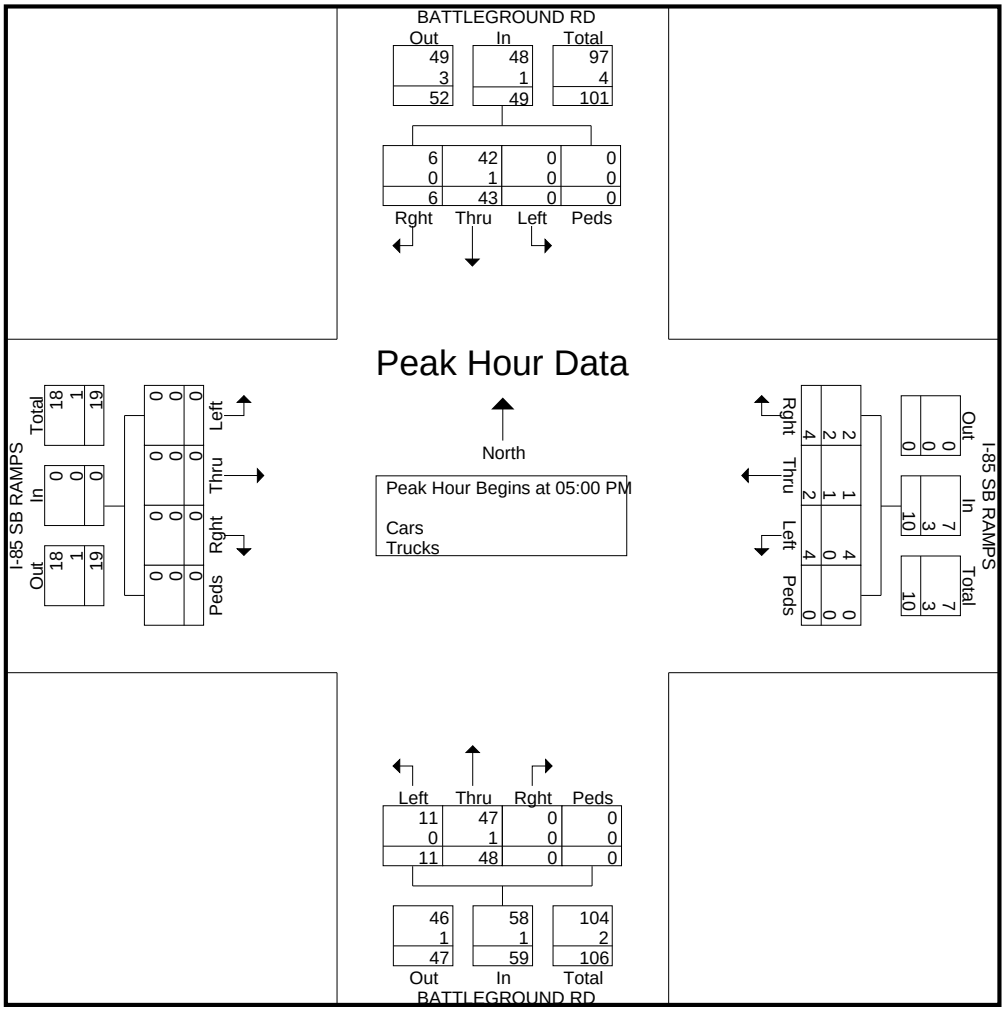


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #43 BattlegroundRd@I-85SBRampsPM
Site Code :
Start Date : 5/27/2015
Page No : 2

	BATTLEGROUND RD Southbound					I-85 SB RAMPS Westbound					BATTLEGROUND RD Northbound					I-85 SB RAMPS Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	**12**	0	0	**13**	1	0	1	0	2	0	**13**	1	0	14	0	0	0	0	0	29
05:15 PM	**3**	10	0	0	13	1	**1**	1	0	3	0	13	0	0	13	0	0	0	0	0	29
05:30 PM	0	10	0	0	10	0	1	0	0	1	0	12	**8**	0	**20**	0	0	0	0	0	**31**
05:45 PM	2	11	0	0	13	**2**	0	**2**	0	**4**	0	10	2	0	12	0	0	0	0	0	29
Total Volume	6	43	0	0	49	4	2	4	0	10	0	48	11	0	59	0	0	0	0	0	118
% App. Total	12.2	87.8	0	0		40	20	40	0		0	81.4	18.6	0		0	0	0	0		
PHF	.500	.896	.000	.000	.942	.500	.500	.500	.000	.625	.000	.923	.344	.000	.738	.000	.000	.000	.000	.000	.952
Cars	6	42	0	0	48	2	1	4	0	7	0	47	11	0	58	0	0	0	0	0	113
% Cars	100	97.7	0	0	98.0	50.0	50.0	100	0	70.0	0	97.9	100	0	98.3	0	0	0	0	0	95.8
Trucks	0	1	0	0	1	2	1	0	0	3	0	1	0	0	1	0	0	0	0	0	5
% Trucks	0	2.3	0	0	2.0	50.0	50.0	0	0	30.0	0	2.1	0	0	1.7	0	0	0	0	0	4.2

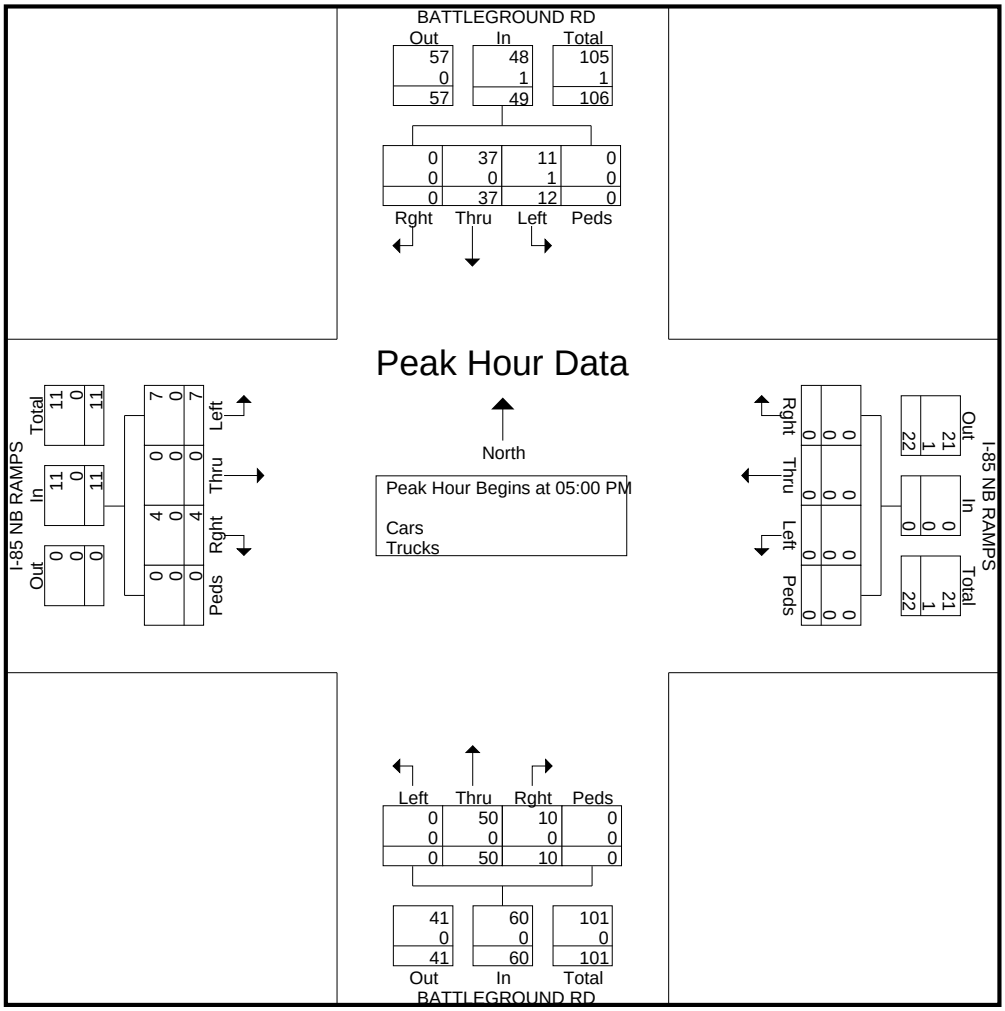


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #44 BattlegroundRd@I-85NBRampsPM
Site Code :
Start Date : 5/27/2015
Page No : 2

	BATTLEGROUND RD Southbound					I-85 NB RAMPS Westbound					BATTLEGROUND RD Northbound					I-85 NB RAMPS Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	10	4	0	14	0	0	0	0	0	2	11	0	0	13	1	0	1	0	2	29
05:15 PM	0	6	**5**	0	11	0	0	0	0	0	2	10	0	0	12	1	0	**3**	0	4	27
05:30 PM	0	6	3	0	9	0	0	0	0	0	**5**	**18**	0	0	**23**	**2**	0	3	0	**5**	**37**
05:45 PM	0	**15**	0	0	**15**	0	0	0	0	0	1	11	0	0	12	0	0	0	0	0	27
Total Volume	0	37	12	0	49	0	0	0	0	0	10	50	0	0	60	4	0	7	0	11	120
% App. Total	0	75.5	24.5	0		0	0	0	0		16.7	83.3	0	0		36.4	0	63.6	0		
PHF	.000	.617	.600	.000	.817	.000	.000	.000	.000	.000	.500	.694	.000	.000	.652	.500	.000	.583	.000	.550	.811
Cars	0	37	11	0	48	0	0	0	0	0	10	50	0	0	60	4	0	7	0	11	119
% Cars	0	100	91.7	0	98.0	0	0	0	0	0	100	100	0	0	100	100	0	100	0	100	99.2
Trucks	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Trucks	0	0	8.3	0	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8

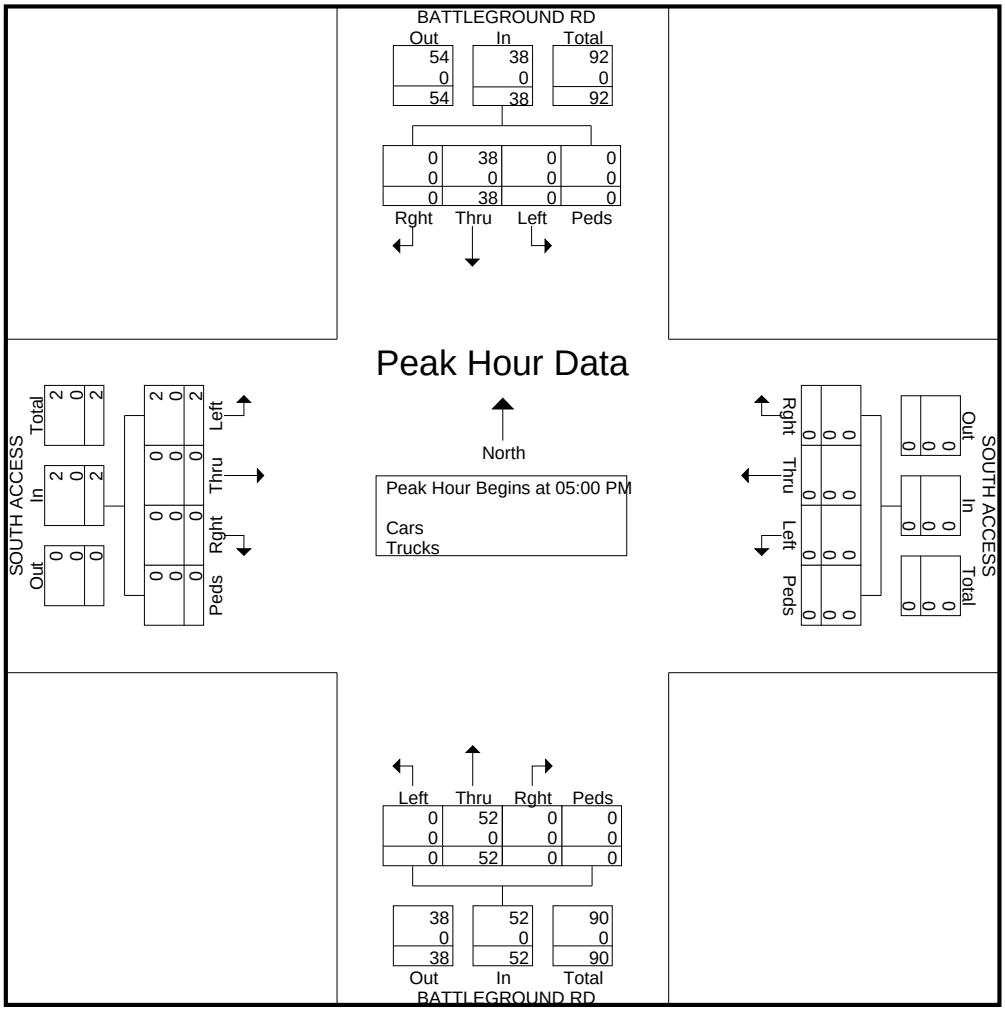


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #45 BattlegroundRd@SouthAccessPM
Site Code :
Start Date : 5/26/2015
Page No : 2

	BATTLEGROUND RD Southbound					SOUTH ACCESS Westbound					BATTLEGROUND RD Northbound					SOUTH ACCESS Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	9	0	0	9	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	23
05:15 PM	0	6	0	0	6	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	18
05:30 PM	0	10	0	0	10	0	0	0	0	0	0	**19**	0	0	**19**	0	0	**2**	0	**2**	**31**
05:45 PM	0	**13**	0	0	**13**	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	20
Total Volume	0	38	0	0	38	0	0	0	0	0	0	52	0	0	52	0	0	2	0	2	92
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		0	0	100	0		
PHF	.000	.731	.000	.000	.731	.000	.000	.000	.000	.000	.000	.684	.000	.000	.684	.000	.000	.250	.000	.250	.742
Cars	0	38	0	0	38	0	0	0	0	0	0	52	0	0	52	0	0	2	0	2	92
% Cars	0	100	0	0	100	0	0	0	0	0	0	100	0	0	100	0	0	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

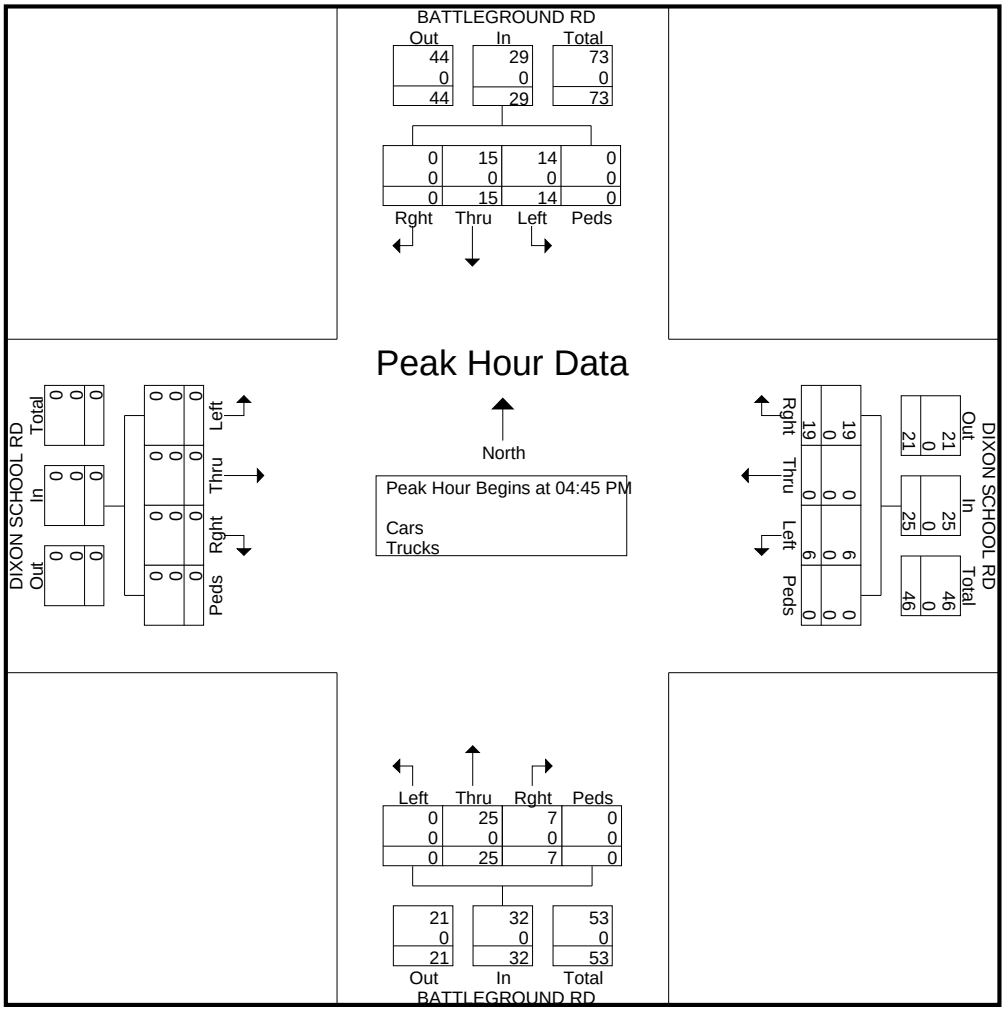


All Traffic Data Service, Inc

1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name : #46 BattlegroundRd@DixonSchoolRdPM
Site Code :
Start Date : 5/26/2015
Page No : 2

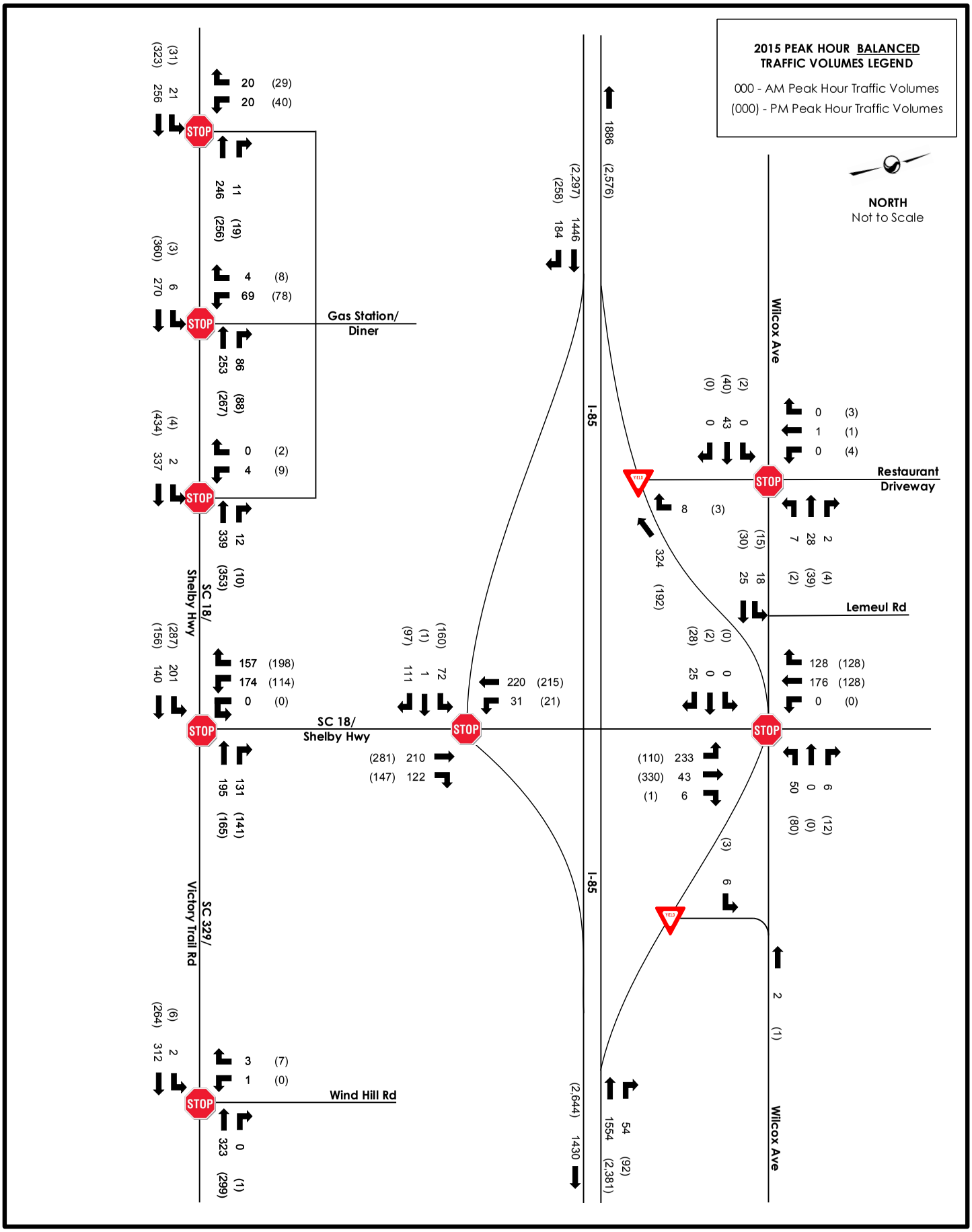
	BATTLEGROUND RD Southbound					DIXON SCHOOL RD Westbound					BATTLEGROUND RD Northbound					DIXON SCHOOL RD Eastbound					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	4	4	0	**8**	3	0	1	0	4	**3**	3	0	0	6	0	0	0	0	0	18
05:00 PM	0	**5**	1	0	6	5	0	2	0	7	0	3	0	0	3	0	0	0	0	0	16
05:15 PM	0	3	**5**	0	8	5	0	**3**	0	**8**	1	8	0	0	9	0	0	0	0	0	25
05:30 PM	0	3	4	0	7	**6**	0	0	0	6	3	**11**	0	0	**14**	0	0	0	0	0	**27**
Total Volume	0	15	14	0	29	19	0	6	0	25	7	25	0	0	32	0	0	0	0	0	86
% App. Total	0	51.7	48.3	0		76	0	24	0		21.9	78.1	0	0		0	0	0	0		
PHF	.000	.750	.700	.000	.906	.792	.000	.500	.000	.781	.583	.568	.000	.000	.571	.000	.000	.000	.000	.000	.796
Cars	0	15	14	0	29	19	0	6	0	25	7	25	0	0	32	0	0	0	0	0	86
% Cars	0	100	100	0	100	100	0	100	0	100	100	100	0	0	100	0	0	0	0	0	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



APPENDIX C

TRAFFIC DIAGRAMS

2015 EXISTING CONDITIONS

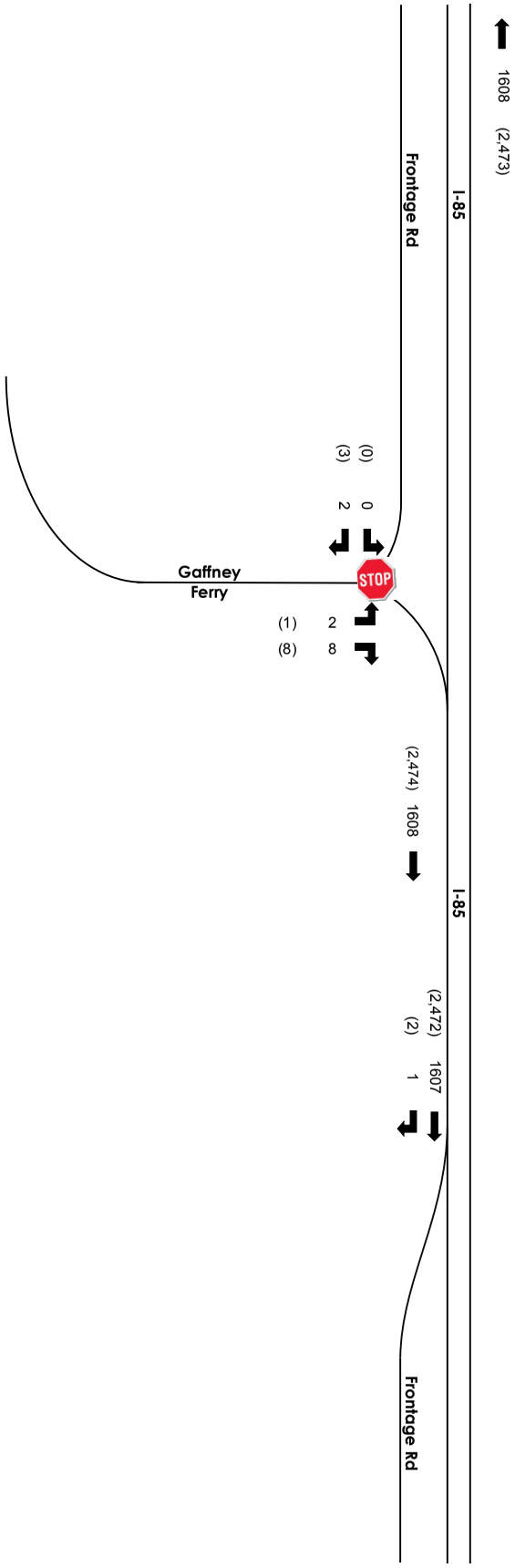

2015 PEAK HOUR BALANCED
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
Wilcox Ave
Restaurant Driveway
Lemeul Rd
I-85
SC 18/ Shelby Hwy
SC 329/ Victory Trail Rd
Gas Station/ Diner
Wind Hill Rd
STOP
YIELD

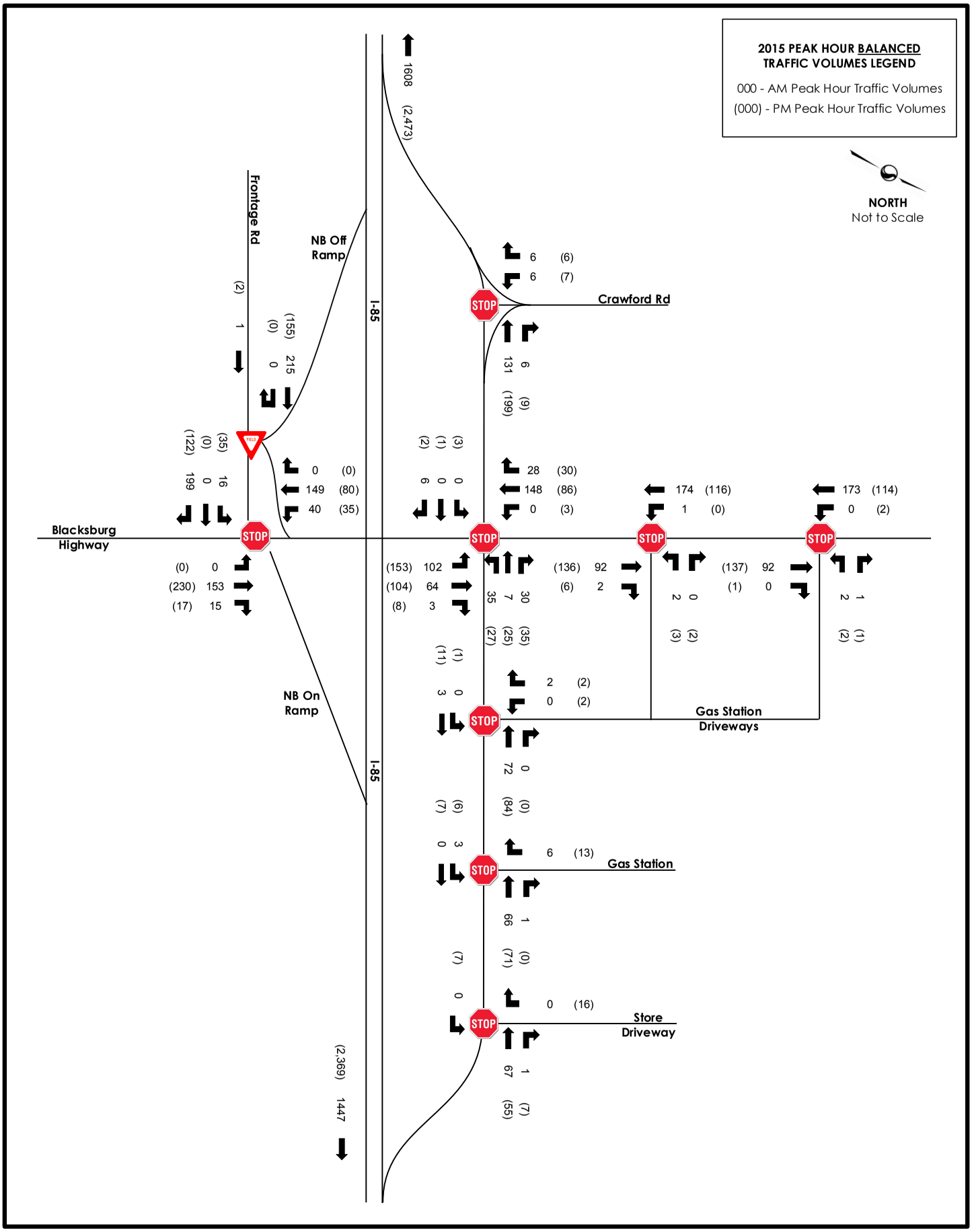
2015 PEAK HOUR BALANCED TRAFFIC VOLUMES LEGEND

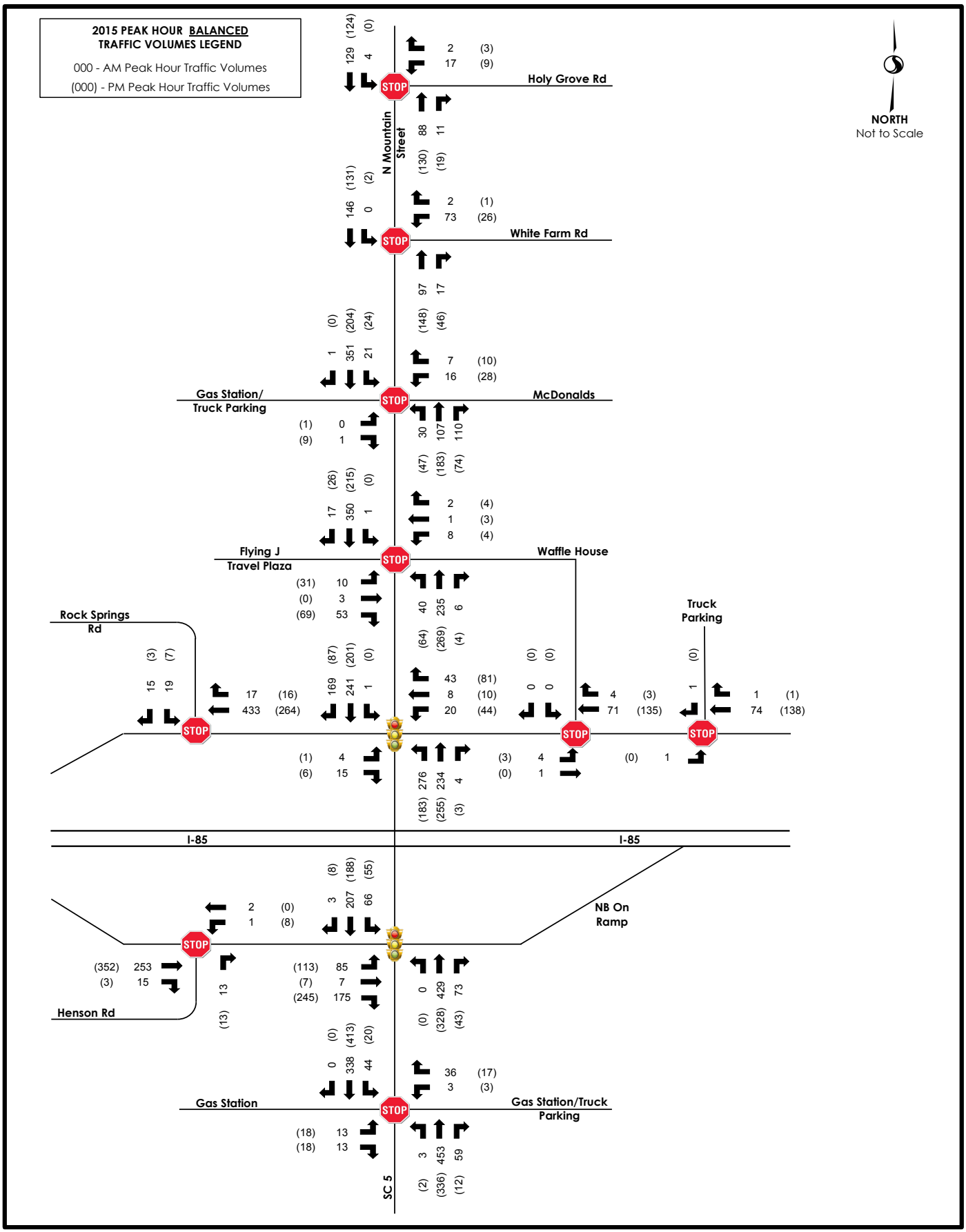
000 - AM Peak Hour Traffic Volumes

(000) - PM Peak Hour Traffic Volumes

NORTH
Not to Scale




2015 PEAK HOUR BALANCED TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
Blacksburg Highway
Frontage Rd
NB Off Ramp
NB On Ramp
I-85
I-85
Crawford Rd
Gas Station Driveways
Gas Station
Store Driveway
STOP
YIELD
1608 (2,473)
(2,369) 1447
(0) 0
(230) 153
(17) 15
(122) 199
(35) 16
(0) 0
(2) 1
(155) 215
(0) 0
0 (0)
149 (80)
40 (35)
(153) 102
(104) 64
(8) 3
(2) 6
(1) 0
(3) 0
(11) 3
(1) 0
(7) 0
(6) 3
(7) 0
(7) 0
(55) 67
(7) 1
(71) 66
(1) 1
(84) 72
(0) 0
(27) 35
(25) 7
(35) 30
(199) 131
(9) 6
6 (6)
6 (7)
28 (30)
148 (86)
0 (3)
2 (2)
0 (2)
6 (13)
0 (16)
(153) 102
(104) 64
(8) 3
(136) 92
(6) 2
174 (116)
1 (0)
(137) 92
(1) 0
173 (114)
0 (2)
(2) 0
(3) 2
(2) 0
(1) 2
(2) 1



Stantec

I-85 Widening Mile Marker 96-106

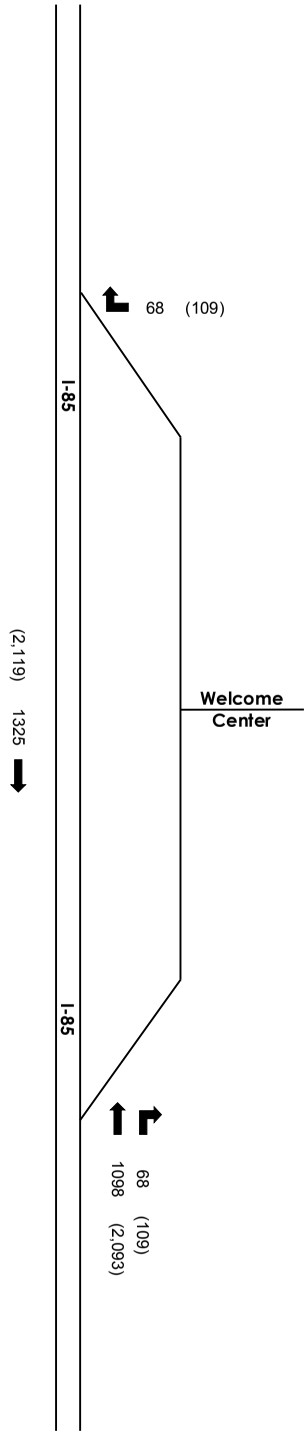
Draft: July 27th, 2016

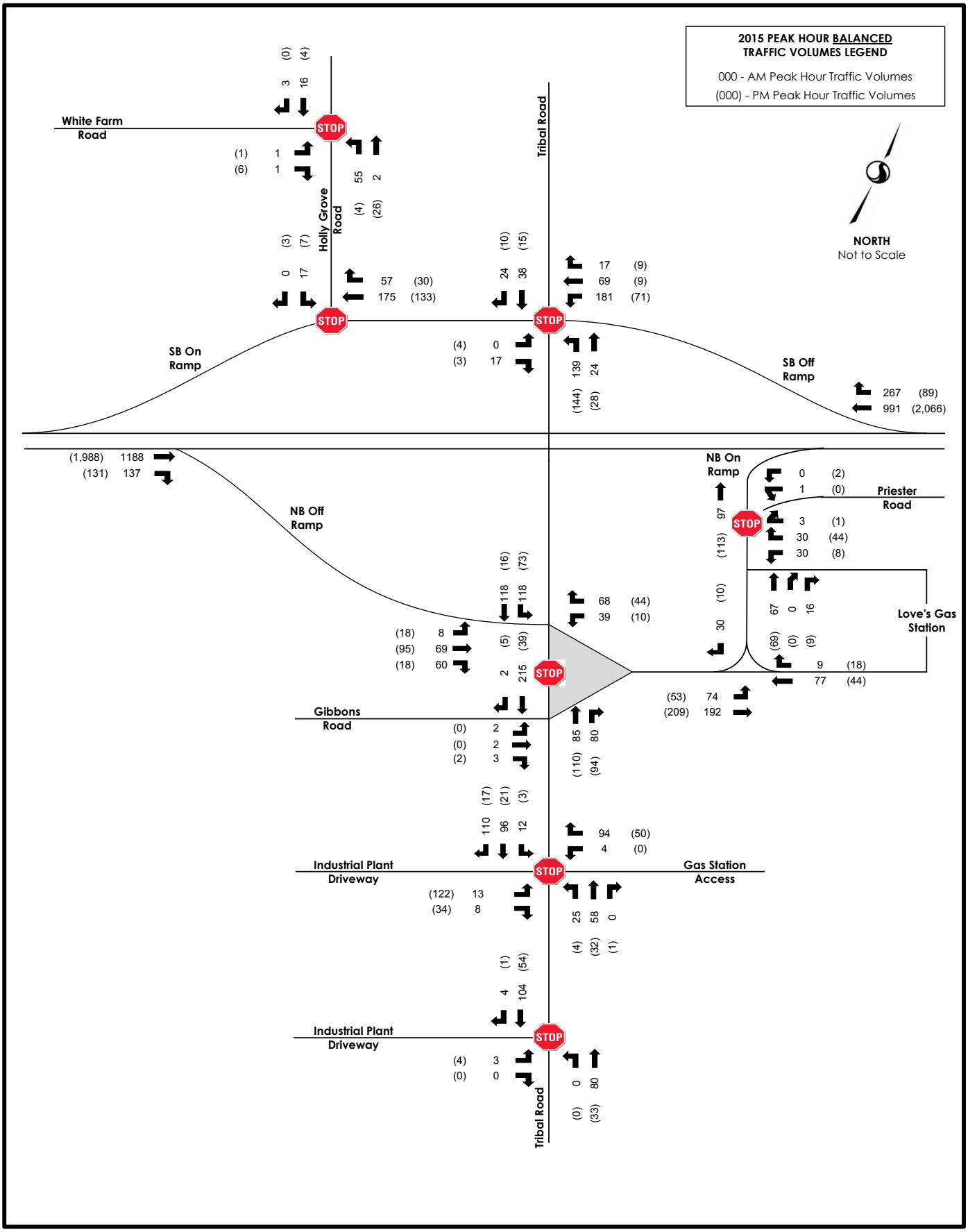
2015 PEAK HOUR BALANCED
TRAFFIC VOLUMES LEGEND

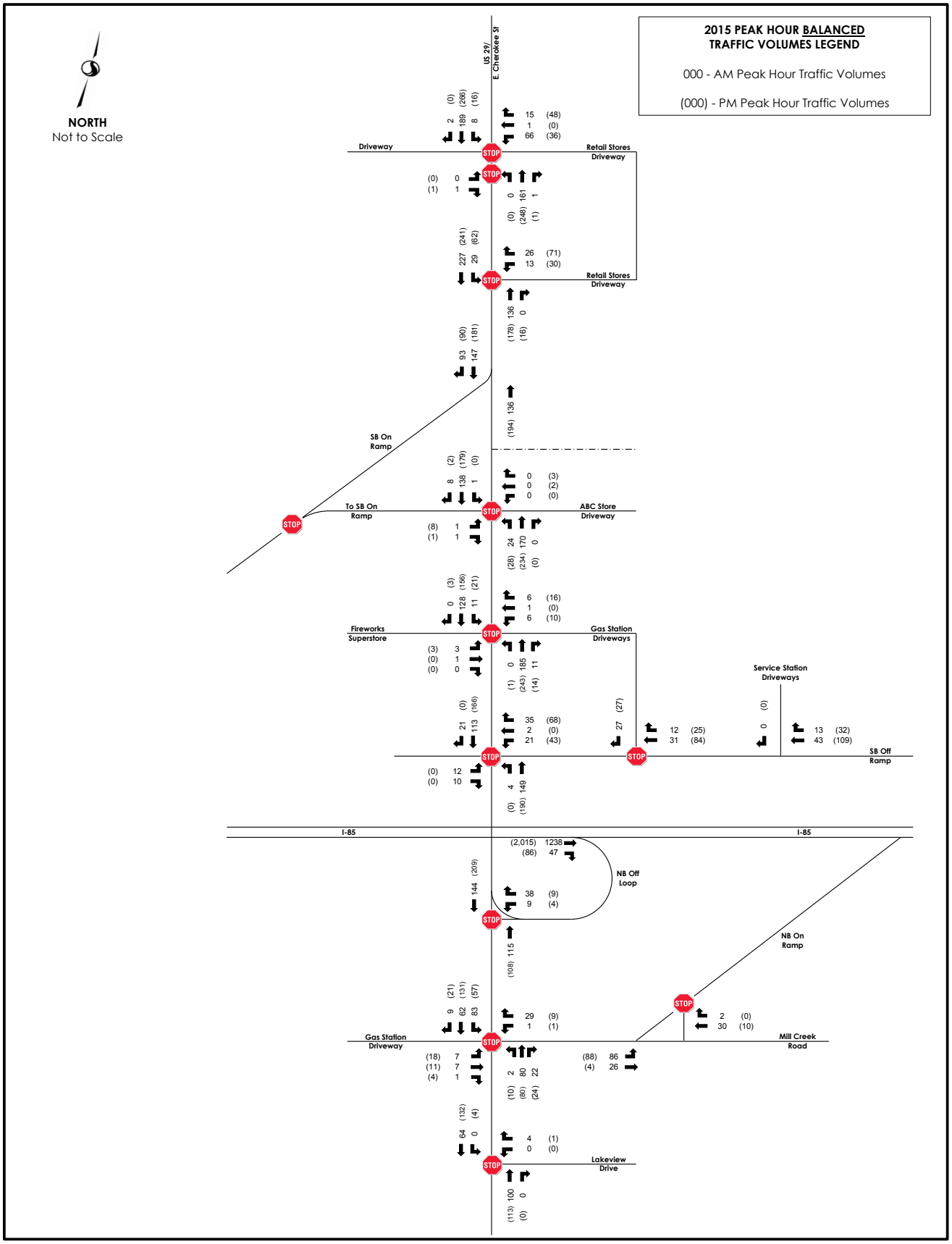
000 - AM Peak Hour Traffic Volumes

(000) - PM Peak Hour Traffic Volumes

NORTH
Not to Scale



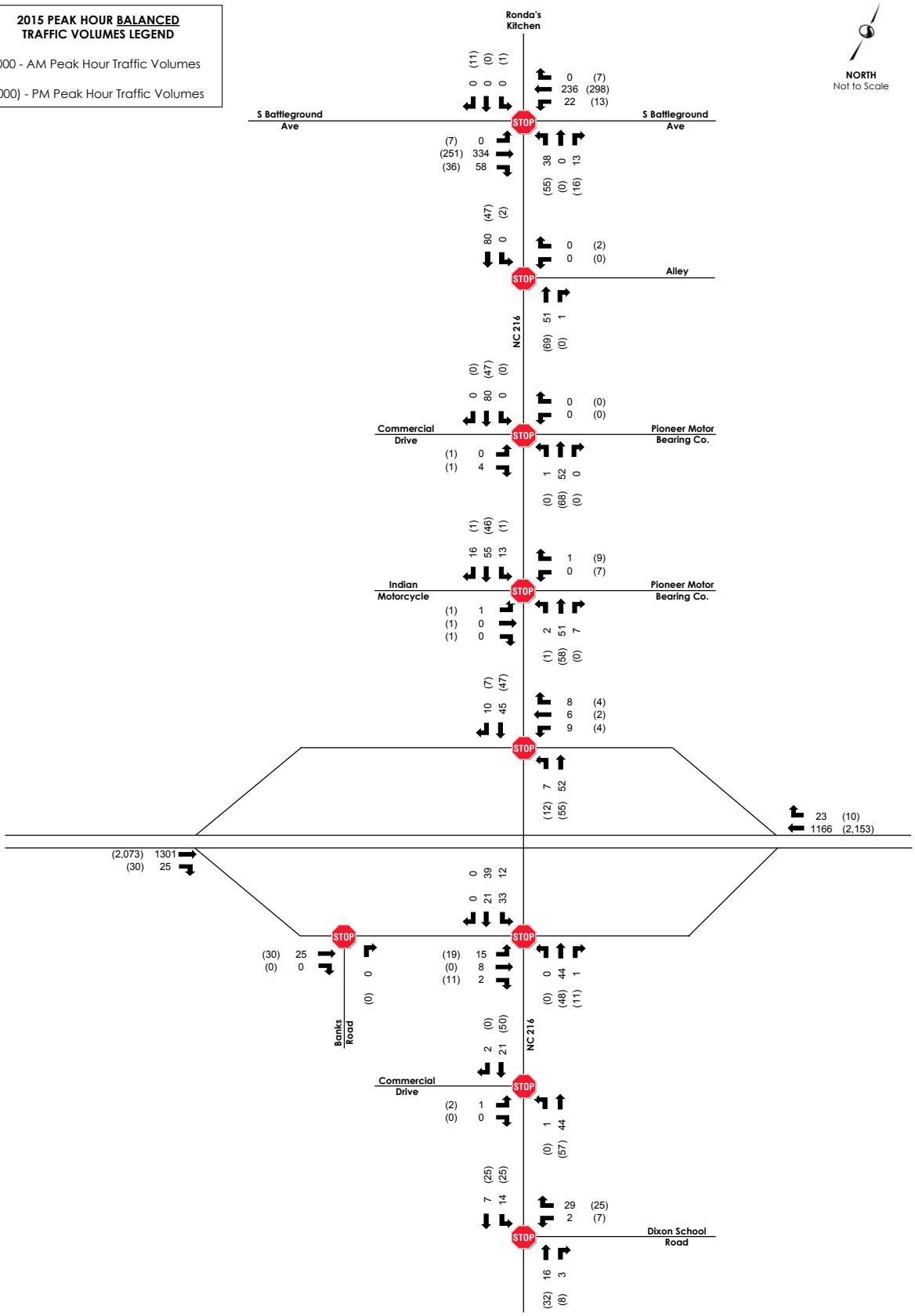

2015 PEAK HOUR BALANCED
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
White Farm Road
Holly Grove Road
Tribal Road
SB On Ramp
SB Off Ramp
NB Off Ramp
NB On Ramp
Priester Road
Love's Gas Station
Gibbons Road
Industrial Plant Driveway
Gas Station Access
Industrial Plant Driveway
Tribal Road
STOP


2015 PEAK HOUR BALANCED
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
US 29/
E. Cherokee St
Driveway
Retail Stores Driveway
Retail Stores Driveway
SB On Ramp
To SB On Ramp
ABC Store Driveway
Fireworks Superstore
Gas Station Driveways
Service Station Driveways
SB Off Ramp
I-85
I-85
NB Off Loop
NB On Ramp
Gas Station Driveway
Mill Creek Road
Lakeview Drive
STOP

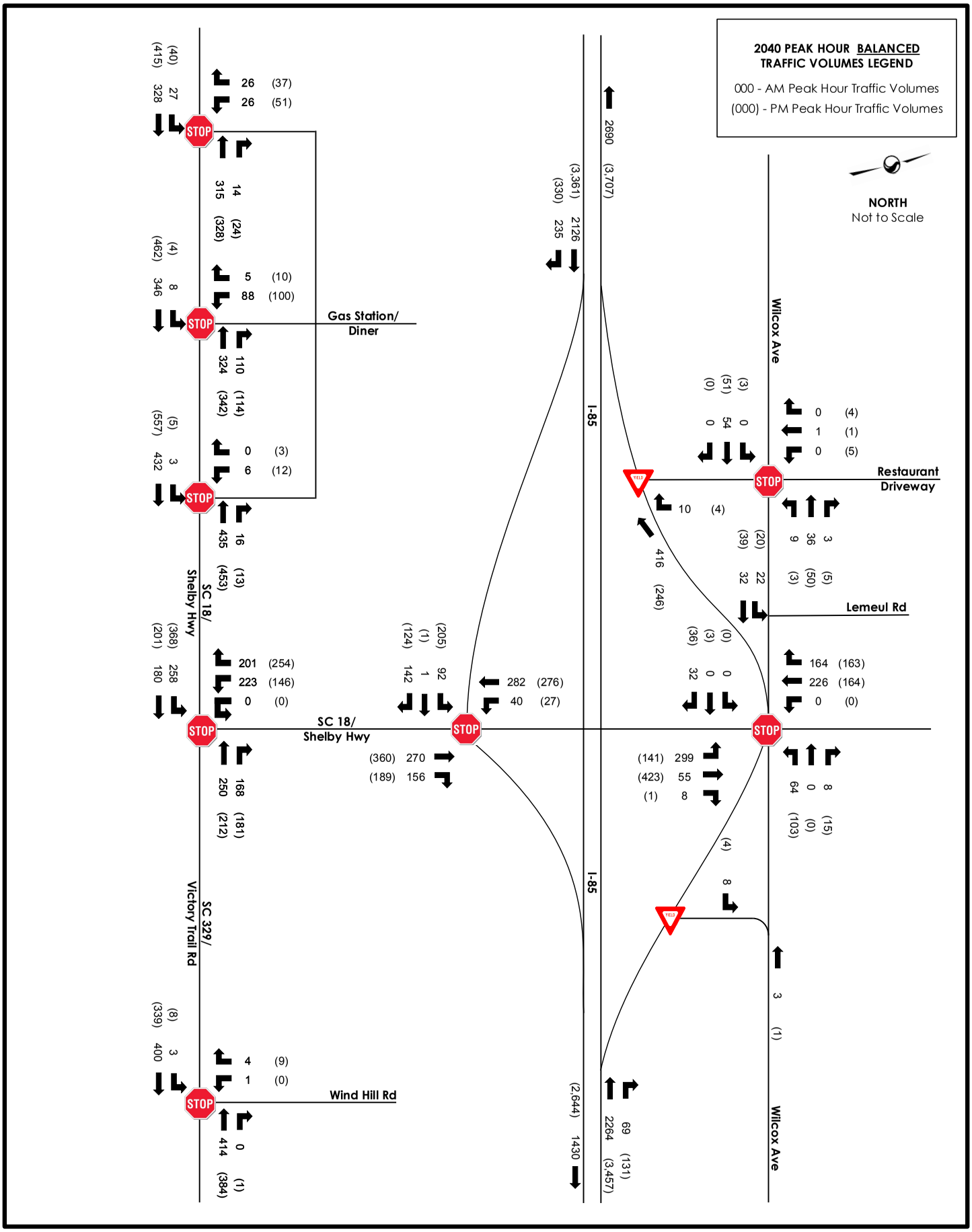
2015 PEAK HOUR BALANCED TRAFFIC VOLUMES LEGEND

000 - AM Peak Hour Traffic Volumes

(000) - PM Peak Hour Traffic Volumes



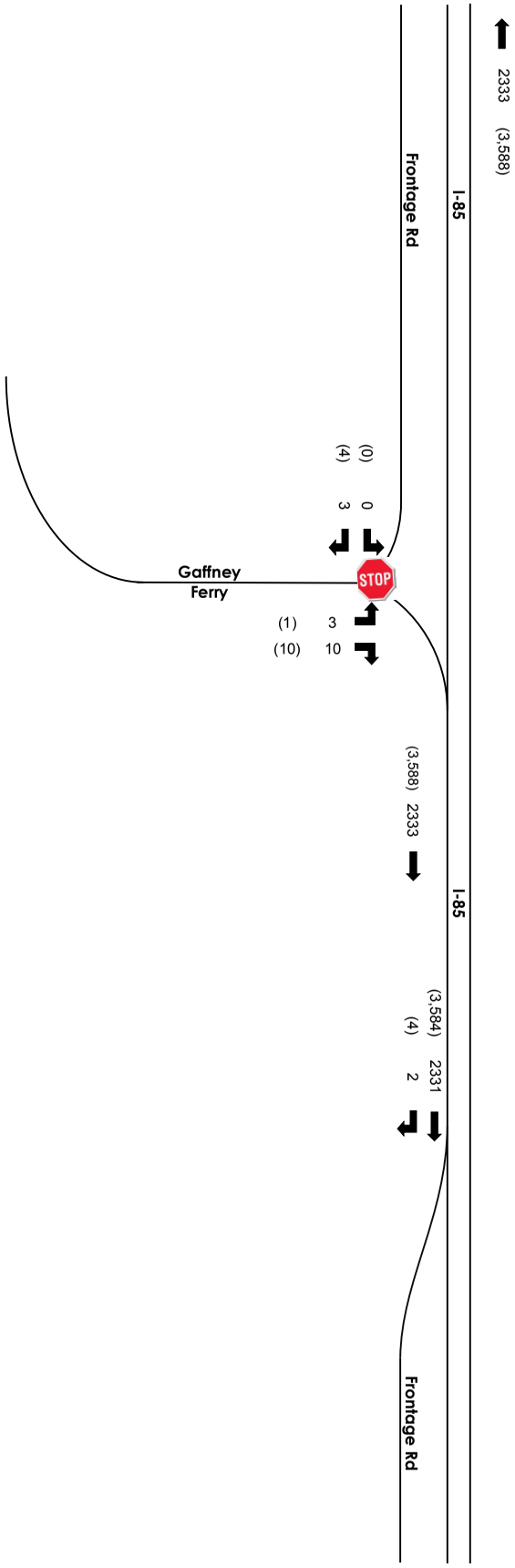
2040 NO BUILD CONDITIONS

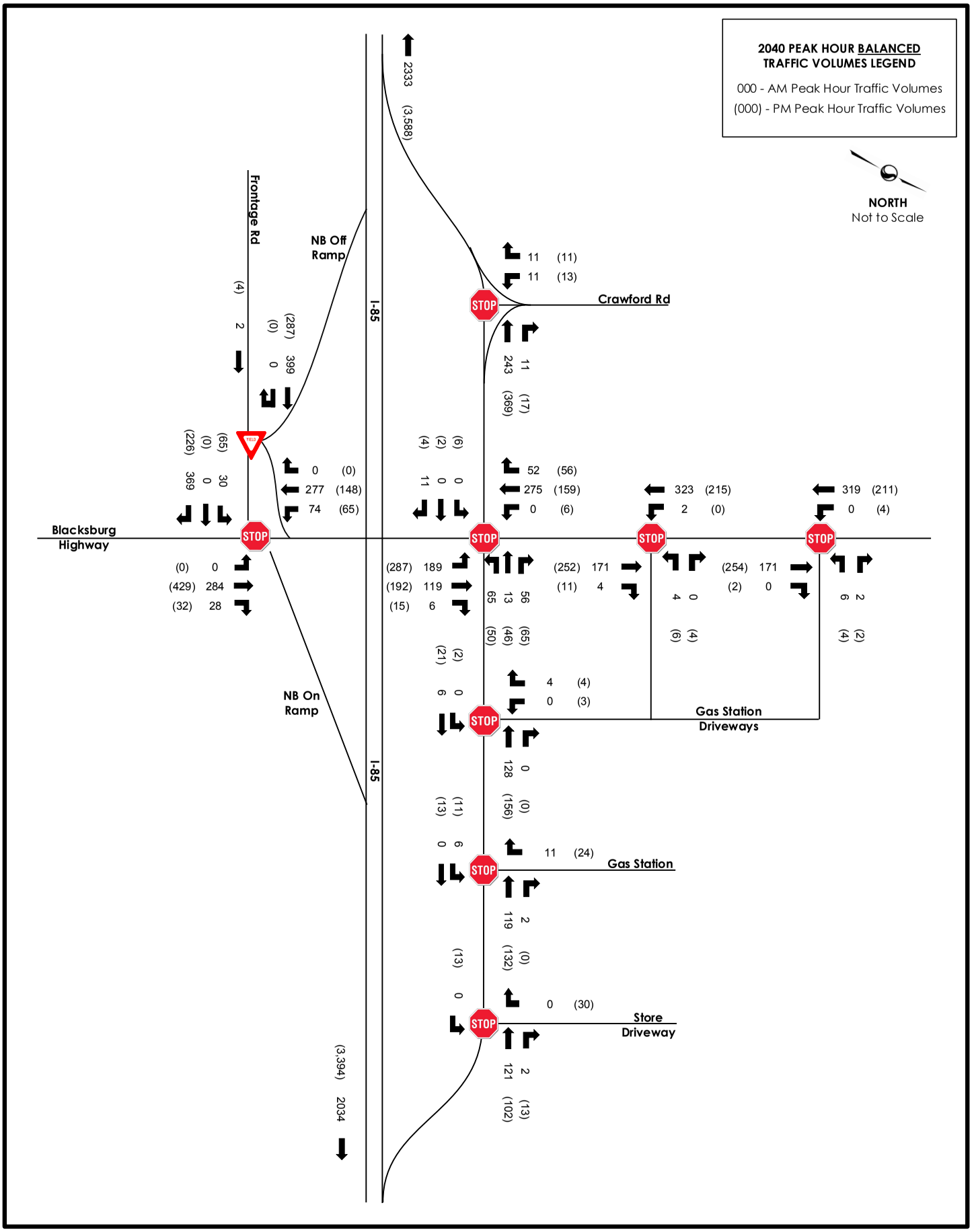

2040 PEAK HOUR BALANCED
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
Wilcox Ave
Restaurant Driveway
Lemeul Rd
I-85
SC 18/ Shelby Hwy
SC 329/ Victory Trail Rd
Gas Station/ Diner
Wind Hill Rd
STOP
YIELD

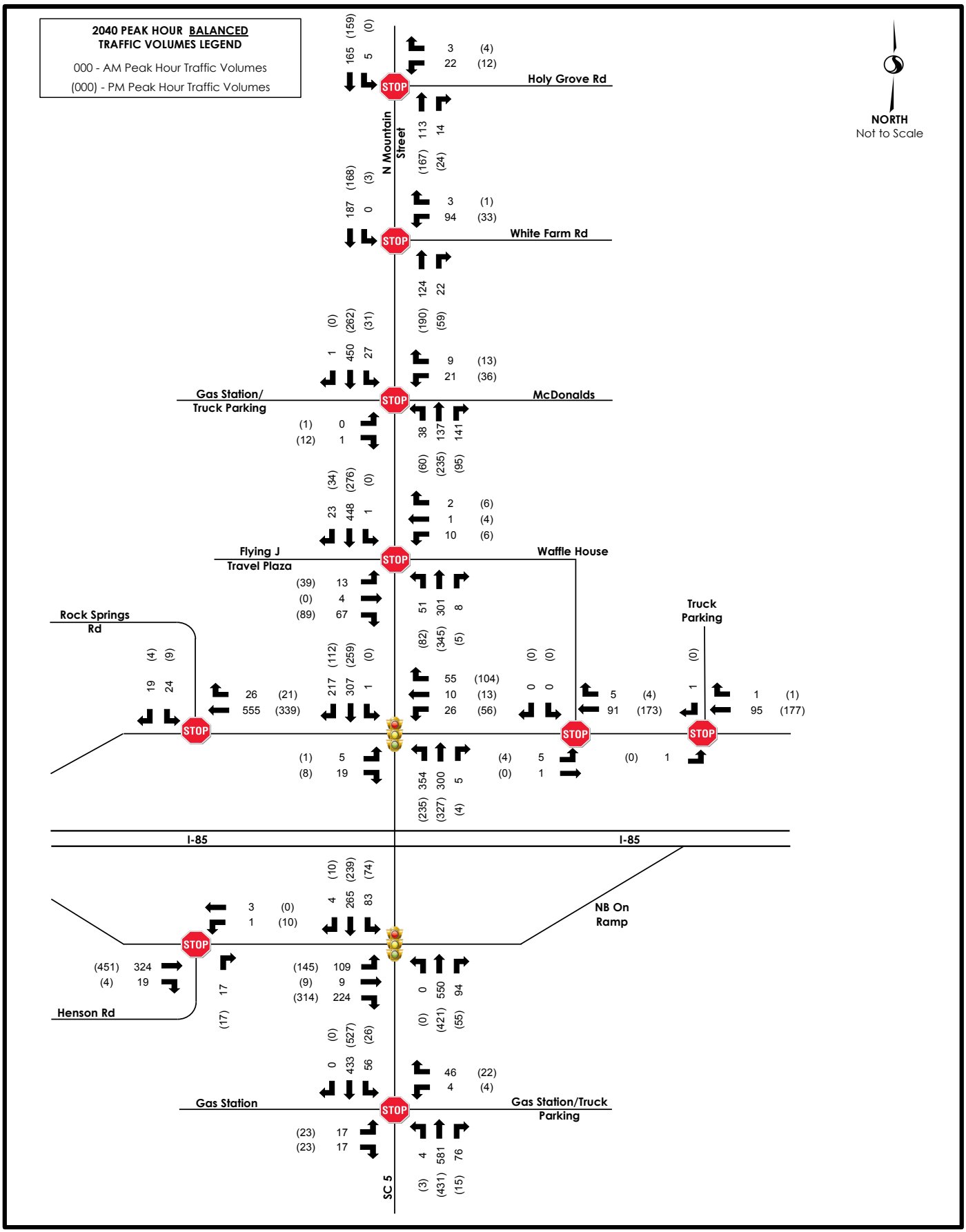
2040 PEAK HOUR BALANCED
TRAFFIC VOLUMES LEGEND

000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes

NORTH
Not to Scale




2040 PEAK HOUR BALANCED
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
Blacksburg Highway
Frontage Rd
NB Off Ramp
NB On Ramp
I-85
I-85
Crawford Rd
Gas Station Driveways
Gas Station
Store Driveway
STOP
YIELD
2333 (3,588)
(3,394) 2034
11 (11)
11 (13)
11 (17)
243 (369)
52 (56)
275 (159)
0 (6)
323 (215)
2 (0)
319 (211)
0 (4)
0 (0)
277 (148)
74 (65)
(6) 0
(2) 0
(4) 11
(65) 30
(0) 0
(226) 369
(4) 2
(287) 399
(0) 0
(0) 0
(429) 284
(32) 28
(287) 189
(192) 119
(15) 6
(252) 171
(11) 4
(254) 171
(2) 0
2 (2)
6 (4)
0 (4)
4 (6)
56 (65)
13 (46)
65 (50)
(2) 0
(21) 6
4 (4)
0 (3)
0 (0)
128 (156)
6 (11)
0 (13)
11 (24)
2 (0)
119 (132)
(13) 0
0 (30)
2 (13)
121 (102)



Stantec

I-85 Widening Mile Marker 96-106

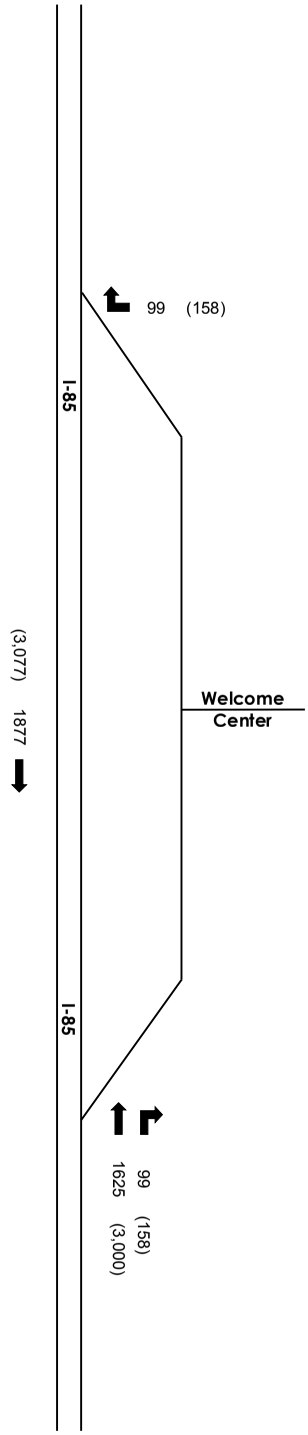
October 27th, 2016

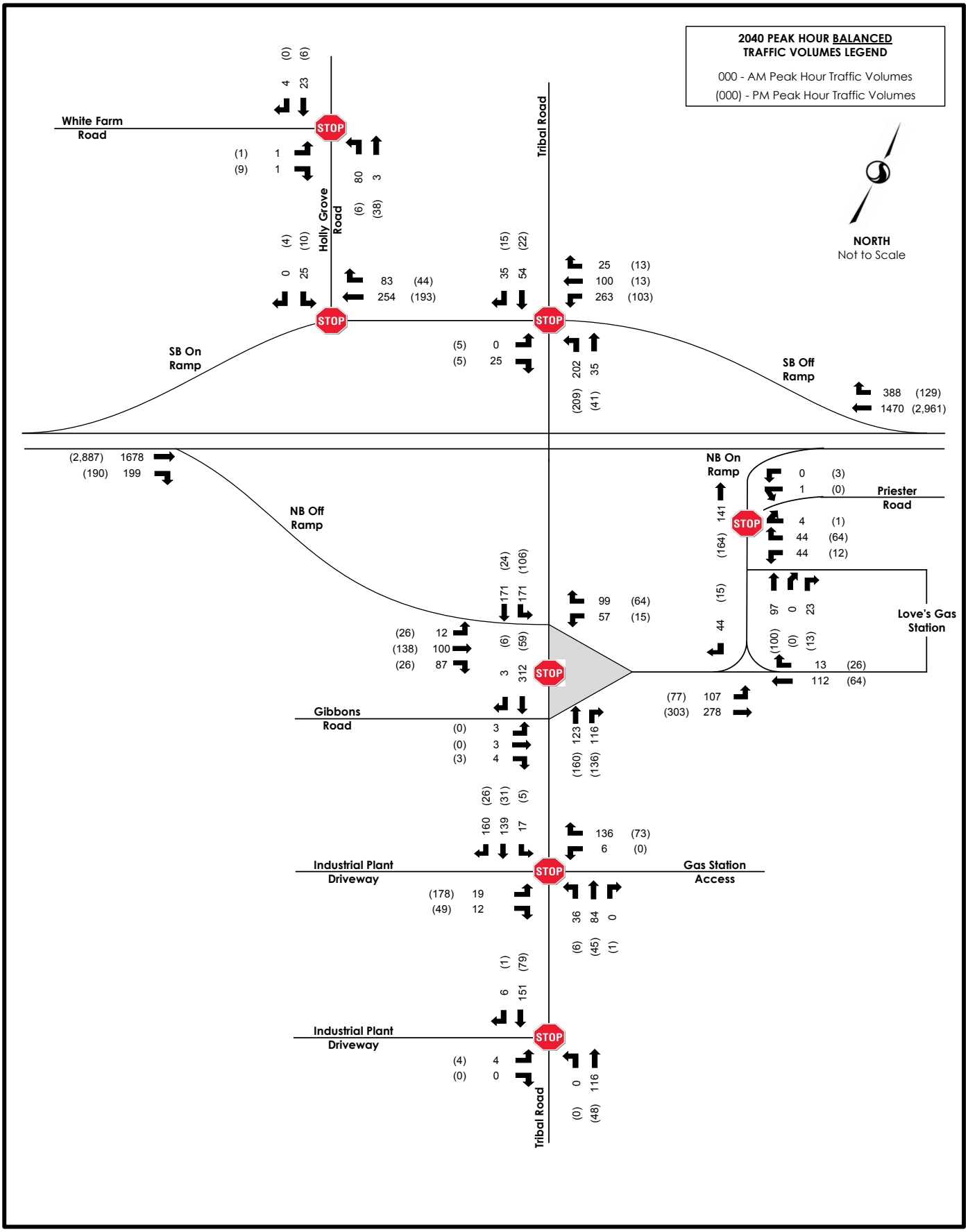
2040 PEAK HOUR BALANCED
TRAFFIC VOLUMES LEGEND

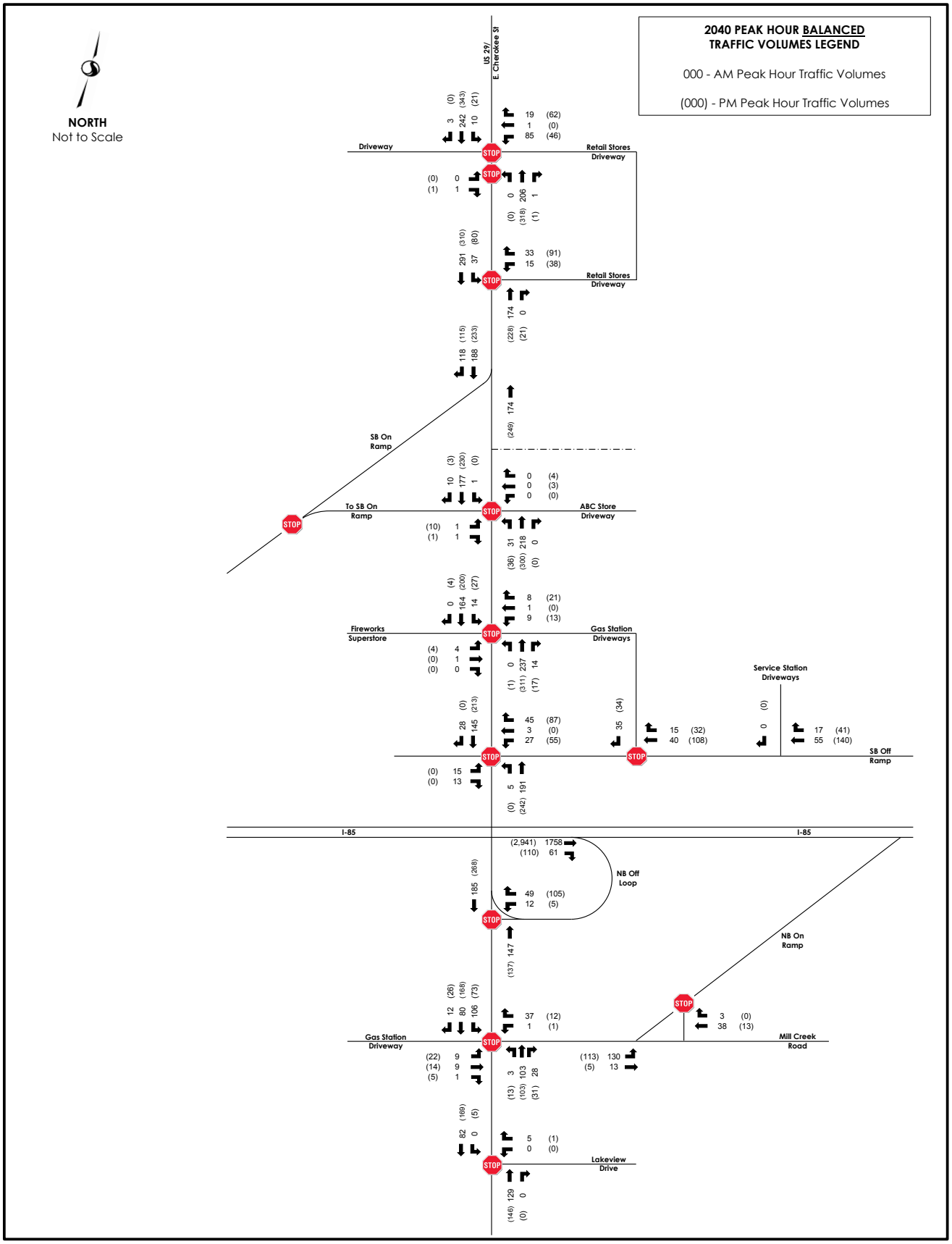
000 - AM Peak Hour Traffic Volumes

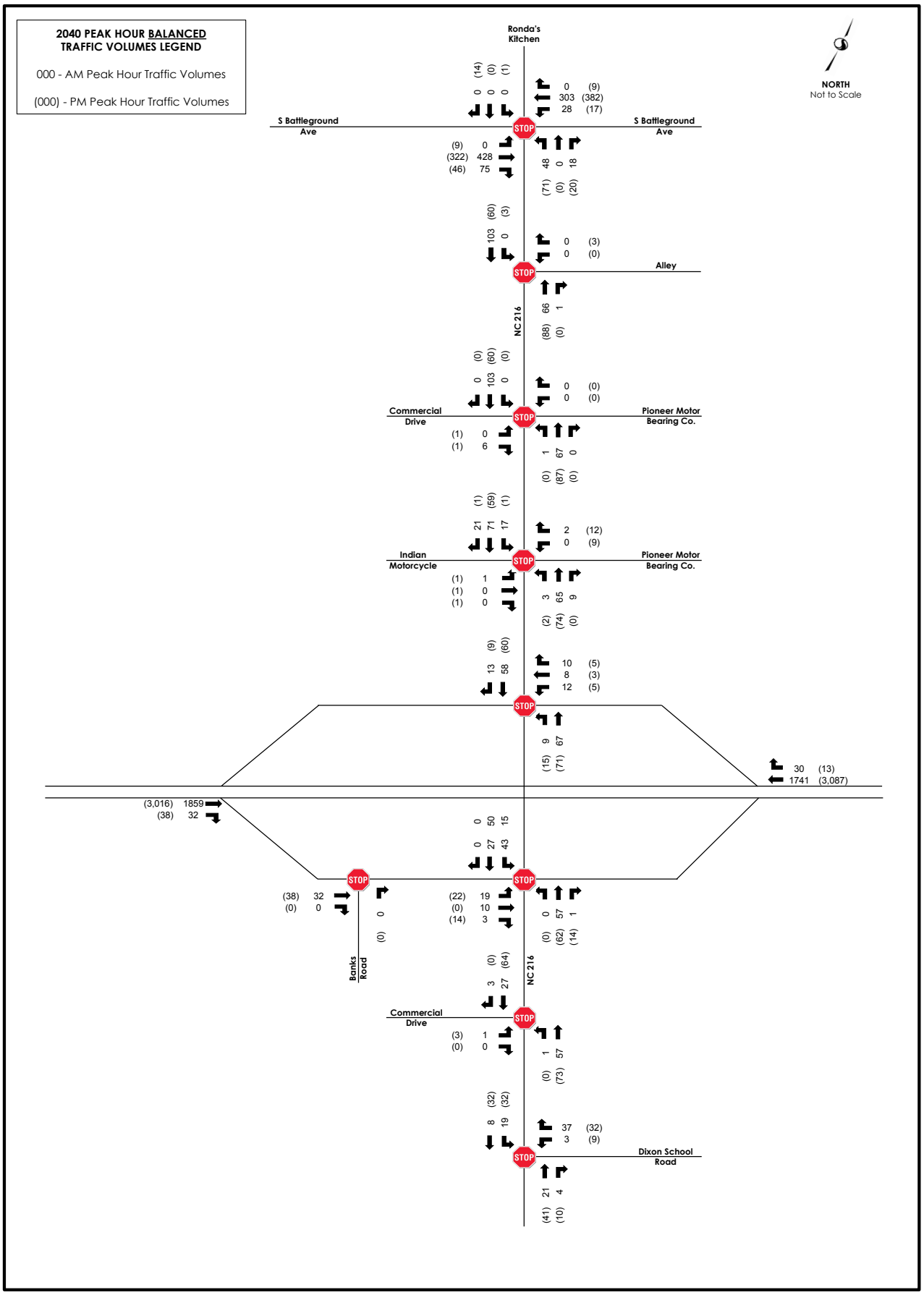
(000) - PM Peak Hour Traffic Volumes

NORTH
Not to Scale

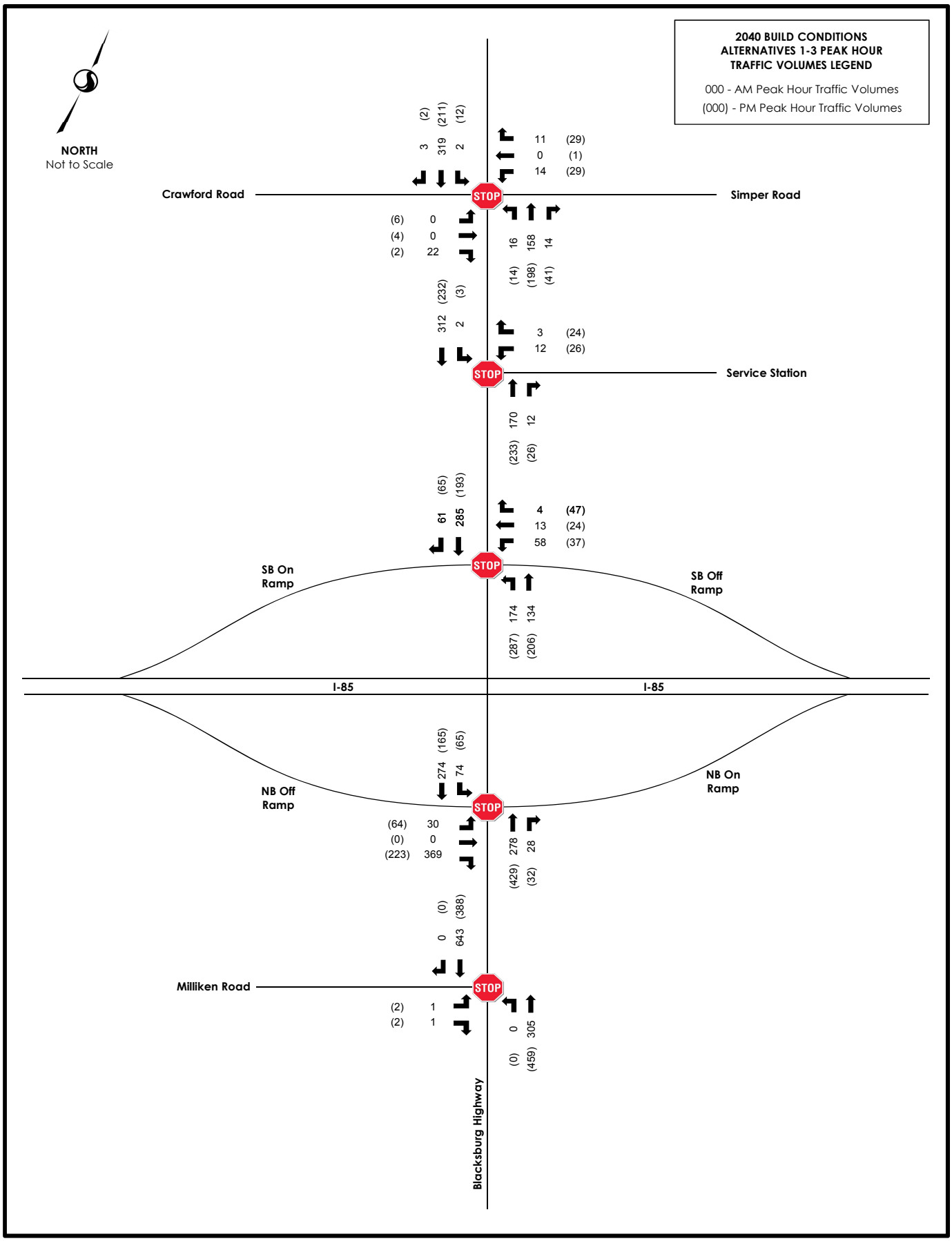


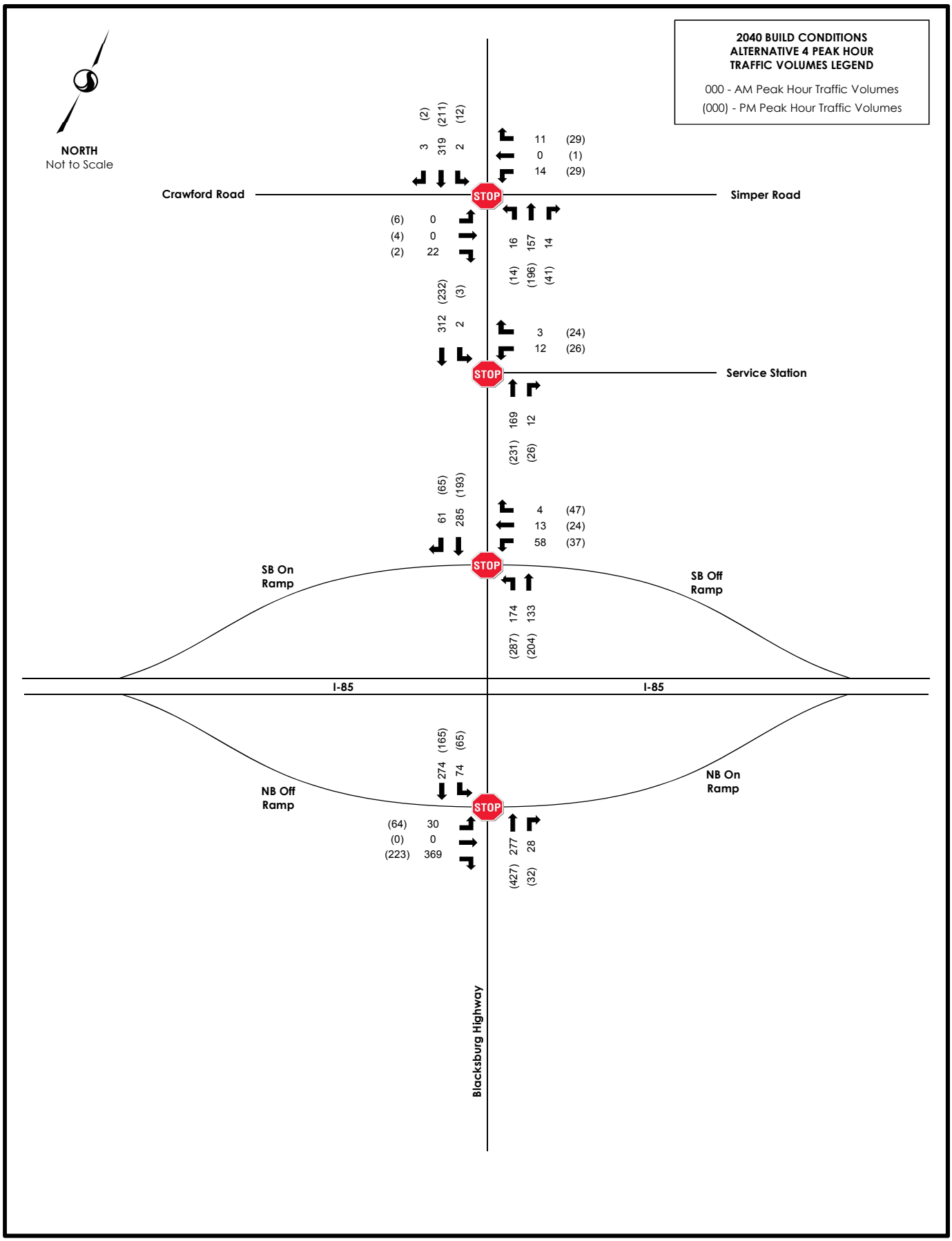

2040 PEAK HOUR BALANCED
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
White Farm Road
Holly Grove Road
Tribal Road
SB On Ramp
SB Off Ramp
NB Off Ramp
NB On Ramp
Priester Road
Love's Gas Station
Gibbons Road
Industrial Plant Driveway
Gas Station Access
Industrial Plant Driveway
Tribal Road
STOP

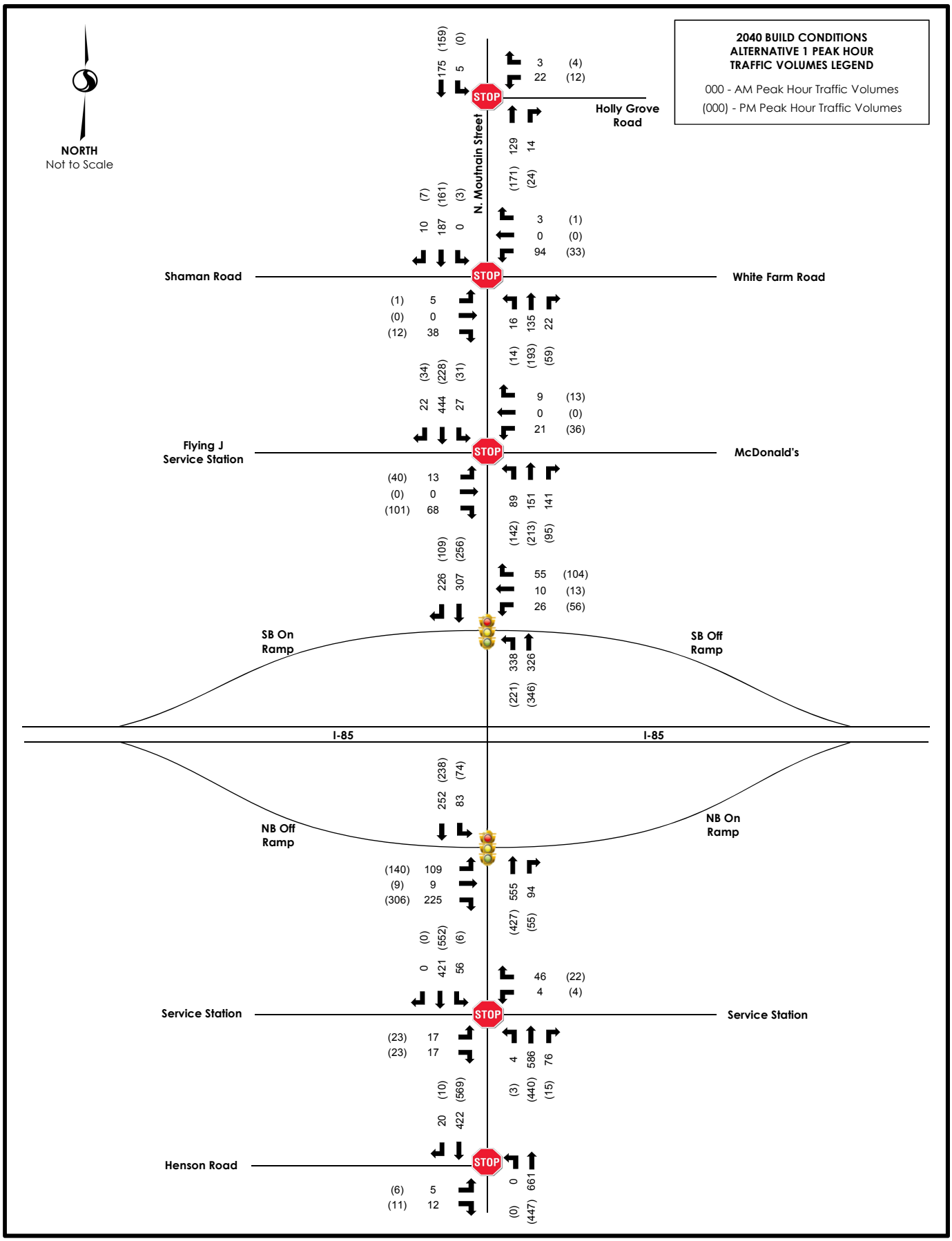

2040 PEAK HOUR BALANCED
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
US 29/
E. Cherokee St
Driveway
Retail Stores Driveway
Retail Stores Driveway
SB On Ramp
To SB On Ramp
ABC Store Driveway
Fireworks Superstore
Gas Station Driveways
Service Station Driveways
SB Off Ramp
I-85
I-85
NB Off Loop
NB On Ramp
Gas Station Driveway
Mill Creek Road
Lakeview Drive
STOP


2040 PEAK HOUR BALANCED TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
Ronda's Kitchen
S Battleground Ave
S Battleground Ave
Alley
NC 216
Commercial Drive
Pioneer Motor Bearing Co.
Indian Motorcycle
Pioneer Motor Bearing Co.
Banks Road
NC 216
Commercial Drive
Dixon School Road
STOP

2040 BUILD CONDITIONS


2040 BUILD CONDITIONS
ALTERNATIVES 1-3 PEAK HOUR
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
Crawford Road
Simper Road
Service Station
SB On Ramp
SB Off Ramp
I-85
I-85
NB Off Ramp
NB On Ramp
Milliken Road
Blacksburg Highway
STOP
3 319 2
(2) (211) (12)
11 (29)
0 (1)
14 (29)
(6) 0
(4) 0
(2) 22
16 158 14
(14) (198) (41)
312 2
(232) (3)
3 (24)
12 (26)
170 12
(233) (26)
61 285
(65) (193)
4 (47)
13 (24)
58 (37)
174 134
(287) (206)
274 74
(165) (65)
(64) 30
(0) 0
(223) 369
278 28
(429) (32)
0 643
(0) (388)
(2) 1
(2) 1
0 305
(0) (459)

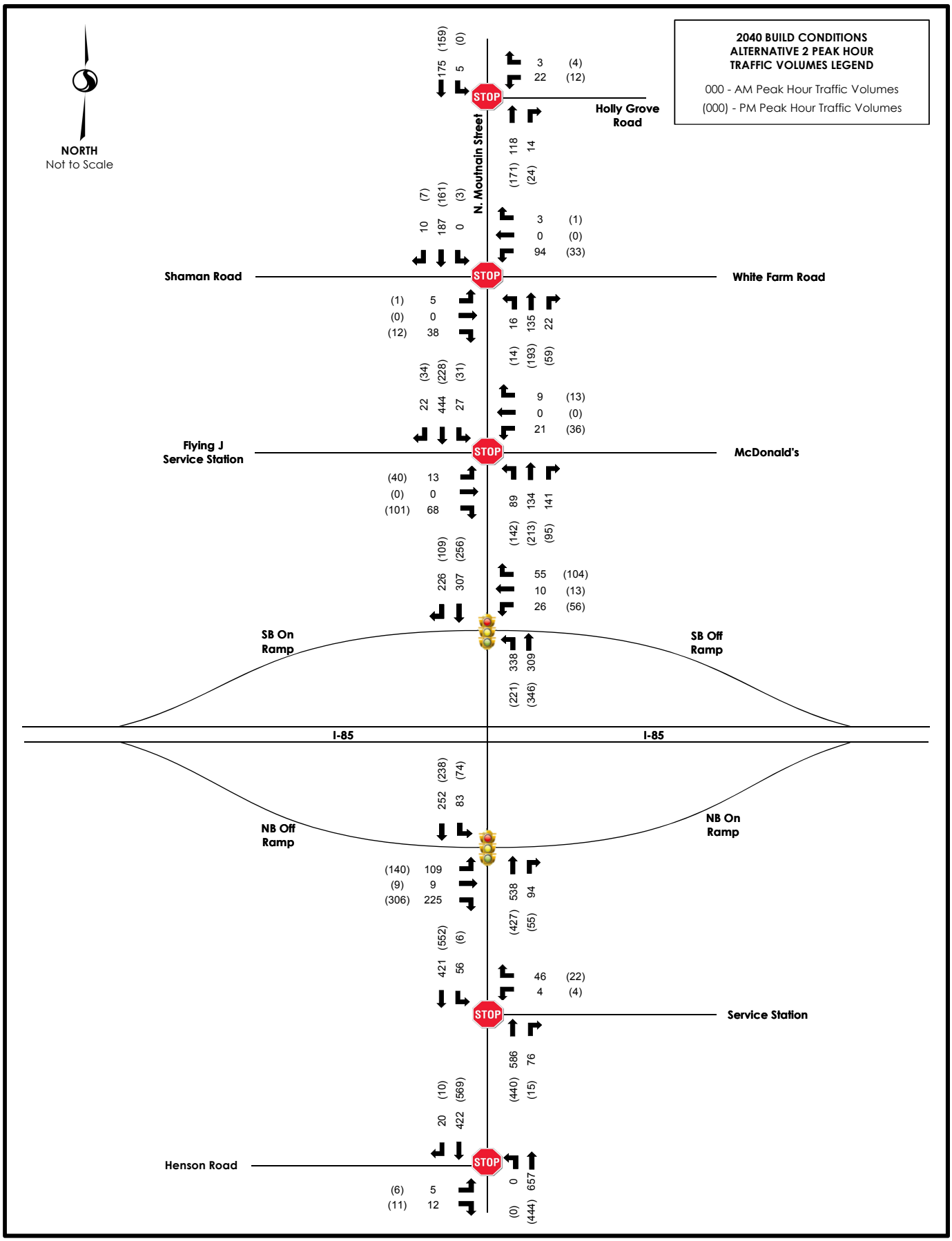

2040 BUILD CONDITIONS
ALTERNATIVE 4 PEAK HOUR
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
Crawford Road
Simper Road
Service Station
SB On Ramp
SB Off Ramp
I-85
I-85
NB Off Ramp
NB On Ramp
Blacksburg Highway
STOP
STOP
STOP
STOP
3 319 2
(2) (211) (12)
11 (29)
0 (1)
14 (29)
(6) 0
(4) 0
(2) 22
16 157 14
(14) (196) (41)
312 2
(232) (3)
3 (24)
12 (26)
169 12
(231) (26)
61 285
(65) (193)
4 (47)
13 (24)
58 (37)
174 133
(287) (204)
274 74
(165) (65)
(64) 30
(0) 0
(223) 369
277 28
(427) (32)



Stantec

I-85 Widening Mile Marker 96-106

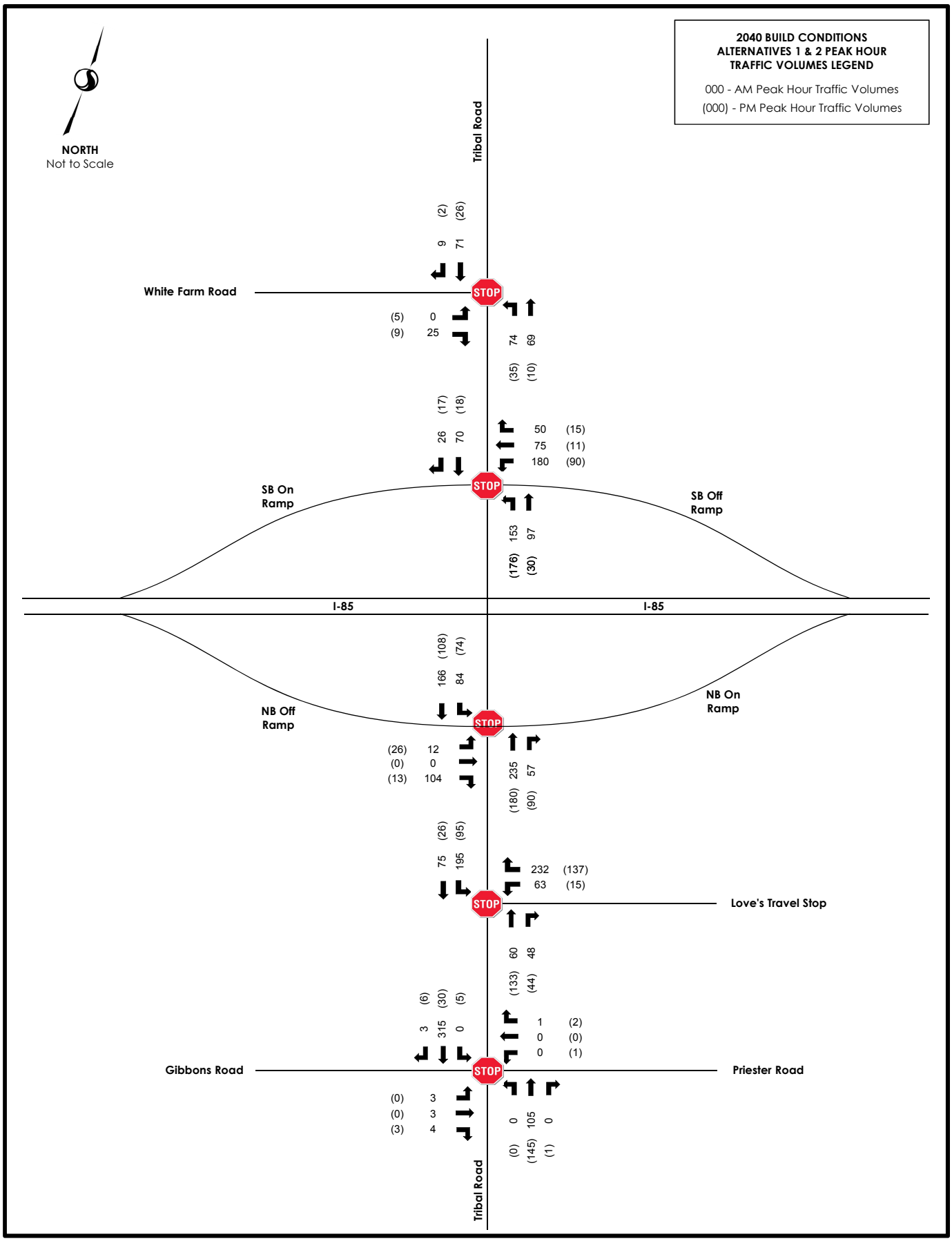
November 17th, 2016



Stantec

I-85 Widening Mile Marker 96-106

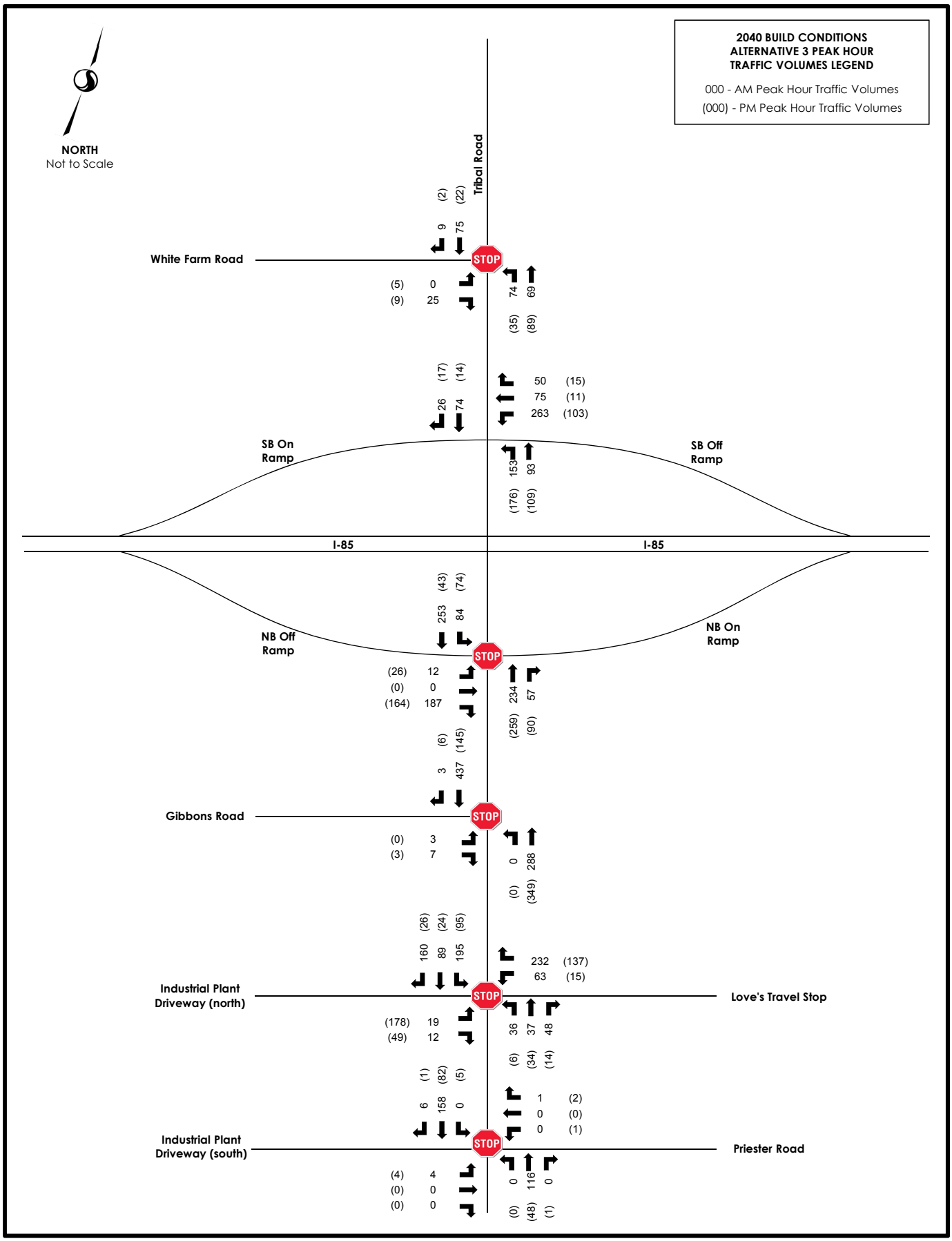
November 17th, 2016



Stantec

I-85 Widening Mile Marker 96-106

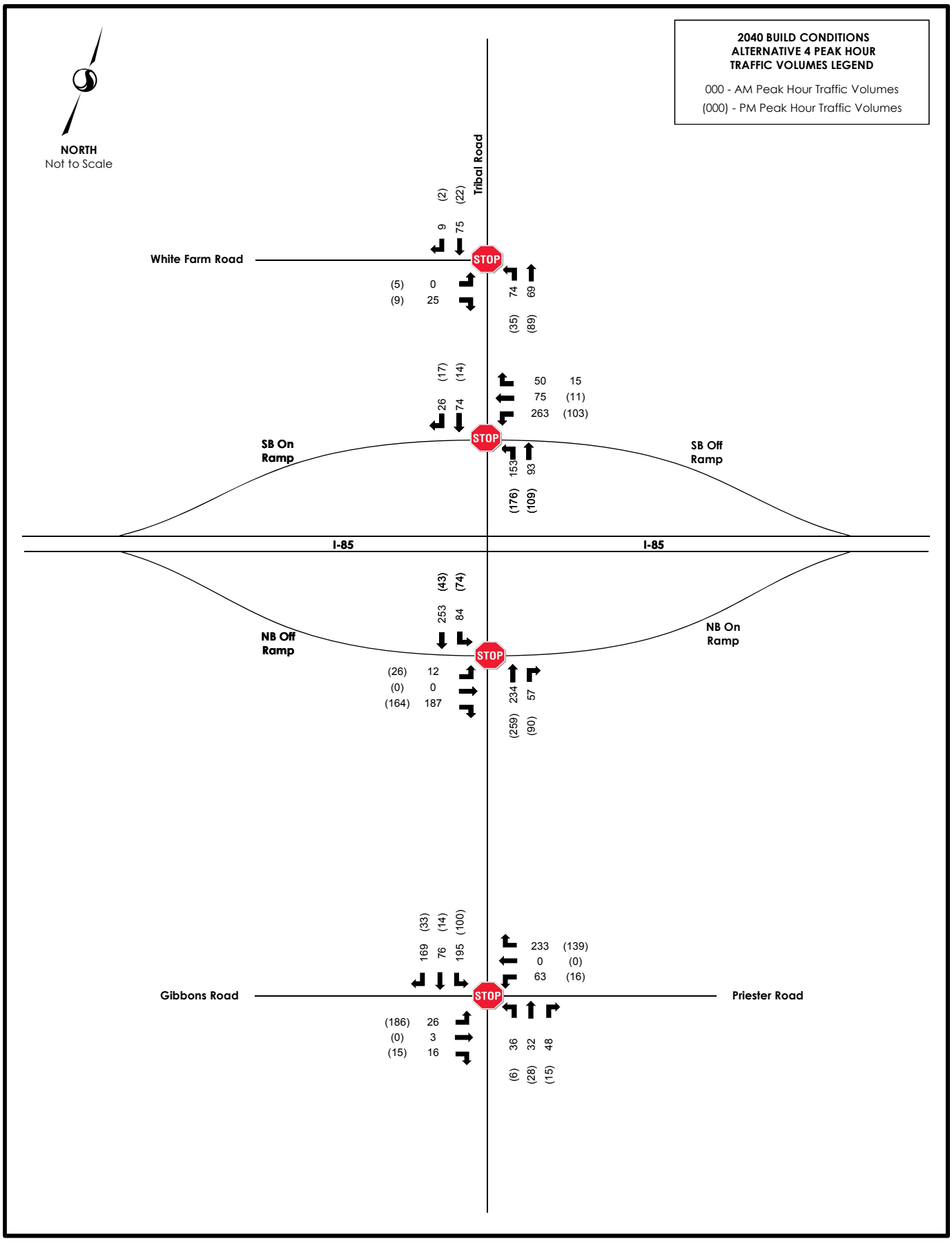
November 17th, 2016

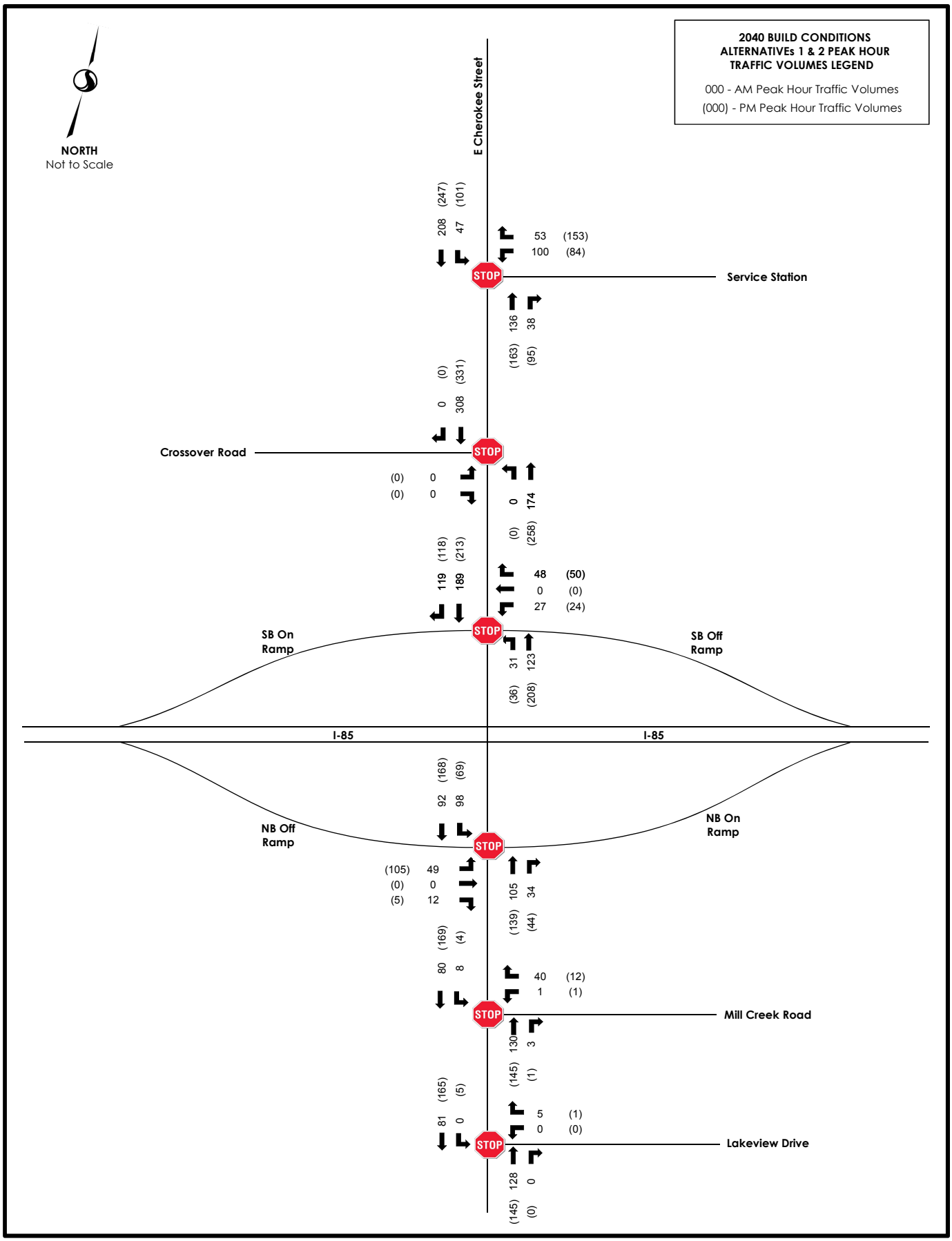


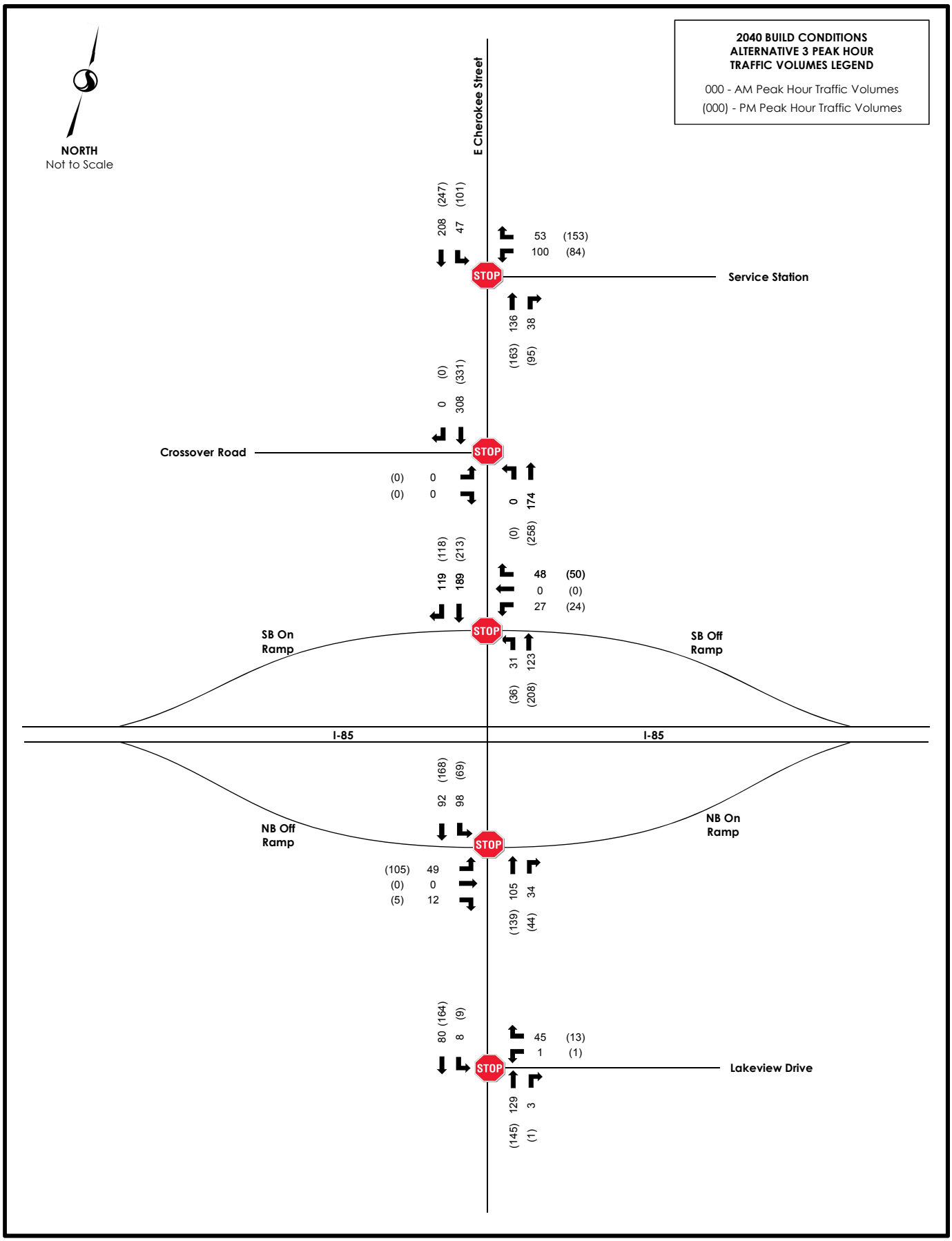
Stantec

I-85 Widening Mile Marker 96-106

November 17th, 2016


2040 BUILD CONDITIONS
ALTERNATIVE 4 PEAK HOUR
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
Tribal Road
White Farm Road
STOP
(2) (22)
9 75
(5) 0
(9) 25
74 69
(35) (89)
(17) (14)
26 74
50 15
75 (11)
263 (103)
SB On Ramp
SB Off Ramp
153 93
(176) (109)
I-85
I-85
(43) (74)
253 84
NB Off Ramp
NB On Ramp
(26) 12
(0) 0
(164) 187
234 57
(259) (90)
(33) (14) (100)
169 76 195
233 (139)
0 (0)
63 (16)
Gibbons Road
Priester Road
(186) 26
(0) 3
(15) 16
36 32 48
(6) (28) (15)


2040 BUILD CONDITIONS
ALTERNATIVEs 1 & 2 PEAK HOUR
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
E Cherokee Street
Service Station
Crossover Road
SB On Ramp
SB Off Ramp
I-85
I-85
NB Off Ramp
NB On Ramp
Mill Creek Road
Lakeview Drive
STOP
208 (247)
47 (101)
53 (153)
100 (84)
136 (163)
38 (95)
0 (0)
308 (331)
(0) 0
(0) 0
0 (0)
174 (258)
119 (118)
189 (213)
48 (50)
0 (0)
27 (24)
31 (36)
123 (208)
92 (168)
98 (69)
(105) 49
(0) 0
(5) 12
105 (139)
34 (44)
80 (169)
8 (4)
40 (12)
1 (1)
130 (145)
3 (1)
81 (165)
0 (5)
5 (1)
0 (0)
128 (145)
0 (0)


2040 BUILD CONDITIONS
ALTERNATIVE 3 PEAK HOUR
TRAFFIC VOLUMES LEGEND
000 - AM Peak Hour Traffic Volumes
(000) - PM Peak Hour Traffic Volumes
NORTH
Not to Scale
E Cherokee Street
Service Station
Crossover Road
SB On Ramp
SB Off Ramp
I-85
I-85
NB Off Ramp
NB On Ramp
Lakeview Drive
STOP
208 (247)
47 (101)
53 (153)
100 (84)
136 (163)
38 (95)
0 (0)
308 (331)
(0) 0
(0) 0
0 (0)
174 (258)
119 (118)
189 (213)
48 (50)
0 (0)
27 (24)
31 (36)
123 (208)
92 (168)
98 (69)
(105) 49
(0) 0
(5) 12
105 (139)
34 (44)
80 (164)
8 (9)
45 (13)
1 (1)
129 (145)
3 (1)

APPENDIX D

SIGNAL PLANS

SIGNAL EQUIPMENT

ONE (1) 8 PHASE FULLY ACTUATED STANDARD
170 CONTROLLER WITH FLASHER,
SIGNAL MONITOR UNIT, AND CABINET.
4 VEHICLE DETECTOR UNITS

SIGNAL HEADS

HEAD NUMBER	1	2	3	4	5	6	7	8
LENS		R Y G		R Y G		R Y G		R Y G
PHASE		2		4		6		8
SIZE		12"		12"		12"		12"
QUANTITY		2		2		2		2

● POLES AS NECESSARY

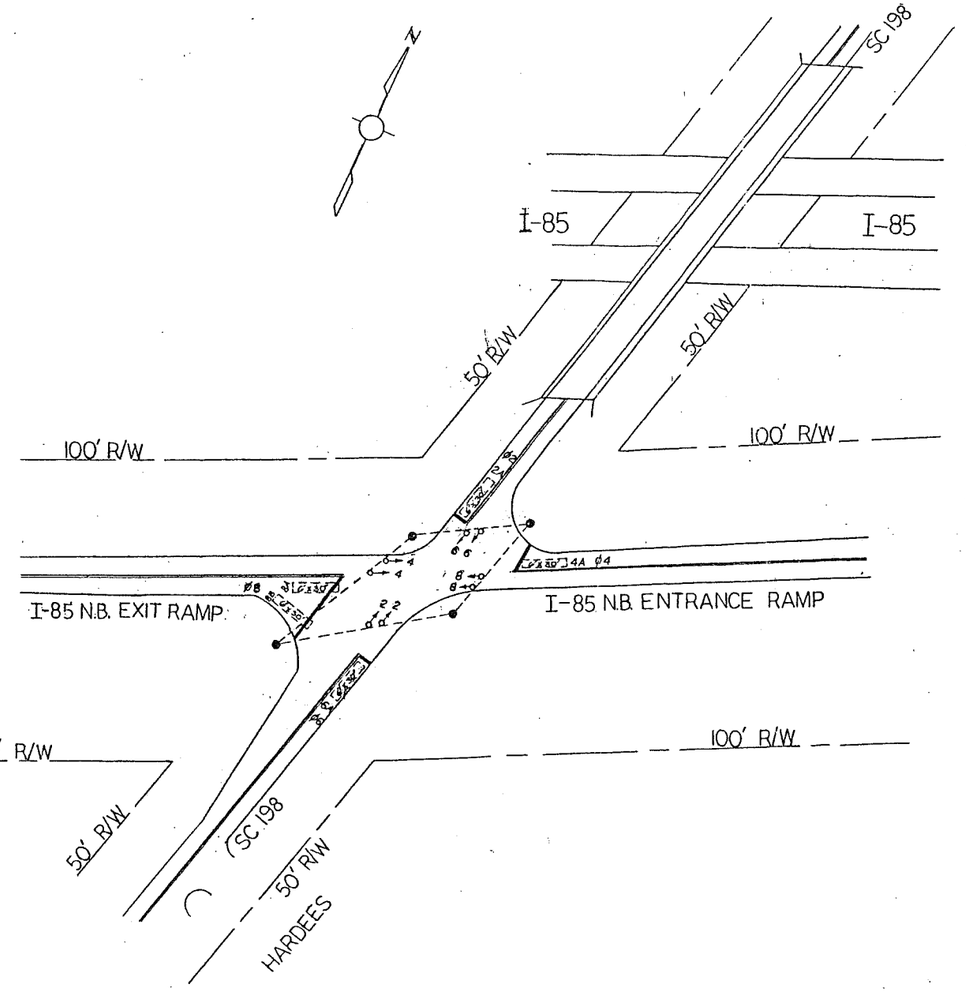
Checked with D.C. on timing 10-10-01 OK RM

TRAFFIC SIGNAL SETTINGS

FUNCTIONS	SECONDS Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MIN GREEN		15		8		15		8
ADDED INIT (SEC/ACT)								
MAX INITIAL								
PASSAGE		4.0		2.5		4.0		2.5
TIME BEFORE REDUCE								
TIME TO REDUCE								
MIN GAP				3.0		4.0		3.0
MAXIMUM I	40	~~30~~		~~20~~		~~30~~		~~20~~
MAXIMUM II								
YELLOW CHANGE		4.3		3.4		4.3		3.4
RED CLEAR		1.7		1.7		1.7		1.7
RECALL		MIN		OFF		MIN		OFF
DET. MEMORY		—		N		—		N
L-LOCK, N-NON-LOCK								
DET. DELAY		—		—		—		—
DET. MODE		PR		PR		PR		PR
P-PULSE PR-PRESENCE								
WALK								
PEDESTRIAN CLEAR								

OVERLAP SETTINGS

OLA ____	OLC ____
OLB ____	OLD ____



SIGNAL DISPLAY SEQUENCE (PREFERENTIAL PHASING)

FLASH	SIGNAL HEAD NUMBER	Ø1 — Ø5 R/W	Ø2-Ø6	Ø1-Ø6	Ø2-Ø5	BARR.	Ø2 — Ø6 R/W	Ø1-Ø5	BARR.	Ø3 — Ø7 R/W	Ø4-Ø8	Ø3-Ø8	Ø4-Ø7	BARR.	Ø4 — Ø8 R/W	Ø3-Ø7
Y	2						G		Y R						R	
R	4						R		R R						G	
Y	6						G		Y R						R	
R	8						R		R R						G	

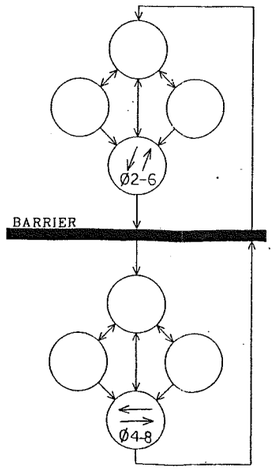
BARRIER

ALTERNATE PHASES

SIGNAL HEAD NUMBER	Ø1 — Ø6 R/W	Ø1-Ø5	Ø2-Ø6	Ø2-Ø5	BARR.	Ø2 — Ø5 R/W	Ø1-Ø5	Ø2-Ø6	Ø1-Ø6	BARR.	Ø3 — Ø8 R/W	Ø3-Ø7	Ø4-Ø6	Ø4-Ø7	BARR.	Ø4 — Ø7 R/W	Ø3-Ø7	Ø4-Ø8	Ø3-Ø6

BARRIER

SIGNAL PHASE SEQUENCE



ROUTE NUMBER	SC 198		I-85 N.B. RAMP EXIT	I-85 N.B. RAMP ENTRANCE
APPROACH DIRECTION	NB	SB	EB	WB
SIGNAL DESIGN SPEED	45	45	35	35
GRADE (%)	0	0	+3.0	+2.0

DKT. NO. — SHEET NO. —

DATE	REVISIONS

SCDOT — SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION ENGINEERING COLUMBIA

SUBJECT TITLE: TRAFFIC SIGNAL INSTALLATION

SPECIFIC LOCATION: INTERSECTION OF I 85 N.B. EXIT & ENTRANCE RAMP WITH SC 198

CITY: | COUNTY: CHESTERFIELD

DESIGNED MTJ
DRAWN MTJ
CHECKED
REVIEWED
RECOMMENDED

APPROVED BY: Richard B. West, DIR. OF TRAFFIC ENGINEERING | APPROVED BY

SCALE	DATE	SHEET NO.
1"=50'	3-11-96	1 OF 1

#4076

SIGNAL EQUIPMENT

_ 8 PHASE FULLY ACTUATED STANDARD
170 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND CABINET.
_ VEHICLE DETECTOR UNITS

) SIGNAL HEADS

NUMBER	1	2	3	4	5	6	7	8
LENS		R Y G		R Y G		R Y G		R Y G
ASE		2		4		6		8
E		12"		12"		12"		12"
ANTITY		2		3		2		3

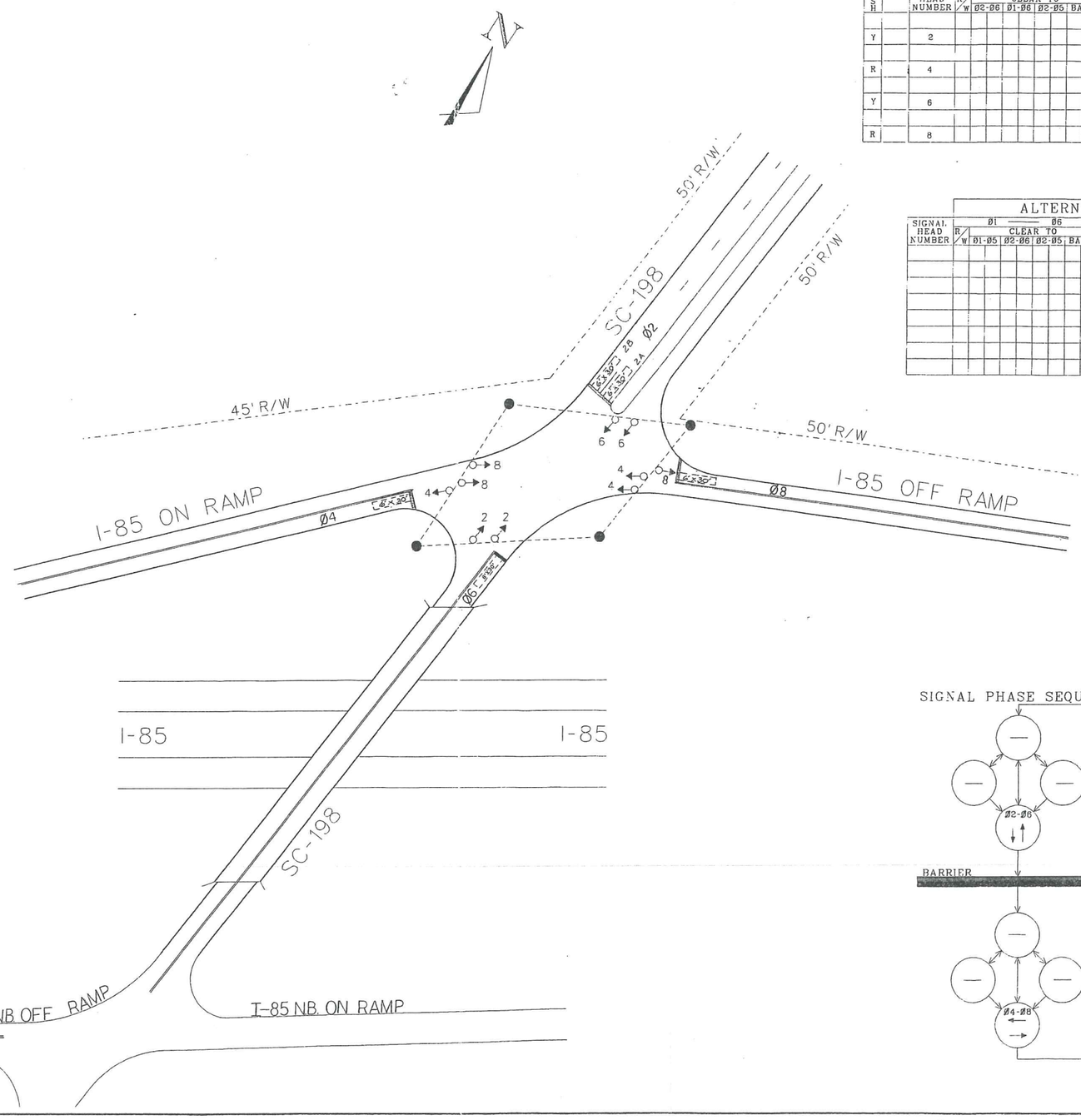
OLES AS NECESSARY

SIGNAL DISPLAY SEQUENCE (PREFERENTIAL PHASING)

FLASH	SIGNAL HEAD NUMBER	Ø1 — Ø5 R/W	CLEAR TO Ø2-Ø6	Ø1-Ø6	Ø2-Ø5	BARR.	Ø2 — Ø6 R/W	CLEAR TO Ø1-Ø5	BARR.	BARRIER	Ø3 — Ø7 R/W	CLEAR TO Ø4-Ø8	Ø3-Ø8	Ø4-Ø7	BARR.	Ø4 — Ø8 R/W	CLEAR TO Ø3-Ø7	BARR.
Y	2						G		Y R							R		R R
R	4						R		R R							G		Y R
Y	6						G		Y R							R		R R
R	8						R		R R							G		Y R

ALTERNATE PHASES

SIGNAL HEAD NUMBER	Ø1 — Ø6 R/W	CLEAR TO Ø1-Ø5	Ø2-Ø6	Ø2-Ø5	BARR.	Ø2 — Ø5 R/W	CLEAR TO Ø1-Ø5	Ø2-Ø6	Ø1-Ø6	BARR.	BARRIER	Ø3 — Ø8 R/W	CLEAR TO Ø3-Ø7	Ø4-Ø8	Ø4-Ø7	BARR.	Ø4 — Ø7 R/W	CLEAR TO Ø3-Ø7	Ø4-Ø8	Ø3-Ø6	BARR.



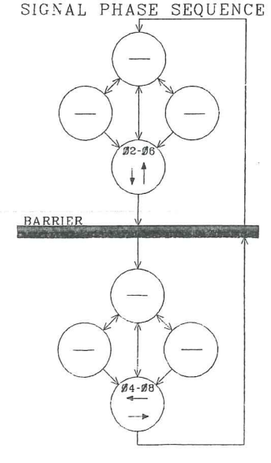
TRAFFIC SIGNAL SETTINGS

NCTIONS	SECONDS Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
EN		15		15		15		15
NIT (SEC/ACT)								
TIAL								
		4.0		2.5		4.0		2.5
FORE REDUCE								
REDUCE								
I		30		30		30		30
II								
CHANGE		4.3		3.8		4.3		3.8
AR		1.8		3.1		1.8		3.1
		MIN		OFF		MIN		OFF
ORY		-		N		-		N
L=LOCK, N=NON-LOCK								
AY				10				
E		PR		PR		PR		PR
P=PULSE PR=PRESENCE								
AN CLEAR								

OVERLAP SETTINGS

OLA ____ OLC ____
OLB ____ OLD ____

SIGNAL PHASE SEQUENCE



ROUTE NUMBER	SC-198		I-85 SB RAMPS ENTR	EXIT
APPROACH DIRECTION	NB	SB	EB	WB
SIGNAL DESIGN SPEED	45	45	35	35
GRADE (%)	0	0	-1.66	+1.66

DKT. NO. 11.347 SHEET NO. 51

DATE	REVISIONS

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
COLUMBIA, S.C.

SUBJECT TITLE: TRAFFIC SIGNAL INSTALLATION

SPECIFIC LOCATION: INTERSECTION OF SC-198 & I-85 SB RAMPS

CITY | COUNTY: CHEROKEE

DESIGNED
DRAWN JLB
CHECKED
REVIEWED
RECOMMENDED

APPROVED BY: Richard B West, DIR. OF TRAFFIC ENGINEERING
APPROVED BY: ENGINEER

SCALE	DATE	SHEET NO.	INDEX NO.
1"=50'	7/24/96	1 OF 1	(11)96-3

APPENDIX E

AUTOMATIC TRAFFIC RECORDER (ATR) DATA

2015 Automatic Traffic Recorder (ATR) Station Data					
Station P-14					
Rank	Volume	Day of the Week	Month	Day	Hour
1	6,170	Sunday	November	29	11:00-12:00PM
2	6,013	Wednesday	November	25	1:00-2:00PM
3	6,005	Sunday	November	29	12:00-1:00PM
4	5,979	Saturday	November	28	1:00-2:00PM
5	5,936	Saturday	December	26	11:00-12:00PM
6	5,921	Saturday	November	28	4:00-5:00PM
7	5,882	Saturday	November	28	2:00-3:00PM
8	5,877	Saturday	December	26	1:00-2:00PM
9	5,832	Sunday	July	5	2:00-3:00PM
10	5,753	Wednesday	November	25	3:00-4:00PM
11	5,744	Tuesday	November	24	2:00-3:00PM
12	5,732	Saturday	December	26	12:00-1:00PM
13	5,705	Sunday	December	27	12:00-1:00PM
14	5,696	Friday	October	9	2:00-3:00PM
15	5,690	Sunday	November	29	1:00-2:00PM
16	5,680	Friday	October	9	3:00-4:00PM
17	5,669	Saturday	December	26	2:00-3:00PM
18	5,667	Sunday	October	25	4:00-5:00PM
19	5,653	Sunday	July	5	3:00-4:00PM
20	5,650	Friday	October	9	4:00-5:00PM
21	5,644	Friday	September	4	4:00-5:00PM
22	5,617	Sunday	August	9	2:00-3:00PM
23	5,615	Thursday	November	26	11:00-12:00PM
24	5,605	Friday	May	22	3:00-4:00PM
25	5,604	Sunday	December	27	3:00-4:00PM
26	5,597	Sunday	July	5	1:00-2:00PM
27	5,571	Wednesday	November	25	4:00-5:00PM
28	5,567	Saturday	November	28	11:00-12:00PM
29	5,551	Friday	September	4	3:00-4:00PM
30	5,548	Friday	September	11	5:00-6:00PM
31	5,548	Sunday	November	29	2:00-3:00PM
32	5,531	Saturday	November	28	12:00-1:00PM
33	5,522	Tuesday	November	24	3:00-4:00PM
34	5,503	Sunday	April	12	3:00-4:00PM
35	5,502	Friday	September	4	5:00-6:00PM
36	5,497	Saturday	November	28	3:00-4:00PM
37	5,496	Sunday	November	29	3:00-4:00PM
38	5,482	Friday	May	22	2:00-3:00PM
39	5,472	Sunday	October	11	4:00-5:00PM

40	5,463	Sunday	December	27	2:00-3:00PM
41	5,456	Wednesday	November	25	2:00-3:00PM
42	5,452	Sunday	October	11	3:00-4:00PM
43	5,449	Friday	September	4	2:00-3:00PM
44	5,444	Sunday	April	12	4:00-5:00PM
45	5,444	Wednesday	November	25	10:00-11:00AM
46	5,441	Friday	July	31	3:00-4:00PM
47	5,440	Sunday	April	5	6:00-7:00PM
48	5,435	Friday	May	22	4:00-5:00PM
49	5,433	Friday	April	3	4:00-5:00PM
50	5,431	Sunday	April	5	5:00-6:00PM
51	5,430	Sunday	July	5	5:00-6:00PM
52	5,427	Sunday	April	5	4:00-5:00PM
53	5,417	Sunday	November	29	5:00-6:00PM
54	5,410	Friday	October	23	3:00-4:00PM
55	5,409	Monday	September	7	2:00-3:00PM
56	5,408	Friday	October	9	5:00-6:00PM
57	5,400	Thursday	November	26	10:00-11:00AM
58	5,385	Sunday	August	9	3:00-4:00PM
59	5,366	Sunday	December	27	11:00-12:00PM
60	5,360	Sunday	December	27	4:00-5:00PM
61	5,351	Friday	July	17	3:00-4:00PM
62	5,350	Sunday	July	26	4:00-5:00PM
63	5,345	Friday	July	31	4:00-5:00PM
64	5,345	Tuesday	November	24	5:00-6:00PM
65	5,343	Sunday	October	25	5:00-6:00PM
66	5,330	Friday	June	19	3:00-4:00PM
67	5,327	Friday	June	19	5:00-6:00PM
68	5,319	Sunday	November	29	4:00-5:00PM
69	5,316	Friday	May	8	5:00-6:00PM
70	5,314	Saturday	December	26	4:00-5:00PM
71	5,311	Saturday	November	28	5:00-6:00PM
72	5,310	Friday	May	22	1:00-2:00PM
73	5,295	Wednesday	November	25	12:00-1:00PM
74	5,294	Friday	July	24	4:00-5:00PM
75	5,291	Friday	November	27	2:00-3:00PM
76	5,290	Sunday	October	18	4:00-5:00PM
77	5,284	Friday	May	8	3:00-4:00PM
78	5,280	Saturday	December	19	11:00-12:00PM
79	5,278	Friday	July	24	3:00-4:00PM
80	5,276	Friday	February	13	4:00-5:00PM
81	5,273	Friday	July	17	4:00-5:00PM
82	5,269	Friday	September	18	3:00-4:00PM

83	5,266	Friday	December	18	4:00-5:00PM
84	5,259	Sunday	October	18	3:00-4:00PM
85	5,258	Saturday	December	26	5:00-6:00PM
86	5,256	Friday	October	16	4:00-5:00PM
87	5,252	Wednesday	November	25	6:00-7:00PM
88	5,248	Sunday	July	26	3:00-4:00PM
89	5,247	Friday	July	31	2:00-3:00PM
90	5,246	Friday	September	4	6:00-7:00PM
91	5,240	Friday	August	28	5:00-6:00PM
92	5,235	Friday	May	15	5:00-6:00PM
93	5,234	Friday	April	24	3:00-4:00PM
94	5,229	Friday	May	8	4:00-5:00PM
95	5,229	Friday	November	6	2:00-3:00PM
96	5,226	Friday	July	10	4:00-5:00PM
97	5,225	Monday	September	7	4:00-5:00PM
98	5,225	Friday	September	18	5:00-6:00PM
99	5,224	Saturday	December	26	3:00-4:00PM
100	5,221	Friday	May	1	4:00-5:00PM

2015 Automatic Traffic Recorder (ATR) Station Data					
Station P-27					
Rank	Volume	Day of the Week	Month	Day	Hour
1	3327	Sunday	April	5	5:00-6:00PM
2	3320	Sunday	April	5	4:00-5:00PM
3	3131	Sunday	April	12	3:00-4:00PM
4	3074	Sunday	April	5	3:00-4:00PM
5	3072	Sunday	March	15	4:00-5:00PM
6	3020	Sunday	April	5	6:00-7:00PM
7	3006	Sunday	April	12	4:00-5:00PM
8	3005	Sunday	January	4	4:00-5:00PM
9	2945	Sunday	January	4	3:00-4:00PM
10	2940	Sunday	April	12	2:00-3:00PM
11	2935	Sunday	March	22	3:00-4:00PM
12	2880	Sunday	April	12	1:00-2:00PM
13	2870	Sunday	March	29	4:00-5:00PM
14	2867	Sunday	April	19	5:00-6:00PM
15	2864	Sunday	January	4	1:00-2:00PM
16	2827	Sunday	April	26	4:00-5:00PM
17	2819	Sunday	April	5	7:00-8:00PM
18	2815	Sunday	January	4	2:00-3:00PM
19	2814	Sunday	April	12	6:00-7:00PM
20	2812	Sunday	April	12	5:00-6:00PM
21	2811	Friday	April	3	5:00-6:00PM
22	2803	Sunday	March	22	2:00-3:00PM
23	2801	Sunday	March	15	5:00-6:00PM
24	2769	Sunday	March	22	5:00-6:00PM
25	2764	Friday	April	3	3:00-4:00PM
26	2762	Sunday	March	29	3:00-4:00PM
27	2762	Saturday	April	11	3:00-4:00PM
28	2760	Saturday	January	3	4:00-5:00PM
29	2757	Sunday	April	5	2:00-3:00PM
30	2751	Sunday	March	29	1:00-2:00PM
31	2750	Friday	January	16	4:00-5:00PM
32	2748	Saturday	January	3	1:00-2:00PM
33	2730	Sunday	March	29	5:00-6:00PM
34	2725	Sunday	April	26	2:00-3:00PM
35	2717	Sunday	April	19	4:00-5:00PM
36	2706	Saturday	April	11	4:00-5:00PM
37	2698	Sunday	March	15	1:00-2:00PM
38	2698	Sunday	February	15	3:00-4:00PM
39	2695	Sunday	March	29	2:00-3:00PM

40	2695	Friday	March	13	5:00-6:00PM
41	2692	Friday	January	2	3:00-4:00PM
42	2687	Sunday	March	22	4:00-5:00PM
43	2680	Sunday	March	15	2:00-3:00PM
44	2677	Friday	April	3	2:00-3:00PM
45	2672	Friday	April	3	1:00-2:00PM
46	2672	Sunday	April	5	1:00-2:00PM
47	2670	Saturday	January	3	2:00-3:00PM
48	2664	Sunday	March	1	2:00-3:00PM
49	2663	Sunday	January	4	12:00-1:00PM
50	2661	Saturday	January	3	12:00-1:00PM
51	2660	Sunday	March	1	1:00-2:00PM
52	2656	Sunday	April	26	3:00-4:00PM
53	2655	Friday	February	13	5:00-6:00PM
54	2654	Friday	January	2	1:00-2:00PM
55	2635	Friday	January	2	4:00-5:00PM
56	2634	Sunday	March	15	3:00-4:00PM
57	2634	Friday	April	3	4:00-5:00PM
58	2632	Friday	March	13	4:00-5:00PM
59	2631	Sunday	March	1	3:00-4:00PM
60	2622	Friday	April	10	3:00-4:00PM
61	2618	Sunday	April	12	12:00-1:00PM
62	2614	Friday	March	20	5:00-6:00PM
63	2614	Friday	April	3	6:00-7:00PM
64	2613	Sunday	February	22	2:00-3:00PM
65	2610	Saturday	April	4	1:00-2:00PM
66	2607	Sunday	March	29	12:00-1:00PM
67	2606	Sunday	April	19	1:00-2:00PM
68	2604	Friday	February	13	4:00-5:00PM
69	2602	Sunday	February	8	3:00-4:00PM
70	2600	Friday	March	13	2:00-3:00PM
71	2597	Friday	April	10	4:00-5:00PM
72	2596	Saturday	January	3	11:00-12:00PM
73	2593	Saturday	April	11	11:00-12:00PM
74	2592	Sunday	February	15	4:00-5:00PM
75	2586	Sunday	April	26	12:00-1:00PM
76	2581	Sunday	April	26	1:00-2:00PM
77	2580	Saturday	April	11	5:00-6:00PM
78	2573	Saturday	April	11	2:00-3:00PM
79	2567	Sunday	April	26	5:00-6:00PM
80	2566	Sunday	March	15	12:00-1:00PM
81	2565	Friday	April	17	4:00-5:00PM
82	2561	Sunday	April	19	2:00-3:00PM

83	2560	Friday	April	3	11:00-12:00PM
84	2560	Thursday	April	2	4:00-5:00PM
85	2550	Saturday	April	4	3:00-4:00PM
86	2548	Friday	April	3	12:00-1:00PM
87	2545	Sunday	February	22	4:00-5:00PM
88	2538	Saturday	April	4	11:00-12:00PM
89	2538	Friday	March	20	6:00-7:00PM
90	2537	Friday	April	10	2:00-3:00PM
91	2536	Saturday	April	4	10:00-11:00AM
92	2535	Sunday	March	1	4:00-5:00PM
93	2534	Friday	March	20	4:00-5:00PM
94	2533	Sunday	April	12	11:00-12:00PM
95	2533	Friday	April	24	4:00-5:00PM
96	2531	Friday	April	24	3:00-4:00PM
97	2528	Sunday	February	15	2:00-3:00PM
98	2528	Friday	March	6	4:00-5:00PM
99	2526	Sunday	March	22	6:00-7:00PM
100	2518	Sunday	January	4	5:00-6:00PM

2015 Automatic Traffic Recorder (ATR) Station Data					
Station P-132					
Rank	Volume	Day of the Week	Month	Day	Hour
1	5202	Sunday	April	5	5:00-6:00PM
2	5142	Sunday	April	5	4:00-5:00PM
3	5019	Friday	May	22	3:00-4:00PM
4	5014	Sunday	April	12	3:00-4:00PM
5	4973	Sunday	April	12	4:00-5:00PM
6	4947	Friday	May	22	2:00-3:00PM
7	4941	Sunday	April	5	6:00-7:00PM
8	4894	Friday	May	22	4:00-5:00PM
9	4844	Monday	May	25	2:00-3:00PM
10	4829	Friday	May	22	5:00-6:00PM
11	4810	Friday	May	22	1:00-2:00PM
12	4764	Sunday	March	15	4:00-5:00PM
13	4763	Friday	April	3	4:00-5:00PM
14	4759	Friday	May	1	4:00-5:00PM
15	4701	Sunday	April	12	2:00-3:00PM
16	4699	Friday	May	8	4:00-5:00PM
17	4689	Sunday	April	12	5:00-6:00PM
18	4653	Friday	May	8	3:00-4:00PM
19	4648	Sunday	April	5	3:00-4:00PM
20	4630	Friday	February	13	4:00-5:00PM
21	4624	Friday	May	8	5:00-6:00PM
22	4614	Friday	April	3	2:00-3:00PM
23	4611	Friday	January	16	4:00-5:00PM
24	4604	Friday	April	24	3:00-4:00PM
25	4597	Friday	May	1	2:00-3:00PM
26	4582	Friday	March	20	3:00-4:00PM
27	4582	Friday	March	6	4:00-5:00PM
28	4552	Monday	May	25	4:00-5:00PM
29	4546	Friday	May	8	2:00-3:00PM
30	4536	Friday	April	10	2:00-3:00PM
31	4513	Friday	May	15	5:00-6:00PM
32	4498	Sunday	May	17	1:00-2:00PM
33	4497	Friday	April	3	5:00-6:00PM
34	4495	Friday	February	13	3:00-4:00PM
35	4489	Friday	March	20	4:00-5:00PM
36	4485	Sunday	April	5	7:00-8:00PM
37	4481	Friday	April	3	3:00-4:00PM
38	4475	Friday	May	22	7:00-8:00PM
39	4472	Friday	April	3	1:00-2:00PM

40	4471	Friday	April	17	3:00-4:00PM
41	4459	Friday	April	10	3:00-4:00PM
42	4457	Friday	February	13	2:00-3:00PM
43	4456	Friday	May	15	2:00-3:00PM
44	4450	Friday	March	6	3:00-4:00PM
45	4446	Friday	March	13	3:00-4:00PM
46	4443	Friday	April	17	4:00-5:00PM
47	4442	Friday	May	1	3:00-4:00PM
48	4438	Thursday	April	2	4:00-5:00PM
49	4431	Monday	May	25	3:00-4:00PM
50	4430	Friday	May	29	4:00-5:00PM
51	4429	Friday	January	16	3:00-4:00PM
52	4428	Sunday	April	12	1:00-2:00PM
53	4420	Sunday	March	22	4:00-5:00PM
54	4409	Sunday	March	22	3:00-4:00PM
55	4386	Friday	March	13	2:00-3:00PM
56	4380	Thursday	April	2	3:00-4:00PM
57	4378	Friday	April	24	4:00-5:00PM
58	4370	Sunday	May	17	3:00-4:00PM
59	4369	Friday	April	10	4:00-5:00PM
60	4363	Sunday	March	29	3:00-4:00PM
61	4361	Friday	May	22	12:00-1:00PM
62	4357	Friday	April	10	1:00-2:00PM
63	4349	Friday	April	10	5:00-6:00PM
64	4348	Sunday	May	10	3:00-4:00PM
65	4347	Sunday	May	3	3:00-4:00PM
66	4338	Sunday	May	17	5:00-6:00PM
67	4335	Friday	May	15	4:00-5:00PM
68	4330	Sunday	May	17	2:00-3:00PM
69	4329	Sunday	April	12	6:00-7:00PM
70	4328	Sunday	May	31	3:00-4:00PM
71	4327	Thursday	May	7	4:00-5:00PM
72	4326	Friday	May	1	5:00-6:00PM
73	4325	Friday	March	20	5:00-6:00PM
74	4317	Sunday	January	4	3:00-4:00PM
75	4314	Friday	May	22	11:00-12:00PM
76	4314	Friday	May	29	3:00-4:00PM
77	4310	Sunday	March	22	5:00-6:00PM
78	4309	Friday	April	3	11:00-12:00PM
79	4304	Sunday	March	15	5:00-6:00PM
80	4300	Sunday	May	3	4:00-5:00PM

81	4290	Friday	March	13	4:00-5:00PM
82	4280	Friday	March	13	5:00-6:00PM
83	4279	Sunday	May	17	4:00-5:00PM
84	4278	Friday	May	8	1:00-2:00PM
85	4273	Friday	February	13	5:00-6:00PM
86	4271	Friday	May	29	5:00-6:00PM
87	4266	Friday	February	6	4:00-5:00PM
88	4260	Friday	May	29	2:00-3:00PM
89	4252	Sunday	May	10	4:00-5:00PM
90	4249	Sunday	January	4	4:00-5:00PM
91	4243	Friday	February	20	4:00-5:00PM
92	4243	Friday	March	6	5:00-6:00PM
93	4238	Sunday	April	26	4:00-5:00PM
94	4237	Thursday	May	7	3:00-4:00PM
95	4236	Sunday	January	4	2:00-3:00PM
96	4229	Sunday	March	29	5:00-6:00PM
97	4223	Friday	February	20	3:00-4:00PM
98	4211	Friday	February	13	1:00-2:00PM
99	4202	Sunday	April	26	5:00-6:00PM
100	4201	Sunday	March	29	4:00-5:00PM

APPENDIX F

FREEWAY SEGMENT HCS ANALYSIS

2015 EXISTING CONDITIONS
FREEWAY SEGMENT HCS ANALYSIS

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Hampshire Dr to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1630	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	434	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1257	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.30	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.0	mi/h
Free-flow speed, FFS	69.5	mi/h

LOS and Performance Measures

Flow rate, vp	1257	pc/h/ln
Free-flow speed, FFS	69.5	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	18.0-	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	SC 18 To Gaffney Ferry Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1600	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	426	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1234	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	1234	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.6	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Gaffney Ferry To Frontage Rd
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1608	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	428	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1240	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1240	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.7	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Frontage Rd to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1607	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	427	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1239	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	1239	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.7	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Blacksburg Hwy To SC 5
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1447	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	385	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1116	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1116	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	15.9	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	SC 5 To Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1324	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	352	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1021	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1021	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	14.6	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Tribal Rd To US 29
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1284	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	341	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	990	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	990	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	14.1	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	US 29 To NC 216
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1325	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	352	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1022	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	1022	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	14.6	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	NC 216 to US 29
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1189	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	316	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	917	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	917	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	13.1	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	US 29 to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1258	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	335	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	970	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.7	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	970	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	13.9	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	Tribal Rd to Welcome Cntr
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1166	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	310	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	899	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	899	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	12.8	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	Welcome Cntr to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1166	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	310	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	899	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	899	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	12.8	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	SC 5 to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1539	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	409	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1187	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1187	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.0	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	Blacksburg Hwy to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1608	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	428	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1240	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1240	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.7	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Hampshire to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2555	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	680	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1971	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.30	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.0	mi/h
Free-flow speed, FFS	69.5	mi/h

LOS and Performance Measures

Flow rate, vp	1971	pc/h/ln
Free-flow speed, FFS	69.5	mi/h
Average passenger-car speed, S	63.1	mi/h
Number of lanes, N	2	
Density, D	31.2	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	SC 18 to Gaffney Ferry Rd
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2466	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	656	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1902	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	1902	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	2	
Density, D	29.6	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Gaffney Ferry to Frontage Rd
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2474	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	658	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1908	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1908	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	2	
Density, D	29.7	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Frontage Rd to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2472	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	657	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1907	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	1907	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	2	
Density, D	29.7	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Blacksburg Hwy to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2369	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	630	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1827	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1827	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	65.4	mi/h
Number of lanes, N	2	
Density, D	27.9	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	SC 5 to Tribal Road
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2119	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	564	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1634	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1634	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	67.8	mi/h
Number of lanes, N	2	
Density, D	24.1	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Tribal Road to US 29
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2101	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	559	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1620	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1620	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	68.0	mi/h
Number of lanes, N	2	
Density, D	23.8	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	US 29 to NC 216
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2103	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	559	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1622	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	1622	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	67.9	mi/h
Number of lanes, N	2	
Density, D	23.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	NC 216 to US 29
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2174	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	578	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1677	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1677	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	67.4	mi/h
Number of lanes, N	2	
Density, D	24.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	US 29 to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2155	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	573	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1662	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.7	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	1662	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	67.5	mi/h
Number of lanes, N	2	
Density, D	24.6	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	Tribal Rd to Welcome Cntr
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2202	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	586	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1698	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1698	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	67.1	mi/h
Number of lanes, N	2	
Density, D	25.3	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	Welcome Cntr to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2202	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	586	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1698	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1698	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	67.1	mi/h
Number of lanes, N	2	
Density, D	25.3	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	SC 5 to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2330	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	620	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1797	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1797	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	65.9	mi/h
Number of lanes, N	2	
Density, D	27.3	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	Blacksburg Hwy to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2473	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	658	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1907	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1907	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	2	
Density, D	29.7	pc/mi/ln
Level of service, LOS	D	

2040 NO-BUILD CONDITIONS
FREEWAY SEGMENT HCS ANALYSIS

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Hampshire Dr to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2361	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	628	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1821	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.30	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.0	mi/h
Free-flow speed, FFS	69.5	mi/h

LOS and Performance Measures

Flow rate, vp	1821	pc/h/ln
Free-flow speed, FFS	69.5	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	2	
Density, D	27.8	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	SC 18 To Gaffney Ferry Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2323	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	618	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1792	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	1792	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	65.9	mi/h
Number of lanes, N	2	
Density, D	27.2	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Gaffney Ferry To Frontage Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2333	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	620	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1799	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1799	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	65.8	mi/h
Number of lanes, N	2	
Density, D	27.3	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Frontage Rd to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2331	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	620	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1798	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	1798	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	65.9	mi/h
Number of lanes, N	2	
Density, D	27.3	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Blacksburg Hwy To SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2034	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	541	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1569	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1569	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	68.4	mi/h
Number of lanes, N	2	
Density, D	22.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	SC 5 To Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1877	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	499	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1448	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1448	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	69.3	mi/h
Number of lanes, N	2	
Density, D	20.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Tribal Rd To US 29
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1819	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	484	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1403	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1403	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	69.5	mi/h
Number of lanes, N	2	
Density, D	20.2	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	US 29 To NC 216
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1871	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	498	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1443	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	1443	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	69.3	mi/h
Number of lanes, N	2	
Density, D	20.8	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	NC 216 to US 29
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1771	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	471	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1366	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1366	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	2	
Density, D	19.6	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	US 29 to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1858	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	494	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1433	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.7	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	1433	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	69.4	mi/h
Number of lanes, N	2	
Density, D	20.7	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	Tribal Rd to Welcome Cntr
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1724	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	459	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1330	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1330	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	2	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	Welcome Cntr to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1724	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	459	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1330	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1330	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	2	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	SC 5 to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2202	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	586	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1698	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1698	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	67.1	mi/h
Number of lanes, N	2	
Density, D	25.3	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	Blacksburg Hwy to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2333	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	620	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1799	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1799	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	65.8	mi/h
Number of lanes, N	2	
Density, D	27.3	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Hampshire to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3691	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	982	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2847	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.30	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.0	mi/h
Free-flow speed, FFS	69.5	mi/h

LOS and Performance Measures

Flow rate, vp	2847	pc/h/ln
Free-flow speed, FFS	69.5	mi/h
Average passenger-car speed, S	38.5	mi/h
Number of lanes, N	2	
Density, D	73.9	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	SC 18 to Gaffney Ferry Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3578	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	952	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2760	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	2760	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	41.8	mi/h
Number of lanes, N	2	
Density, D	66.1	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Gaffney Ferry to Frontage Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3588	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	954	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2767	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	2767	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	41.5	mi/h
Number of lanes, N	2	
Density, D	66.6	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Frontage Rd to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3584	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	953	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2764	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	2764	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	41.6	mi/h
Number of lanes, N	2	
Density, D	66.4	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Blacksburg Hwy to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3394	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	903	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2618	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	2618	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	46.7	mi/h
Number of lanes, N	2	
Density, D	56.1	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	SC 5 to Tribal Road
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3077	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	818	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2373	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	2373	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	54.0	mi/h
Number of lanes, N	2	
Density, D	43.9	pc/mi/ln
Level of service, LOS	E	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Tribal Road to US 29
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3051	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	811	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2353	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	2353	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	54.6	mi/h
Number of lanes, N	2	
Density, D	43.1	pc/mi/ln
Level of service, LOS	E	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	US 29 to NC 216
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3054	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	812	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2355	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	2355	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	54.5	mi/h
Number of lanes, N	2	
Density, D	43.2	pc/mi/ln
Level of service, LOS	E	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	NC 216 to US 29
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3114	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	828	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2402	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	2402	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	53.2	mi/h
Number of lanes, N	2	
Density, D	45.1	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	US 29 to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3090	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	822	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2383	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.7	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	2383	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	53.8	mi/h
Number of lanes, N	2	
Density, D	44.3	pc/mi/ln
Level of service, LOS	E	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	Tribal Rd to Welcome Cntr
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3158	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	840	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2436	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	2436	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	52.3	mi/h
Number of lanes, N	2	
Density, D	46.6	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	Welcome Cntr to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3158	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	840	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2436	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	2436	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	52.3	mi/h
Number of lanes, N	2	
Density, D	46.6	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	SC 5 to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3323	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	884	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2563	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	2563	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	48.4	mi/h
Number of lanes, N	2	
Density, D	52.9	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	Blacksburg Hwy to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3588	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	954	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2767	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	2767	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	41.5	mi/h
Number of lanes, N	2	
Density, D	66.6	pc/mi/ln
Level of service, LOS	F	

2040 BUILD CONDITIONS
FREEWAY SEGMENT HCS ANALYSIS

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Hampshire Dr to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2361	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	628	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1214	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.30	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.0	mi/h
Free-flow speed, FFS	69.5	mi/h

LOS and Performance Measures

Flow rate, vp	1214	pc/h/ln
Free-flow speed, FFS	69.5	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.3	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	SC 18 To Gaffney Ferry Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2323	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	618	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1194	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	1194	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Gaffney Ferry To Frontage Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2333	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	620	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1200	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1200	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Frontage Rd to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2331	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	620	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1199	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	1199	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Blacksburg Hwy To SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2034	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	541	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1046	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1046	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	14.9	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	SC 5 To Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1877	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	499	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	965	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	965	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	13.8	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	Tribal Rd To US 29
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1819	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	484	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	935	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	935	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	13.4	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/8/2016
Analysis Time Period:	8:00AM-9:00AM
Freeway/Direction:	I-85 Northbound
From/To:	US 29 To NC 216
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1871	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	498	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1443	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	1443	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	69.3	mi/h
Number of lanes, N	2	
Density, D	20.8	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	NC 216 to US 29
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1771	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	471	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1366	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1366	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	2	
Density, D	19.6	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	US 29 to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1858	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	494	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	955	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.7	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	955	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	13.6	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	Tribal Rd to Welcome Cntr
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1724	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	459	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	886	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	886	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	12.7	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	Welcome Cntr to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	1724	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	459	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	886	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	886	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	12.7	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	SC 5 to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2202	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	586	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1132	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1132	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	16.2	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	8:00AM -9:00AM
Freeway/Direction:	I-85 Southbound
From/To:	Blacksburg Hwy to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	2333	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	620	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1200	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1200	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Hampshire to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3691	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	982	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1898	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.30	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.0	mi/h
Free-flow speed, FFS	69.5	mi/h

LOS and Performance Measures

Flow rate, vp	1898	pc/h/ln
Free-flow speed, FFS	69.5	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	3	
Density, D	29.5	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	SC 18 to Gaffney Ferry Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3578	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	952	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1840	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	1840	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	3	
Density, D	28.2	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Gaffney Ferry to Frontage Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3588	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	954	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1845	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1845	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	3	
Density, D	28.3	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Frontage Rd to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3584	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	953	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1843	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.17	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.7	mi/h
Free-flow speed, FFS	69.8	mi/h

LOS and Performance Measures

Flow rate, vp	1843	pc/h/ln
Free-flow speed, FFS	69.8	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	3	
Density, D	28.3	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Blacksburg Hwy to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3394	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	903	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1745	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1745	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	66.6	mi/h
Number of lanes, N	3	
Density, D	26.2	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	SC 5 to Tribal Road
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3077	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	818	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1582	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1582	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	68.3	mi/h
Number of lanes, N	3	
Density, D	23.2	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	Tribal Road to US 29
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3051	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	811	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1569	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1569	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	68.4	mi/h
Number of lanes, N	3	
Density, D	22.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Northbound
From/To:	US 29 to NC 216
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3054	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	812	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2355	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	2355	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	54.5	mi/h
Number of lanes, N	2	
Density, D	43.2	pc/mi/ln
Level of service, LOS	E	

Phone: Fax:
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Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	NC 216 to US 29
Jurisdiction:	SCDOT/NCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3114	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	828	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	2402	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	2402	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	53.2	mi/h
Number of lanes, N	2	
Density, D	45.1	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	US 29 to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3090	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	822	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1589	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.7	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	1589	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	68.2	mi/h
Number of lanes, N	3	
Density, D	23.3	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	Tribal Rd to Welcome Cntr
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3158	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	840	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1624	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1624	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	67.9	mi/h
Number of lanes, N	3	
Density, D	23.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	Welcome Cntr to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3158	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	840	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1624	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1624	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	67.9	mi/h
Number of lanes, N	3	
Density, D	23.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	SC 5 to Blacksburg Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3323	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	884	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1709	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1709	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	25.5	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	Stantec
Date Performed:	11/9/2016
Analysis Time Period:	2:00PM-3:00PM
Freeway/Direction:	I-85 Southbound
From/To:	Blacksburg Hwy to SC 18
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Flow Inputs and Adjustments

Volume, V	3588	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	954	v
Trucks and buses	30	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1845	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1845	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	3	
Density, D	28.3	pc/mi/ln
Level of service, LOS	D	

APPENDIX G

RAMP MERGE/DIVERGE HCS ANALYSIS

2015 EXISTING CONDITIONS
RAMP MERGE AREAS - HCS ANALYSIS

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Shelby Hwy On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	1446	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	184	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1446	154	184	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	385	41	49	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2231	164	196	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2231 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2395	4790	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2231 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2395	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.325	
Space mean speed in ramp influence area,	S_R = 60.6	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 60.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Shelby Hwy On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	1446	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	8	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1446	154	8	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	385	41	2	v
Trucks and buses	30	0	100	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	0.667	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2231	164	13	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2231 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2395	4790	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2231 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2395	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.325

Space mean speed in ramp influence area, S_R = 60.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 60.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Gaffney Ferry On Ramp to I-85
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1600	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	8	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	154	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1600	8	154	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	426	2	41	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2468	9	164	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2468 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2477	4796	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2468 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2477	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 19.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.313

Space mean speed in ramp influence area, S_R = 61.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 61.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Gaffney Ferry On Ramp to I-85
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1600	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	8	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1600	8	1	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	426	2		v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2468	9	1	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2468 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2477	4796	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2468 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2477	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 19.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.313	
Space mean speed in ramp influence area,	S_R = 61.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 61.1	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Blacksburg On Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1392	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	55	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	215	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1392	55	215	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	370	15	57	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2147	59	229	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2147 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2206	4796	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2147 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2206	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.293

Space mean speed in ramp influence area, S_R = 61.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 61.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: SC 5 On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1178	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	146	vph
Length of first accel/decel lane	1375	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	269	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1178	146	269	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	313	39	72	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1817	155	286	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1817 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1972	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1817 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1972	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 12.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.253	
Space mean speed in ramp influence area,	S_R = 63.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 63.4	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Tribal Rd On Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1187	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	97	vph
Length of first accel/decel lane	1064	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	137	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1187	97	137	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	316	26	36	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1831	103	146	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1831 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1934	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1831 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1934	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.273	
Space mean speed in ramp influence area,	S_R = 62.6	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 62.6	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	US 29 On Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1237	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	88	vph
Length of first accel/decel lane	580	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	47	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1237	88	47	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	329	23	13	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1908	94	50	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1908 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2002	4800	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 1908 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2002	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.309	
Space mean speed in ramp influence area,	S_R = 61.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 61.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: US 29 On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1133	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	125	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	56	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1133	125	56	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	301	33	15	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1748	133	60	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1748 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1881	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1748 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1881	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 10.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.242	
Space mean speed in ramp influence area,	S_R = 63.5	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 63.5	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Tribal Rd On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	991	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	175	vph
Length of first accel/decel lane	1280	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	267	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	991	175	267	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	264	47	71	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1529	186	284	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1529 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1715	4780	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1529 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1715	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 10.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.253	
Space mean speed in ramp influence area,	S_R = 62.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 62.2	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Tribal Rd On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	991	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	175	vph
Length of first accel/decel lane	1280	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	68	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	991	175	68	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	264	47	18	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1529	186	72	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1529 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1715	4780	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1529 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1715	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 10.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.253	
Space mean speed in ramp influence area,	S_R = 62.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 62.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Welcome Cntr On Ramp to I-85 S
Jurisdiction: SCCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1098	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	68	vph
Length of first accel/decel lane	875	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	68	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1098	68	68	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	292	18	18	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1694	72	72	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1694 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1766	4788	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 1694 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1766	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.283	
Space mean speed in ramp influence area,	S_R = 61.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 61.7	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Welcome Cntr On Ramp to I-85 S
Jurisdiction:	SCCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1098	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	68	vph
Length of first accel/decel lane	875	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	75	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1098	68	75	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	292	18	20	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1694	72	80	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1694 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1766	4788	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1694 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1766	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.283

Space mean speed in ramp influence area, S_R = 61.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 61.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: SC 5 On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1091	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	448	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	75	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1091	448	75	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	290	119	20	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1683	477	80	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1683 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2160	4788	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 1683 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2160	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.308	
Space mean speed in ramp influence area,	S_R = 61.0	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 61.0	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/16/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Blacksburg On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1471	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	137	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	68	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1471	137	68	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	391	36	18	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2269	146	72	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2269 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2415	4796	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2269 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2415	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.330	
Space mean speed in ramp influence area,	S_R = 60.6	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 60.6	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Shelby Hwy On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1554	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	332	vph
Length of first accel/decel lane	365	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	54	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1554	332	54	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	413	88	14	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2397	353	57	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2397 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2750	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2397 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2750	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 24.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.356	
Space mean speed in ramp influence area,	S_R = 60.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 60.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM:3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: Shelby Hwy On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	2297	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	169	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	258	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2297	169	258	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	611	45	69	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3543	180	274	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3543 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3723	4790	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3543 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3723	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 30.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.443	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Shelby Hwy On Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	2297	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	169	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	8	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2297	169	8	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	611	45	2	v
Trucks and buses	30	0	100	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	0.667	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3543	180	13	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3543 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3723	4790	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3543 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3723	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 30.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.443	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: Gaffney Ferry On Ramp to I-85
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2466	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	8	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	169	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2466	8	169	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	656	2	45	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3804	9	180	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3804 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3813	4796	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3804 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3813	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 30.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.443	
Space mean speed in ramp influence area,	S_R = 57.5	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Gaffney Ferry On Ramp to I-85
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2466	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	8	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	2	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2466	8	2	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	656	2	1	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3804	9	2	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3804 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3813	4796	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3804 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3813	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 30.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.443	
Space mean speed in ramp influence area,	S_R = 57.5	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.5	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Blacksburg On Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2317	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	52	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	155	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2317	52	155	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	616	14	41	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3574	55	165	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3574 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3629	4796	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3574 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3629	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 28.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.405

Space mean speed in ramp influence area, S_R = 58.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: SC 5 On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2014	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	105	vph
Length of first accel/decel lane	1375	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	355	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2014	105	355	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	536	28	94	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3107	112	378	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3107 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3219	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3107 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3219	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.322	
Space mean speed in ramp influence area,	S_R = 61.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 61.5	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Tribal Rd On Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1988	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	131	vph
Length of first accel/decel lane	1080	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	131	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1988	131	131	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	529	35	35	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3067	139	139	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3067 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3206	4800	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3067 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3206	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 23.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.342	
Space mean speed in ramp influence area,	S_R = 60.6	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 60.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: US 29 On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2015	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	88	vph
Length of first accel/decel lane	580	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	86	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2015	88	86	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	536	23	23	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3108	94	91	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3108 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3202	4800	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3108 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3202	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 26.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.376	
Space mean speed in ramp influence area,	S_R = 59.9	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 59.9	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	US 29 On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2033	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	122	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	141	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2033	122	141	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	541	32	38	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3136	130	150	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3136 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3266	4800	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3136 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3266	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.318	
Space mean speed in ramp influence area,	S_R = 61.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 61.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: Tribal Rd On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	2066	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1280	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	89	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2066	136	89	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	549	36	24	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3187	145	95	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3187 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3332	4780	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3187 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3332	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 23.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.341	
Space mean speed in ramp influence area,	S_R = 59.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 59.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Tribal Rd On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	2066	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1280	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	109	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2066	136	109	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	549	36	29	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3187	145	116	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3187 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3332	4780	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3187 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3332	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 23.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.341	
Space mean speed in ramp influence area,	S_R = 59.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 59.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: Welcome Cntr On Ramp to I-85 S
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2093	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	875	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	109	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2093	109	109	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	557	29	29	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3229	116	116	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3229 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3345	4788	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3229 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3345	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 26.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.370	
Space mean speed in ramp influence area,	S_R = 59.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 59.3	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Welcome Cntr On Ramp to I-85 S
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2093	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	875	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	139	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2093	109	139	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	557	29	37	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3229	116	148	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3229 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3345	4788	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3229 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3345	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 26.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.370	
Space mean speed in ramp influence area,	S_R = 59.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 59.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: SC 5 On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2063	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	267	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	139	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2063	267	139	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	549	71	37	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3182	284	148	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3182 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3466	4788	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3182 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3466	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 28.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.399	
Space mean speed in ramp influence area,	S_R = 58.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/16/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Blacksburg On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2268	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	205	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	62	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2268	205	62	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	603	55	16	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3499	218	66	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3499 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3717	4796	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3499 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3717	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 31.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.446	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: Shelby Hwy On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2381	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	195	vph
Length of first accel/decel lane	365	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	92	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2381	195	92	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	633	52	24	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3673	207	98	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3673 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3880	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3673 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3880	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 33.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.484	
Space mean speed in ramp influence area,	S_R = 56.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.8	mph

2040 NO BUILD CONDITIONS
RAMP MERGE AREAS - HCS ANALYSIS

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Shelby Hwy On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	2126	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	197	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	235	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2126	197	235	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	565	52	63	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3279	210	250	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3279 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3489	4790	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3279 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3489	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 29.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.410

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Shelby Hwy On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	2126	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	197	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	10	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2126	197	10	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	565	52	3	v
Trucks and buses	30	0	100	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	0.667	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3279	210	16	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3279 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3489	4790	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3279 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3489	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 29.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.410

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Gaffney Ferry On Ramp to I-85
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2323	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	197	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2323	10	197	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	618	3	52	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3583	11	210	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3583 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3594	4796	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3583 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3594	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 28.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.408	
Space mean speed in ramp influence area,	S_R = 58.4	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.4	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Gaffney Ferry On Ramp to I-85
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2323	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	2	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2323	10	2	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	618	3	1	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3583	11	2	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3583 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3594	4796	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3583 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3594	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 28.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.408	
Space mean speed in ramp influence area,	S_R = 58.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Blacksburg On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1932	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	102	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	399	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1932	102	399	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	514	27	106	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2980	109	424	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2980 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3089	4796	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2980 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3089	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 23.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.344	
Space mean speed in ramp influence area,	S_R = 60.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 60.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: SC 5 On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1691	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	186	vph
Length of first accel/decel lane	1375	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	343	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1691	186	343	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	450	49	91	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2608	198	365	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2608 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2806	4800	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2608 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2806	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.289	
Space mean speed in ramp influence area,	S_R = 62.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 62.4	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Tribal Rd On Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1678	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	141	vph
Length of first accel/decel lane	1064	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	199	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1678	141	199	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	446	38	53	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2588	150	212	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2588 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2738	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2588 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2738	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.307

Space mean speed in ramp influence area, S_R = 61.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 61.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: US 29 On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1758	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	113	vph
Length of first accel/decel lane	580	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	61	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1758	113	61	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	468	30	16	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2712	120	65	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2712 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2832	4800	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2712 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2832	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 23.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.347

Space mean speed in ramp influence area, S_R = 60.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 60.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: US 29 On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1699	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	159	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	72	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1699	159	72	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	452	42	19	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2621	169	77	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2621 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2790	4800	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2621 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2790	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.279

Space mean speed in ramp influence area, S_R = 62.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 62.4 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Tribal Rd On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	1470	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	254	vph
Length of first accel/decel lane	1280	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	388	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1470	254	388	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	391	68	103	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2268	270	413	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2268 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2538	4780	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2268 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2538	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.281

Space mean speed in ramp influence area, S_R = 61.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 61.4 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Tribal Rd On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	1470	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	254	vph
Length of first accel/decel lane	1280	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	99	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1470	254	99	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	391	68	26	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2268	270	105	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2268 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2538	4780	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2268 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2538	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.281

Space mean speed in ramp influence area, S_R = 61.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 61.4 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Welcome Cntr On Ramp to I-85 S
Jurisdiction: SCCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1625	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	875	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	99	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1625	99	99	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	432	26	26	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2507	105	105	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2507 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2612	4788	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2507 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2612	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.313

Space mean speed in ramp influence area, S_R = 60.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Welcome Cntr On Ramp to I-85 S
Jurisdiction: SCCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1625	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	875	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	96	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1625	99	96	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	432	26	26	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2507	105	102	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2507 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2612	4788	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2507 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2612	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.313

Space mean speed in ramp influence area, S_R = 60.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 60.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: SC 5 On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1628	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	574	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	96	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1628	574	96	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	433	153	26	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2511	611	102	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2511 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3122	4788	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2511 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3122	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 25.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.362

Space mean speed in ramp influence area, S_R = 59.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 59.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/16/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Blacksburg On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2079	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	254	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	123	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2079	254	123	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	553	68	33	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3207	270	131	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3207 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3477	4796	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3207 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3477	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 29.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.412	
Space mean speed in ramp influence area,	S_R = 58.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.3	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Shelby Hwy On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2264	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	426	vph
Length of first accel/decel lane	365	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	69	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2264	426	69	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	602	113	18	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3492	453	73	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3492 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3945	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3492 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3945	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 33.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.497	
Space mean speed in ramp influence area,	S_R = 56.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM:3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: Shelby Hwy On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	3361	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	330	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	217	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3361	330	217	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	894	88	58	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5185	351	231	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5185 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5536	4790	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5185 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5536	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 45.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.271	
Space mean speed in ramp influence area,	S_R = 34.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 34.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Shelby Hwy On Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	3361	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	217	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	10	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3361	217	10	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	894	58	3	v
Trucks and buses	30	0	100	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	0.667	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5185	231	16	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5185 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5416	4790	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5185 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5416	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 44.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.159	
Space mean speed in ramp influence area,	S_R = 37.6	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 37.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: Gaffney Ferry On Ramp to I-85
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3578	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	217	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3578	10	217	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	952	3	58	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5519	11	231	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5519 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5530	4796	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5519 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5530	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 43.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.250	
Space mean speed in ramp influence area,	S_R = 35.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 35.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: Gaffney Ferry On Ramp to I-85
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3578	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	4	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3578	10	4	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	952	3	1	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5519	11	4	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5519 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5530	4796	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5519 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5530	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 43.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.250	
Space mean speed in ramp influence area,	S_R = 35.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 35.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Blacksburg On Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3297	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	97	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	287	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3297	97	287	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	877	26	76	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5086	103	305	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5086 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5189	4796	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5086 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5189	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 40.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 0.957	
Space mean speed in ramp influence area,	S_R = 43.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 43.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: SC 5 On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2939	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	138	vph
Length of first accel/decel lane	1375	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	355	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2939	138	355	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	782	37	94	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4534	147	378	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4534 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4681	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4534 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4681	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 33.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.645	
Space mean speed in ramp influence area,	S_R = 52.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 52.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: Tribal Rd On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2887	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	190	vph
Length of first accel/decel lane	1080	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	164	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2887	190	164	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	768	51	44	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4453	202	174	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4453 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4655	4800	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4453 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4655	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.655	
Space mean speed in ramp influence area,	S_R = 51.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 51.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: US 29 On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2941	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	113	vph
Length of first accel/decel lane	580	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	110	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2941	113	110	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	782	30	29	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4537	120	117	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4537 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4657	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4537 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4657	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 38.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	M_S = 0.691	
Space mean speed in ramp influence area,	S_R = 50.9	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 50.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: US 29 On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2933	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	181	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2933	157	181	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	780	42	48	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4524	167	193	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4524 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4691	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4524 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4691	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 32.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.641	
Space mean speed in ramp influence area,	S_R = 52.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 52.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: Tribal Rd On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	2961	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	197	vph
Length of first accel/decel lane	1280	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	129	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2961	197	129	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	788	52	34	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4567	210	137	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4567 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4777	4780	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4567 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4777	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.695	
Space mean speed in ramp influence area,	S_R = 50.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 50.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Tribal Rd On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	2961	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	197	vph
Length of first accel/decel lane	1280	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	158	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2961	197	158	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	788	52	42	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4567	210	168	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4567 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4777	4780	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4567 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4777	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.695	
Space mean speed in ramp influence area,	S_R = 50.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 50.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: Welcome Cntr On Ramp to I-85 S
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	3000	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	875	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	158	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3000	158	158	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	798	42	42	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4628	168	168	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4628 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4796	4788	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4628 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4796	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 37.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 0.732	
Space mean speed in ramp influence area,	S_R = 49.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 49.4	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Welcome Cntr On Ramp to I-85 S
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	3000	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	875	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	178	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3000	158	178	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	798	42	47	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4628	168	189	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4628 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4796	4788	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4628 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4796	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 37.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 0.732	
Space mean speed in ramp influence area,	S_R = 49.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 49.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: SC 5 On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2980	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	343	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	178	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2980	343	178	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	793	91	47	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4597	365	189	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4597 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4962	4788	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4597 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4962	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 39.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 0.831	
Space mean speed in ramp influence area,	S_R = 46.6	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 46.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/16/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Blacksburg On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3208	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	380	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	115	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3208	380	115	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	853	101	31	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4949	404	122	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4949 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5353	4796	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4949 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5353	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 43.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.110	
Space mean speed in ramp influence area,	S_R = 38.9	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 38.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: Shelby Hwy On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	3457	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	250	vph
Length of first accel/decel lane	365	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	131	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3457	250	131	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	919	66	35	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5333	266	139	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5333 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5599	4800	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5333 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5599	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 46.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.349	
Space mean speed in ramp influence area,	S_R = 32.0	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 32.0	mph

2040 BUILD CONDITIONS
RAMP MERGE AREAS - HCS ANALYSIS

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Shelby Hwy On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.5	mph
Volume on freeway	2126	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	197	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	235	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2126	197	235	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	565	52	63	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3279	210	250	pcph

Estimation of V12 Merge Areas

L_{EQ} = 423.49 (Equation 13-6 or 13-7)

P_{FM} = 0.593 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1945 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3489	7185	No
v_3 or v_{av34}	1334 pc/h	(Equation 13-14 or 17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 1945 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2155	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.315	
Space mean speed in ramp influence area,	S_R = 60.8	mph
Space mean speed in outer lanes,	S_0 = 66.5	mph
Space mean speed for all vehicles,	S = 62.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Shelby Hwy On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.5	mph
Volume on freeway	2126	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	197	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	10	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2126	197	10	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	565	52	3	v
Trucks and buses	30	0	100	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	0.667	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3279	210	16	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.593 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1945 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3489	7185	No
v_3 or v_{av34}	1334 pc/h	(Equation 13-14 or 17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 1945 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2155	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.315	
Space mean speed in ramp influence area,	S_R = 60.8	mph
Space mean speed in outer lanes,	S_0 = 66.5	mph
Space mean speed for all vehicles,	S = 62.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Gaffney Ferry On Ramp to I-85
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2323	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	197	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2323	10	197	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	618	3	52	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3583	11	210	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.599 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2147 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3594	7194	No
v_3 or v_{av34}	1436 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 2147 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2158	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.300	
Space mean speed in ramp influence area,	S_R = 61.5	mph
Space mean speed in outer lanes,	S_O = 66.4	mph
Space mean speed for all vehicles,	S = 63.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Gaffney Ferry On Ramp to I-85
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2323	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	2	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2323	10	2	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	618	3	1	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3583	11	2	pcph

Estimation of V12 Merge Areas

L_{EQ} = 10.36 (Equation 13-6 or 13-7)

P_{FM} = 0.599 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2147 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3594	7194	No
v_3 or v_{av34}	1436 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2147 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2158	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.300	
Space mean speed in ramp influence area,	S_R = 61.5	mph
Space mean speed in outer lanes,	S_0 = 66.4	mph
Space mean speed for all vehicles,	S = 63.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	05/02/17
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Blacksburg On-Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1932	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	102	vph
Length of first accel/decel lane	825	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	399	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1932	102	399	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	514	27	106	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2980	109	424	pcph

Estimation of V12 Merge Areas

L_{EQ} = 455.55 (Equation 13-6 or 13-7)

P_{FM} = 0.601 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1790 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3089	7194	No
v_3 or v_{av34}	1190 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 1790 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	1899	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 15.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.289	
Space mean speed in ramp influence area,	S_R = 61.8	mph
Space mean speed in outer lanes,	S_0 = 67.3	mph
Space mean speed for all vehicles,	S = 63.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: SC 5 On-Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1691	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	186	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	343	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1691	186	343	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	450	49	91	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2608	198	365	pcph

Estimation of V12 Merge Areas

L_{EQ} = 428.28 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1572 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2806	7200	No
v_3 or v_{av34}	1036 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 1572 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	1770	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.281	
Space mean speed in ramp influence area,	S_R = 62.6	mph
Space mean speed in outer lanes,	S_0 = 68.8	mph
Space mean speed for all vehicles,	S = 64.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: Tribal Rd On-Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1678	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	141	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	199	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1678	141	199	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	446	38	53	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2588	150	212	pcph

Estimation of V12 Merge Areas

L_{EQ} = 413.73 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1560 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2738	7200	No
v_3 or v_{av34}	1028 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 1560 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	1710	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.280	
Space mean speed in ramp influence area,	S_R = 62.4	mph
Space mean speed in outer lanes,	S_O = 68.4	mph
Space mean speed for all vehicles,	S = 64.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: US 29 On-Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1758	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	113	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	61	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1758	113	61	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	468	30	16	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2712	120	65	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2712 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2832	4800	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2712 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2832	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.324

Space mean speed in ramp influence area, S_R = 61.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 61.4 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: US 29 On-Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1699	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	159	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	72	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1699	159	72	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	452	42	19	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2621	169	77	pcph

Estimation of V12 Merge Areas

L_{EQ} = 424.86 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1580 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2790	7200	No
v_3 or v_{av34}	1041 pc/h	(Equation 13-14 or 17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 1580 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	1749	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.280	
Space mean speed in ramp influence area,	S_R = 62.4	mph
Space mean speed in outer lanes,	S_0 = 68.4	mph
Space mean speed for all vehicles,	S = 64.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Tribal Rd On-Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.0	mph
Volume on freeway	1470	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	254	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	99	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1470	254	99	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	391	68	26	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2268	270	105	pcph

Estimation of V12 Merge Areas

L_{EQ} = 509.96 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1367 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2538	7170	No
v_3 or v_{av34}	901 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 1367 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	1637	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 12.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.278

Space mean speed in ramp influence area, S_R = 61.5 mph

Space mean speed in outer lanes, S_O = 67.6 mph

Space mean speed for all vehicles, S = 63.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Tribal Rd On-Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.0	mph
Volume on freeway	1470	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	254	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	388	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1470	254	388	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	391	68	103	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2268	270	413	pcph

Estimation of V12 Merge Areas

L_{EQ} = 370.93 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1367 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2538	7170	No
v_3 or v_{av34}	901 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 1367 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	1637	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 12.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.278

Space mean speed in ramp influence area, S_R = 61.5 mph

Space mean speed in outer lanes, S_O = 67.6 mph

Space mean speed for all vehicles, S = 63.5 mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	05/02/17
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Welcome Cntr On-Ramp to I-85 S
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1625	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	1076	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	96	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1625	99	96	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	432	26	26	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2507	105	102	pcph

Estimation of V12 Merge Areas

L_{EQ} = 453.87 (Equation 13-6 or 13-7)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1523 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2612	7182	No
v_3 or v_{av34}	984 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 1523 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	1628	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 11.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.266

Space mean speed in ramp influence area, S_R = 62.1 mph

Space mean speed in outer lanes, S_O = 67.7 mph

Space mean speed for all vehicles, S = 64.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Welcome Cntr On-Ramp to I-85 S
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1625	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	1076	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	99	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1625	99	99	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	432	26	26	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2507	105	105	pcph

Estimation of V12 Merge Areas

L_{EQ} = 464.91 (Equation 13-6 or 13-7)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1523 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2612	7182	No
v_3 or v_{av34}	984 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 1523 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	1628	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 11.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.266

Space mean speed in ramp influence area, S_R = 62.1 mph

Space mean speed in outer lanes, S_O = 67.7 mph

Space mean speed for all vehicles, S = 64.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	05/02/17
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	SC 5 On-Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1628	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	574	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	96	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1628	574	96	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	433	153	26	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2511	611	102	pcph

Estimation of V12 Merge Areas

L_{EQ} = 495.91 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1513 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3122	7182	No
v_3 or v_{av34}	998 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 1513 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2124	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 16.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.291

Space mean speed in ramp influence area, S_R = 61.4 mph

Space mean speed in outer lanes, S_O = 67.6 mph

Space mean speed for all vehicles, S = 63.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	05/02/17
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Blacksburg On-Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2079	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	254	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	123	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2079	254	123	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	553	68	33	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3207	270	131	pcph

Estimation of V12 Merge Areas

L_{EQ} = 571.88 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1933 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3477	7194	No
v_3 or v_{av34}	1274 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 1933 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2203	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 16.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.293

Space mean speed in ramp influence area, S_R = 61.6 mph

Space mean speed in outer lanes, S_O = 67.0 mph

Space mean speed for all vehicles, S = 63.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Shelby Hwy On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2264	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	426	vph
Length of first accel/decel lane	365	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	69	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2264	426	69	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	602	113	18	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3492	453	73	pcph

Estimation of V12 Merge Areas

L_{EQ} = 434.49 (Equation 13-6 or 13-7)

P_{FM} = 0.588 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2052 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3945	7200	No
v_3 or v_{av34}	1440 pc/h	(Equation 13-14 or 17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2052 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2505	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.343	
Space mean speed in ramp influence area,	S_R = 60.9	mph
Space mean speed in outer lanes,	S_O = 67.3	mph
Space mean speed for all vehicles,	S = 63.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM:3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: Shelby Hwy On Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.5	mph
Volume on freeway	3361	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	330	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	217	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3361	330	217	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	894	88	58	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5185	351	231	pcph

Estimation of V12 Merge Areas

L_{EQ} = 861.54 (Equation 13-6 or 13-7)

P_{FM} = 0.593 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3076 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5536	7185	No
v_3 or v_{av34}	2109 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 3076 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3427	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 28.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.402	
Space mean speed in ramp influence area,	S_R = 58.4	mph
Space mean speed in outer lanes,	S_0 = 63.7	mph
Space mean speed for all vehicles,	S = 60.3	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Shelby Hwy On Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.5	mph
Volume on freeway	3361	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	217	vph
Length of first accel/decel lane	560	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	10	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3361	217	10	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	894	58	3	v
Trucks and buses	30	0	100	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	0.667	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5185	231	16	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.593 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3076 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5416	7185	No
v_3 or v_{av34}	2109 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 3076 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3307	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 27.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.388	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_0 = 63.7	mph
Space mean speed for all vehicles,	S = 60.6	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Gaffney Ferry On Ramp to I-85
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3578	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	217	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3578	10	217	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	952	3	58	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5519	11	231	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.599 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3308 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5530	7194	No
v_3 or v_{av34}	2211 pc/h	(Equation 13-14 or 17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 3308 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3319	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 26.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.374	
Space mean speed in ramp influence area,	S_R = 59.4	mph
Space mean speed in outer lanes,	S_0 = 63.6	mph
Space mean speed for all vehicles,	S = 61.0	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Gaffney Ferry On Ramp to I-85
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3578	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	780	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	4	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3578	10	4	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	952	3	1	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5519	11	4	pcph

Estimation of V12 Merge Areas

L_{EQ} = 20.72 (Equation 13-6 or 13-7)

P_{FM} = 0.599 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3308 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5530	7194	No
v_3 or v_{av34}	2211 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 3308 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3319	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 26.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.374

Space mean speed in ramp influence area, S_R = 59.4 mph

Space mean speed in outer lanes, S_O = 63.6 mph

Space mean speed for all vehicles, S = 61.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	05/02/17
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Blacksburg On-Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3297	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	97	vph
Length of first accel/decel lane	825	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	287	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3297	97	287	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	877	26	76	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5086	103	305	pcph

Estimation of V12 Merge Areas

L_{EQ} = 904.95 (Equation 13-6 or 13-7)

P_{FM} = 0.601 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3055 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5189	7194	No
v_3 or v_{av34}	2031 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 3055 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3158	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 24.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.355

Space mean speed in ramp influence area, S_R = 59.9 mph

Space mean speed in outer lanes, S_0 = 64.3 mph

Space mean speed for all vehicles, S = 61.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: SC 5 On-Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2939	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	138	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	355	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2939	138	355	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	782	37	94	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4534	147	378	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2733 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4681	7200	No
v_3 or v_{av34}	1801 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2733 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2880	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.327	
Space mean speed in ramp influence area,	S_R = 61.3	mph
Space mean speed in outer lanes,	S_O = 66.0	mph
Space mean speed for all vehicles,	S = 63.0	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	05/02/17
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	Tribal Rd On-Ramp to I-85 NB
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2887	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	190	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	164	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2887	190	164	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	768	51	44	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4453	202	174	pcph

Estimation of V12 Merge Areas

L_{EQ} = 823.97 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2684 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4655	7200	No
v_3 or v_{av34}	1769 pc/h	(Equation 13-14 or 17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2684 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2886	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.328	
Space mean speed in ramp influence area,	S_R = 61.0	mph
Space mean speed in outer lanes,	S_0 = 65.7	mph
Space mean speed for all vehicles,	S = 62.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: US 29 On-Ramp to I-85 NB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2941	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	113	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	110	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2941	113	110	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	782	30	29	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4537	120	117	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4537 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4657	4800	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4537 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4657	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 36.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	M_S = 0.669	
Space mean speed in ramp influence area,	S_R = 51.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 51.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: US 29 On-Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2933	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	181	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2933	157	181	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	780	42	48	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4524	167	193	pcph

Estimation of V12 Merge Areas

L_{EQ} = 831.67 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2727 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4691	7200	No
v_3 or v_{av34}	1797 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2727 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2894	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.328	
Space mean speed in ramp influence area,	S_R = 61.0	mph
Space mean speed in outer lanes,	S_O = 65.6	mph
Space mean speed for all vehicles,	S = 62.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	05/02/17
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Tribal Rd On-Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.0	mph
Volume on freeway	2961	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	197	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	158	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2961	197	158	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	788	52	42	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4567	210	168	pcph

Estimation of V12 Merge Areas

L_{EQ} = 815.93 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2753 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4777	7170	No
v_3 or v_{av34}	1814 pc/h	(Equation 13-14 or 17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2753 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2963	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.333	
Space mean speed in ramp influence area,	S_R = 60.0	mph
Space mean speed in outer lanes,	S_0 = 64.3	mph
Space mean speed for all vehicles,	S = 61.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	05/02/17
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Tribal Rd On-Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.0	mph
Volume on freeway	2961	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	197	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	129	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2961	197	129	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	788	52	34	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4567	210	137	pcph

Estimation of V12 Merge Areas

L_{EQ} = 850.08 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2753 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4777	7170	No
v_3 or v_{av34}	1814 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 2753 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2963	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.333

Space mean speed in ramp influence area, S_R = 60.0 mph

Space mean speed in outer lanes, S_O = 64.3 mph

Space mean speed for all vehicles, S = 61.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	05/02/17
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Welcome Cntr On-Ramp to I-85 S
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	3000	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	1076	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	178	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3000	158	178	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	798	42	47	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4628	168	189	pcph

Estimation of V12 Merge Areas

L_{EQ} = 841.00 (Equation 13-6 or 13-7)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2812 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4796	7182	No
v_3 or v_{av34}	1816 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 2812 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2980	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.322

Space mean speed in ramp influence area, S_R = 60.6 mph

Space mean speed in outer lanes, S_O = 64.7 mph

Space mean speed for all vehicles, S = 62.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: Welcome Cntr On-Ramp to I-85 S
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	3000	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	1076	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	158	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3000	158	158	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	798	42	42	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4628	168	168	pcph

Estimation of V12 Merge Areas

L_{EQ} = 932.29 (Equation 13-6 or 13-7)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2812 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4796	7182	No
v_3 or v_{av34}	1816 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2812 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2980	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.322

Space mean speed in ramp influence area, S_R = 60.6 mph

Space mean speed in outer lanes, S_O = 64.7 mph

Space mean speed for all vehicles, S = 62.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 05/02/17
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: SC 5 On-Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2980	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	343	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	178	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2980	343	178	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	793	91	47	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4597	365	189	pcph

Estimation of V12 Merge Areas

L_{EQ} = 889.67 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2771 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4962	7182	No
v_3 or v_{av34}	1826 pc/h	(Equation 13-14 or 17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2771 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3136	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 24.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.348

Space mean speed in ramp influence area, S_R = 59.9 mph

Space mean speed in outer lanes, S_O = 64.6 mph

Space mean speed for all vehicles, S = 61.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	05/02/17
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Blacksburg On-Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3208	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	380	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	115	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3208	380	115	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	853	101	31	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4949	404	122	pcph

Estimation of V12 Merge Areas

L_{EQ} = 973.34 (Equation 13-6 or 13-7)

P_{FM} = 0.603 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2983 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5353	7194	No
v_3 or v_{av34}	1966 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 2983 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3387	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 26.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.373

Space mean speed in ramp influence area, S_R = 59.4 mph

Space mean speed in outer lanes, S_O = 64.5 mph

Space mean speed for all vehicles, S = 61.2 mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	Shelby Hwy On Ramp to I-85 SB
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.7	mph
Volume on freeway	3457	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	250	vph
Length of first accel/decel lane	365	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	131	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3457	250	131	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	919	66	35	v
Trucks and buses	30	0	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5333	266	139	pcph

Estimation of V12 Merge Areas

L_{EQ} = 788.45 (Equation 13-6 or 13-7)

P_{FM} = 0.588 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3134 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5599	7200	No
v_3 or v_{av34}	2199 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 3134 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3400	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 29.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.412	
Space mean speed in ramp influence area,	S_R = 58.9	mph
Space mean speed in outer lanes,	S_0 = 64.6	mph
Space mean speed for all vehicles,	S = 61.0	mph

2015 EXISTING CONDITIONS
RAMP DIVERGE AREAS - HCS ANALYSIS

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Shelby Hwy
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	1446	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	184	vph
Length of first accel/decel lane	696	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	154	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1446		184		154		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	385		49		41		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2231	196	164	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2231 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2231	4790	No
$v_{FO} = v_F - v_R$	2035	4790	No
v_R	196	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2231 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2231	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 17.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.446	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Frontage
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1607	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1	vph
Length of first accel/decel lane	453	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	8	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1607		1		8		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	427				2		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2479	1	9	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2479 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2479	4800	No
$v_{FO} = v_F - v_R$	2478	4800	No
v_R	1	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2479 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2479	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.428

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.2 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Frontage
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1607	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1	vph
Length of first accel/decel lane	435	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	215	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1607		1		215	vph
Peak-hour factor, PHF	0.94		0.94		0.94	
Peak 15-min volume, v15	427				57	v
Trucks and buses	30		0		0	%
Recreational vehicles	0		0		0	%
Terrain type:	Rolling		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	2.5		1.5		1.5	
Recreational vehicle PCE, ER	2.0		1.2		1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2479	1	229	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2479 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2479	4800	No
$v_{FO} = v_F - v_R$	2478	4800	No
v_R	1	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2479 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2479	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.428

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.2 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1392	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	215	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	1	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1392		215		1		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	370		57				v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2147	229	1	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2147 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2147	4796	No
$v_{FO} = v_F - v_R$	1918	4796	No
v_R	229	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2147 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2147	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.449	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1392	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	215	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	55	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1392		215		55		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	370		57		15		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2147	229	59	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2147 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2147	4796	No
$v_{FO} = v_F - v_R$	1918	4796	No
v_R	229	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2147 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2147	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.449	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1178	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	269	vph
Length of first accel/decel lane	250	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	146	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1178		269		146		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	313		72		39		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1817	286	155	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1817 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1817	4800	No
$v_{FO} = v_F - v_R$	1531	4800	No
v_R	286	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1817 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1817	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 17.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.454	
Space mean speed in ramp influence area,	S_R = 57.7	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.7	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1187	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	137	vph
Length of first accel/decel lane	1190	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	97	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1187		137		97		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	316		36		26		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1831	146	103	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1831 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1831	4800	No
$v_{FO} = v_F - v_R$	1685	4800	No
v_R	146	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1831 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1831	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 9.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.441

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.8 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Loop to US 29
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1237	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	47	vph
Length of first accel/decel lane	260	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	88	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1237		47		88		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	329		13		23		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1908	50	94	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1908 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1908	4800	No
$v_{FO} = v_F - v_R$	1858	4800	No
v_R	50	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1908 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1908	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 18.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.433

Space mean speed in ramp influence area, S_R = 58.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 Off Ramp to US 29
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1133	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	56	vph
Length of first accel/decel lane	228	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	125	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1133		56		125		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	301		15		33		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1748	60	133	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1748 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1748	4800	No
$v_{FO} = v_F - v_R$	1688	4800	No
v_R	60	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1748 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1748	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 17.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.433	
Space mean speed in ramp influence area,	S_R = 58.0	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.0	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 Off Ramp to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Condiotions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	991	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	267	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	175	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	991		267		175		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	264		71		47		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1529	284	186	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1529 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1529	4780	No
$v_{FO} = v_F - v_R$	1245	4780	No
v_R	284	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1529 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1529	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 11.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.454	
Space mean speed in ramp influence area,	S_R = 56.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.8	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Welcome Cn
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1098	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	68	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	175	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1098		68		175		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	292		18		47		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1694	72	186	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1694 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1694	4788	No
$v_{FO} = v_F - v_R$	1622	4788	No
v_R	72	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1694 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1694	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 16.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.434

Space mean speed in ramp influence area, S_R = 57.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.5 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Welcome Cn
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1098	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	68	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	68	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1098		68		68		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	292		18		18		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1694	72	72	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1694 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1694	4788	No
$v_{FO} = v_F - v_R$	1622	4788	No
v_R	72	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1694 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1694	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 16.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.434

Space mean speed in ramp influence area, S_R = 57.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.5 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1091	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	75	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	68	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1091		75		68		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	290		20		18		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1683	80	72	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1683 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1683	4788	No
$v_{FO} = v_F - v_R$	1603	4788	No
v_R	80	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1683 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1683	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 14.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.435

Space mean speed in ramp influence area, S_R = 57.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.5 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1091	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	75	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	448	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1091		75		448		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	290		20		119		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1683	80	477	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1683 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1683	4788	No
$v_{FO} = v_F - v_R$	1603	4788	No
v_R	80	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1683 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1683	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 14.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.435

Space mean speed in ramp influence area, S_R = 57.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.5 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1471	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	68	vph
Length of first accel/decel lane	164	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	137	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1471		68		137		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	391		18		36		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2269	72	146	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2269 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2269	4788	No
$v_{FO} = v_F - v_R$	2197	4788	No
v_R	72	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2269 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2269	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 22.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.434	
Space mean speed in ramp influence area,	S_R = 57.5	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.5	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Shelby Hwy
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1554	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	54	vph
Length of first accel/decel lane	295	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	332	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1554		54		332		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	413		14		88		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2397	57	353	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2397 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2397	4800	No
$v_{FO} = v_F - v_R$	2340	4800	No
v_R	57	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2397 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2397	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 22.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.433

Space mean speed in ramp influence area, S_R = 58.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.3 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Shelby Hwy
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	2297	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	258	vph
Length of first accel/decel lane	696	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	169	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2297		258		169		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	611		69		45		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3543	274	180	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3543 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3543	4790	No
$v_{FO} = v_F - v_R$	3269	4790	No
v_R	274	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3543 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3543	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.453	
Space mean speed in ramp influence area,	S_R = 57.1	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.1	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Frontage
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2472	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	2	vph
Length of first accel/decel lane	453	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	8	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2472		2		8		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	657		1		2		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3813	2	9	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3813 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3813	4800	No
$v_{FO} = v_F - v_R$	3811	4800	No
v_R	2	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3813 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3813	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 33.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.428

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.2 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Frontage
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2472	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	2	vph
Length of first accel/decel lane	435	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	155	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2472		2		155		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	657		1		41		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3813	2	165	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3813 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3813	4800	No
$v_{FO} = v_F - v_R$	3811	4800	No
v_R	2	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3813 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3813	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 33.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.428	
Space mean speed in ramp influence area,	S_R = 58.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2317	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	155	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	2	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2317		155		2		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	616		41		1		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3574	165	2	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3574 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3574	4796	No
$v_{FO} = v_F - v_R$	3409	4796	No
v_R	165	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3574 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3574	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.443	
Space mean speed in ramp influence area,	S_R = 57.5	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.5	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	2317	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	155	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	52	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2317		155		52		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	616		41		14		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3574	165	55	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3574 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3574	4796	No
$v_{FO} = v_F - v_R$	3409	4796	No
v_R	165	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3574 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3574	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.443	
Space mean speed in ramp influence area,	S_R = 57.5	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.5	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2014	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	355	vph
Length of first accel/decel lane	250	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	105	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2014		355		105		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	536		94		28		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3107	378	112	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3107 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3107	4800	No
$v_{FO} = v_F - v_R$	2729	4800	No
v_R	378	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3107 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3107	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 28.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.462

Space mean speed in ramp influence area, S_R = 57.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.4 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1988	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	131	vph
Length of first accel/decel lane	1190	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	113	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1988		131		113		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	529		35		30		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3067	139	120	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3067 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3067	4800	No
$v_{FO} = v_F - v_R$	2928	4800	No
v_R	139	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3067 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3067	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.441

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: I-85 NB Off Loop to US 29
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2015	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	86	vph
Length of first accel/decel lane	260	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	88	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2015		86		88		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	536		23		23		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3108	91	94	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3108 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3108	4800	No
$v_{FO} = v_F - v_R$	3017	4800	No
v_R	91	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3108 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3108	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.436	
Space mean speed in ramp influence area,	S_R = 58.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 Off Ramp to US 29
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2033	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	141	vph
Length of first accel/decel lane	228	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	122	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2033		141		122		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	541		38		32		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3136	150	130	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3136 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3136	4800	No
$v_{FO} = v_F - v_R$	2986	4800	No
v_R	150	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3136 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3136	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 29.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.442

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 Off Ramp to Tribal Rd
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	2066	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	89	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	136	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2066		89		136		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	549		24		36		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3187	95	145	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3187 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3187	4780	No
$v_{FO} = v_F - v_R$	3092	4780	No
v_R	95	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3187 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3187	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 25.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.437	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Welcome Cn
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2093	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	136	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2093		109		136		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	557		29		36		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3229	116	145	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3229 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3229	4788	No
$v_{FO} = v_F - v_R$	3113	4788	No
v_R	116	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3229 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3229	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 29.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.438	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.4	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Welcome Cn
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2093	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	109	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2093		109		109		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	557		29		29		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3229	116	116	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3229 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3229	4788	No
$v_{FO} = v_F - v_R$	3113	4788	No
v_R	116	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3229 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3229	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 29.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.438	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.4	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2063	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	139	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	109	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2063		139		109		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	549		37		29		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3182	148	116	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3182 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3182	4788	No
$v_{FO} = v_F - v_R$	3034	4788	No
v_R	148	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3182 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3182	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.441	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2063	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	139	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	267	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2063		139		267		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	549		37		71		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3182	148	284	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3182 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3182	4788	No
$v_{FO} = v_F - v_R$	3034	4788	No
v_R	148	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3182 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3182	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.441	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2268	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	62	vph
Length of first accel/decel lane	164	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	205	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2268		62		205		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	603		16		55		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3499	66	218	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3499 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3499	4788	No
$v_{FO} = v_F - v_R$	3433	4788	No
v_R	66	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3499 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3499	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 32.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.434

Space mean speed in ramp influence area, S_R = 57.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 SB Off Ramp to Shelby Hwy
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2381	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	92	vph
Length of first accel/decel lane	295	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	195	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2381		92		195		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	633		24		52		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3673	98	207	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3673 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3673	4800	No
$v_{FO} = v_F - v_R$	3575	4800	No
v_R	98	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3673 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3673	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 33.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.437

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.2 mph

2040 NO BUILD CONDITIONS
RAMP DIVERGE AREAS - HCS ANALYSIS

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Shelby Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	2126	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	235	vph
Length of first accel/decel lane	696	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	197	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2126		235		197		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	565		63		52		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3279	250	210	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3279 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3279	4790	No
$v_{FO} = v_F - v_R$	3029	4790	No
v_R	250	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3279 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3279	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.451	
Space mean speed in ramp influence area,	S_R = 57.1	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: I-85 NB Off Ramp to Frontage
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2331	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	2	vph
Length of first accel/decel lane	453	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	10	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2331		2		10		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	620		1		3		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3596	2	11	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3596 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3596	4800	No
$v_{FO} = v_F - v_R$	3594	4800	No
v_R	2	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3596 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3596	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.428

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.2 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Frontage
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2331	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	2	vph
Length of first accel/decel lane	435	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	399	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2331		2		399	vph
Peak-hour factor, PHF	0.94		0.94		0.94	
Peak 15-min volume, v15	620		1		106	v
Trucks and buses	30		0		0	%
Recreational vehicles	0		0		0	%
Terrain type:	Rolling		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	2.5		1.5		1.5	
Recreational vehicle PCE, ER	2.0		1.2		1.2	

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3596	2	424	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3596 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3596	4800	No
$v_{FO} = v_F - v_R$	3594	4800	No
v_R	2	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3596 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3596	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.428	
Space mean speed in ramp influence area,	S_R = 58.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1932	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	399	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	2	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1932		399		2		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	514		106		1		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2980	424	2	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2980 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2980	4796	No
$v_{FO} = v_F - v_R$	2556	4796	No
v_R	424	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2980 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2980	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.466	
Space mean speed in ramp influence area,	S_R = 56.8	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 56.8	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1932	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	399	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	102	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1932		399		102		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	514		106		27		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2980	424	109	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2980 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2980	4796	No
$v_{FO} = v_F - v_R$	2556	4796	No
v_R	424	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2980 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2980	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.466	
Space mean speed in ramp influence area,	S_R = 56.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: I-85 NB Off Ramp to SC 5
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1691	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	343	vph
Length of first accel/decel lane	250	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	186	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1691		343		186		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	450		91		49		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2608	365	198	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2608 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2608	4800	No
$v_{FO} = v_F - v_R$	2243	4800	No
v_R	365	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2608 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2608	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 24.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.461	
Space mean speed in ramp influence area,	S_R = 57.5	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.5	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1678	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	199	vph
Length of first accel/decel lane	1190	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	141	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1678		199		141		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	446		53		38		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2588	212	150	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2588 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2588	4800	No
$v_{FO} = v_F - v_R$	2376	4800	No
v_R	212	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2588 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2588	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 15.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.447	
Space mean speed in ramp influence area,	S_R = 57.6	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: I-85 NB Off Loop to US 29
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1758	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	61	vph
Length of first accel/decel lane	260	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	113	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1758		61		113		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	468		16		30		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2712	65	120	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2712 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2712	4800	No
$v_{FO} = v_F - v_R$	2647	4800	No
v_R	65	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2712 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2712	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 25.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.434

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 Off Ramp to US 29
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1699	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	72	vph
Length of first accel/decel lane	228	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	159	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1699		72		159		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	452		19		42		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2621	77	169	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2621 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2621	4800	No
$v_{FO} = v_F - v_R$	2544	4800	No
v_R	77	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2621 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2621	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 24.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.435	
Space mean speed in ramp influence area,	S_R = 58.0	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.0	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 Off Ramp to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	1470	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	388	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	254	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1470		388		254		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	391		103		68		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2268	413	270	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2268 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2268	4780	No
$v_{FO} = v_F - v_R$	1855	4780	No
v_R	413	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2268 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2268	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 17.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.465	
Space mean speed in ramp influence area,	S_R = 56.4	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 56.4	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Welcome Cn
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1625	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	254	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1625		99		254		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	432		26		68		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2507	105	270	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2507 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2507	4788	No
$v_{FO} = v_F - v_R$	2402	4788	No
v_R	105	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2507 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2507	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 23.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.437	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.4	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Welcome Cn
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1625	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	99	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1625		99		99		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	432		26		26		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2507	105	105	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2507 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2507	4788	No
$v_{FO} = v_F - v_R$	2402	4788	No
v_R	105	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2507 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2507	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 23.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.437	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.4	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2015 Existing Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1628	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	96	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	99	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1628		96		99		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	433		26		26		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2511	102	105	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2511 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2511	4788	No
$v_{FO} = v_F - v_R$	2409	4788	No
v_R	102	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2511 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2511	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.437

Space mean speed in ramp influence area, S_R = 57.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.4 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1628	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	75	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	574	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1628		75		574		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	433		20		153		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2511	80	611	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2511 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2511	4788	No
$v_{FO} = v_F - v_R$	2431	4788	No
v_R	80	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2511 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2511	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.435	
Space mean speed in ramp influence area,	S_R = 57.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 Off Ramp to Blacksburg
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2079	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	123	vph
Length of first accel/decel lane	164	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	254	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2079		123		254		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	553		33		68		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3207	131	270	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3207 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3207	4788	No
$v_{FO} = v_F - v_R$	3076	4788	No
v_R	131	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3207 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3207	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 30.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 57.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.3 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Shelby Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2264	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	69	vph
Length of first accel/decel lane	295	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	426	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2264		69		426		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	602		18		113		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3492	73	453	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3492 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3492	4800	No
$v_{FO} = v_F - v_R$	3419	4800	No
v_R	73	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3492 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3492	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.435	
Space mean speed in ramp influence area,	S_R = 58.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Shelby Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.5	mph
Volume on freeway	3361	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	330	vph
Length of first accel/decel lane	696	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	217	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3361		330		217		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	894		88		58		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5185	351	231	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5185 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5185	4790	Yes
$v_{FO} = v_F - v_R$	4834	4790	Yes
v_R	351	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 5185 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5185	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 42.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.460	
Space mean speed in ramp influence area,	S_R = 56.9	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 56.9	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Frontage
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	3584	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	4	vph
Length of first accel/decel lane	453	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	10	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3584		4		10		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	953		1		3		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5529	4	11	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5529 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5529	4800	Yes
$v_{FO} = v_F - v_R$	5525	4800	Yes
v_R	4	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 5529 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5529	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 47.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.428	
Space mean speed in ramp influence area,	S_R = 58.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: I-85 NB Off Ramp to Frontage
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	3584	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	4	vph
Length of first accel/decel lane	435	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	287	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3584		4		287		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	953		1		76		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5529	4	305	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5529 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5529	4800	Yes
$v_{FO} = v_F - v_R$	5525	4800	Yes
v_R	4	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 5529 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5529	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 47.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.428	
Space mean speed in ramp influence area,	S_R = 58.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3297	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	287	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	4	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3297		287		4		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	877		76		1		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5086	305	4	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5086 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5086	4796	Yes
$v_{FO} = v_F - v_R$	4781	4796	No
v_R	305	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5086 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5086	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 44.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.455	
Space mean speed in ramp influence area,	S_R = 57.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.1	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3297	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	287	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	97	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3297		287		97		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	877		76		26		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5086	305	103	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5086 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5086	4796	Yes
$v_{FO} = v_F - v_R$	4781	4796	No
v_R	305	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 5086 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5086	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 44.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.455	
Space mean speed in ramp influence area,	S_R = 57.1	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: I-85 NB Off Ramp to SC 5
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2939	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	455	vph
Length of first accel/decel lane	250	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	138	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2939		455		138		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	782		121		37		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4534	484	147	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4534 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4534	4800	No
$v_{FO} = v_F - v_R$	4050	4800	No
v_R	484	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4534 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4534	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 41.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.472

Space mean speed in ramp influence area, S_R = 57.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.2 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2887	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	190	vph
Length of first accel/decel lane	1190	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	164	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2887		190		164		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	768		51		44		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4453	202	174	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4453 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4453	4800	No
$v_{FO} = v_F - v_R$	4251	4800	No
v_R	202	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4453 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4453	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.446	
Space mean speed in ramp influence area,	S_R = 57.7	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: I-85 NB Off Loop to US 29
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2941	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	110	vph
Length of first accel/decel lane	260	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	113	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2941		110		113		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	782		29		30		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4537	117	120	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4537 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4537	4800	No
$v_{FO} = v_F - v_R$	4420	4800	No
v_R	117	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4537 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4537	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 40.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	D_S = 0.439	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 Off Ramp to US 29
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2933	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	181	vph
Length of first accel/decel lane	228	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	157	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2933		181		157		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	780		48		42		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4524	193	167	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4524 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4524	4800	No
$v_{FO} = v_F - v_R$	4331	4800	No
v_R	193	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4524 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4524	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 41.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	D_S = 0.445	
Space mean speed in ramp influence area,	S_R = 57.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 Off Ramp to Tribal Rd
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	2961	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	129	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	197	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2961		129		197		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	788		34		52		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4567	137	210	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4567 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4567	4780	No
$v_{FO} = v_F - v_R$	4430	4780	No
v_R	137	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4567 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4567	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 37.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	D_S = 0.440	
Space mean speed in ramp influence area,	S_R = 57.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.1	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Welcome Cn
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	3000	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	197	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3000		158		197		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	798		42		52		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4628	168	210	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4628 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4628	4788	No
$v_{FO} = v_F - v_R$	4460	4788	No
v_R	168	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4628 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4628	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 41.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	D_S = 0.443	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Welcome Cn
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	3000	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	158	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3000		158		158		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	798		42		42		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4628	168	168	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4628 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4628	4788	No
$v_{FO} = v_F - v_R$	4460	4788	No
v_R	168	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4628 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4628	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 41.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	D_S = 0.443	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2980	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	178	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	158	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2980		178		158		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	793		47		42		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4597	189	168	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4597 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4597	4788	No
$v_{FO} = v_F - v_R$	4408	4788	No
v_R	189	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4597 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4597	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 39.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	D_S = 0.445	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 SB Off Ramp to SC 5
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2980	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	178	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	343	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2980		178		343		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	793		47		91		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4597	189	365	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4597 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4597	4788	No
$v_{FO} = v_F - v_R$	4408	4788	No
v_R	189	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4597 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4597	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 39.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	D_S = 0.445	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2040 No Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	3208	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	115	vph
Length of first accel/decel lane	164	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	380	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3208		115		380		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	853		31		101		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4949	122	404	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4949 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4949	4788	Yes
$v_{FO} = v_F - v_R$	4827	4788	Yes
v_R	122	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4949 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4949	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 45.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.439	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 SB Off Ramp to Shelby Hwy
Jurisdiction: SCDOT
Analysis Year: 2040 No Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	3457	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	131	vph
Length of first accel/decel lane	295	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	250	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3457		131		250		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	919		35		66		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5333	139	266	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5333 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5333	4800	Yes
$v_{FO} = v_F - v_R$	5194	4800	Yes
v_R	139	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 5333 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5333	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 47.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.441	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.1	mph

2040 BUILD CONDITIONS
RAMP DIVERGE AREAS - HCS ANALYSIS

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Shelby Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.5	mph
Volume on freeway	2126	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	235	vph
Length of first accel/decel lane	696	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	197	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2126		235		197		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	565		63		52		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3279	250	210	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.667 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2269 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3279	7185	No
$v_{FO} = v_F - v_R$	3029	7185	No
v_R	250	2000	No
v_3 or v_{av34}	1010 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2269 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2269	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 17.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.451	
Space mean speed in ramp influence area,	S_R = 57.1	mph
Space mean speed in outer lanes,	S_0 = 76.2	mph
Space mean speed for all vehicles,	S = 61.9	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Frontage
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2331	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	2	vph
Length of first accel/decel lane	453	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	10	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2331		2		10		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	620		1		3		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3596	2	11	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 71.64 (Equation 13-12 or 13-13)

P_{FD} = 0.670 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2410 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3596	7200	No
$v_{FO} = v_F - v_R$	3594	7200	No
v_R	2	2000	No
v_3 or v_{av34}	1186 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2410 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2410	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 20.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.428	
Space mean speed in ramp influence area,	S_R = 58.2	mph
Space mean speed in outer lanes,	S_O = 76.4	mph
Space mean speed for all vehicles,	S = 63.1	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Frontage
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2331	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	2	vph
Length of first accel/decel lane	435	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	399	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2331		2		399		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	620		1		106		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3596	2	424	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 410.14 (Equation 13-12 or 13-13)

P_{FD} = 0.670 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2410 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3596	7200	No
$v_{FO} = v_F - v_R$	3594	7200	No
v_R	2	2000	No
v_3 or v_{av34}	1186 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2410 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2410	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.428	
Space mean speed in ramp influence area,	S_R = 58.2	mph
Space mean speed in outer lanes,	S_O = 76.4	mph
Space mean speed for all vehicles,	S = 63.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Northbound
Junction: I-85 NB Off Ramp to Blacksburg
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1932	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	399	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	2	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1932		399		2		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	514		106		1		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2980	424	2	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.666 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2126 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2980	7194	No
$v_{FO} = v_F - v_R$	2556	7194	No
v_R	424	2000	No
v_3 or v_{av34}	854 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2126 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2126	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.466	
Space mean speed in ramp influence area,	S_R = 56.8	mph
Space mean speed in outer lanes,	S_O = 76.6	mph
Space mean speed for all vehicles,	S = 61.4	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1932	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	399	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	102	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1932		399		102		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	514		106		27		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2980	424	109	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.666 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2126 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2980	7194	No
$v_{FO} = v_F - v_R$	2556	7194	No
v_R	424	2000	No
v_3 or v_{av34}	854 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2126 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2126	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.466	
Space mean speed in ramp influence area,	S_R = 56.8	mph
Space mean speed in outer lanes,	S_O = 76.6	mph
Space mean speed for all vehicles,	S = 61.4	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1691	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	343	vph
Length of first accel/decel lane	250	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	186	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1691		343		186		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	450		91		49		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2608	365	198	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.678 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1886 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2608	7200	No
$v_{FO} = v_F - v_R$	2243	7200	No
v_R	365	2000	No
v_3 or v_{av34}	722 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1886 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1886	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 18.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.461	
Space mean speed in ramp influence area,	S_R = 57.5	mph
Space mean speed in outer lanes,	S_O = 77.6	mph
Space mean speed for all vehicles,	S = 61.9	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1678	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	199	vph
Length of first accel/decel lane	1190	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	141	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1678		199		141		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	446		53		38		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2588	212	150	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.686 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1841 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2588	7200	No
$v_{FO} = v_F - v_R$	2376	7200	No
v_R	212	2000	No
v_3 or v_{av34}	747 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1841 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1841	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 9.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	D_S = 0.447	
Space mean speed in ramp influence area,	S_R = 57.6	mph
Space mean speed in outer lanes,	S_O = 77.1	mph
Space mean speed for all vehicles,	S = 62.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off-Ramp to US 29
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1758	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	61	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	113	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1758		61		113		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	468		16		30		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2712	65	120	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.689 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1889 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2712	7200	No
$v_{FO} = v_F - v_R$	2647	7200	No
v_R	65	2000	No
v_3 or v_{av34}	823 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1889 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1889	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 7.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.434

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_O = 77.6 mph

Space mean speed for all vehicles, S = 63.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 Off Ramp to US 29
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1699	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	72	vph
Length of first accel/decel lane	228	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	159	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1699		72		159		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	452		19		42		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2621	77	169	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2621 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2621	4800	No
$v_{FO} = v_F - v_R$	2544	4800	No
v_R	77	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2621 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2621	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 24.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.435	
Space mean speed in ramp influence area,	S_R = 58.0	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.0	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 Off Ramp to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.0	mph
Volume on freeway	1470	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	388	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	254	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1470		388		254		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	391		103		68		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2268	413	270	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.684 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1682 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2268	7170	No
$v_{FO} = v_F - v_R$	1855	7170	No
v_R	413	2000	No
v_3 or v_{av34}	586 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1682 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1682	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 12.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.465

Space mean speed in ramp influence area, S_R = 56.4 mph

Space mean speed in outer lanes, S_O = 75.7 mph

Space mean speed for all vehicles, S = 60.4 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Welcome Cn
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1625	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	254	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1625		99		254		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	432		26		68		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2507	105	270	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 2237.30 (Equation 13-12 or 13-13)

P_{FD} = 0.692 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1768 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2507	7182	No
$v_{FO} = v_F - v_R$	2402	7182	No
v_R	105	2000	No
v_3 or v_{av34}	739 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1768 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1768	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 17.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.437	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_O = 76.1	mph
Space mean speed for all vehicles,	S = 61.9	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Welcome Cn
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1625	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	99	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1625		99		99		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	432		26		26		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2507	105	105	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.692 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1768 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2507	7182	No
$v_{FO} = v_F - v_R$	2402	7182	No
v_R	105	2000	No
v_3 or v_{av34}	739 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1768 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1768	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 17.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.437	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_O = 76.1	mph
Space mean speed for all vehicles,	S = 61.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 SB Off Ramp to SC 5
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1628	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	96	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	99	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1628		96		99		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	433		26		26		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2511	102	105	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 867.76 (Equation 13-12 or 13-13)

P_{FD} = 0.693 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1770 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2511	7182	No
$v_{FO} = v_F - v_R$	2409	7182	No
v_R	102	2000	No
v_3 or v_{av34}	741 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1770 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1770	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 15.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.437	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_O = 76.1	mph
Space mean speed for all vehicles,	S = 61.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 SB Off Ramp to SC 5
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1628	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	75	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	574	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1628		75		574		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	433		20		153		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2511	80	611	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.694 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1766 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2511	7182	No
$v_{FO} = v_F - v_R$	2431	7182	No
v_R	80	2000	No
v_3 or v_{av34}	745 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1766 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1766	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 15.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.435	
Space mean speed in ramp influence area,	S_R = 57.5	mph
Space mean speed in outer lanes,	S_O = 76.1	mph
Space mean speed for all vehicles,	S = 62.0	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/9/2016
Analysis time period:	8:00AM-9:00AM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2079	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	123	vph
Length of first accel/decel lane	164	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	254	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2079		123		254		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	553		33		68		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3207	131	270	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.674 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2204 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3207	7182	No
$v_{FO} = v_F - v_R$	3076	7182	No
v_R	131	2000	No
v_3 or v_{av34}	1003 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2204 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2204	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.440	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_O = 76.1	mph
Space mean speed for all vehicles,	S = 62.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 SB Off Ramp to Shelby Hwy
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2264	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	69	vph
Length of first accel/decel lane	295	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	426	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2264		69		426		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	602		18		113		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3492	73	453	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.669 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2361 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3492	7200	No
$v_{FO} = v_F - v_R$	3419	7200	No
v_R	73	2000	No
v_3 or v_{av34}	1131 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2361 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2361	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.435	
Space mean speed in ramp influence area,	S_R = 58.2	mph
Space mean speed in outer lanes,	S_O = 77.0	mph
Space mean speed for all vehicles,	S = 63.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Shelby Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.5	mph
Volume on freeway	3361	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	330	vph
Length of first accel/decel lane	696	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	217	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1675	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3361		330		217		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	894		88		58		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5185	351	231	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.614 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3320 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5185	7185	No
$v_{FO} = v_F - v_R$	4834	7185	No
v_R	351	2000	No
v_3 or v_{av34}	1865 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3320 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3320	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.460	
Space mean speed in ramp influence area,	S_R = 56.9	mph
Space mean speed in outer lanes,	S_O = 72.9	mph
Space mean speed for all vehicles,	S = 61.7	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Frontage
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.3	mph
Volume on freeway	3584	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	4	vph
Length of first accel/decel lane	453	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	10	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3584		4		10		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	953		1		3		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5529	4	11	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 55.59 (Equation 13-12 or 13-13)

P_{FD} = 0.622 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3438 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5529	7200	No
$v_{FO} = v_F - v_R$	5525	7200	No
v_R	4	2000	No
v_3 or v_{av34}	2091 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3438 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3438	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 29.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.428	
Space mean speed in ramp influence area,	S_R = 58.2	mph
Space mean speed in outer lanes,	S_O = 72.9	mph
Space mean speed for all vehicles,	S = 63.0	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Frontage
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.3	mph
Volume on freeway	3584	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	4	vph
Length of first accel/decel lane	435	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	287	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3584		4		287		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	953		1		76		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5529	4	305	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 314.11 (Equation 13-12 or 13-13)

P_{FD} = 0.622 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3438 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5529	7200	No
$v_{FO} = v_F - v_R$	5525	7200	No
v_R	4	2000	No
v_3 or v_{av34}	2091 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3438 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3438	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 29.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.428	
Space mean speed in ramp influence area,	S_R = 58.2	mph
Space mean speed in outer lanes,	S_O = 72.9	mph
Space mean speed for all vehicles,	S = 63.0	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Blacksburg
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3297	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	287	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	4	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6362	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3297		287		4		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	877		76		1		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5086	305	4	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.619 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3264 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5086	7194	No
$v_{FO} = v_F - v_R$	4781	7194	No
v_R	305	2000	No
v_3 or v_{av34}	1822 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3264 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3264	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.455

Space mean speed in ramp influence area, S_R = 57.1 mph

Space mean speed in outer lanes, S_O = 73.4 mph

Space mean speed for all vehicles, S = 62.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: I-85 NB Off Ramp to Blacksburg
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.8	mph
Volume on freeway	3297	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	287	vph
Length of first accel/decel lane	385	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	97	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3297		287		97		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	877		76		26		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5086	305	103	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.619 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3264 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5086	7194	No
$v_{FO} = v_F - v_R$	4781	7194	No
v_R	305	2000	No
v_3 or v_{av34}	1822 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3264 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3264	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.455	
Space mean speed in ramp influence area,	S_R = 57.1	mph
Space mean speed in outer lanes,	S_O = 73.4	mph
Space mean speed for all vehicles,	S = 62.1	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2939	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	455	vph
Length of first accel/decel lane	250	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	138	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3940	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2939		455		138		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	782		121		37		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4534	484	147	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.624 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3013 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4534	7200	No
$v_{FO} = v_F - v_R$	4050	7200	No
v_R	484	2000	No
v_3 or v_{av34}	1521 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3013 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3013	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.472

Space mean speed in ramp influence area, S_R = 57.2 mph

Space mean speed in outer lanes, S_O = 75.5 mph

Space mean speed for all vehicles, S = 62.2 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Northbound
Junction:	I-85 NB Off Ramp to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2887	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	190	vph
Length of first accel/decel lane	1190	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	164	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1111	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2887		190		164		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	768		51		44		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4453	202	174	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.639 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2920 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4453	7200	No
$v_{FO} = v_F - v_R$	4251	7200	No
v_R	202	2000	No
v_3 or v_{av34}	1533 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2920 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2920	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 18.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = 75.0 mph

Space mean speed for all vehicles, S = 62.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Northbound
Junction: I-85 NB Off-Ramp to US 29
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.7	mph
Volume on freeway	2941	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	110	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	113	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	745	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2941		110		113		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	782		29		30		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4537	117	120	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.641 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2951 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4537	7200	No
$v_{FO} = v_F - v_R$	4420	7200	No
v_R	117	2000	No
v_3 or v_{av34}	1586 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2951 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2951	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 16.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.439

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_O = 75.3 mph

Space mean speed for all vehicles, S = 63.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 Off Ramp to US 29
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	2933	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	181	vph
Length of first accel/decel lane	228	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	157	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2738	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2933		181		157		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	780		48		42		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4524	193	167	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4524 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4524	4800	No
$v_{FO} = v_F - v_R$	4331	4800	No
v_R	193	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4524 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4524	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 41.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	D_S = 0.445	
Space mean speed in ramp influence area,	S_R = 57.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.7	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 Off Ramp to Tribal Rd
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.0	mph
Volume on freeway	2961	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	129	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	197	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1615	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2961		129		197		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	788		34		52		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4567	137	210	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.640 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2970 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4567	7170	No
$v_{FO} = v_F - v_R$	4430	7170	No
v_R	137	2000	No
v_3 or v_{av34}	1597 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2970 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2970	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 23.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.440	
Space mean speed in ramp influence area,	S_R = 57.1	mph
Space mean speed in outer lanes,	S_O = 73.4	mph
Space mean speed for all vehicles,	S = 61.9	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Welcome Cn
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	3000	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	197	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3467	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3000		158		197		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	798		42		52		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4628	168	210	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 1275.23 (Equation 13-12 or 13-13)

P_{FD} = 0.637 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3007 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4628	7182	No
$v_{FO} = v_F - v_R$	4460	7182	No
v_R	168	2000	No
v_3 or v_{av34}	1621 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3007 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3007	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.443	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_O = 73.7	mph
Space mean speed for all vehicles,	S = 62.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 SB Off Ramp to Welcome Cn
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	3000	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	255	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	158	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3000		158		158		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	798		42		42		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4628	168	168	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.637 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3007 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4628	7182	No
$v_{FO} = v_F - v_R$	4460	7182	No
v_R	168	2000	No
v_3 or v_{av34}	1621 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3007 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3007	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.443	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_O = 73.7	mph
Space mean speed for all vehicles,	S = 62.1	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to SC 5
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2980	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	178	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	158	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2216	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2980		178		158		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	793		47		42		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4597	189	168	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 1034.69 (Equation 13-12 or 13-13)

P_{FD} = 0.636 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2994 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4597	7182	No
$v_{FO} = v_F - v_R$	4408	7182	No
v_R	189	2000	No
v_3 or v_{av34}	1603 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2994 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2994	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 25.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.445	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_O = 73.8	mph
Space mean speed for all vehicles,	S = 62.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 SB Off Ramp to SC 5
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	2980	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	178	vph
Length of first accel/decel lane	465	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	343	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2980		178		343		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	793		47		91		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4597	189	365	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.636 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2994 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4597	7182	No
$v_{FO} = v_F - v_R$	4408	7182	No
v_R	189	2000	No
v_3 or v_{av34}	1603 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2994 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2994	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 25.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.445	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_O = 73.8	mph
Space mean speed for all vehicles,	S = 62.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/10/2016
Analysis time period: 2:00PM-3:00PM
Freeway/Dir of Travel: I-85 Southbound
Junction: I-85 Off Ramp to Blacksburg
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	69.4	mph
Volume on freeway	3208	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	115	vph
Length of first accel/decel lane	164	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	380	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3208		115		380		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	853		31		101		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4949	122	404	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.631 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3166 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4949	7182	No
$v_{FO} = v_F - v_R$	4827	7182	No
v_R	122	2000	No
v_3 or v_{av34}	1783 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3166 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3166	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 30.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.439

Space mean speed in ramp influence area, S_R = 57.4 mph

Space mean speed in outer lanes, S_O = 73.1 mph

Space mean speed for all vehicles, S = 62.2 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Stantec
Date performed:	11/10/2016
Analysis time period:	2:00PM-3:00PM
Freeway/Dir of Travel:	I-85 Southbound
Junction:	I-85 SB Off Ramp to Shelby Hwy
Jurisdiction:	SCDOT
Analysis Year:	2040 Build Conditions
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.7	mph
Volume on freeway	3457	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	131	vph
Length of first accel/decel lane	295	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	250	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1322	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3457		131		250		vph
Peak-hour factor, PHF	0.94		0.94		0.94		
Peak 15-min volume, v15	919		35		66		v
Trucks and buses	30		0		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		

Heavy vehicle adjustment, fHV	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5333	139	266	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.620 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3361 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5333	7200	No
$v_{FO} = v_F - v_R$	5194	7200	No
v_R	139	2000	No
v_3 or v_{av34}	1972 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3361 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3361	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 30.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.441

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_O = 73.8 mph

Space mean speed for all vehicles, S = 63.0 mph

APPENDIX H

SYNCHRO HCM ANALYSIS

2015 EXISTING CONDITIONS
SYNCHRO HCM ANALYSIS

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	0	0	324	0	43	8
Future Volume (Veh/h)	0	0	324	0	43	8
Sign Control		Stop	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.76	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	426	0	47	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	312	98	103	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	312	98	103	0	0	
tC, single (s)	7.1	6.5	6.6	6.2	4.4	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.1	3.3	2.4	
p0 queue free %	100	100	43	100	97	
cM capacity (veh/h)	345	766	751	1091	1479	

Direction, Lane #	WB 1	SE 1
Volume Total	426	56
Volume Left	0	47
Volume Right	0	9
cSH	751	1479
Volume to Capacity	0.57	0.03
Queue Length 95th (ft)	90	2
Control Delay (s)	15.9	6.3
Lane LOS	C	A
Approach Delay (s)	15.9	6.3
Approach LOS	C	

Intersection Summary			
Average Delay	14.8		
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	0	0	18	25	324	36	0	0
Future Vol, veh/h	0	0	18	25	324	36	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None
Storage Length	100	0	-	-	-	100	-	-
Veh in Median Storage, #	0	-	-	0	0	-	-	-
Grade, %	0	-	-	0	0	-	0	-
Peak Hour Factor	92	92	25	30	76	67	92	92
Heavy Vehicles, %	2	2	0	45	8	11	2	2
Mvmt Flow	0	0	72	83	426	54	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1133	54	54	0	0	0
Stage 1	906	-	-	-	-	-
Stage 2	227	-	-	-	-	-
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	224	1013	-	-	-	-
Stage 1	394	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	159	1013	-	-	-	-
Mov Cap-2 Maneuver	159	-	-	-	-	-
Stage 1	280	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0		7.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	SBR2
Capacity (veh/h)	-	-	-	-	1477	-	-
HCM Lane V/C Ratio	-	-	-	-	0.289	-	-
HCM Control Delay (s)	-	-	0	0	8.4	-	-
HCM Lane LOS	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-	1.2	-	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	25	50	0	6	233	43	6	0	176	128
Future Vol, veh/h	0	0	25	50	0	6	233	43	6	0	176	128
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	-	-	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	0	2	2	2	2	2	2
Mvmt Flow	0	0	27	54	0	7	253	47	7	0	191	139

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	821	821	261	831	887	50	330	0	0	53	0	0
Stage 1	261	261	-	557	557	-	-	-	-	-	-	-
Stage 2	560	560	-	274	330	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.2	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	293	309	778	289	283	1024	1229	-	-	1553	-	-
Stage 1	744	692	-	515	512	-	-	-	-	-	-	-
Stage 2	513	511	-	732	646	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	244	243	778	233	223	1024	1229	-	-	1553	-	-
Mov Cap-2 Maneuver	244	243	-	233	223	-	-	-	-	-	-	-
Stage 1	586	692	-	406	403	-	-	-	-	-	-	-
Stage 2	402	403	-	706	646	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	23.6	7.2	0
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1229	-	-	778	254	1553	-	-
HCM Lane V/C Ratio	0.206	-	-	0.035	0.24	-	-	-
HCM Control Delay (s)	8.7	0	-	9.8	23.6	0	-	-
HCM Lane LOS	A	A	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0.8	-	-	0.1	0.9	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	1	111	0	210	122	31	220	0	0	0
Future Vol, veh/h	1	111	0	210	122	31	220	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Yield	-	-	None	-	-
Storage Length	0	-	-	-	0	200	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	121	0	228	133	34	239	0	0	0

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	535	239	-	0	0	228	0	0
Stage 1	307	-	-	-	-	-	-	-
Stage 2	228	-	-	-	-	-	-	-
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	506	800	0	-	-	1340	-	0
Stage 1	746	-	0	-	-	-	-	0
Stage 2	810	-	0	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	493	800	-	-	-	1340	-	-
Mov Cap-2 Maneuver	493	-	-	-	-	-	-	-
Stage 1	727	-	-	-	-	-	-	-
Stage 2	810	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	643	1340	-
HCM Lane V/C Ratio	-	-	0.311	0.025	-
HCM Control Delay (s)	-	-	13.1	7.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0.1	-

Intersection	
Int Delay, s/veh	9.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	201	140	195	131	174	157
Future Vol, veh/h	201	140	195	131	174	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	300	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	6	3	7	5	11
Mvmt Flow	218	152	212	142	189	171

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	212	0	-	0	801	212
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	589	-
Critical Hdwy	4.23	-	-	-	6.45	6.31
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.317	-	-	-	3.545	3.399
Pot Cap-1 Maneuver	1296	-	-	-	350	806
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1296	-	-	-	291	806
Mov Cap-2 Maneuver	-	-	-	-	291	-
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	457	-

Approach	EB	WB	SB
HCM Control Delay, s	4.9	0	24.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1296	-	-	-	291	806
HCM Lane V/C Ratio	0.169	-	-	-	0.65	0.212
HCM Control Delay (s)	8.3	-	-	-	37.7	10.7
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.6	-	-	-	4.2	0.8

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	312	323	0	1	3
Future Vol, veh/h	2	312	323	0	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	50	5	3	0	100	33
Mvmt Flow	2	339	351	0	1	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	351	0	-	0	694	351
Stage 1	-	-	-	-	351	-
Stage 2	-	-	-	-	343	-
Critical Hdwy	4.6	-	-	-	7.4	6.53
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	2.65	-	-	-	4.4	3.597
Pot Cap-1 Maneuver	984	-	-	-	291	628
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	544	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	984	-	-	-	290	628
Mov Cap-2 Maneuver	-	-	-	-	290	-
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	543	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	984	-	-	-	486
HCM Lane V/C Ratio	0.002	-	-	-	0.009
HCM Control Delay (s)	8.7	-	-	-	12.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	337	339	12	4	0
Future Vol, veh/h	2	337	339	12	4	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	50	82	82	50	50	92
Heavy Vehicles, %	0	4	2	73	75	0
Mvmt Flow	4	411	413	24	8	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	437	0	-	0	844	425
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	419	-
Critical Hdwy	4.1	-	-	-	7.15	6.2
Critical Hdwy Stg 1	-	-	-	-	6.15	-
Critical Hdwy Stg 2	-	-	-	-	6.15	-
Follow-up Hdwy	2.2	-	-	-	4.175	3.3
Pot Cap-1 Maneuver	1134	-	-	-	253	634
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	532	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1134	-	-	-	252	634
Mov Cap-2 Maneuver	-	-	-	-	356	-
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	529	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1134	-	-	-	356
HCM Lane V/C Ratio	0.004	-	-	-	0.022
HCM Control Delay (s)	8.2	0	-	-	15.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	270	253	86	69	4
Future Vol, veh/h	6	270	253	86	69	4
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	42	87	79	71	84	50
Heavy Vehicles, %	0	6	3	1	2	25
Mvmt Flow	14	310	320	121	82	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	441	0	-	0	720	381
Stage 1	-	-	-	-	381	-
Stage 2	-	-	-	-	339	-
Critical Hdwy	4.1	-	-	-	7.12	6.45
Critical Hdwy Stg 1	-	-	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.525
Pot Cap-1 Maneuver	1130	-	-	-	343	618
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	676	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1130	-	-	-	339	618
Mov Cap-2 Maneuver	-	-	-	-	450	-
Stage 1	-	-	-	-	631	-
Stage 2	-	-	-	-	666	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1130	-	-	-	461
HCM Lane V/C Ratio	0.013	-	-	-	0.196
HCM Control Delay (s)	8.2	0	-	-	14.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	256	246	11	20	20
Future Vol, veh/h	21	256	246	11	20	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	59	86	80	56	56	56
Heavy Vehicles, %	0	6	4	0	0	0
Mvmt Flow	36	298	308	20	36	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	327	0	-	0	686	317
Stage 1	-	-	-	-	317	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1244	-	-	-	416	728
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	704	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1244	-	-	-	404	728
Mov Cap-2 Maneuver	-	-	-	-	509	-
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	684	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1244	-	-	-	599
HCM Lane V/C Ratio	0.029	-	-	-	0.119
HCM Control Delay (s)	8	-	-	-	11.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	0	92	2	1	174
Future Vol, veh/h	2	0	92	2	1	174
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	25	92	70	50	25	75
Heavy Vehicles, %	50	0	1	50	0	2
Mvmt Flow	8	0	131	4	4	232

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	373	133	0	0	135	0
Stage 1	133	-	-	-	-	-
Stage 2	240	-	-	-	-	-
Critical Hdwy	6.9	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	543	922	-	-	1462	-
Stage 1	788	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	541	922	-	-	1462	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	541	1462	-
HCM Lane V/C Ratio	-	-	0.015	0.003	-
HCM Control Delay (s)	-	-	11.8	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	1	92	0	0	173
Future Vol, veh/h	2	1	92	0	0	173
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	50	25	68	25	25	75
Heavy Vehicles, %	100	0	1	0	0	1
Mvmt Flow	4	4	135	0	0	231

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	366	135	0	0	135	0
Stage 1	135	-	-	-	-	-
Stage 2	231	-	-	-	-	-
Critical Hdwy	7.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	478	919	-	-	1462	-
Stage 1	698	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	478	919	-	-	1462	-
Mov Cap-2 Maneuver	478	-	-	-	-	-
Stage 1	698	-	-	-	-	-
Stage 2	623	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	629	1462	-
HCM Lane V/C Ratio	-	-	0.013	-	-
HCM Control Delay (s)	-	-	10.8	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	67	1	0	0
Future Vol, veh/h	0	0	67	1	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	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	60	25	92	92
Heavy Vehicles, %	2	2	7	0	2	2
Mvmt Flow	0	0	112	4	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	116	-	-	0	-	114
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1473	0	-	-	0	939
Stage 1	-	0	-	-	0	-
Stage 2	-	0	-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1473	-	-	-	-	939
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	WBT	WBR	SBLn1
Capacity (veh/h)	1473	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	0	-	-	0
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	66	1	0	6
Future Vol, veh/h	3	0	66	1	0	6
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	25	25	60	25	25	63
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	12	0	110	4	0	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	114	0	-	0	136	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1488	-	-	-	862	947
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	1004	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1488	-	-	-	855	947
Mov Cap-2 Maneuver	-	-	-	-	855	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	996	-

Approach	EB	WB	SB
HCM Control Delay, s	7.4	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1488	-	-	-	947
HCM Lane V/C Ratio	0.008	-	-	-	0.01
HCM Control Delay (s)	7.4	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	72	0	0	2
Future Vol, veh/h	0	3	72	0	0	2
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	25	48	67	25	25	25
Heavy Vehicles, %	0	0	5	0	0	50
Mvmt Flow	0	6	107	0	0	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	107	0	-	0	113	107
Stage 1	-	-	-	-	107	-
Stage 2	-	-	-	-	6	-
Critical Hdwy	4.1	-	-	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.75
Pot Cap-1 Maneuver	1497	-	-	-	888	831
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1497	-	-	-	888	831
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1497	-	-	-	831
HCM Lane V/C Ratio	-	-	-	-	0.01
HCM Control Delay (s)	0	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

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	0	0	6	35	7	30	102	64	3	0	148	28
Future Vol, veh/h	0	0	6	35	7	30	102	64	3	0	148	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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	0	7	38	8	33	111	70	3	0	161	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	489	471	176	472	484	71	191	0	0	73	0	0
Stage 1	176	176	-	293	293	-	-	-	-	-	-	-
Stage 2	313	295	-	179	191	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	489	491	867	502	483	991	1383	-	-	1527	-	-
Stage 1	826	753	-	715	670	-	-	-	-	-	-	-
Stage 2	698	669	-	823	742	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	437	450	867	466	442	991	1383	-	-	1527	-	-
Mov Cap-2 Maneuver	437	450	-	466	442	-	-	-	-	-	-	-
Stage 1	757	753	-	655	614	-	-	-	-	-	-	-
Stage 2	611	613	-	817	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	12	4.7	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1383	-	-	867	594	1527	-	-
HCM Lane V/C Ratio	0.08	-	-	0.008	0.132	-	-	-
HCM Control Delay (s)	7.8	0	-	9.2	12	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0	0.5	0	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	199	0	168	148	0
Future Vol, veh/h	16	199	0	168	148	0
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	92	92	92	92	92	92
Heavy Vehicles, %	14	3	2	2	2	2
Mvmt Flow	17	216	0	183	161	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	344	161	-	0	-	0
Stage 1	161	-	-	-	-	-
Stage 2	183	-	-	-	-	-
Critical Hdwy	6.54	6.23	-	-	-	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.327	-	-	-	-
Pot Cap-1 Maneuver	629	881	0	-	-	0
Stage 1	839	-	0	-	-	0
Stage 2	820	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	629	881	-	-	-	-
Mov Cap-2 Maneuver	629	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	820	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	855	-
HCM Lane V/C Ratio	-	0.273	-
HCM Control Delay (s)	-	10.8	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	1.1	-

Intersection	
Int Delay, s/veh	1.3

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	88	11	4	129	17	2
Future Vol, veh/h	88	11	4	129	17	2
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	89	75	33	74	70	25
Heavy Vehicles, %	9	0	50	12	7	0
Mvmt Flow	99	15	12	174	24	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	114	0	305	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	199	-
Critical Hdwy	-	-	4.6	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.65	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1224	-	677	954
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1224	-	670	954
Mov Cap-2 Maneuver	-	-	-	-	670	-
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	814	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.5	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1224	-	723
HCM Lane V/C Ratio	-	-	0.01	-	0.045
HCM Control Delay (s)	-	-	8	0	10.2
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	2.4

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	97	17	0	146	73	2
Future Vol, veh/h	97	17	0	146	73	2
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	85	88	25	77	81	50
Heavy Vehicles, %	6	0	0	2	0	0
Mvmt Flow	114	19	0	190	90	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	133	0	314	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	190	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1464	-	683	932
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	847	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1464	-	683	932
Mov Cap-2 Maneuver	-	-	-	-	710	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	847	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1464	-	717
HCM Lane V/C Ratio	-	-	-	-	0.131
HCM Control Delay (s)	-	-	0	-	10.8
HCM Lane LOS	-	-	A	-	B
HCM 95th %tile Q(veh)	-	-	0	-	0.5

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	19	15	0	0	433	17
Future Vol, veh/h	19	15	0	0	433	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	46	92	92	83	75
Heavy Vehicles, %	24	23	2	2	16	7
Mvmt Flow	27	33	0	0	522	23

Major/Minor	Minor2		Major2	
Conflicting Flow All	533	533	-	0
Stage 1	533	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.64	6.43	-	-
Critical Hdwy Stg 1	5.64	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.716	3.507	-	-
Pot Cap-1 Maneuver	471	508	-	-
Stage 1	546	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	471	508	-	-
Mov Cap-2 Maneuver	471	-	-	-
Stage 1	546	-	-	-
Stage 2	-	-	-	-

Approach	EB	SW
HCM Control Delay, s	13.3	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SWT	SWR
Capacity (veh/h)	491	-	-
HCM Lane V/C Ratio	0.121	-	-
HCM Control Delay (s)	13.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-

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	0	1	16	0	7	30	107	110	21	351	1
Future Vol, veh/h	0	0	1	16	0	7	30	107	110	21	351	1
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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	70	25	38	72	92	83	68	82	25
Heavy Vehicles, %	0	0	0	0	0	0	89	14	0	0	25	0
Mvmt Flow	0	0	4	23	0	18	42	116	133	31	428	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	767	824	216	542	760	183	432	0	0	249	0	0
Stage 1	492	492	-	266	266	-	-	-	-	-	-	-
Stage 2	275	332	-	276	494	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	6.9	7.3	6.5	6.2	5.435	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	3.0455	-	-	2.2	-	-
Pot Cap-1 Maneuver	308	310	795	441	338	865	735	-	-	1328	-	-
Stage 1	532	551	-	744	692	-	-	-	-	-	-	-
Stage 2	736	648	-	712	550	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	279	280	795	407	306	865	735	-	-	1328	-	-
Mov Cap-2 Maneuver	279	280	-	407	306	-	-	-	-	-	-	-
Stage 1	496	534	-	694	646	-	-	-	-	-	-	-
Stage 2	672	605	-	686	533	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	12.3	1.5	0.6
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	735	-	-	795	533	1328	-	-
HCM Lane V/C Ratio	0.057	-	-	0.005	0.077	0.023	-	-
HCM Control Delay (s)	10.2	-	-	9.6	12.3	7.8	0.1	-
HCM Lane LOS	B	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	0.3	0.1	-	-

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	10	3	53	8	1	2	40	235	6	1	350	17
Future Vol, veh/h	10	3	53	8	1	2	40	235	6	1	350	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	56	38	77	58	25	25	63	86	63	25	86	63
Heavy Vehicles, %	0	0	4	0	0	0	0	18	0	0	25	0
Mvmt Flow	18	8	69	14	4	8	63	273	10	4	407	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	839	838	217	620	847	278	434	0	0	283	0	0
Stage 1	428	428	-	405	405	-	-	-	-	-	-	-
Stage 2	411	410	-	215	442	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	6.96	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.338	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	274	305	783	390	301	766	1136	-	-	1291	-	-
Stage 1	581	588	-	626	602	-	-	-	-	-	-	-
Stage 2	622	599	-	773	580	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	254	284	783	330	280	766	1136	-	-	1291	-	-
Mov Cap-2 Maneuver	254	284	-	330	280	-	-	-	-	-	-	-
Stage 1	543	586	-	585	562	-	-	-	-	-	-	-
Stage 2	571	559	-	693	578	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.7	14.9	1.5	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1136	-	-	508	388	1291	-	-
HCM Lane V/C Ratio	0.056	-	-	0.186	0.066	0.003	-	-
HCM Control Delay (s)	8.4	0	-	13.7	14.9	7.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.2	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	15	20	8	43	276	234	4	1	241	169
Future Volume (veh/h)	4	0	15	20	8	43	276	234	4	1	241	169
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1497	1900	1900	1664	1900	1900	1582	1439
Adj Flow Rate, veh/h	4	0	23	36	32	59	368	252	4	4	284	214
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	1
Peak Hour Factor	1.00	0.25	0.65	0.56	0.25	0.73	0.75	0.93	1.00	0.25	0.85	0.79
Percent Heavy Veh, %	2	2	2	14	14	14	11	11	11	19	19	32
Cap, veh/h	78	26	304	117	98	136	423	243	4	48	1042	809
Arrive On Green	0.23	0.00	0.23	0.23	0.23	0.23	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	117	117	1342	264	431	603	531	367	6	4	1576	1223
Grp Volume(v), veh/h	27	0	0	127	0	0	624	0	0	288	0	214
Grp Sat Flow(s),veh/h/ln	1575	0	0	1299	0	0	903	0	0	1580	0	1223
Q Serve(g_s), s	0.0	0.0	0.0	1.6	0.0	0.0	46.9	0.0	0.0	0.0	0.0	5.7
Cycle Q Clear(g_c), s	1.0	0.0	0.0	6.4	0.0	0.0	52.9	0.0	0.0	6.0	0.0	5.7
Prop In Lane	0.15		0.85	0.28		0.46	0.59		0.01	0.01		1.00
Lane Grp Cap(c), veh/h	408	0	0	352	0	0	669	0	0	1090	0	809
V/C Ratio(X)	0.07	0.00	0.00	0.36	0.00	0.00	0.93	0.00	0.00	0.26	0.00	0.26
Avail Cap(c_a), veh/h	408	0	0	352	0	0	669	0	0	1090	0	809
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	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	0.0	26.4	0.0	0.0	17.5	0.0	0.0	5.6	0.0	5.6
Incr Delay (d2), s/veh	0.3	0.0	0.0	2.9	0.0	0.0	21.7	0.0	0.0	0.6	0.0	0.8
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	0.5	0.0	0.0	2.7	0.0	0.0	17.7	0.0	0.0	2.7	0.0	2.1
LnGrp Delay(d),s/veh	24.7	0.0	0.0	29.2	0.0	0.0	39.2	0.0	0.0	6.2	0.0	6.4
LnGrp LOS	C			C			D			A		A
Approach Vol, veh/h		27			127			624			502	
Approach Delay, s/veh		24.7			29.2			39.2			6.3	
Approach LOS		C			C			D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.4		22.6		57.4		22.6
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		52.9		18.1		52.9		18.1
Max Q Clear Time (g_c+I1), s		54.9		3.0		8.0		8.4
Green Ext Time (p_c), s		0.0		0.7		10.9		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	7	175	0	0	0	0	429	73	66	207	3
Future Volume (veh/h)	85	7	175	0	0	0	0	429	73	66	207	3
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1474	1667				1900	1712	1557	1900	1598	1900
Adj Flow Rate, veh/h	123	11	0				0	499	107	77	265	6
Adj No. of Lanes	0	1	1				0	1	1	0	1	0
Peak Hour Factor	0.69	0.62	0.92				0.92	0.86	0.68	0.86	0.78	0.50
Percent Heavy Veh, %	14	17	14				11	11	22	11	11	11
Cap, veh/h	466	42	510				0	787	609	153	432	9
Arrive On Green	0.36	0.36	0.00				0.00	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1293	116	1417				0	1712	1324	142	940	19
Grp Volume(v), veh/h	134	0	0				0	499	107	348	0	0
Grp Sat Flow(s),veh/h/ln	1409	0	1417				0	1712	1324	1100	0	0
Q Serve(g_s), s	3.4	0.0	0.0				0.0	11.1	2.4	3.0	0.0	0.0
Cycle Q Clear(g_c), s	3.4	0.0	0.0				0.0	11.1	2.4	14.1	0.0	0.0
Prop In Lane	0.92		1.00				0.00		1.00	0.22		0.02
Lane Grp Cap(c), veh/h	507	0	510				0	787	609	594	0	0
V/C Ratio(X)	0.26	0.00	0.00				0.00	0.63	0.18	0.59	0.00	0.00
Avail Cap(c_a), veh/h	507	0	510				0	787	609	594	0	0
HCM Platoon Ratio	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	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.3	0.0	0.0				0.0	10.3	7.9	10.0	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0				0.0	3.9	0.6	4.2	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
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0				0.0	6.0	1.0	4.6	0.0	0.0
LnGrp Delay(d),s/veh	12.6	0.0	0.0				0.0	14.2	8.6	14.2	0.0	0.0
LnGrp LOS	B							B	A	B		
Approach Vol, veh/h		134						606			348	
Approach Delay, s/veh		12.6						13.2			14.2	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		27.5		22.5		27.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		23.0		18.0		23.0		
Max Q Clear Time (g_c+I1), s		13.1		5.4		16.1		
Green Ext Time (p_c), s		4.3		0.5		3.3		

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

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	13	0	13	3	0	36	3	453	59	44	338	0
Future Vol, veh/h	13	0	13	3	0	36	3	453	59	44	338	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	92	60	38	92	62	75	86	63	79	92	92
Heavy Vehicles, %	8	0	0	0	2	44	0	11	8	31	10	2
Mvmt Flow	19	0	22	8	0	58	4	527	94	56	367	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	750	1107	184	877	1061	310	367	0	0	620	0	0
Stage 1	479	479	-	582	582	-	-	-	-	-	-	-
Stage 2	271	628	-	295	479	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.5	6.9	7.5	6.54	7.78	4.1	-	-	4.72	-	-
Critical Hdwy Stg 1	6.66	5.5	-	6.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.5	-	6.5	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4	3.3	3.5	4.02	3.74	2.2	-	-	2.51	-	-
Pot Cap-1 Maneuver	289	212	833	246	222	576	1203	-	-	784	-	-
Stage 1	521	558	-	471	497	-	-	-	-	-	-	-
Stage 2	695	479	-	695	553	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	241	192	833	222	201	576	1203	-	-	784	-	-
Mov Cap-2 Maneuver	241	192	-	222	201	-	-	-	-	-	-	-
Stage 1	518	508	-	469	495	-	-	-	-	-	-	-
Stage 2	622	477	-	616	503	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.4	13.6	0.1	1.6
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1203	-	-	386	484	784	-	-
HCM Lane V/C Ratio	0.003	-	-	0.106	0.136	0.071	-	-
HCM Control Delay (s)	8	0	-	15.4	13.6	9.9	0.3	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.5	0.2	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	74	1	0	1
Future Vol, veh/h	1	0	74	1	0	1
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	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	25	92	76	25	92	25
Heavy Vehicles, %	100	2	35	100	2	100
Mvmt Flow	4	0	97	4	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	101	-	-	0	-	99
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.1	-	-	-	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.1	-	-	-	-	4.2
Pot Cap-1 Maneuver	1051	0	-	-	0	745
Stage 1	-	0	-	-	0	-
Stage 2	-	0	-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1051	-	-	-	-	745
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	8.4	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	WBT	WBR	SBLn1
Capacity (veh/h)	1051	-	-	745
HCM Lane V/C Ratio	0.004	-	-	0.005
HCM Control Delay (s)	8.4	-	-	9.9
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	0

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	1	71	4	0	0
Future Vol, veh/h	4	1	71	4	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	25	50	69	50	92	92
Heavy Vehicles, %	0	0	33	0	2	2
Mvmt Flow	16	2	103	8	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	111	0	-	0	141	107
Stage 1	-	-	-	-	107	-
Stage 2	-	-	-	-	34	-
Critical Hdwy	4.1	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1492	-	-	-	852	947
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	988	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1492	-	-	-	843	947
Mov Cap-2 Maneuver	-	-	-	-	843	-
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	977	-

Approach	EB	WB	SB
HCM Control Delay, s	6.6	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1492	-	-	-	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	7.4	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	16	3	55	2	1	1
Future Vol, veh/h	16	3	55	2	1	1
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	54	38	63	25	25	25
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	30	8	87	8	4	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	217	34
Stage 1	-	-	-	-	34	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	-	-	4.12	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1572	-	776	1045
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1572	-	733	1045
Mov Cap-2 Maneuver	-	-	-	-	733	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	805	-

Approach	EB	WB	NE
HCM Control Delay, s	0	6.8	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	862	-	-	1572	-
HCM Lane V/C Ratio	0.009	-	-	0.056	-
HCM Control Delay (s)	9.2	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.2	-

Intersection	
Int Delay, s/veh	24.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	17	181	69	17	139	24	0	0	38	24
Future Vol, veh/h	0	0	17	181	69	17	139	24	0	0	38	24
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	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	58	78	75	42	80	53	92	92	73	50
Heavy Vehicles, %	2	2	0	22	10	13	30	5	2	2	0	0
Mvmt Flow	0	0	29	232	92	40	174	45	0	0	52	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	535	-	76	469	493	45	100	0	-	-	-	0
Stage 1	76	-	-	393	393	-	-	-	-	-	-	-
Stage 2	459	-	-	76	100	-	-	-	-	-	-	-
Critical Hdwy	7.12	-	6.2	7.32	6.6	6.33	4.4	-	-	-	-	-
Critical Hdwy Stg 1	6.12	-	-	6.32	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	6.32	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	-	3.3	3.698	4.09	3.417	2.47	-	-	-	-	-
Pot Cap-1 Maneuver	456	0	991	473	466	994	1335	-	0	0	-	-
Stage 1	933	0	-	593	592	-	-	-	0	0	-	-
Stage 2	582	0	-	886	797	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	325	-	991	412	404	994	1335	-	-	-	-	-
Mov Cap-2 Maneuver	325	-	-	412	404	-	-	-	-	-	-	-
Stage 1	808	-	-	514	513	-	-	-	-	-	-	-
Stage 2	397	-	-	860	797	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	42.6	6.4	0
HCM LOS	A	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	WBLn1	SBT	SBR
Capacity (veh/h)	1335	-	-	991	438	-	-
HCM Lane V/C Ratio	0.13	-	-	0.03	0.832	-	-
HCM Control Delay (s)	8.1	0	0	8.7	42.6	-	-
HCM Lane LOS	A	A	A	A	E	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	8	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	0	8	4	0	94	25	58	0	12	96	110
Future Vol, veh/h	13	0	8	4	0	94	25	58	0	12	96	110
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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	43	92	44	33	92	83	55	58	92	69	63	62
Heavy Vehicles, %	0	0	0	100	2	95	0	4	2	64	5	1
Mvmt Flow	30	0	18	12	0	113	45	100	0	17	152	177

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	524	467	241	476	556	100	330	0	0	100	0	0
Stage 1	276	276	-	191	191	-	-	-	-	-	-	-
Stage 2	248	191	-	285	365	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	8.1	6.52	7.15	4.1	-	-	4.74	-	-
Critical Hdwy Stg 1	6.1	5.5	-	7.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	7.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	4.4	4.018	4.155	2.2	-	-	2.776	-	-
Pot Cap-1 Maneuver	467	496	803	370	439	752	1241	-	-	1181	-	-
Stage 1	735	685	-	629	742	-	-	-	-	-	-	-
Stage 2	760	746	-	552	623	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	380	469	803	346	415	752	1241	-	-	1181	-	-
Mov Cap-2 Maneuver	380	469	-	346	415	-	-	-	-	-	-	-
Stage 1	707	673	-	605	714	-	-	-	-	-	-	-
Stage 2	621	718	-	530	612	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.5	11.5	2.5	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1241	-	-	474	675	1181	-	-
HCM Lane V/C Ratio	0.037	-	-	0.102	0.186	0.015	-	-
HCM Control Delay (s)	8	0	-	13.5	11.5	8.1	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.7	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	0	78	104	4	3	0
Future Vol, veh/h	0	78	104	4	3	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	92	55	70	100	75	25
Heavy Vehicles, %	0	0	10	40	0	0
Mvmt Flow	0	142	149	4	4	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	153	0	-	0	293	151
Stage 1	-	-	-	-	151	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1440	-	-	-	702	901
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1440	-	-	-	702	901
Mov Cap-2 Maneuver	-	-	-	-	702	-
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	890	-

Approach	NB	SB	NE
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	702	1440	-	-	-
HCM Lane V/C Ratio	0.006	-	-	-	-
HCM Control Delay (s)	10.2	0	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0	0	-	-	-

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	0	161	1	8	189	2	66	1	15	0	0	1
Future Vol, veh/h	0	161	1	8	189	2	66	1	15	0	0	1
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	25	85	25	58	87	25	75	25	60	92	92	25
Heavy Vehicles, %	0	13	0	29	11	0	90	0	50	0	0	100
Mvmt Flow	0	189	4	14	217	8	88	4	25	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	225	0	0	193	0	0	442	444	191	455	442	221
Stage 1	-	-	-	-	-	-	191	191	-	249	249	-
Stage 2	-	-	-	-	-	-	251	253	-	206	193	-
Critical Hdwy	4.1	-	-	4.39	-	-	8	6.5	6.7	7.1	6.5	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	7	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.461	-	-	4.31	4	3.75	3.5	4	4.2
Pot Cap-1 Maneuver	1356	-	-	1234	-	-	403	511	742	519	513	625
Stage 1	-	-	-	-	-	-	645	746	-	759	704	-
Stage 2	-	-	-	-	-	-	594	701	-	801	745	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1356	-	-	1234	-	-	396	504	742	494	506	625
Mov Cap-2 Maneuver	-	-	-	-	-	-	396	504	-	494	506	-
Stage 1	-	-	-	-	-	-	645	746	-	759	695	-
Stage 2	-	-	-	-	-	-	583	692	-	770	745	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	16	10.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	443	1356	-	-	1234	-	-	625
HCM Lane V/C Ratio	0.264	-	-	-	0.011	-	-	0.006
HCM Control Delay (s)	16	0	-	-	8	0	-	10.8
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	13	26	136	0	29	227
Future Vol, veh/h	13	26	136	0	29	227
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	82	69	86	25	93	89
Heavy Vehicles, %	9	0	7	0	2	2
Mvmt Flow	16	38	158	0	31	255

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	475	158	0	0	158	0
Stage 1	158	-	-	-	-	-
Stage 2	317	-	-	-	-	-
Critical Hdwy	6.49	6.2	-	-	4.12	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.3	-	-	2.218	-
Pot Cap-1 Maneuver	536	893	-	-	1422	-
Stage 1	854	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	523	893	-	-	1422	-
Mov Cap-2 Maneuver	523	-	-	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	705	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	10.3	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	738	1422	-
HCM Lane V/C Ratio	-	-	0.073	0.022	-
HCM Control Delay (s)	-	-	10.3	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

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	1	0	1	0	0	0	24	170	0	1	138	8
Future Vol, veh/h	1	0	1	0	0	0	24	170	0	1	138	8
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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	92	25	92	92	92	75	88	92	25	81	58
Heavy Vehicles, %	0	0	0	2	2	2	4	8	2	0	20	29
Mvmt Flow	4	0	4	0	0	0	32	193	0	4	170	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	442	442	177	444	449	193	184	0	0	193	0	0
Stage 1	185	185	-	257	257	-	-	-	-	-	-	-
Stage 2	257	257	-	187	192	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.12	6.52	6.22	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.518	4.018	3.318	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	529	513	871	524	505	849	1379	-	-	1392	-	-
Stage 1	821	751	-	748	695	-	-	-	-	-	-	-
Stage 2	752	699	-	815	742	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	517	498	871	510	490	849	1379	-	-	1392	-	-
Mov Cap-2 Maneuver	517	498	-	510	490	-	-	-	-	-	-	-
Stage 1	800	749	-	729	677	-	-	-	-	-	-	-
Stage 2	732	681	-	809	740	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	0	1.1	0.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1379	-	-	649	-	1392	-	-
HCM Lane V/C Ratio	0.023	-	-	0.012	-	0.003	-	-
HCM Control Delay (s)	7.7	0	-	10.6	0	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-	0	-	-

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	3	1	0	6	1	6	0	185	11	11	128	0
Future Vol, veh/h	3	1	0	6	1	6	0	185	11	11	128	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	25	25	75	25	62	92	86	63	50	64	25
Heavy Vehicles, %	0	0	0	0	0	0	0	24	0	0	36	0
Mvmt Flow	4	4	0	8	4	10	0	215	17	22	200	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	475	477	200	470	468	224	200	0	0	233	0	0
Stage 1	244	244	-	224	224	-	-	-	-	-	-	-
Stage 2	231	233	-	246	244	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	503	490	846	507	496	820	1384	-	-	1346	-	-
Stage 1	764	708	-	783	722	-	-	-	-	-	-	-
Stage 2	776	716	-	762	708	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	487	481	846	497	487	820	1384	-	-	1346	-	-
Mov Cap-2 Maneuver	487	481	-	497	487	-	-	-	-	-	-	-
Stage 1	764	695	-	783	722	-	-	-	-	-	-	-
Stage 2	763	716	-	744	695	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	11.2	0	0.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1384	-	-	484	600	1346	-	-
HCM Lane V/C Ratio	-	-	-	0.017	0.036	0.016	-	-
HCM Control Delay (s)	0	-	-	12.6	11.2	7.7	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-	-

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	12	0	10	21	2	35	4	149	0	0	113	21
Future Vol, veh/h	12	0	10	21	2	35	4	149	0	0	113	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	0	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	55	92	45	95	25	65	50	83	92	92	90	68
Heavy Vehicles, %	11	2	0	5	0	10	0	25	2	2	37	0
Mvmt Flow	22	0	22	22	8	54	8	180	0	0	126	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	367	-	141	337	352	180	156	0	-	-	-	0
Stage 1	141	-	-	196	196	-	-	-	-	-	-	-
Stage 2	226	-	-	141	156	-	-	-	-	-	-	-
Critical Hdwy	7.21	-	6.2	7.15	6.5	6.3	4.1	-	-	-	-	-
Critical Hdwy Stg 1	6.21	-	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.21	-	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.599	-	3.3	3.545	4	3.39	2.2	-	-	-	-	-
Pot Cap-1 Maneuver	573	0	912	611	576	843	1436	-	0	0	-	-
Stage 1	841	0	-	799	742	-	-	-	0	0	-	-
Stage 2	757	0	-	855	772	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	528	-	912	593	573	843	1436	-	-	-	-	-
Mov Cap-2 Maneuver	528	-	-	593	573	-	-	-	-	-	-	-
Stage 1	836	-	-	794	738	-	-	-	-	-	-	-
Stage 2	697	-	-	834	772	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	10.6	0.3	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	WBLn1	SBT	SBR
Capacity (veh/h)	1436	-	528	912	729	-	-
HCM Lane V/C Ratio	0.006	-	0.041	0.024	0.115	-	-
HCM Control Delay (s)	7.5	0	12.1	9	10.6	-	-
HCM Lane LOS	A	A	B	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	0.4	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	38	115	0	0	144
Future Vol, veh/h	9	38	115	0	0	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	69	82	92	92	93
Heavy Vehicles, %	25	21	28	2	2	36
Mvmt Flow	13	55	140	0	0	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	295	140	0	-	-	-
Stage 1	140	-	-	-	-	-
Stage 2	155	-	-	-	-	-
Critical Hdwy	6.65	6.41	-	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.489	-	-	-	-
Pot Cap-1 Maneuver	650	860	-	0	0	-
Stage 1	833	-	-	0	0	-
Stage 2	820	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	650	860	-	-	-	-
Mov Cap-2 Maneuver	650	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	820	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	1070	-
HCM Lane V/C Ratio	-	0.064	-
HCM Control Delay (s)	-	8.6	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0.2	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	7	1	2	80	22	83	62	9	1	0
Future Vol, veh/h	7	1	2	80	22	83	62	9	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Free	-	-	None	-	-
Storage Length	0	-	-	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	75	25	25	90	62	78	86	67	25	25
Heavy Vehicles, %	0	0	0	6	0	57	7	0	2	2
Mvmt Flow	9	4	8	89	35	106	72	13	4	0

Major/Minor	Minor2		Major1			Major2			Minor1	
Conflicting Flow All	425	79	86	0	-	89	0	0	403	89
Stage 1	292	-	-	-	-	-	-	-	105	-
Stage 2	133	-	-	-	-	-	-	-	298	-
Critical Hdwy	7.1	6.2	4.1	-	-	4.67	-	-	7.12	6.22
Critical Hdwy Stg 1	6.1	-	-	-	-	-	-	-	6.12	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-	-	-	6.12	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	2.713	-	-	3.518	3.318
Pot Cap-1 Maneuver	543	987	1523	-	0	1222	-	-	558	969
Stage 1	720	-	-	-	0	-	-	-	901	-
Stage 2	875	-	-	-	0	-	-	-	711	-
Platoon blocked, %				-			-	-		
Mov Cap-1 Maneuver	474	987	1523	-	-	1222	-	-	507	969
Mov Cap-2 Maneuver	474	-	-	-	-	-	-	-	507	-
Stage 1	716	-	-	-	-	-	-	-	896	-
Stage 2	820	-	-	-	-	-	-	-	634	-

Approach	EB	NB	SB	SW
HCM Control Delay, s	12.1	0.6	4.6	9.2
HCM LOS	B			A

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBL	SBT	SBR	SWLn1
Capacity (veh/h)	1523	-	531	1222	-	-	913
HCM Lane V/C Ratio	0.005	-	0.043	0.087	-	-	0.065
HCM Control Delay (s)	7.4	0	12.1	8.2	0	-	9.2
HCM Lane LOS	A	A	B	A	A	-	A
HCM 95th %tile Q(veh)	0	-	0.1	0.3	-	-	0.2

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	31	12	0	27
Future Vol, veh/h	0	0	31	12	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	88	63	92	67
Heavy Vehicles, %	2	2	18	0	2	0
Mvmt Flow	0	0	35	19	0	40

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	-	45
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	1031
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	-	1031
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	8.6
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1031
HCM Lane V/C Ratio	-	-	0.039
HCM Control Delay (s)	-	-	8.6
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.1

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	4	100	0	0	64
Future Vol, veh/h	0	4	100	0	0	64
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	25	50	87	25	25	84
Heavy Vehicles, %	0	0	1	0	0	7
Mvmt Flow	0	8	115	0	0	76

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	191	115	0	0	115	0
Stage 1	115	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	803	943	-	-	1487	-
Stage 1	915	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	803	943	-	-	1487	-
Mov Cap-2 Maneuver	803	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	952	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	943	1487	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	-	-	8.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	25	0
Future Vol, veh/h	0	0	0	0	25	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Yield	Yield	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	0	-
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	0	-	0	-	0	-
Peak Hour Factor	92	92	92	92	79	92
Heavy Vehicles, %	2	2	2	2	32	0
Mvmt Flow	0	0	0	0	32	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0
Stage 1	0	-	-	0
Stage 2	0	-	-	0
Platoon blocked, %				
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	NB	SE
HCM Control Delay, s	0	
HCM LOS	A	

Minor Lane/Major Mvmt	NBLn1	SEL
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	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	334	58	22	236	0	33	0	13	0	0	0
Future Vol, veh/h	0	334	58	22	236	0	33	0	13	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	83	78	92	67	83	66	92	65	92	92	92
Heavy Vehicles, %	2	4	6	0	3	5	6	2	8	2	2	2
Mvmt Flow	0	402	74	24	352	0	50	0	20	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	352	0	0	477	0	0	664	840	238	601	877	176
Stage 1	-	-	-	-	-	-	440	440	-	400	400	-
Stage 2	-	-	-	-	-	-	224	400	-	201	477	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.62	6.54	7.06	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.62	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.62	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.2	-	-	3.56	4.02	3.38	3.52	4.02	3.32
Pot Cap-1 Maneuver	1203	-	-	1096	-	-	338	300	745	384	285	837
Stage 1	-	-	-	-	-	-	555	576	-	597	600	-
Stage 2	-	-	-	-	-	-	747	600	-	782	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1203	-	-	1096	-	-	331	292	745	366	277	837
Mov Cap-2 Maneuver	-	-	-	-	-	-	331	292	-	366	277	-
Stage 1	-	-	-	-	-	-	555	576	-	597	584	-
Stage 2	-	-	-	-	-	-	727	584	-	761	554	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	16.1	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	393	1203	-	-	1096	-	-	-
HCM Lane V/C Ratio	0.178	-	-	-	0.022	-	-	-
HCM Control Delay (s)	16.1	0	-	-	8.4	0.1	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.6	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	4	0	0	0	1	52	0	0	80	0
Future Vol, veh/h	0	0	4	0	0	0	1	52	0	0	80	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	38	92	92	92	25	73	92	92	75	92
Heavy Vehicles, %	2	2	0	2	2	2	2	7	0	2	6	2
Mvmt Flow	0	0	11	0	0	0	4	71	0	0	107	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	186	186	107	191	186	71	107	0	0	71	0	0
Stage 1	107	107	-	79	79	-	-	-	-	-	-	-
Stage 2	79	79	-	112	107	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.2	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.3	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	775	708	953	769	708	991	1484	-	-	1529	-	-
Stage 1	898	807	-	930	829	-	-	-	-	-	-	-
Stage 2	930	829	-	893	807	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	773	706	953	759	706	991	1484	-	-	1529	-	-
Mov Cap-2 Maneuver	773	706	-	759	706	-	-	-	-	-	-	-
Stage 1	895	807	-	927	827	-	-	-	-	-	-	-
Stage 2	927	827	-	883	807	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	0	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1484	-	-	953	-	1529	-	-
HCM Lane V/C Ratio	0.003	-	-	0.011	-	-	-	-
HCM Control Delay (s)	7.4	0	-	8.8	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	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	1	0	0	0	0	1	2	51	7	13	55	16
Future Vol, veh/h	1	0	0	0	0	1	2	51	7	13	55	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	92	92	92	92	25	30	70	50	38	68	50
Heavy Vehicles, %	0	2	2	2	2	0	0	2	0	0	4	0
Mvmt Flow	4	0	0	0	0	4	7	73	14	34	81	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	260	265	97	258	274	80	113	0	0	87	0	0
Stage 1	165	165	-	93	93	-	-	-	-	-	-	-
Stage 2	95	100	-	165	181	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.22	7.12	6.52	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.318	3.518	4.018	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	697	640	959	695	633	986	1489	-	-	1522	-	-
Stage 1	842	762	-	914	818	-	-	-	-	-	-	-
Stage 2	917	812	-	837	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	679	622	959	680	615	986	1489	-	-	1522	-	-
Mov Cap-2 Maneuver	679	622	-	680	615	-	-	-	-	-	-	-
Stage 1	838	744	-	909	814	-	-	-	-	-	-	-
Stage 2	909	808	-	817	732	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	8.7	0.5	1.7
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1489	-	-	679	986	1522	-	-
HCM Lane V/C Ratio	0.004	-	-	0.006	0.004	0.022	-	-
HCM Control Delay (s)	7.4	0	-	10.3	8.7	7.4	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.1	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Traffic Vol, veh/h	6	8	7	52	0	0	45	10	0	0
Future Vol, veh/h	6	8	7	52	0	0	45	10	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	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	-	0	-
Peak Hour Factor	31	88	50	67	25	92	86	45	92	92
Heavy Vehicles, %	100	0	2	2	2	2	5	0	2	2
Mvmt Flow	19	9	14	78	0	0	52	22	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	169	78	75	0	-	-	-	0
Stage 1	106	-	-	-	-	-	-	-
Stage 2	63	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	826	988	1524	-	0	0	-	-
Stage 1	923	-	-	-	0	0	-	-
Stage 2	965	-	-	-	0	0	-	-
Platoon blocked, %				-			-	-
Mov Cap-1 Maneuver	818	988	1524	-	-	-	-	-
Mov Cap-2 Maneuver	818	-	-	-	-	-	-	-
Stage 1	914	-	-	-	-	-	-	-
Stage 2	965	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	1.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1524	-	879	-	-
HCM Lane V/C Ratio	0.009	-	0.048	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	8	2	0	44	1	33	21	0	0	0
Future Vol, veh/h	8	2	0	44	1	33	21	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Yield	-	-	None	-	-
Storage Length	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	44	50	25	81	25	70	45	25	92	92
Heavy Vehicles, %	86	0	0	0	0	7	0	0	2	2
Mvmt Flow	18	4	0	54	4	47	47	0	0	0

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	195	47	47	0	0	54	0	0
Stage 1	141	-	-	-	-	-	-	-
Stage 2	54	-	-	-	-	-	-	-
Critical Hdwy	6.48	6.2	4.1	-	-	4.17	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	3.3	2.2	-	-	2.263	-	-
Pot Cap-1 Maneuver	780	1028	1573	-	-	1520	-	-
Stage 1	871	-	-	-	-	-	-	-
Stage 2	953	-	-	-	-	-	-	-
Platoon blocked, %				-	-		-	-
Mov Cap-1 Maneuver	755	1028	1573	-	-	1520	-	-
Mov Cap-2 Maneuver	755	-	-	-	-	-	-	-
Stage 1	843	-	-	-	-	-	-	-
Stage 2	953	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1573	-	-	792	1520	-	-
HCM Lane V/C Ratio	-	-	-	0.051	0.031	-	-
HCM Control Delay (s)	0	-	-	9.8	7.4	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	1	44	21	2	1	0
Future Vol, veh/h	1	44	21	2	1	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	25	79	65	75	25	25
Heavy Vehicles, %	0	3	0	5	0	0
Mvmt Flow	4	56	32	3	4	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	35	0	-	0	98	34
Stage 1	-	-	-	-	34	-
Stage 2	-	-	-	-	64	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1589	-	-	-	906	1045
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1589	-	-	-	903	1045
Mov Cap-2 Maneuver	-	-	-	-	903	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	961	-

Approach	NB	SB	NE
HCM Control Delay, s	0.5	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	903	1589	-	-	-
HCM Lane V/C Ratio	0.004	0.003	-	-	-
HCM Control Delay (s)	9	7.3	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	0	-	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	29	16	3	14	7
Future Vol, veh/h	2	29	16	3	14	7
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	50	52	38	62	50	62
Heavy Vehicles, %	0	4	0	0	8	0
Mvmt Flow	4	56	26	2	28	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	94	27	0	0	29	0
Stage 1	27	-	-	-	-	-
Stage 2	67	-	-	-	-	-
Critical Hdwy	7.1	6.24	-	-	4.18	-
Critical Hdwy Stg 1	6.1	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.272	-
Pot Cap-1 Maneuver	894	1043	-	-	1546	-
Stage 1	996	-	-	-	-	-
Stage 2	948	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	882	1043	-	-	1546	-
Mov Cap-2 Maneuver	882	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	931	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	5.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1030	1546	-
HCM Lane V/C Ratio	-	-	0.058	0.018	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	0	0	192	0	44	3
Future Volume (Veh/h)	0	0	192	0	44	3
Sign Control		Stop	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.76	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	253	0	48	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	224	98	99	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	224	98	99	0	0	
tC, single (s)	7.1	6.5	6.7	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.1	3.3	2.3	
p0 queue free %	100	100	66	100	97	
cM capacity (veh/h)	526	768	742	1091	1572	

Direction, Lane #	WB 1	SE 1
Volume Total	253	51
Volume Left	0	48
Volume Right	0	3
cSH	742	1572
Volume to Capacity	0.34	0.03
Queue Length 95th (ft)	38	2
Control Delay (s)	12.3	6.9
Lane LOS	B	A
Approach Delay (s)	12.3	6.9
Approach LOS	B	

Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	20.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	0	0	15	30	192	45	0	0
Future Vol, veh/h	0	0	15	30	192	45	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None
Storage Length	100	0	-	-	-	100	-	-
Veh in Median Storage, #	0	-	-	0	0	-	-	-
Grade, %	0	-	-	0	0	-	0	-
Peak Hour Factor	92	92	25	30	76	67	92	92
Heavy Vehicles, %	2	2	0	45	8	11	2	2
Mvmt Flow	0	0	60	100	253	67	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	792	67	67	0	0	0
Stage 1	572	-	-	-	-	-
Stage 2	220	-	-	-	-	-
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	358	997	-	-	-	-
Stage 1	565	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	296	997	-	-	-	-
Mov Cap-2 Maneuver	296	-	-	-	-	-
Stage 1	467	-	-	-	-	-
Stage 2	817	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0		6.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	SBR2
Capacity (veh/h)	-	-	-	-	1456	-	-
HCM Lane V/C Ratio	-	-	-	-	0.174	-	-
HCM Control Delay (s)	-	-	0	0	8	-	-
HCM Lane LOS	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-	0.6	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	28	80	0	12	110	330	1	0	128	128
Future Vol, veh/h	0	2	28	80	0	12	110	330	1	0	128	128
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	-	-	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	20	2	0	2	2	2	2	2	2
Mvmt Flow	0	2	30	87	0	13	120	359	1	0	139	139

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	814	808	209	823	876	359	278	0	0	360	0	0
Stage 1	209	209	-	598	598	-	-	-	-	-	-	-
Stage 2	605	599	-	225	278	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.3	6.52	6.2	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.3	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.3	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.68	4.018	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	297	315	831	273	287	690	1285	-	-	1199	-	-
Stage 1	793	729	-	459	491	-	-	-	-	-	-	-
Stage 2	485	490	-	739	680	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	265	278	831	238	253	690	1285	-	-	1199	-	-
Mov Cap-2 Maneuver	265	278	-	238	253	-	-	-	-	-	-	-
Stage 1	700	729	-	405	434	-	-	-	-	-	-	-
Stage 2	420	433	-	710	680	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	27.2	2	0
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1285	-	-	734	260	1199	-	-
HCM Lane V/C Ratio	0.093	-	-	0.044	0.385	-	-	-
HCM Control Delay (s)	8.1	0	-	10.1	27.2	0	-	-
HCM Lane LOS	A	A	-	B	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	1.7	0	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	1	97	0	281	147	21	215	0	0	0
Future Vol, veh/h	1	97	0	281	147	21	215	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Yield	-	-	None	-	-
Storage Length	0	-	-	-	0	200	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	105	0	305	160	23	234	0	0	0

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	584	234	-	0	0	305	0	0
Stage 1	279	-	-	-	-	-	-	-
Stage 2	305	-	-	-	-	-	-	-
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	474	805	0	-	-	1256	-	0
Stage 1	768	-	0	-	-	-	-	0
Stage 2	748	-	0	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	465	805	-	-	-	1256	-	-
Mov Cap-2 Maneuver	465	-	-	-	-	-	-	-
Stage 1	754	-	-	-	-	-	-	-
Stage 2	748	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18	0	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	553	1256	-
HCM Lane V/C Ratio	-	-	0.507	0.018	-
HCM Control Delay (s)	-	-	18	7.9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	2.8	0.1	-

Intersection	
Int Delay, s/veh	9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	287	156	165	141	114	198
Future Vol, veh/h	287	156	165	141	114	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	300	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	5	1	13	9	7
Mvmt Flow	312	170	179	153	124	215

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	179	0	-	0	972	179
Stage 1	-	-	-	-	179	-
Stage 2	-	-	-	-	793	-
Critical Hdwy	4.18	-	-	-	6.49	6.27
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	2.272	-	-	-	3.581	3.363
Pot Cap-1 Maneuver	1361	-	-	-	272	851
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	434	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1361	-	-	-	210	851
Mov Cap-2 Maneuver	-	-	-	-	210	-
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	335	-

Approach	EB	WB	SB
HCM Control Delay, s	5.5	0	22.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1361	-	-	-	210	851
HCM Lane V/C Ratio	0.229	-	-	-	0.59	0.253
HCM Control Delay (s)	8.4	-	-	-	44.2	10.7
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.9	-	-	-	3.3	1

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	264	299	1	0	7
Future Vol, veh/h	6	264	299	1	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	20	7	6	0	0	17
Mvmt Flow	7	287	325	1	0	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	325	0	-	0	625	325
Stage 1	-	-	-	-	325	-
Stage 2	-	-	-	-	300	-
Critical Hdwy	4.3	-	-	-	6.4	6.37
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.38	-	-	-	3.5	3.453
Pot Cap-1 Maneuver	1140	-	-	-	452	683
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	756	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1140	-	-	-	449	683
Mov Cap-2 Maneuver	-	-	-	-	449	-
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	751	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1140	-	-	-	683
HCM Lane V/C Ratio	0.006	-	-	-	0.011
HCM Control Delay (s)	8.2	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	434	353	10	9	2
Future Vol, veh/h	4	434	353	10	9	2
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	50	82	82	50	50	92
Heavy Vehicles, %	100	8	2	56	25	100
Mvmt Flow	8	529	430	20	18	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	450	0	-	0	985	440
Stage 1	-	-	-	-	440	-
Stage 2	-	-	-	-	545	-
Critical Hdwy	5.1	-	-	-	7.35	7.2
Critical Hdwy Stg 1	-	-	-	-	6.35	-
Critical Hdwy Stg 2	-	-	-	-	6.35	-
Follow-up Hdwy	3.1	-	-	-	3.725	4.2
Pot Cap-1 Maneuver	740	-	-	-	206	455
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	483	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	740	-	-	-	204	455
Mov Cap-2 Maneuver	-	-	-	-	325	-
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	476	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	740	-	-	-	335
HCM Lane V/C Ratio	0.011	-	-	-	0.06
HCM Control Delay (s)	9.9	0	-	-	16.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	360	267	88	78	8
Future Vol, veh/h	3	360	267	88	78	8
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	42	87	79	71	84	50
Heavy Vehicles, %	0	6	3	1	20	14
Mvmt Flow	7	414	338	124	93	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	462	0	-	0	828	400
Stage 1	-	-	-	-	400	-
Stage 2	-	-	-	-	428	-
Critical Hdwy	4.1	-	-	-	7.3	6.34
Critical Hdwy Stg 1	-	-	-	-	6.3	-
Critical Hdwy Stg 2	-	-	-	-	6.3	-
Follow-up Hdwy	2.2	-	-	-	3.68	3.426
Pot Cap-1 Maneuver	1110	-	-	-	271	625
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	571	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1110	-	-	-	269	625
Mov Cap-2 Maneuver	-	-	-	-	386	-
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	566	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	17
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1110	-	-	-	409
HCM Lane V/C Ratio	0.006	-	-	-	0.266
HCM Control Delay (s)	8.3	0	-	-	17
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.1

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	323	256	19	40	29
Future Vol, veh/h	31	323	256	19	40	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	59	86	80	56	56	56
Heavy Vehicles, %	0	7	3	0	0	0
Mvmt Flow	53	376	320	34	71	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	354	0	-	0	818	337
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	481	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1216	-	-	-	348	710
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1216	-	-	-	333	710
Mov Cap-2 Maneuver	-	-	-	-	449	-
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	599	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1216	-	-	-	531
HCM Lane V/C Ratio	0.043	-	-	-	0.232
HCM Control Delay (s)	8.1	-	-	-	13.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	136	6	0	116
Future Vol, veh/h	3	2	136	6	0	116
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	25	92	70	50	25	75
Heavy Vehicles, %	50	0	1	50	0	2
Mvmt Flow	12	2	194	12	0	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	355	200	0	0	206	0
Stage 1	200	-	-	-	-	-
Stage 2	155	-	-	-	-	-
Critical Hdwy	6.9	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	557	846	-	-	1377	-
Stage 1	731	-	-	-	-	-
Stage 2	769	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	557	846	-	-	1377	-
Mov Cap-2 Maneuver	557	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	769	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	588	1377	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	-	-	11.3	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	1	137	1	2	114
Future Vol, veh/h	2	1	137	1	2	114
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	50	25	68	25	25	75
Heavy Vehicles, %	100	0	1	0	0	1
Mvmt Flow	4	4	201	4	8	152

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	371	203	0	0	205	0
Stage 1	203	-	-	-	-	-
Stage 2	168	-	-	-	-	-
Critical Hdwy	7.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	475	843	-	-	1378	-
Stage 1	644	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	472	843	-	-	1378	-
Mov Cap-2 Maneuver	472	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	667	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	605	1378	-
HCM Lane V/C Ratio	-	-	0.013	0.006	-
HCM Control Delay (s)	-	-	11	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	0	55	7	0	16
Future Vol, veh/h	7	0	55	7	0	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	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	60	25	92	92
Heavy Vehicles, %	2	2	7	0	2	2
Mvmt Flow	8	0	92	28	0	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	120	-	-	0	-	106
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1468	0	-	-	0	948
Stage 1	-	0	-	-	0	-
Stage 2	-	0	-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1468	-	-	-	-	948
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	7.5	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	WBT	WBR	SBLn1
Capacity (veh/h)	1468	-	-	948
HCM Lane V/C Ratio	0.005	-	-	0.018
HCM Control Delay (s)	7.5	-	-	8.9
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	7	71	1	0	13
Future Vol, veh/h	6	7	71	1	0	13
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	25	25	60	25	25	63
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	24	28	118	4	0	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	122	0	-	0	196	120
Stage 1	-	-	-	-	120	-
Stage 2	-	-	-	-	76	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1478	-	-	-	797	937
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	952	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1478	-	-	-	784	937
Mov Cap-2 Maneuver	-	-	-	-	784	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	937	-

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1478	-	-	-	937
HCM Lane V/C Ratio	0.016	-	-	-	0.022
HCM Control Delay (s)	7.5	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	11	84	0	2	2
Future Vol, veh/h	1	11	84	0	2	2
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	25	48	67	25	25	25
Heavy Vehicles, %	0	0	5	0	0	50
Mvmt Flow	4	23	125	0	8	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	125	0	-	0	156	125
Stage 1	-	-	-	-	125	-
Stage 2	-	-	-	-	31	-
Critical Hdwy	4.1	-	-	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.75
Pot Cap-1 Maneuver	1474	-	-	-	840	811
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1474	-	-	-	837	811
Mov Cap-2 Maneuver	-	-	-	-	837	-
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	994	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1474	-	-	-	824
HCM Lane V/C Ratio	0.003	-	-	-	0.019
HCM Control Delay (s)	7.4	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

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	3	1	2	27	25	35	153	104	8	3	86	30
Future Vol, veh/h	3	1	2	27	25	35	153	104	8	3	86	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	-	-	-	-	-	-	-	-	-	-	-	-
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	3	1	2	29	27	38	166	113	9	3	93	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	599	570	110	568	583	117	126	0	0	122	0	0
Stage 1	116	116	-	450	450	-	-	-	-	-	-	-
Stage 2	483	454	-	118	133	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	413	431	943	434	424	935	1460	-	-	1465	-	-
Stage 1	889	800	-	589	572	-	-	-	-	-	-	-
Stage 2	565	569	-	887	786	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	339	378	943	391	372	935	1460	-	-	1465	-	-
Mov Cap-2 Maneuver	339	378	-	391	372	-	-	-	-	-	-	-
Stage 1	781	798	-	517	502	-	-	-	-	-	-	-
Stage 2	450	500	-	882	784	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.3	13.9	4.5	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1460	-	-	441	501	1465	-	-
HCM Lane V/C Ratio	0.114	-	-	0.015	0.189	0.002	-	-
HCM Control Delay (s)	7.8	0	-	13.3	13.9	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	0.7	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	122	0	212	80	0
Future Vol, veh/h	35	122	0	212	80	0
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	92	92	92	92	92	92
Heavy Vehicles, %	14	3	2	2	2	2
Mvmt Flow	38	133	0	230	87	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	317	87	-	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	230	-	-	-	-	-
Critical Hdwy	6.54	6.23	-	-	-	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.327	-	-	-	-
Pot Cap-1 Maneuver	652	969	0	-	-	0
Stage 1	907	-	0	-	-	0
Stage 2	781	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	652	969	-	-	-	-
Mov Cap-2 Maneuver	652	-	-	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	781	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	874	-
HCM Lane V/C Ratio	-	0.195	-
HCM Control Delay (s)	-	10.1	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.7	-

Intersection	
Int Delay, s/veh	0.7

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	130	19	0	124	9	3
Future Vol, veh/h	130	19	0	124	9	3
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	89	75	33	74	70	25
Heavy Vehicles, %	9	0	50	12	7	0
Mvmt Flow	146	25	0	168	13	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	171	0	327	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	-	-	4.6	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.65	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1162	-	657	892
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	850	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1162	-	657	892
Mov Cap-2 Maneuver	-	-	-	-	657	-
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	850	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1162	-	753
HCM Lane V/C Ratio	-	-	-	-	0.033
HCM Control Delay (s)	-	-	0	-	9.9
HCM Lane LOS	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	0.9

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	148	46	2	131	26	1
Future Vol, veh/h	148	46	2	131	26	1
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	85	88	25	77	81	50
Heavy Vehicles, %	6	0	0	2	0	0
Mvmt Flow	174	52	8	170	32	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	226	0	386	200
Stage 1	-	-	-	-	200	-
Stage 2	-	-	-	-	186	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1354	-	621	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	851	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1354	-	617	846
Mov Cap-2 Maneuver	-	-	-	-	666	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	845	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.3	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1354	-	674
HCM Lane V/C Ratio	-	-	0.006	-	0.051
HCM Control Delay (s)	-	-	7.7	0	10.6
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.2

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	7	3	0	0	264	16
Future Vol, veh/h	7	3	0	0	264	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	46	92	92	83	75
Heavy Vehicles, %	24	23	2	2	16	7
Mvmt Flow	10	7	0	0	318	21

Major/Minor	Minor2		Major2	
Conflicting Flow All	329	329	-	0
Stage 1	329	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.64	6.43	-	-
Critical Hdwy Stg 1	5.64	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.716	3.507	-	-
Pot Cap-1 Maneuver	623	667	-	-
Stage 1	682	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	623	667	-	-
Mov Cap-2 Maneuver	623	-	-	-
Stage 1	682	-	-	-
Stage 2	-	-	-	-

Approach	EB	SW
HCM Control Delay, s	10.8	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SWT	SWR
Capacity (veh/h)	640	-	-
HCM Lane V/C Ratio	0.026	-	-
HCM Control Delay (s)	10.8	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

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	1	0	9	28	0	10	47	183	74	24	204	0
Future Vol, veh/h	1	0	9	28	0	10	47	183	74	24	204	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	70	25	38	72	92	83	68	82	25
Heavy Vehicles, %	0	0	0	0	0	0	89	14	0	0	25	0
Mvmt Flow	4	0	36	40	0	26	65	199	89	35	249	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	706	738	124	569	693	243	249	0	0	288	0	0
Stage 1	319	319	-	374	374	-	-	-	-	-	-	-
Stage 2	387	419	-	195	319	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	6.9	7.3	6.5	6.2	5.435	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	3.0455	-	-	2.2	-	-
Pot Cap-1 Maneuver	340	348	910	422	369	801	900	-	-	1286	-	-
Stage 1	673	657	-	651	621	-	-	-	-	-	-	-
Stage 2	641	593	-	794	657	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	300	308	910	369	326	801	900	-	-	1286	-	-
Mov Cap-2 Maneuver	300	308	-	369	326	-	-	-	-	-	-	-
Stage 1	614	636	-	594	567	-	-	-	-	-	-	-
Stage 2	566	541	-	738	636	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	13.9	1.7	1.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	900	-	-	756	469	1286	-	-
HCM Lane V/C Ratio	0.073	-	-	0.053	0.141	0.027	-	-
HCM Control Delay (s)	9.3	-	-	10	13.9	7.9	0.1	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	0	69	4	3	4	64	269	4	0	215	26
Future Vol, veh/h	31	0	69	4	3	4	64	269	4	0	215	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	56	38	77	58	25	25	63	86	63	25	86	63
Heavy Vehicles, %	0	0	4	0	0	0	0	18	0	0	25	0
Mvmt Flow	55	0	90	7	12	16	102	313	6	0	250	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	804	793	146	644	810	316	291	0	0	319	0	0
Stage 1	271	271	-	519	519	-	-	-	-	-	-	-
Stage 2	533	522	-	125	291	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	6.96	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.338	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	290	323	870	375	316	729	1282	-	-	1252	-	-
Stage 1	717	689	-	544	536	-	-	-	-	-	-	-
Stage 2	534	534	-	872	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	254	292	870	311	285	729	1282	-	-	1252	-	-
Mov Cap-2 Maneuver	254	292	-	311	285	-	-	-	-	-	-	-
Stage 1	647	689	-	491	484	-	-	-	-	-	-	-
Stage 2	460	482	-	782	675	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.7	14.7	1.9	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1282	-	-	452	405	1252	-	-
HCM Lane V/C Ratio	0.079	-	-	0.321	0.086	-	-	-
HCM Control Delay (s)	8.1	0	-	16.7	14.7	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1.4	0.3	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	6	44	10	81	183	255	3	0	201	87
Future Volume (veh/h)	1	0	6	44	10	81	183	255	3	0	201	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1486	1900	1900	1673	1900	1900	1597	1439
Adj Flow Rate, veh/h	1	0	9	79	40	111	244	274	3	0	236	110
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	1
Peak Hour Factor	1.00	0.25	0.65	0.56	0.25	0.73	0.75	0.93	1.00	0.25	0.85	0.79
Percent Heavy Veh, %	2	2	2	14	14	14	11	11	11	19	19	32
Cap, veh/h	84	30	429	183	96	184	355	358	4	0	875	671
Arrive On Green	0.30	0.00	0.30	0.30	0.30	0.30	0.55	0.55	0.55	0.00	0.55	0.55
Sat Flow, veh/h	60	98	1423	338	317	611	487	654	7	0	1597	1223
Grp Volume(v), veh/h	10	0	0	230	0	0	521	0	0	0	236	110
Grp Sat Flow(s),veh/h/ln	1581	0	0	1267	0	0	1147	0	0	0	1597	1223
Q Serve(g_s), s	0.0	0.0	0.0	5.3	0.0	0.0	18.8	0.0	0.0	0.0	4.7	2.7
Cycle Q Clear(g_c), s	0.3	0.0	0.0	9.1	0.0	0.0	23.5	0.0	0.0	0.0	4.7	2.7
Prop In Lane	0.10		0.90	0.34		0.48	0.47		0.01	0.00		1.00
Lane Grp Cap(c), veh/h	543	0	0	463	0	0	717	0	0	0	875	671
V/C Ratio(X)	0.02	0.00	0.00	0.50	0.00	0.00	0.73	0.00	0.00	0.00	0.27	0.16
Avail Cap(c_a), veh/h	543	0	0	463	0	0	717	0	0	0	875	671
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	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	0.0	0.0	17.7	0.0	0.0	11.9	0.0	0.0	0.0	7.2	6.7
Incr Delay (d2), s/veh	0.1	0.0	0.0	3.8	0.0	0.0	6.3	0.0	0.0	0.0	0.8	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	0.1	0.0	0.0	3.7	0.0	0.0	8.4	0.0	0.0	0.0	2.2	1.0
LnGrp Delay(d),s/veh	14.8	0.0	0.0	21.5	0.0	0.0	18.3	0.0	0.0	0.0	7.9	7.3
LnGrp LOS	B			C			B				A	A
Approach Vol, veh/h		10			230			521			346	
Approach Delay, s/veh		14.8			21.5			18.3			7.7	
Approach LOS		B			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		37.4		22.6		37.4		22.6
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		32.9		18.1		32.9		18.1
Max Q Clear Time (g_c+I1), s		25.5		2.3		6.7		11.1
Green Ext Time (p_c), s		3.3		1.2		6.4		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	7	245	0	0	0	0	328	43	55	188	8
Future Volume (veh/h)	113	7	245	0	0	0	0	328	43	55	188	8
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1471	1667				1900	1712	1557	1900	1598	1900
Adj Flow Rate, veh/h	164	11	0				0	381	63	64	241	16
Adj No. of Lanes	0	1	1				0	1	1	0	1	0
Peak Hour Factor	0.69	0.62	0.92				0.92	0.86	0.68	0.86	0.78	0.50
Percent Heavy Veh, %	14	17	14				11	11	22	11	11	11
Cap, veh/h	527	35	567				0	685	530	156	446	27
Arrive On Green	0.40	0.40	0.00				0.00	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1317	88	1417				0	1712	1324	151	1114	66
Grp Volume(v), veh/h	175	0	0				0	381	63	321	0	0
Grp Sat Flow(s),veh/h/ln	1405	0	1417				0	1712	1324	1332	0	0
Q Serve(g_s), s	3.8	0.0	0.0				0.0	7.7	1.3	0.8	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0				0.0	7.7	1.3	8.5	0.0	0.0
Prop In Lane	0.94		1.00				0.00		1.00	0.20		0.05
Lane Grp Cap(c), veh/h	562	0	567				0	685	530	629	0	0
V/C Ratio(X)	0.31	0.00	0.00				0.00	0.56	0.12	0.51	0.00	0.00
Avail Cap(c_a), veh/h	562	0	567				0	685	530	629	0	0
HCM Platoon Ratio	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	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	0.0	0.0				0.0	10.4	8.5	10.2	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0				0.0	3.2	0.5	2.9	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
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0				0.0	4.2	0.6	3.6	0.0	0.0
LnGrp Delay(d),s/veh	10.7	0.0	0.0				0.0	13.7	9.0	13.2	0.0	0.0
LnGrp LOS	B							B	A	B		
Approach Vol, veh/h		175						444			321	
Approach Delay, s/veh		10.7						13.0			13.2	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		22.5		22.5		22.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		18.0		18.0		18.0		
Max Q Clear Time (g_c+I1), s		9.7		5.8		10.5		
Green Ext Time (p_c), s		3.0		0.7		2.8		

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

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	0	18	3	0	17	2	336	12	20	413	0
Future Vol, veh/h	18	0	18	3	0	17	2	336	12	20	413	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	92	60	38	92	62	75	86	63	79	92	92
Heavy Vehicles, %	8	0	0	0	2	44	0	11	8	31	10	2
Mvmt Flow	27	0	30	8	0	27	3	391	19	25	449	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	701	915	224	681	906	205	449	0	0	410	0	0
Stage 1	500	500	-	406	406	-	-	-	-	-	-	-
Stage 2	201	415	-	275	500	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.5	6.9	7.5	6.54	7.78	4.1	-	-	4.72	-	-
Critical Hdwy Stg 1	6.66	5.5	-	6.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.5	-	6.5	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4	3.3	3.5	4.02	3.74	2.2	-	-	2.51	-	-
Pot Cap-1 Maneuver	314	275	786	340	275	686	1122	-	-	963	-	-
Stage 1	506	546	-	598	596	-	-	-	-	-	-	-
Stage 2	765	596	-	713	541	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	293	265	786	318	265	686	1122	-	-	963	-	-
Mov Cap-2 Maneuver	293	265	-	318	265	-	-	-	-	-	-	-
Stage 1	504	527	-	596	594	-	-	-	-	-	-	-
Stage 2	732	594	-	662	522	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	12.1	0.1	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1122	-	-	438	545	963	-	-
HCM Lane V/C Ratio	0.002	-	-	0.13	0.065	0.026	-	-
HCM Control Delay (s)	8.2	0	-	14.4	12.1	8.8	0.1	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	138	1	0	0
Future Vol, veh/h	0	0	138	1	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	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	25	92	76	25	92	25
Heavy Vehicles, %	100	2	35	100	2	100
Mvmt Flow	0	0	182	4	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	186	-	-	0	-	184
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.1	-	-	-	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.1	-	-	-	-	4.2
Pot Cap-1 Maneuver	966	0	-	-	0	659
Stage 1	-	0	-	-	0	-
Stage 2	-	0	-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	966	-	-	-	-	659
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	WBT	WBR	SBLn1
Capacity (veh/h)	966	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	0	-	-	0
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	135	3	0	0
Future Vol, veh/h	3	0	135	3	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	25	50	69	50	92	92
Heavy Vehicles, %	0	0	33	0	2	2
Mvmt Flow	12	0	196	6	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	202	0	-	0	223	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	4.1	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1382	-	-	-	765	842
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	999	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1382	-	-	-	758	842
Mov Cap-2 Maneuver	-	-	-	-	758	-
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	990	-

Approach	EB	WB	SB
HCM Control Delay, s	7.6	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1382	-	-	-	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	7.6	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	4	0	4	26	1	6
Future Vol, veh/h	4	0	4	26	1	6
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	54	38	63	25	25	25
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	7	0	6	104	4	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	7	0	124	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	117	-
Critical Hdwy	-	-	4.12	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1614	-	876	1081
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	913	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1614	-	872	1081
Mov Cap-2 Maneuver	-	-	-	-	872	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	909	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0.4	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1045	-	-	1614	-
HCM Lane V/C Ratio	0.027	-	-	0.004	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	3	71	9	9	144	28	0	0	15	10
Future Vol, veh/h	4	0	3	71	9	9	144	28	0	0	15	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	0	-	100	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	58	78	75	42	80	53	92	92	73	50
Heavy Vehicles, %	2	2	0	22	10	13	30	5	2	2	0	0
Mvmt Flow	4	0	5	91	12	21	180	53	0	0	21	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	461	-	31	444	454	53	41	0	-	-	-	0
Stage 1	31	-	-	413	413	-	-	-	-	-	-	-
Stage 2	430	-	-	31	41	-	-	-	-	-	-	-
Critical Hdwy	7.12	-	6.2	7.32	6.6	6.33	4.4	-	-	-	-	-
Critical Hdwy Stg 1	6.12	-	-	6.32	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	6.32	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	-	3.3	3.698	4.09	3.417	2.47	-	-	-	-	-
Pot Cap-1 Maneuver	511	0	1049	492	490	984	1406	-	0	0	-	-
Stage 1	986	0	-	579	580	-	-	-	0	0	-	-
Stage 2	603	0	-	937	845	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	440	-	1049	440	425	984	1406	-	-	-	-	-
Mov Cap-2 Maneuver	440	-	-	440	425	-	-	-	-	-	-	-
Stage 1	856	-	-	503	503	-	-	-	-	-	-	-
Stage 2	500	-	-	932	845	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	15	6.1	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	WBLn1	SBT	SBR
Capacity (veh/h)	1406	-	440	1049	484	-	-
HCM Lane V/C Ratio	0.128	-	0.01	0.005	0.257	-	-
HCM Control Delay (s)	7.9	0	13.3	8.4	15	-	-
HCM Lane LOS	A	A	B	A	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0	0	1	-	-

Intersection	
Int Delay, s/veh	9.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	122	0	34	0	0	50	4	32	1	3	21	17
Future Vol, veh/h	122	0	34	0	0	50	4	32	1	3	21	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	43	92	44	33	92	83	55	58	92	69	63	62
Heavy Vehicles, %	0	0	0	100	2	95	0	4	2	64	5	1
Mvmt Flow	284	0	77	0	0	60	7	55	1	4	33	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	156	127	47	164	139	56	61	0	0	56	0	0
Stage 1	56	56	-	70	70	-	-	-	-	-	-	-
Stage 2	100	71	-	94	69	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	8.1	6.52	7.15	4.1	-	-	4.74	-	-
Critical Hdwy Stg 1	6.1	5.5	-	7.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	7.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	4.4	4.018	4.155	2.2	-	-	2.776	-	-
Pot Cap-1 Maneuver	815	767	1028	624	752	801	1555	-	-	1231	-	-
Stage 1	961	852	-	744	837	-	-	-	-	-	-	-
Stage 2	911	840	-	720	837	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	749	761	1028	574	746	801	1555	-	-	1231	-	-
Mov Cap-2 Maneuver	749	761	-	574	746	-	-	-	-	-	-	-
Stage 1	956	849	-	740	833	-	-	-	-	-	-	-
Stage 2	838	836	-	664	834	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.2	9.9	0.8	0.5
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1555	-	-	795	801	1231	-	-
HCM Lane V/C Ratio	0.005	-	-	0.454	0.075	0.004	-	-
HCM Control Delay (s)	7.3	0	-	13.2	9.9	7.9	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.4	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	0	33	54	1	4	0
Future Vol, veh/h	0	33	54	1	4	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	92	55	70	100	75	25
Heavy Vehicles, %	0	0	10	40	0	0
Mvmt Flow	0	60	77	1	5	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	78	0	-	0	138	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	60	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1533	-	-	-	860	988
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	968	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1533	-	-	-	860	988
Mov Cap-2 Maneuver	-	-	-	-	860	-
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	968	-

Approach	NB	SB	NE
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	860	1533	-	-	-
HCM Lane V/C Ratio	0.006	-	-	-	-
HCM Control Delay (s)	9.2	0	-	-	-
HCM Lane LOS	A	A	-	-	-
HCM 95th %tile Q(veh)	0	0	-	-	-

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	0	248	1	16	265	0	36	0	48	0	0	1
Future Vol, veh/h	0	248	1	16	265	0	36	0	48	0	0	1
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	25	85	25	58	87	25	75	25	60	92	92	25
Heavy Vehicles, %	0	13	0	29	11	0	90	0	50	0	0	100
Mvmt Flow	0	292	4	28	305	0	48	0	80	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	305	0	0	296	0	0	656	654	294	694	656	305
Stage 1	-	-	-	-	-	-	294	294	-	360	360	-
Stage 2	-	-	-	-	-	-	362	360	-	334	296	-
Critical Hdwy	4.1	-	-	4.39	-	-	8	6.5	6.7	7.1	6.5	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	7	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.461	-	-	4.31	4	3.75	3.5	4	4.2
Pot Cap-1 Maneuver	1267	-	-	1126	-	-	281	389	645	360	388	553
Stage 1	-	-	-	-	-	-	559	673	-	662	630	-
Stage 2	-	-	-	-	-	-	509	630	-	684	672	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1267	-	-	1126	-	-	273	377	645	308	376	553
Mov Cap-2 Maneuver	-	-	-	-	-	-	273	377	-	308	376	-
Stage 1	-	-	-	-	-	-	559	673	-	662	611	-
Stage 2	-	-	-	-	-	-	490	611	-	599	672	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	17	11.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	427	1267	-	-	1126	-	-	553
HCM Lane V/C Ratio	0.3	-	-	-	0.024	-	-	0.007
HCM Control Delay (s)	17	0	-	-	8.3	0	-	11.6
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	1.2	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	30	71	178	16	62	241
Future Vol, veh/h	30	71	178	16	62	241
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	82	69	86	25	93	89
Heavy Vehicles, %	9	0	7	0	2	2
Mvmt Flow	37	103	207	64	67	271

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	643	239	0	0	271	0
Stage 1	239	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Critical Hdwy	6.49	6.2	-	-	4.12	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.3	-	-	2.218	-
Pot Cap-1 Maneuver	427	805	-	-	1292	-
Stage 1	785	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	401	805	-	-	1292	-
Mov Cap-2 Maneuver	401	-	-	-	-	-
Stage 1	785	-	-	-	-	-
Stage 2	619	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	12.2	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	637	1292	-
HCM Lane V/C Ratio	-	-	0.219	0.052	-
HCM Control Delay (s)	-	-	12.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-

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	8	0	1	0	3	2	28	234	0	0	179	2
Future Vol, veh/h	8	0	1	0	3	2	28	234	0	0	179	2
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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	92	25	92	92	92	75	88	92	25	81	58
Heavy Vehicles, %	0	0	0	2	2	2	4	8	2	0	20	29
Mvmt Flow	32	0	4	0	3	2	37	266	0	0	221	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	566	564	223	566	565	266	224	0	0	266	0	0
Stage 1	223	223	-	341	341	-	-	-	-	-	-	-
Stage 2	343	341	-	225	224	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.12	6.52	6.22	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.518	4.018	3.318	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	438	438	822	435	434	773	1333	-	-	1310	-	-
Stage 1	784	723	-	674	639	-	-	-	-	-	-	-
Stage 2	676	642	-	778	718	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	423	424	822	422	420	773	1333	-	-	1310	-	-
Mov Cap-2 Maneuver	423	424	-	422	420	-	-	-	-	-	-	-
Stage 1	758	723	-	652	618	-	-	-	-	-	-	-
Stage 2	648	621	-	774	718	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.8	12.1	1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1333	-	-	447	514	1310	-	-
HCM Lane V/C Ratio	0.028	-	-	0.081	0.011	-	-	-
HCM Control Delay (s)	7.8	0	-	13.8	12.1	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0	0	-	-

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	3	0	0	10	0	16	1	243	14	21	156	3
Future Vol, veh/h	3	0	0	10	0	16	1	243	14	21	156	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	25	25	75	25	62	92	86	63	50	64	25
Heavy Vehicles, %	0	0	0	0	0	0	0	24	0	0	36	0
Mvmt Flow	4	0	0	13	0	26	1	283	22	42	244	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	643	641	250	630	636	294	256	0	0	305	0	0
Stage 1	334	334	-	296	296	-	-	-	-	-	-	-
Stage 2	309	307	-	334	340	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	389	395	794	397	398	750	1321	-	-	1267	-	-
Stage 1	684	647	-	717	672	-	-	-	-	-	-	-
Stage 2	705	665	-	684	643	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	364	379	794	385	382	750	1321	-	-	1267	-	-
Mov Cap-2 Maneuver	364	379	-	385	382	-	-	-	-	-	-	-
Stage 1	683	622	-	716	671	-	-	-	-	-	-	-
Stage 2	680	664	-	657	618	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	11.8	0	1.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1321	-	-	364	567	1267	-	-
HCM Lane V/C Ratio	0.001	-	-	0.011	0.069	0.033	-	-
HCM Control Delay (s)	7.7	0	-	15	11.8	7.9	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	82	108	0	0	208
Future Vol, veh/h	4	82	108	0	0	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	69	82	92	92	93
Heavy Vehicles, %	25	21	28	2	2	36
Mvmt Flow	6	119	132	0	0	224

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	356	132	0	-	-	-
Stage 1	132	-	-	-	-	-
Stage 2	224	-	-	-	-	-
Critical Hdwy	6.65	6.41	-	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.489	-	-	-	-
Pot Cap-1 Maneuver	599	869	-	0	0	-
Stage 1	840	-	-	0	0	-
Stage 2	762	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	599	869	-	-	-	-
Mov Cap-2 Maneuver	599	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	762	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	913	-
HCM Lane V/C Ratio	-	0.137	-
HCM Control Delay (s)	-	9.6	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0.5	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	11	4	10	80	24	57	131	21	1	0
Future Vol, veh/h	11	4	10	80	24	57	131	21	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Free	-	-	None	-	-
Storage Length	0	-	-	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	75	25	25	90	62	78	86	67	25	25
Heavy Vehicles, %	0	0	0	6	0	57	7	0	2	2
Mvmt Flow	15	16	40	89	39	73	152	31	4	0

Major/Minor	Minor2		Major1			Major2			Minor1	
Conflicting Flow All	492	168	184	0	-	89	0	0	498	89
Stage 1	314	-	-	-	-	-	-	-	169	-
Stage 2	178	-	-	-	-	-	-	-	329	-
Critical Hdwy	7.1	6.2	4.1	-	-	4.67	-	-	7.12	6.22
Critical Hdwy Stg 1	6.1	-	-	-	-	-	-	-	6.12	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-	-	-	6.12	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	2.713	-	-	3.518	3.318
Pot Cap-1 Maneuver	490	881	1403	-	0	1222	-	-	483	969
Stage 1	701	-	-	-	0	-	-	-	833	-
Stage 2	828	-	-	-	0	-	-	-	684	-
Platoon blocked, %				-			-	-		
Mov Cap-1 Maneuver	446	881	1403	-	-	1222	-	-	429	969
Mov Cap-2 Maneuver	446	-	-	-	-	-	-	-	429	-
Stage 1	680	-	-	-	-	-	-	-	808	-
Stage 2	789	-	-	-	-	-	-	-	612	-

Approach	EB	NB	SB	SW
HCM Control Delay, s	11.4	2.4	2.3	9.7
HCM LOS	B			A

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBL	SBT	SBR	SWLn1
Capacity (veh/h)	1403	-	596	1222	-	-	784
HCM Lane V/C Ratio	0.029	-	0.051	0.06	-	-	0.027
HCM Control Delay (s)	7.6	0	11.4	8.1	0	-	9.7
HCM Lane LOS	A	A	B	A	A	-	A
HCM 95th %tile Q(veh)	0.1	-	0.2	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	84	25	0	27
Future Vol, veh/h	0	0	84	25	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	88	63	92	67
Heavy Vehicles, %	2	2	18	0	2	0
Mvmt Flow	0	0	95	40	0	40

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	-	115
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	943
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	-	943
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	9
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	943
HCM Lane V/C Ratio	-	-	0.043
HCM Control Delay (s)	-	-	9
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	113	0	4	132
Future Vol, veh/h	0	1	113	0	4	132
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	25	50	87	25	25	84
Heavy Vehicles, %	0	0	1	0	0	7
Mvmt Flow	0	2	130	0	16	157

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	319	130	0	0	130	0
Stage 1	130	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	7.1	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.1	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	638	925	-	-	1468	-
Stage 1	878	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	632	925	-	-	1468	-
Mov Cap-2 Maneuver	632	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	807	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	925	1468	-
HCM Lane V/C Ratio	-	-	0.002	0.011	-
HCM Control Delay (s)	-	-	8.9	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	30	0
Future Vol, veh/h	0	0	0	0	30	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Yield	Yield	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	0	-
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	0	-	0	-	0	-
Peak Hour Factor	92	92	92	92	79	92
Heavy Vehicles, %	2	2	2	2	32	0
Mvmt Flow	0	0	0	0	38	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0
Stage 1	0	-	-	0
Stage 2	0	-	-	0
Platoon blocked, %				
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	NB	SE
HCM Control Delay, s	0	
HCM LOS	A	

Minor Lane/Major Mvmt	NBLn1	SEL
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	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	251	36	13	298	7	55	0	16	1	0	11
Future Vol, veh/h	7	251	36	13	298	7	55	0	16	1	0	11
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	92	83	78	92	67	83	66	92	65	92	92	92
Heavy Vehicles, %	2	4	6	0	3	5	6	2	8	2	2	2
Mvmt Flow	8	302	46	14	445	8	83	0	25	1	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	453	0	0	349	0	0	592	822	174	643	841	227
Stage 1	-	-	-	-	-	-	341	341	-	477	477	-
Stage 2	-	-	-	-	-	-	251	481	-	166	364	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.62	6.54	7.06	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.62	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.62	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.2	-	-	3.56	4.02	3.38	3.52	4.02	3.32
Pot Cap-1 Maneuver	1104	-	-	1221	-	-	382	307	821	358	300	776
Stage 1	-	-	-	-	-	-	636	637	-	538	554	-
Stage 2	-	-	-	-	-	-	720	552	-	820	622	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1104	-	-	1221	-	-	369	300	821	341	293	776
Mov Cap-2 Maneuver	-	-	-	-	-	-	369	300	-	341	293	-
Stage 1	-	-	-	-	-	-	630	631	-	533	546	-
Stage 2	-	-	-	-	-	-	698	544	-	788	616	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	16.4	10.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	422	1104	-	-	1221	-	-	701
HCM Lane V/C Ratio	0.256	0.007	-	-	0.012	-	-	0.019
HCM Control Delay (s)	16.4	8.3	0	-	8	0.1	-	10.2
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1	0	-	-	0	-	-	0.1

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	1	0	1	0	0	0	0	68	0	0	47	0
Future Vol, veh/h	1	0	1	0	0	0	0	68	0	0	47	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	38	92	92	92	25	73	92	92	75	92
Heavy Vehicles, %	2	2	0	2	2	2	2	7	0	2	6	2
Mvmt Flow	1	0	3	0	0	0	0	93	0	0	63	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	156	156	63	157	156	93	63	0	0	93	0	0
Stage 1	63	63	-	93	93	-	-	-	-	-	-	-
Stage 2	93	93	-	64	63	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.2	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.3	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	810	736	1007	809	736	964	1540	-	-	1501	-	-
Stage 1	948	842	-	914	818	-	-	-	-	-	-	-
Stage 2	914	818	-	947	842	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	810	736	1007	807	736	964	1540	-	-	1501	-	-
Mov Cap-2 Maneuver	810	736	-	807	736	-	-	-	-	-	-	-
Stage 1	948	842	-	914	818	-	-	-	-	-	-	-
Stage 2	914	818	-	945	842	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1540	-	-	940	-	1501	-	-
HCM Lane V/C Ratio	-	-	-	0.004	-	-	-	-
HCM Control Delay (s)	0	-	-	8.8	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

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	1	1	1	7	0	9	1	58	0	1	46	1
Future Vol, veh/h	1	1	1	7	0	9	1	58	0	1	46	1
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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	92	92	92	92	25	30	70	50	38	68	50
Heavy Vehicles, %	0	2	2	2	2	0	0	2	0	0	4	0
Mvmt Flow	4	1	1	8	0	36	3	83	0	3	68	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	182	164	69	165	165	83	70	0	0	83	0	0
Stage 1	74	74	-	90	90	-	-	-	-	-	-	-
Stage 2	108	90	-	75	75	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.22	7.12	6.52	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.318	3.518	4.018	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	784	729	994	800	728	982	1544	-	-	1527	-	-
Stage 1	940	833	-	917	820	-	-	-	-	-	-	-
Stage 2	902	820	-	934	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	753	726	994	796	725	982	1544	-	-	1527	-	-
Mov Cap-2 Maneuver	753	726	-	796	725	-	-	-	-	-	-	-
Stage 1	938	831	-	915	818	-	-	-	-	-	-	-
Stage 2	867	818	-	930	831	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	9	0.3	0.3
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1544	-	-	781	944	1527	-	-
HCM Lane V/C Ratio	0.002	-	-	0.008	0.046	0.002	-	-
HCM Control Delay (s)	7.3	0	-	9.6	9	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Traffic Vol, veh/h	2	4	12	55	0	0	47	7	0	0
Future Vol, veh/h	2	4	12	55	0	0	47	7	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	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	-	0	-
Peak Hour Factor	31	88	50	67	25	92	86	45	92	92
Heavy Vehicles, %	100	0	2	2	2	2	5	0	2	2
Mvmt Flow	6	5	24	82	0	0	55	16	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	192	82	70	0	-	-	-	0
Stage 1	130	-	-	-	-	-	-	-
Stage 2	62	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.2	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	772	983	1531	-	0	0	-	-
Stage 1	878	-	-	-	0	0	-	-
Stage 2	954	-	-	-	0	0	-	-
Platoon blocked, %				-			-	-
Mov Cap-1 Maneuver	763	983	1531	-	-	-	-	-
Mov Cap-2 Maneuver	763	-	-	-	-	-	-	-
Stage 1	864	-	-	-	-	-	-	-
Stage 2	954	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	1.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1531	-	698	-	-
HCM Lane V/C Ratio	0.016	-	0.024	-	-
HCM Control Delay (s)	7.4	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	0	11	0	48	11	12	39	0	0	0
Future Vol, veh/h	0	11	0	48	11	12	39	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Yield	-	-	None	-	-
Storage Length	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	44	50	25	81	25	70	45	25	92	92
Heavy Vehicles, %	86	0	0	0	0	7	0	0	2	2
Mvmt Flow	0	22	0	59	44	17	87	0	0	0

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	180	87	87	0	0	59	0	0
Stage 1	121	-	-	-	-	-	-	-
Stage 2	59	-	-	-	-	-	-	-
Critical Hdwy	6.48	6.2	4.1	-	-	4.17	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	3.3	2.2	-	-	2.263	-	-
Pot Cap-1 Maneuver	796	977	1522	-	-	1513	-	-
Stage 1	890	-	-	-	-	-	-	-
Stage 2	948	-	-	-	-	-	-	-
Platoon blocked, %				-	-		-	-
Mov Cap-1 Maneuver	786	977	1522	-	-	1513	-	-
Mov Cap-2 Maneuver	786	-	-	-	-	-	-	-
Stage 1	879	-	-	-	-	-	-	-
Stage 2	948	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1522	-	-	868	1513	-	-
HCM Lane V/C Ratio	-	-	-	0.052	0.011	-	-
HCM Control Delay (s)	0	-	-	9.4	7.4	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	0	57	50	0	2	0
Future Vol, veh/h	0	57	50	0	2	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	25	79	65	75	25	25
Heavy Vehicles, %	0	3	0	5	0	0
Mvmt Flow	0	72	77	0	8	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	77	0	-	0	149	77
Stage 1	-	-	-	-	77	-
Stage 2	-	-	-	-	72	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1535	-	-	-	848	990
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	956	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1535	-	-	-	848	990
Mov Cap-2 Maneuver	-	-	-	-	848	-
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	956	-

Approach	NB	SB	NE
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	848	1535	-	-	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	9.3	0	-	-	-
HCM Lane LOS	A	A	-	-	-
HCM 95th %tile Q(veh)	0	0	-	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	25	32	8	25	25
Future Vol, veh/h	7	25	32	8	25	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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	52	38	62	50	62
Heavy Vehicles, %	0	4	0	0	8	0
Mvmt Flow	14	48	52	6	50	40

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	195	55	0	0	59	0
Stage 1	55	-	-	-	-	-
Stage 2	140	-	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.18	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.272	-
Pot Cap-1 Maneuver	798	1006	-	-	1507	-
Stage 1	973	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	771	1006	-	-	1507	-
Mov Cap-2 Maneuver	771	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	862	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	4.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	941	1507	-
HCM Lane V/C Ratio	-	-	0.066	0.033	-
HCM Control Delay (s)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

2040 NO BUILD CONDITIONS
SYNCHRO HCM ANALYSIS

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	0	0	416	0	54	10
Future Volume (Veh/h)	0	0	416	0	54	10
Sign Control		Stop	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.76	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	547	0	59	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	397	124	129	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	397	124	129	0	0	
tC, single (s)	7.1	6.5	6.6	6.2	4.4	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.1	3.3	2.4	
p0 queue free %	100	100	24	100	96	
cM capacity (veh/h)	207	736	721	1091	1479	

Direction, Lane #	WB 1	SE 1
Volume Total	547	70
Volume Left	0	59
Volume Right	0	11
cSH	721	1479
Volume to Capacity	0.76	0.04
Queue Length 95th (ft)	178	3
Control Delay (s)	23.9	6.4
Lane LOS	C	A
Approach Delay (s)	23.9	6.4
Approach LOS	C	

Intersection Summary			
Average Delay	21.9		
Intersection Capacity Utilization	32.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	0	0	23	32	416	48	0	0
Future Vol, veh/h	0	0	23	32	416	48	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None
Storage Length	100	0	-	-	-	100	-	-
Veh in Median Storage, #	0	-	-	0	0	-	-	-
Grade, %	0	-	-	0	0	-	0	-
Peak Hour Factor	92	92	90	90	90	90	92	92
Heavy Vehicles, %	2	2	0	45	8	11	2	2
Mvmt Flow	0	0	26	36	462	53	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1065	53	53	0	0	0
Stage 1	978	-	-	-	-	-
Stage 2	87	-	-	-	-	-
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	246	1014	-	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	172	1014	-	-	-	-
Mov Cap-2 Maneuver	172	-	-	-	-	-
Stage 1	255	-	-	-	-	-
Stage 2	936	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0		7.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	SBR2
Capacity (veh/h)	-	-	-	-	1537	-	-
HCM Lane V/C Ratio	-	-	-	-	0.301	-	-
HCM Control Delay (s)	-	-	0	0	8.3	-	-
HCM Lane LOS	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-	1.3	-	-

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	32	64	0	8	299	55	8	0	226	164
Future Vol, veh/h	0	0	32	64	0	8	299	55	8	0	226	164
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	-	-	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	0	2	2	2	2	2	2
Mvmt Flow	0	0	35	70	0	9	325	60	9	0	246	178

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1053	1053	335	1066	1138	64	424	0	0	68	0	0
Stage 1	335	335	-	714	714	-	-	-	-	-	-	-
Stage 2	718	718	-	352	424	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.2	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	204	226	707	200	201	1006	1135	-	-	1533	-	-
Stage 1	679	643	-	422	435	-	-	-	-	-	-	-
Stage 2	420	433	-	665	587	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	156	159	707	146	141	1006	1135	-	-	1533	-	-
Mov Cap-2 Maneuver	156	159	-	146	141	-	-	-	-	-	-	-
Stage 1	477	643	-	296	305	-	-	-	-	-	-	-
Stage 2	292	304	-	632	587	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	46.9	7.8	0
HCM LOS	B	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1135	-	-	707	161	1533	-	-
HCM Lane V/C Ratio	0.286	-	-	0.049	0.486	-	-	-
HCM Control Delay (s)	9.4	0	-	10.4	46.9	0	-	-
HCM Lane LOS	A	A	-	B	E	A	-	-
HCM 95th %tile Q(veh)	1.2	-	-	0.2	2.3	0	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	1	142	0	270	156	40	282	0	0	0
Future Vol, veh/h	1	142	0	270	156	40	282	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Yield	-	-	None	-	-
Storage Length	0	-	-	-	0	200	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	154	0	293	170	43	307	0	0	0

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	686	307	-	0	0	293	0	0
Stage 1	393	-	-	-	-	-	-	-
Stage 2	293	-	-	-	-	-	-	-
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	413	733	0	-	-	1269	-	0
Stage 1	682	-	0	-	-	-	-	0
Stage 2	757	-	0	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	399	733	-	-	-	1269	-	-
Mov Cap-2 Maneuver	399	-	-	-	-	-	-	-
Stage 1	659	-	-	-	-	-	-	-
Stage 2	757	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.1	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	551	1269	-
HCM Lane V/C Ratio	-	-	0.464	0.034	-
HCM Control Delay (s)	-	-	17.1	7.9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	2.4	0.1	-

Intersection	
Int Delay, s/veh	36

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	258	180	250	168	223	201
Future Vol, veh/h	258	180	250	168	223	201
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	300	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	6	3	7	5	11
Mvmt Flow	280	196	272	183	242	218

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	272	0	-	0	1029	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	757	-
Critical Hdwy	4.23	-	-	-	6.45	6.31
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.317	-	-	-	3.545	3.399
Pot Cap-1 Maneuver	1230	-	-	-	256	746
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	458	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1230	-	-	-	~ 198	746
Mov Cap-2 Maneuver	-	-	-	-	~ 198	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	354	-

Approach	EB	WB	SB
HCM Control Delay, s	5.2	0	103.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1230	-	-	-	198	746
HCM Lane V/C Ratio	0.228	-	-	-	1.224	0.293
HCM Control Delay (s)	8.8	-	-	-	185.7	11.8
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.9	-	-	-	12.7	1.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	400	414	0	1	4
Future Vol, veh/h	3	400	414	0	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	50	5	3	0	100	33
Mvmt Flow	3	435	450	0	1	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	450	0	-	0	891	450
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	441	-
Critical Hdwy	4.6	-	-	-	7.4	6.53
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	2.65	-	-	-	4.4	3.597
Pot Cap-1 Maneuver	898	-	-	-	215	549
Stage 1	-	-	-	-	478	-
Stage 2	-	-	-	-	483	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	898	-	-	-	214	549
Mov Cap-2 Maneuver	-	-	-	-	214	-
Stage 1	-	-	-	-	478	-
Stage 2	-	-	-	-	481	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	898	-	-	-	418
HCM Lane V/C Ratio	0.004	-	-	-	0.013
HCM Control Delay (s)	9	-	-	-	13.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	432	435	16	6	0
Future Vol, veh/h	3	432	435	16	6	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	90	90	90	90	90	92
Heavy Vehicles, %	0	4	2	73	75	0
Mvmt Flow	3	480	483	18	7	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	501	0	-	0	979	492
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	487	-
Critical Hdwy	4.1	-	-	-	7.15	6.2
Critical Hdwy Stg 1	-	-	-	-	6.15	-
Critical Hdwy Stg 2	-	-	-	-	6.15	-
Follow-up Hdwy	2.2	-	-	-	4.175	3.3
Pot Cap-1 Maneuver	1074	-	-	-	206	581
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	491	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1074	-	-	-	205	581
Mov Cap-2 Maneuver	-	-	-	-	317	-
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	489	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1074	-	-	-	317
HCM Lane V/C Ratio	0.003	-	-	-	0.021
HCM Control Delay (s)	8.4	0	-	-	16.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	346	324	110	88	5
Future Vol, veh/h	8	346	324	110	88	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	90	90	90	90	90	90
Heavy Vehicles, %	0	6	3	1	2	25
Mvmt Flow	9	384	360	122	98	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	482	0	-	0	823	421
Stage 1	-	-	-	-	421	-
Stage 2	-	-	-	-	402	-
Critical Hdwy	4.1	-	-	-	6.42	6.45
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.525
Pot Cap-1 Maneuver	1091	-	-	-	343	586
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	676	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1091	-	-	-	340	586
Mov Cap-2 Maneuver	-	-	-	-	459	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1091	-	-	-	464
HCM Lane V/C Ratio	0.008	-	-	-	0.223
HCM Control Delay (s)	8.3	0	-	-	15
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.8

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	328	315	14	26	26
Future Vol, veh/h	27	328	315	14	26	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	6	4	0	0	0
Mvmt Flow	30	364	350	16	29	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	366	0	-	0	782	358
Stage 1	-	-	-	-	358	-
Stage 2	-	-	-	-	424	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1204	-	-	-	366	691
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	664	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1204	-	-	-	357	691
Mov Cap-2 Maneuver	-	-	-	-	472	-
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	647	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1204	-	-	-	561
HCM Lane V/C Ratio	0.025	-	-	-	0.103
HCM Control Delay (s)	8.1	-	-	-	12.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	171	4	2	323
Future Vol, veh/h	4	0	171	4	2	323
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	90	92	90	90	90	90
Heavy Vehicles, %	50	0	1	50	0	2
Mvmt Flow	4	0	190	4	2	359

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	555	192	0	0	194	0
Stage 1	192	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Critical Hdwy	6.9	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	420	855	-	-	1391	-
Stage 1	738	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	419	855	-	-	1391	-
Mov Cap-2 Maneuver	419	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	608	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	419	1391	-
HCM Lane V/C Ratio	-	-	0.011	0.002	-
HCM Control Delay (s)	-	-	13.7	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	2	171	0	0	319
Future Vol, veh/h	6	2	171	0	0	319
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	90	90	90	25	25	90
Heavy Vehicles, %	100	0	1	0	0	1
Mvmt Flow	7	2	190	0	0	354

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	544	190	0	0	190	0
Stage 1	190	-	-	-	-	-
Stage 2	354	-	-	-	-	-
Critical Hdwy	7.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	366	857	-	-	1396	-
Stage 1	654	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	366	857	-	-	1396	-
Mov Cap-2 Maneuver	366	-	-	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	537	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	427	1396	-
HCM Lane V/C Ratio	-	-	0.021	-	-
HCM Control Delay (s)	-	-	13.6	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	121	2	0	0
Future Vol, veh/h	0	0	121	2	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	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	90	90	92	92
Heavy Vehicles, %	2	2	7	0	2	2
Mvmt Flow	0	0	134	2	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	137	-	-	0	-	136
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1447	0	-	-	0	913
Stage 1	-	0	-	-	0	-
Stage 2	-	0	-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1447	-	-	-	-	913
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	WBT	WBR	SBLn1
Capacity (veh/h)	1447	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	0	-	-	0
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	0	119	2	0	11
Future Vol, veh/h	6	0	119	2	0	11
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	90	90	90	90	25	90
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	7	0	132	2	0	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	134	0	-	0	146	133
Stage 1	-	-	-	-	133	-
Stage 2	-	-	-	-	13	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1463	-	-	-	851	922
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	1015	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1463	-	-	-	847	922
Mov Cap-2 Maneuver	-	-	-	-	847	-
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s	7.5	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1463	-	-	-	922
HCM Lane V/C Ratio	0.005	-	-	-	0.013
HCM Control Delay (s)	7.5	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱		Y	
Traffic Vol, veh/h	0	6	128	0	0	4
Future Vol, veh/h	0	6	128	0	0	4
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	25	90	90	25	25	90
Heavy Vehicles, %	0	0	5	0	0	50
Mvmt Flow	0	7	142	0	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	142	0	-	0	149	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	7	-
Critical Hdwy	4.1	-	-	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.75
Pot Cap-1 Maneuver	1453	-	-	-	848	793
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	1021	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1453	-	-	-	848	793
Mov Cap-2 Maneuver	-	-	-	-	848	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	1021	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1453	-	-	-	793
HCM Lane V/C Ratio	-	-	-	-	0.006
HCM Control Delay (s)	0	-	-	-	9.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

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	11	65	13	56	189	119	6	0	275	52
Future Vol, veh/h	0	0	11	65	13	56	189	119	6	0	275	52
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	-	-	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	0	0	12	71	14	61	205	129	7	0	299	57

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	908	874	327	876	898	133	355	0	0	136	0	0
Stage 1	327	327	-	543	543	-	-	-	-	-	-	-
Stage 2	581	547	-	333	355	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	256	288	714	269	279	916	1204	-	-	1448	-	-
Stage 1	686	648	-	524	520	-	-	-	-	-	-	-
Stage 2	499	517	-	681	630	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	196	235	714	227	228	916	1204	-	-	1448	-	-
Mov Cap-2 Maneuver	196	235	-	227	228	-	-	-	-	-	-	-
Stage 1	560	648	-	428	424	-	-	-	-	-	-	-
Stage 2	367	422	-	670	630	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	24.2	5.2	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1204	-	-	714	331	1448	-	-
HCM Lane V/C Ratio	0.171	-	-	0.017	0.44	-	-	-
HCM Control Delay (s)	8.6	0	-	10.1	24.2	0	-	-
HCM Lane LOS	A	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	2.2	0	-	-

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	369	0	312	277	0
Future Vol, veh/h	30	369	0	312	277	0
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	92	92	92	92	92	92
Heavy Vehicles, %	14	3	2	2	2	2
Mvmt Flow	33	401	0	339	301	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	640	301	-	0	-	0
Stage 1	301	-	-	-	-	-
Stage 2	339	-	-	-	-	-
Critical Hdwy	6.54	6.23	-	-	-	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.327	-	-	-	-
Pot Cap-1 Maneuver	421	736	0	-	-	0
Stage 1	724	-	0	-	-	0
Stage 2	696	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	421	736	-	-	-	-
Mov Cap-2 Maneuver	421	-	-	-	-	-
Stage 1	724	-	-	-	-	-
Stage 2	696	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	697	-
HCM Lane V/C Ratio	-	0.622	-
HCM Control Delay (s)	-	18.3	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	4.4	-

Intersection	
Int Delay, s/veh	0.9

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	113	14	5	165	22	3
Future Vol, veh/h	113	14	5	165	22	3
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	90	90	90	90	90	90
Heavy Vehicles, %	9	0	50	12	7	0
Mvmt Flow	126	16	6	183	24	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	141	0	327	133
Stage 1	-	-	-	-	133	-
Stage 2	-	-	-	-	194	-
Critical Hdwy	-	-	4.6	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.65	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1194	-	657	922
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1194	-	653	922
Mov Cap-2 Maneuver	-	-	-	-	653	-
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	822	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.2	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1194	-	677
HCM Lane V/C Ratio	-	-	0.005	-	0.041
HCM Control Delay (s)	-	-	8	0	10.5
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	2.5

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	124	22	0	187	94	3
Future Vol, veh/h	124	22	0	187	94	3
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	90	90	90	90	90	90
Heavy Vehicles, %	6	0	0	2	0	0
Mvmt Flow	138	24	0	208	104	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	162	0	358	150
Stage 1	-	-	-	-	150	-
Stage 2	-	-	-	-	208	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1429	-	644	902
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	832	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1429	-	644	902
Mov Cap-2 Maneuver	-	-	-	-	684	-
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	832	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1429	-	689
HCM Lane V/C Ratio	-	-	-	-	0.156
HCM Control Delay (s)	-	-	0	-	11.2
HCM Lane LOS	-	-	A	-	B
HCM 95th %tile Q(veh)	-	-	0	-	0.6

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	24	19	0	0	555	26
Future Vol, veh/h	24	19	0	0	555	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	92	92	90	90
Heavy Vehicles, %	24	23	2	2	16	7
Mvmt Flow	27	21	0	0	617	29

Major/Minor	Minor2		Major2	
Conflicting Flow All	631	631	-	0
Stage 1	631	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.64	6.43	-	-
Critical Hdwy Stg 1	5.64	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.716	3.507	-	-
Pot Cap-1 Maneuver	412	445	-	-
Stage 1	491	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	412	445	-	-
Mov Cap-2 Maneuver	412	-	-	-
Stage 1	491	-	-	-
Stage 2	-	-	-	-

Approach	EB	SW
HCM Control Delay, s	14.5	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SWT	SWR
Capacity (veh/h)	426	-	-
HCM Lane V/C Ratio	0.112	-	-
HCM Control Delay (s)	14.5	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-

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	1	21	0	9	38	137	141	27	450	1
Future Vol, veh/h	0	0	1	21	0	9	38	137	141	27	450	1
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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	92	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	89	14	0	0	25	0
Mvmt Flow	0	0	1	23	0	10	42	149	157	30	500	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	878	951	251	622	873	227	501	0	0	306	0	0
Stage 1	561	561	-	312	312	-	-	-	-	-	-	-
Stage 2	317	390	-	310	561	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	6.9	7.3	6.5	6.2	5.435	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	3.0455	-	-	2.2	-	-
Pot Cap-1 Maneuver	258	262	755	388	291	817	681	-	-	1266	-	-
Stage 1	485	513	-	703	661	-	-	-	-	-	-	-
Stage 2	698	611	-	681	513	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	234	234	755	356	260	817	681	-	-	1266	-	-
Mov Cap-2 Maneuver	234	234	-	356	260	-	-	-	-	-	-	-
Stage 1	448	496	-	650	611	-	-	-	-	-	-	-
Stage 2	637	565	-	658	496	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	14.1	1.3	0.5
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	681	-	-	755	429	1266	-	-
HCM Lane V/C Ratio	0.062	-	-	0.001	0.078	0.024	-	-
HCM Control Delay (s)	10.6	-	-	9.8	14.1	7.9	0.1	-
HCM Lane LOS	B	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	0.3	0.1	-	-

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	13	4	67	10	1	2	51	301	8	1	448	23
Future Vol, veh/h	13	4	67	10	1	2	51	301	8	1	448	23
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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	4	0	0	0	0	18	0	0	25	0
Mvmt Flow	14	4	74	11	1	2	57	334	9	1	498	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	967	970	262	705	978	339	523	0	0	343	0	0
Stage 1	513	513	-	452	452	-	-	-	-	-	-	-
Stage 2	454	457	-	253	526	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	6.96	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.338	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	223	255	732	340	252	708	1054	-	-	1227	-	-
Stage 1	517	539	-	591	574	-	-	-	-	-	-	-
Stage 2	589	571	-	735	532	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	210	238	732	285	235	708	1054	-	-	1227	-	-
Mov Cap-2 Maneuver	210	238	-	285	235	-	-	-	-	-	-	-
Stage 1	482	538	-	551	536	-	-	-	-	-	-	-
Stage 2	547	533	-	654	531	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	17.3	1.2	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1054	-	-	493	308	1227	-	-
HCM Lane V/C Ratio	0.054	-	-	0.189	0.047	0.001	-	-
HCM Control Delay (s)	8.6	0	-	14	17.3	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	19	26	10	55	354	300	5	1	307	217
Future Volume (veh/h)	5	0	19	26	10	55	354	300	5	1	307	217
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1459	1900	1900	1667	1900	1900	1593	1439
Adj Flow Rate, veh/h	5	0	21	29	11	61	393	323	5	1	341	241
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	1
Peak Hour Factor	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.93	1.00	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	14	14	14	11	11	11	19	19	32
Cap, veh/h	83	25	255	103	47	150	395	274	4	40	1113	855
Arrive On Green	0.20	0.00	0.20	0.20	0.20	0.20	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	177	124	1266	257	234	748	477	392	6	0	1593	1223
Grp Volume(v), veh/h	26	0	0	101	0	0	721	0	0	342	0	241
Grp Sat Flow(s),veh/h/ln	1567	0	0	1239	0	0	875	0	0	1593	0	1223
Q Serve(g_s), s	0.0	0.0	0.0	1.3	0.0	0.0	55.5	0.0	0.0	0.0	0.0	6.6
Cycle Q Clear(g_c), s	1.2	0.0	0.0	6.1	0.0	0.0	62.9	0.0	0.0	7.4	0.0	6.6
Prop In Lane	0.19		0.81	0.29		0.60	0.55		0.01	0.00		1.00
Lane Grp Cap(c), veh/h	363	0	0	301	0	0	673	0	0	1154	0	855
V/C Ratio(X)	0.07	0.00	0.00	0.34	0.00	0.00	1.07	0.00	0.00	0.30	0.00	0.28
Avail Cap(c_a), veh/h	363	0	0	301	0	0	673	0	0	1154	0	855
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	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.2	0.0	0.0	31.1	0.0	0.0	19.8	0.0	0.0	5.2	0.0	5.1
Incr Delay (d2), s/veh	0.4	0.0	0.0	3.0	0.0	0.0	55.2	0.0	0.0	0.7	0.0	0.8
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	0.6	0.0	0.0	2.4	0.0	0.0	27.0	0.0	0.0	3.4	0.0	2.4
LnGrp Delay(d),s/veh	29.6	0.0	0.0	34.1	0.0	0.0	75.0	0.0	0.0	5.9	0.0	5.9
LnGrp LOS	C			C			F			A		A
Approach Vol, veh/h		26			101			721			583	
Approach Delay, s/veh		29.6			34.1			75.0			5.9	
Approach LOS		C			C			E			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		67.4		22.6		67.4		22.6
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		62.9		18.1		62.9		18.1
Max Q Clear Time (g_c+I1), s		64.9		3.2		9.4		8.1
Green Ext Time (p_c), s		0.0		0.5		14.9		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	43.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	9	224	0	0	0	0	550	94	83	265	4
Future Volume (veh/h)	109	9	224	0	0	0	0	550	94	83	265	4
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1473	1667				1900	1712	1557	1900	1593	1900
Adj Flow Rate, veh/h	121	10	0				0	611	104	92	294	4
Adj No. of Lanes	0	1	1				0	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.92				0.92	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	14	17	14				11	11	22	11	11	11
Cap, veh/h	390	32	425				0	941	728	157	432	5
Arrive On Green	0.30	0.30	0.00				0.00	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	1300	107	1417				0	1712	1324	150	785	10
Grp Volume(v), veh/h	131	0	0				0	611	104	390	0	0
Grp Sat Flow(s),veh/h/ln	1408	0	1417				0	1712	1324	945	0	0
Q Serve(g_s), s	4.3	0.0	0.0				0.0	15.0	2.3	8.0	0.0	0.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0				0.0	15.0	2.3	23.0	0.0	0.0
Prop In Lane	0.92		1.00				0.00		1.00	0.24		0.01
Lane Grp Cap(c), veh/h	422	0	425				0	941	728	594	0	0
V/C Ratio(X)	0.31	0.00	0.00				0.00	0.65	0.14	0.66	0.00	0.00
Avail Cap(c_a), veh/h	422	0	425				0	941	728	594	0	0
HCM Platoon Ratio	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	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.2	0.0	0.0				0.0	9.4	6.6	10.6	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	0.0				0.0	3.5	0.4	5.6	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
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0				0.0	7.9	0.9	6.2	0.0	0.0
LnGrp Delay(d),s/veh	18.1	0.0	0.0				0.0	12.9	7.0	16.2	0.0	0.0
LnGrp LOS	B							B	A	B		
Approach Vol, veh/h		131						715			390	
Approach Delay, s/veh		18.1						12.0			16.2	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.5		22.5		37.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		33.0		18.0		33.0		
Max Q Clear Time (g_c+I1), s		17.0		6.3		25.0		
Green Ext Time (p_c), s		6.9		0.5		4.4		

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

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	17	0	17	4	0	46	4	581	76	56	433	0
Future Vol, veh/h	17	0	17	4	0	46	4	581	76	56	433	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	92	90	90	92	90	90	90	90	90	92	92
Heavy Vehicles, %	8	0	0	0	2	44	0	11	8	31	10	2
Mvmt Flow	19	0	19	4	0	51	4	646	84	62	471	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	927	1334	235	1057	1292	365	471	0	0	730	0	0
Stage 1	595	595	-	697	697	-	-	-	-	-	-	-
Stage 2	332	739	-	360	595	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.5	6.9	7.5	6.54	7.78	4.1	-	-	4.72	-	-
Critical Hdwy Stg 1	6.66	5.5	-	6.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.5	-	6.5	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4	3.3	3.5	4.02	3.74	2.2	-	-	2.51	-	-
Pot Cap-1 Maneuver	214	155	773	182	162	526	1101	-	-	703	-	-
Stage 1	443	496	-	402	441	-	-	-	-	-	-	-
Stage 2	639	427	-	636	491	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	175	136	773	161	142	526	1101	-	-	703	-	-
Mov Cap-2 Maneuver	175	136	-	161	142	-	-	-	-	-	-	-
Stage 1	440	437	-	400	438	-	-	-	-	-	-	-
Stage 2	573	424	-	547	433	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.6	14.2	0.1	1.7
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1101	-	-	285	445	703	-	-
HCM Lane V/C Ratio	0.004	-	-	0.133	0.125	0.089	-	-
HCM Control Delay (s)	8.3	0	-	19.6	14.2	10.6	0.5	-
HCM Lane LOS	A	A	-	C	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.4	0.3	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	95	1	0	1
Future Vol, veh/h	1	0	95	1	0	1
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	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	92	90	90	92	90
Heavy Vehicles, %	100	2	35	100	2	100
Mvmt Flow	1	0	106	1	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	107	-	-	0	-	106
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.1	-	-	-	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.1	-	-	-	-	4.2
Pot Cap-1 Maneuver	1045	0	-	-	0	737
Stage 1	-	0	-	-	0	-
Stage 2	-	0	-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1045	-	-	-	-	737
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	8.4	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	WBT	WBR	SBLn1
Capacity (veh/h)	1045	-	-	737
HCM Lane V/C Ratio	0.001	-	-	0.002
HCM Control Delay (s)	8.4	-	-	9.9
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	1	91	5	0	0
Future Vol, veh/h	5	1	91	5	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	90	90	90	90	92	92
Heavy Vehicles, %	0	0	33	0	2	2
Mvmt Flow	6	1	101	6	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	107	0	-	0	116	104
Stage 1	-	-	-	-	104	-
Stage 2	-	-	-	-	12	-
Critical Hdwy	4.1	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1497	-	-	-	880	951
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1497	-	-	-	876	951
Mov Cap-2 Maneuver	-	-	-	-	876	-
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	1007	-

Approach	EB	WB	SB
HCM Control Delay, s	6.2	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1497	-	-	-	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	7.4	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	23	4	80	3	1	1
Future Vol, veh/h	23	4	80	3	1	1
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	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	26	4	89	3	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	30	0	209	28
Stage 1	-	-	-	-	28	-
Stage 2	-	-	-	-	181	-
Critical Hdwy	-	-	4.12	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1583	-	784	1053
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	855	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1583	-	740	1053
Mov Cap-2 Maneuver	-	-	-	-	740	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	NE
HCM Control Delay, s	0	7.1	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	869	-	-	1583	-
HCM Lane V/C Ratio	0.003	-	-	0.056	-
HCM Control Delay (s)	9.2	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.2	-

Intersection	
Int Delay, s/veh	128.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	25	263	100	25	202	35	0	0	54	35
Future Vol, veh/h	0	0	25	263	100	25	202	35	0	0	54	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	0	-	100	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	90	90	90	90	80	53	92	92	73	50
Heavy Vehicles, %	2	2	0	22	10	13	30	5	2	2	0	0
Mvmt Flow	0	0	28	292	111	28	253	66	0	0	74	70

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	749	-	109	680	715	66	144	0	-	-	-	0
Stage 1	109	-	-	571	571	-	-	-	-	-	-	-
Stage 2	640	-	-	109	144	-	-	-	-	-	-	-
Critical Hdwy	7.12	-	6.2	7.32	6.6	6.33	4.4	-	-	-	-	-
Critical Hdwy Stg 1	6.12	-	-	6.32	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	6.32	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	-	3.3	3.698	4.09	3.417	2.47	-	-	-	-	-
Pot Cap-1 Maneuver	328	0	950	339	347	968	1284	-	0	0	-	-
Stage 1	896	0	-	472	492	-	-	-	0	0	-	-
Stage 2	464	0	-	850	763	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	187	-	950	~ 277	276	968	1284	-	-	-	-	-
Mov Cap-2 Maneuver	187	-	-	~ 277	276	-	-	-	-	-	-	-
Stage 1	712	-	-	375	391	-	-	-	-	-	-	-
Stage 2	256	-	-	825	763	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	269.3	6.7	0
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	WBLn1	SBT	SBR
Capacity (veh/h)	1284	-	-	950	290	-	-
HCM Lane V/C Ratio	0.197	-	-	0.029	1.487	-	-
HCM Control Delay (s)	8.5	0	0	8.9	269.3	-	-
HCM Lane LOS	A	A	A	A	F	-	-
HCM 95th %tile Q(veh)	0.7	-	-	0.1	24.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

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	19	0	12	6	0	136	36	84	0	17	139	160
Future Vol, veh/h	19	0	12	6	0	136	36	84	0	17	139	160
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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	92	90	90	92	90	90	90	92	90	90	90
Heavy Vehicles, %	0	0	0	100	2	95	0	4	2	64	5	1
Mvmt Flow	21	0	13	7	0	151	40	93	0	19	154	178

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	530	454	243	461	543	93	332	0	0	93	0	0
Stage 1	281	281	-	173	173	-	-	-	-	-	-	-
Stage 2	249	173	-	288	370	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	8.1	6.52	7.15	4.1	-	-	4.74	-	-
Critical Hdwy Stg 1	6.1	5.5	-	7.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	7.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	4.4	4.018	4.155	2.2	-	-	2.776	-	-
Pot Cap-1 Maneuver	463	505	801	379	447	760	1239	-	-	1189	-	-
Stage 1	730	682	-	645	756	-	-	-	-	-	-	-
Stage 2	759	760	-	550	620	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	356	478	801	358	423	760	1239	-	-	1189	-	-
Mov Cap-2 Maneuver	356	478	-	358	423	-	-	-	-	-	-	-
Stage 1	705	668	-	623	730	-	-	-	-	-	-	-
Stage 2	587	734	-	530	608	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.6	11.3	2.4	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1239	-	-	454	726	1189	-	-
HCM Lane V/C Ratio	0.032	-	-	0.076	0.217	0.016	-	-
HCM Control Delay (s)	8	0	-	13.6	11.3	8.1	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.8	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	0	116	151	6	4	0
Future Vol, veh/h	0	116	151	6	4	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	92	90	90	100	90	90
Heavy Vehicles, %	0	0	10	40	0	0
Mvmt Flow	0	129	168	6	4	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	174	0	-	0	300	171
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	129	-
Critical Hdwy	4.1	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	6.1	-
Critical Hdwy Stg 2	-	-	-	-	6.1	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1415	-	-	-	656	878
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	880	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1415	-	-	-	656	878
Mov Cap-2 Maneuver	-	-	-	-	656	-
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	880	-

Approach	NB	SB	NE
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	656	1415	-	-	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s)	10.5	0	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0	0	-	-	-

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	0	206	1	10	242	3	85	1	19	0	0	1
Future Vol, veh/h	0	206	1	10	242	3	85	1	19	0	0	1
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	90	90	90	90	90	90	90	90	90	92	92	90
Heavy Vehicles, %	0	13	0	29	11	0	90	0	50	0	0	100
Mvmt Flow	0	229	1	11	269	3	94	1	21	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	272	0	0	230	0	0	522	523	229	534	523	271
Stage 1	-	-	-	-	-	-	229	229	-	293	293	-
Stage 2	-	-	-	-	-	-	293	294	-	241	230	-
Critical Hdwy	4.1	-	-	4.39	-	-	8	6.5	6.7	7.1	6.5	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	7	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.461	-	-	4.31	4	3.75	3.5	4	4.2
Pot Cap-1 Maneuver	1303	-	-	1194	-	-	352	462	705	460	462	581
Stage 1	-	-	-	-	-	-	612	718	-	719	674	-
Stage 2	-	-	-	-	-	-	560	673	-	767	718	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1303	-	-	1194	-	-	348	457	705	442	457	581
Mov Cap-2 Maneuver	-	-	-	-	-	-	348	457	-	442	457	-
Stage 1	-	-	-	-	-	-	612	718	-	719	667	-
Stage 2	-	-	-	-	-	-	553	666	-	743	718	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	18.4	11.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	384	1303	-	-	1194	-	-	581
HCM Lane V/C Ratio	0.304	-	-	-	0.009	-	-	0.002
HCM Control Delay (s)	18.4	0	-	-	8	0	-	11.2
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	15	33	174	0	37	291
Future Vol, veh/h	15	33	174	0	37	291
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	90	90	90	90	93	90
Heavy Vehicles, %	9	0	7	0	2	2
Mvmt Flow	17	37	193	0	40	323

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	596	193	0	0	193	0
Stage 1	193	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Critical Hdwy	6.49	6.2	-	-	4.12	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.3	-	-	2.218	-
Pot Cap-1 Maneuver	455	854	-	-	1380	-
Stage 1	823	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	439	854	-	-	1380	-
Mov Cap-2 Maneuver	439	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	637	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	10.9	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	659	1380	-
HCM Lane V/C Ratio	-	-	0.081	0.029	-
HCM Control Delay (s)	-	-	10.9	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	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	1	0	1	0	0	0	31	218	0	1	177	10
Future Vol, veh/h	1	0	1	0	0	0	31	218	0	1	177	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	92	90	92	92	92	90	90	92	90	90	90
Heavy Vehicles, %	0	0	0	2	2	2	4	8	2	0	20	29
Mvmt Flow	1	0	1	0	0	0	34	242	0	1	197	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	515	515	202	516	521	242	208	0	0	242	0	0
Stage 1	204	204	-	311	311	-	-	-	-	-	-	-
Stage 2	311	311	-	205	210	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.12	6.52	6.22	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.518	4.018	3.318	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	474	466	844	470	460	797	1351	-	-	1336	-	-
Stage 1	803	737	-	699	658	-	-	-	-	-	-	-
Stage 2	704	662	-	797	728	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	463	452	844	459	446	797	1351	-	-	1336	-	-
Mov Cap-2 Maneuver	463	452	-	459	446	-	-	-	-	-	-	-
Stage 1	780	736	-	679	639	-	-	-	-	-	-	-
Stage 2	684	643	-	795	727	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	0	1	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1351	-	-	598	-	1336	-	-
HCM Lane V/C Ratio	0.025	-	-	0.004	-	0.001	-	-
HCM Control Delay (s)	7.7	0	-	11	0	7.7	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-	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	4	1	0	9	1	8	0	237	14	14	164	0
Future Vol, veh/h	4	1	0	9	1	8	0	237	14	14	164	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	92	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	24	0	0	36	0
Mvmt Flow	4	1	0	10	1	9	0	263	16	16	182	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	489	492	182	485	484	271	182	0	0	279	0	0
Stage 1	213	213	-	271	271	-	-	-	-	-	-	-
Stage 2	276	279	-	214	213	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	493	481	866	496	486	773	1405	-	-	1295	-	-
Stage 1	794	730	-	739	689	-	-	-	-	-	-	-
Stage 2	735	683	-	793	730	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	481	474	866	490	479	773	1405	-	-	1295	-	-
Mov Cap-2 Maneuver	481	474	-	490	479	-	-	-	-	-	-	-
Stage 1	794	720	-	739	689	-	-	-	-	-	-	-
Stage 2	725	683	-	781	720	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	11.4	0	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1405	-	-	480	584	1295	-	-
HCM Lane V/C Ratio	-	-	-	0.012	0.034	0.012	-	-
HCM Control Delay (s)	0	-	-	12.6	11.4	7.8	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

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	15	0	13	27	3	45	5	191	0	0	145	28
Future Vol, veh/h	15	0	13	27	3	45	5	191	0	0	145	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	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	92	90	95	90	90	90	90	92	92	90	68
Heavy Vehicles, %	11	2	0	5	0	10	0	25	2	2	37	0
Mvmt Flow	17	0	14	28	3	50	6	212	0	0	161	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	432	-	182	405	425	212	202	0	-	-	-	0
Stage 1	182	-	-	223	223	-	-	-	-	-	-	-
Stage 2	250	-	-	182	202	-	-	-	-	-	-	-
Critical Hdwy	7.21	-	6.2	7.15	6.5	6.3	4.1	-	-	-	-	-
Critical Hdwy Stg 1	6.21	-	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.21	-	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.599	-	3.3	3.545	4	3.39	2.2	-	-	-	-	-
Pot Cap-1 Maneuver	519	0	866	551	524	808	1382	-	0	0	-	-
Stage 1	799	0	-	773	723	-	-	-	0	0	-	-
Stage 2	734	0	-	813	738	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	483	-	866	540	521	808	1382	-	-	-	-	-
Mov Cap-2 Maneuver	483	-	-	540	521	-	-	-	-	-	-	-
Stage 1	795	-	-	769	719	-	-	-	-	-	-	-
Stage 2	682	-	-	799	738	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	11.1	0.2	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	WBLn1	SBT	SBR
Capacity (veh/h)	1382	-	483	866	676	-	-
HCM Lane V/C Ratio	0.004	-	0.035	0.017	0.121	-	-
HCM Control Delay (s)	7.6	0	12.7	9.2	11.1	-	-
HCM Lane LOS	A	A	B	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	0.4	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	49	147	0	0	185
Future Vol, veh/h	12	49	147	0	0	185
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	92	92	93
Heavy Vehicles, %	25	21	28	2	2	36
Mvmt Flow	13	54	163	0	0	199

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	362	163	0	-	-	-
Stage 1	163	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	6.65	6.41	-	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.489	-	-	-	-
Pot Cap-1 Maneuver	594	834	-	0	0	-
Stage 1	813	-	-	0	0	-
Stage 2	782	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	594	834	-	-	-	-
Mov Cap-2 Maneuver	594	-	-	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	782	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	1038	-
HCM Lane V/C Ratio	-	0.065	-
HCM Control Delay (s)	-	8.7	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0.2	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	9	1	3	103	28	106	80	12	1	0
Future Vol, veh/h	9	1	3	103	28	106	80	12	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Free	-	-	None	-	-
Storage Length	0	-	-	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	6	0	57	7	0	2	2
Mvmt Flow	10	1	3	114	31	118	89	13	1	0

Major/Minor	Minor2		Major1			Major2			Minor1	
Conflicting Flow All	473	96	102	0	-	114	0	0	458	114
Stage 1	331	-	-	-	-	-	-	-	121	-
Stage 2	142	-	-	-	-	-	-	-	337	-
Critical Hdwy	7.1	6.2	4.1	-	-	4.67	-	-	7.12	6.22
Critical Hdwy Stg 1	6.1	-	-	-	-	-	-	-	6.12	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-	-	-	6.12	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	2.713	-	-	3.518	3.318
Pot Cap-1 Maneuver	505	966	1503	-	0	1194	-	-	513	939
Stage 1	687	-	-	-	0	-	-	-	883	-
Stage 2	866	-	-	-	0	-	-	-	677	-
Platoon blocked, %				-			-	-		
Mov Cap-1 Maneuver	443	966	1503	-	-	1194	-	-	463	939
Mov Cap-2 Maneuver	443	-	-	-	-	-	-	-	463	-
Stage 1	686	-	-	-	-	-	-	-	881	-
Stage 2	826	-	-	-	-	-	-	-	595	-

Approach	EB	NB	SB	SW
HCM Control Delay, s	13.2	0.2	4.5	9.1
HCM LOS	B			A

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBL	SBT	SBR	SWLn1
Capacity (veh/h)	1503	-	460	1194	-	-	914
HCM Lane V/C Ratio	0.002	-	0.046	0.099	-	-	0.046
HCM Control Delay (s)	7.4	0	13.2	8.3	0	-	9.1
HCM Lane LOS	A	A	B	A	A	-	A
HCM 95th %tile Q(veh)	0	-	0.1	0.3	-	-	0.1

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	40	14	0	35
Future Vol, veh/h	0	0	40	14	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	90	90	92	90
Heavy Vehicles, %	2	2	18	0	2	0
Mvmt Flow	0	0	44	16	0	39

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	-	52
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	1021
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	-	1021
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	8.7
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1021
HCM Lane V/C Ratio	-	-	0.038
HCM Control Delay (s)	-	-	8.7
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.1

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	129	0	0	82
Future Vol, veh/h	0	5	129	0	0	82
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	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	7
Mvmt Flow	0	6	143	0	0	91

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	234	143	0	0	143	0
Stage 1	143	-	-	-	-	-
Stage 2	91	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	759	910	-	-	1452	-
Stage 1	889	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	759	910	-	-	1452	-
Mov Cap-2 Maneuver	759	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	938	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	910	1452	-
HCM Lane V/C Ratio	-	-	0.006	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	32	0
Future Vol, veh/h	0	0	0	0	32	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Yield	Yield	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	0	-
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	0	-	0	-	0	-
Peak Hour Factor	92	92	92	92	90	92
Heavy Vehicles, %	2	2	2	2	32	0
Mvmt Flow	0	0	0	0	36	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0
Stage 1	0	-	-	0
Stage 2	0	-	-	0
Platoon blocked, %				
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	NB	SE
HCM Control Delay, s	0	
HCM LOS	A	

Minor Lane/Major Mvmt	NBLn1	SEL
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	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	428	75	28	303	0	48	0	18	0	0	0
Future Vol, veh/h	0	428	75	28	303	0	48	0	18	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	90	90	92	90	90	90	92	90	92	92	92
Heavy Vehicles, %	2	4	6	0	3	5	6	2	8	2	2	2
Mvmt Flow	0	476	83	30	337	0	53	0	20	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	337	0	0	559	0	0	746	915	279	636	957	168
Stage 1	-	-	-	-	-	-	517	517	-	398	398	-
Stage 2	-	-	-	-	-	-	229	398	-	238	559	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.62	6.54	7.06	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.62	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.62	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.2	-	-	3.56	4.02	3.38	3.52	4.02	3.32
Pot Cap-1 Maneuver	1219	-	-	1022	-	-	295	271	700	363	256	847
Stage 1	-	-	-	-	-	-	499	532	-	599	601	-
Stage 2	-	-	-	-	-	-	742	601	-	744	509	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1219	-	-	1022	-	-	287	261	700	343	247	847
Mov Cap-2 Maneuver	-	-	-	-	-	-	287	261	-	343	247	-
Stage 1	-	-	-	-	-	-	499	532	-	599	579	-
Stage 2	-	-	-	-	-	-	715	579	-	723	509	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	18.4	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	342	1219	-	-	1022	-	-	-
HCM Lane V/C Ratio	0.214	-	-	-	0.03	-	-	-
HCM Control Delay (s)	18.4	0	-	-	8.6	0.1	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.8	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	6	0	0	0	1	67	0	0	103	0
Future Vol, veh/h	0	0	6	0	0	0	1	67	0	0	103	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	90	92	92	92	90	90	92	92	90	92
Heavy Vehicles, %	2	2	0	2	2	2	2	7	0	2	6	2
Mvmt Flow	0	0	7	0	0	0	1	74	0	0	114	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	191	191	114	195	191	74	114	0	0	74	0	0
Stage 1	114	114	-	77	77	-	-	-	-	-	-	-
Stage 2	77	77	-	118	114	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.2	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.3	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	769	704	944	764	704	988	1475	-	-	1526	-	-
Stage 1	891	801	-	932	831	-	-	-	-	-	-	-
Stage 2	932	831	-	887	801	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	768	703	944	758	703	988	1475	-	-	1526	-	-
Mov Cap-2 Maneuver	768	703	-	758	703	-	-	-	-	-	-	-
Stage 1	890	801	-	931	830	-	-	-	-	-	-	-
Stage 2	931	830	-	881	801	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	0	0.1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1475	-	-	944	-	1526	-	-
HCM Lane V/C Ratio	0.001	-	-	0.007	-	-	-	-
HCM Control Delay (s)	7.4	0	-	8.8	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	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	1	0	0	0	0	2	3	65	9	17	71	21
Future Vol, veh/h	1	0	0	0	0	2	3	65	9	17	71	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	92	92	92	92	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	2	2	2	0	0	2	0	0	4	0
Mvmt Flow	1	0	0	0	0	2	3	72	10	19	79	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	213	217	91	212	224	77	102	0	0	82	0	0
Stage 1	128	128	-	84	84	-	-	-	-	-	-	-
Stage 2	85	89	-	128	140	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.22	7.12	6.52	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.318	3.518	4.018	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	748	681	967	745	675	990	1503	-	-	1528	-	-
Stage 1	881	790	-	924	825	-	-	-	-	-	-	-
Stage 2	928	821	-	876	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	738	671	967	736	665	990	1503	-	-	1528	-	-
Mov Cap-2 Maneuver	738	671	-	736	665	-	-	-	-	-	-	-
Stage 1	879	780	-	922	823	-	-	-	-	-	-	-
Stage 2	924	819	-	865	771	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	8.6	0.3	1.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1503	-	-	738	990	1528	-	-
HCM Lane V/C Ratio	0.002	-	-	0.002	0.002	0.012	-	-
HCM Control Delay (s)	7.4	0	-	9.9	8.6	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Traffic Vol, veh/h	8	10	9	67	0	0	58	13	0	0
Future Vol, veh/h	8	10	9	67	0	0	58	13	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	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	-	0	-
Peak Hour Factor	90	90	90	90	90	92	25	100	92	92
Heavy Vehicles, %	100	0	2	2	2	2	5	0	2	2
Mvmt Flow	9	11	10	74	0	0	232	13	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	333	74	245	0	-	-	-	0
Stage 1	94	-	-	-	-	-	-	-
Stage 2	239	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	666	993	1321	-	0	0	-	-
Stage 1	935	-	-	-	0	0	-	-
Stage 2	805	-	-	-	0	0	-	-
Platoon blocked, %				-			-	-
Mov Cap-1 Maneuver	661	993	1321	-	-	-	-	-
Mov Cap-2 Maneuver	661	-	-	-	-	-	-	-
Stage 1	928	-	-	-	-	-	-	-
Stage 2	805	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1321	-	779	-	-
HCM Lane V/C Ratio	0.008	-	0.043	-	-
HCM Control Delay (s)	7.7	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	10	3	0	57	1	43	27	0	0	0
Future Vol, veh/h	10	3	0	57	1	43	27	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Yield	-	-	None	-	-
Storage Length	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	92	92
Heavy Vehicles, %	86	0	0	0	0	7	0	0	2	2
Mvmt Flow	11	3	0	63	1	48	30	0	0	0

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	189	30	30	0	0	63	0	0
Stage 1	126	-	-	-	-	-	-	-
Stage 2	63	-	-	-	-	-	-	-
Critical Hdwy	6.48	6.2	4.1	-	-	4.17	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	3.3	2.2	-	-	2.263	-	-
Pot Cap-1 Maneuver	787	1050	1596	-	-	1508	-	-
Stage 1	885	-	-	-	-	-	-	-
Stage 2	945	-	-	-	-	-	-	-
Platoon blocked, %				-	-		-	-
Mov Cap-1 Maneuver	762	1050	1596	-	-	1508	-	-
Mov Cap-2 Maneuver	762	-	-	-	-	-	-	-
Stage 1	857	-	-	-	-	-	-	-
Stage 2	945	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0	4.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1596	-	-	792	1508	-	-
HCM Lane V/C Ratio	-	-	-	0.045	0.032	-	-
HCM Control Delay (s)	0	-	-	9.8	7.5	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↰	↱		ᴙ	
Traffic Vol, veh/h	1	57	27	3	1	0
Future Vol, veh/h	1	57	27	3	1	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	90	90	90	90	90	90
Heavy Vehicles, %	0	3	0	5	0	0
Mvmt Flow	1	63	30	3	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	33	0	-	0	98	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1592	-	-	-	906	1048
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	962	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1592	-	-	-	905	1048
Mov Cap-2 Maneuver	-	-	-	-	905	-
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	961	-

Approach	NB	SB	NE
HCM Control Delay, s	0.1	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	905	1592	-	-	-
HCM Lane V/C Ratio	0.001	0.001	-	-	-
HCM Control Delay (s)	9	7.3	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	0	-	-	-

Intersection	
Int Delay, s/veh	5.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	37	21	4	19	8
Future Vol, veh/h	3	37	21	4	19	8
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	90	90	90	90	90	90
Heavy Vehicles, %	0	4	0	0	8	0
Mvmt Flow	3	41	14	2	21	9

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	67	16	0	0	17	0
Stage 1	16	-	-	-	-	-
Stage 2	51	-	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.18	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.272	-
Pot Cap-1 Maneuver	943	1057	-	-	1562	-
Stage 1	1012	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	930	1057	-	-	1562	-
Mov Cap-2 Maneuver	930	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	5.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1046	1562	-
HCM Lane V/C Ratio	-	-	0.042	0.014	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	0	0	246	0	54	4
Future Volume (Veh/h)	0	0	246	0	54	4
Sign Control		Stop	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.90	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	273	0	59	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	256	120	122	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	256	120	122	0	0	
tC, single (s)	7.1	6.5	6.6	6.2	4.4	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.1	3.3	2.4	
p0 queue free %	100	100	62	100	96	
cM capacity (veh/h)	479	740	727	1091	1479	

Direction, Lane #	WB 1	SE 1
Volume Total	273	63
Volume Left	0	59
Volume Right	0	4
cSH	727	1479
Volume to Capacity	0.38	0.04
Queue Length 95th (ft)	44	3
Control Delay (s)	12.9	7.1
Lane LOS	B	A
Approach Delay (s)	12.9	7.1
Approach LOS	B	

Intersection Summary			
Average Delay	11.8		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	0	0	19	38	295	27	0	0
Future Vol, veh/h	0	0	19	38	295	27	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None
Storage Length	100	0	-	-	-	100	-	-
Veh in Median Storage, #	0	-	-	0	0	-	-	-
Grade, %	0	-	-	0	0	-	0	-
Peak Hour Factor	92	92	90	90	90	90	92	92
Heavy Vehicles, %	2	2	0	45	8	11	2	2
Mvmt Flow	0	0	21	42	328	30	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	770	30	30	0	0	0
Stage 1	686	-	-	-	-	-
Stage 2	84	-	-	-	-	-
Critical Hdwy	7.12	6.22	-	-	-	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	318	1044	-	-	-	-
Stage 1	438	-	-	-	-	-
Stage 2	924	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	265	1044	-	-	-	-
Mov Cap-2 Maneuver	265	-	-	-	-	-
Stage 1	438	-	-	-	-	-
Stage 2	924	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0		7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	SBR2
Capacity (veh/h)	-	-	-	-	1529	-	-
HCM Lane V/C Ratio	-	-	-	-	0.214	-	-
HCM Control Delay (s)	-	-	0	0	8	-	-
HCM Lane LOS	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-	0.8	-	-

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	3	36	103	0	15	141	423	1	0	164	164
Future Vol, veh/h	0	3	36	103	0	15	141	423	1	0	164	164
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	-	-	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	0	2	2	2	2	2	2
Mvmt Flow	0	3	39	112	0	16	153	460	1	0	178	178

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1042	1034	267	1056	1124	460	357	0	0	461	0	0
Stage 1	267	267	-	767	767	-	-	-	-	-	-	-
Stage 2	775	767	-	289	357	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.2	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	208	232	772	203	205	605	1202	-	-	1100	-	-
Stage 1	738	688	-	395	411	-	-	-	-	-	-	-
Stage 2	391	411	-	719	628	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	176	192	772	165	170	605	1202	-	-	1100	-	-
Mov Cap-2 Maneuver	176	192	-	165	170	-	-	-	-	-	-	-
Stage 1	612	688	-	327	341	-	-	-	-	-	-	-
Stage 2	315	341	-	679	628	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	61.7	2.1	0
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1202	-	-	626	182	1100	-	-
HCM Lane V/C Ratio	0.128	-	-	0.068	0.705	-	-	-
HCM Control Delay (s)	8.4	0	-	11.2	61.7	0	-	-
HCM Lane LOS	A	A	-	B	F	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	4.3	0	-	-

Intersection	
Int Delay, s/veh	10.3

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	1	124	0	360	189	27	276	0	0	0
Future Vol, veh/h	1	124	0	360	189	27	276	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Yield	-	-	None	-	-
Storage Length	0	-	-	-	0	200	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	135	0	391	205	29	300	0	0	0

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	750	300	-	0	0	391	0	0
Stage 1	359	-	-	-	-	-	-	-
Stage 2	391	-	-	-	-	-	-	-
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	379	740	0	-	-	1168	-	0
Stage 1	707	-	0	-	-	-	-	0
Stage 2	683	-	0	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	370	740	-	-	-	1168	-	-
Mov Cap-2 Maneuver	370	-	-	-	-	-	-	-
Stage 1	689	-	-	-	-	-	-	-
Stage 2	683	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	36.3	0	0.7
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	456	1168	-
HCM Lane V/C Ratio	-	-	0.787	0.025	-
HCM Control Delay (s)	-	-	36.3	8.2	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	7	0.1	-

Intersection	
Int Delay, s/veh	27.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	368	200	212	181	146	254
Future Vol, veh/h	368	200	212	181	146	254
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	300	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	6	3	7	5	11
Mvmt Flow	400	217	230	197	159	276

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	230	0	-	0	1247	230
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	1017	-
Critical Hdwy	4.23	-	-	-	6.45	6.31
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.317	-	-	-	3.545	3.399
Pot Cap-1 Maneuver	1276	-	-	-	189	787
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	345	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1276	-	-	-	~ 130	787
Mov Cap-2 Maneuver	-	-	-	-	~ 130	-
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	237	-

Approach	EB	WB	SB
HCM Control Delay, s	5.9	0	86.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1276	-	-	-	130	787
HCM Lane V/C Ratio	0.313	-	-	-	1.221	0.351
HCM Control Delay (s)	9.1	-	-	-	215.3	12
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	1.4	-	-	-	9.7	1.6

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	339	384	1	0	9
Future Vol, veh/h	8	339	384	1	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	50	5	3	0	100	33
Mvmt Flow	9	368	417	1	0	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	417	0	-	0	803	417
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	386	-
Critical Hdwy	4.6	-	-	-	7.4	6.53
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	2.65	-	-	-	4.4	3.597
Pot Cap-1 Maneuver	926	-	-	-	247	574
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	926	-	-	-	245	574
Mov Cap-2 Maneuver	-	-	-	-	245	-
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	512	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	926	-	-	-	574
HCM Lane V/C Ratio	0.009	-	-	-	0.017
HCM Control Delay (s)	8.9	-	-	-	11.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱		Y	
Traffic Vol, veh/h	5	557	453	13	12	3
Future Vol, veh/h	5	557	453	13	12	3
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	90	90	90	90	90	92
Heavy Vehicles, %	0	4	2	73	75	0
Mvmt Flow	6	619	503	14	13	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	518	0	-	0	1141	511
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	630	-
Critical Hdwy	4.1	-	-	-	7.15	6.2
Critical Hdwy Stg 1	-	-	-	-	6.15	-
Critical Hdwy Stg 2	-	-	-	-	6.15	-
Follow-up Hdwy	2.2	-	-	-	4.175	3.3
Pot Cap-1 Maneuver	1058	-	-	-	161	567
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	414	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1058	-	-	-	160	567
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	410	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	17.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1058	-	-	-	305
HCM Lane V/C Ratio	0.005	-	-	-	0.054
HCM Control Delay (s)	8.4	0	-	-	17.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	462	342	113	100	10
Future Vol, veh/h	4	462	342	113	100	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	90	90	90	90	90	90
Heavy Vehicles, %	0	6	3	1	2	25
Mvmt Flow	4	513	380	126	111	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	506	0	-	0	965	443
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	522	-
Critical Hdwy	4.1	-	-	-	6.42	6.45
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.525
Pot Cap-1 Maneuver	1069	-	-	-	283	569
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	595	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1069	-	-	-	282	569
Mov Cap-2 Maneuver	-	-	-	-	410	-
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	592	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	17
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1069	-	-	-	421
HCM Lane V/C Ratio	0.004	-	-	-	0.29
HCM Control Delay (s)	8.4	0	-	-	17
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.2

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	414	328	24	51	37
Future Vol, veh/h	40	414	328	24	51	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	25	90	90	90
Heavy Vehicles, %	0	6	4	0	0	0
Mvmt Flow	44	460	1312	27	57	41

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1339	0	-	0	1874	1325
Stage 1	-	-	-	-	1325	-
Stage 2	-	-	-	-	549	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	521	-	-	-	80	192
Stage 1	-	-	-	-	251	-
Stage 2	-	-	-	-	583	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	521	-	-	-	73	192
Mov Cap-2 Maneuver	-	-	-	-	184	-
Stage 1	-	-	-	-	251	-
Stage 2	-	-	-	-	534	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	43.6
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	521	-	-	-	187
HCM Lane V/C Ratio	0.085	-	-	-	0.523
HCM Control Delay (s)	12.6	-	-	-	43.6
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0.3	-	-	-	2.7

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	4	252	11	0	215
Future Vol, veh/h	6	4	252	11	0	215
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	90	92	90	90	90	90
Heavy Vehicles, %	50	0	1	50	0	2
Mvmt Flow	7	4	280	12	0	239

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	525	286	0	0	292	0
Stage 1	286	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Critical Hdwy	6.9	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	438	758	-	-	1281	-
Stage 1	665	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	438	758	-	-	1281	-
Mov Cap-2 Maneuver	438	-	-	-	-	-
Stage 1	665	-	-	-	-	-
Stage 2	700	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	526	1281	-
HCM Lane V/C Ratio	-	-	0.021	-	-
HCM Control Delay (s)	-	-	12	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	2	254	2	4	211
Future Vol, veh/h	4	2	254	2	4	211
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	90	90	90	90	90	90
Heavy Vehicles, %	100	0	1	0	0	1
Mvmt Flow	4	2	282	2	4	234

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	526	283	0	0	284	0
Stage 1	283	-	-	-	-	-
Stage 2	243	-	-	-	-	-
Critical Hdwy	7.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	376	761	-	-	1290	-
Stage 1	585	-	-	-	-	-
Stage 2	614	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	374	761	-	-	1290	-
Mov Cap-2 Maneuver	374	-	-	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	450	1290	-
HCM Lane V/C Ratio	-	-	0.015	0.003	-
HCM Control Delay (s)	-	-	13.1	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	0	102	13	0	30
Future Vol, veh/h	13	0	102	13	0	30
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	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	90	90	92	92
Heavy Vehicles, %	2	2	7	0	2	2
Mvmt Flow	14	0	113	14	0	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	128	-	-	0	-	121
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1458	0	-	-	0	930
Stage 1	-	0	-	-	0	-
Stage 2	-	0	-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1458	-	-	-	-	930
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	7.5	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	WBT	WBR	SBLn1
Capacity (veh/h)	1458	-	-	930
HCM Lane V/C Ratio	0.01	-	-	0.035
HCM Control Delay (s)	7.5	-	-	9
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	13	132	0	0	24
Future Vol, veh/h	11	13	132	0	0	24
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	90	90	90	90	90	90
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	12	14	147	0	0	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	147	0	-	0	186	147
Stage 1	-	-	-	-	147	-
Stage 2	-	-	-	-	39	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1447	-	-	-	808	905
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	989	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1447	-	-	-	802	905
Mov Cap-2 Maneuver	-	-	-	-	802	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	981	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1447	-	-	-	905
HCM Lane V/C Ratio	0.008	-	-	-	0.029
HCM Control Delay (s)	7.5	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	21	156	0	3	4
Future Vol, veh/h	2	21	156	0	3	4
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	90	90	90	90	90	90
Heavy Vehicles, %	0	0	5	0	0	50
Mvmt Flow	2	23	173	0	3	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	173	0	-	0	201	173
Stage 1	-	-	-	-	173	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	4.1	-	-	-	6.4	6.7
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.75
Pot Cap-1 Maneuver	1416	-	-	-	792	760
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1416	-	-	-	791	760
Mov Cap-2 Maneuver	-	-	-	-	791	-
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	999	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1416	-	-	-	773
HCM Lane V/C Ratio	0.002	-	-	-	0.01
HCM Control Delay (s)	7.5	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	13.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	2	4	50	46	65	287	192	15	6	159	56
Future Vol, veh/h	6	2	4	50	46	65	287	192	15	6	159	56
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	-	-	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	7	2	4	54	50	71	312	209	16	7	173	61

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1117	1065	203	1061	1088	217	234	0	0	225	0	0
Stage 1	216	216	-	841	841	-	-	-	-	-	-	-
Stage 2	901	849	-	220	247	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	185	223	838	202	216	823	1333	-	-	1344	-	-
Stage 1	786	724	-	359	380	-	-	-	-	-	-	-
Stage 2	333	377	-	782	702	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	102	162	838	157	157	823	1333	-	-	1344	-	-
Mov Cap-2 Maneuver	102	162	-	157	157	-	-	-	-	-	-	-
Stage 1	575	720	-	263	278	-	-	-	-	-	-	-
Stage 2	183	276	-	771	698	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.8	55.9	5	0.2
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1333	-	-	158	233	1344	-	-
HCM Lane V/C Ratio	0.234	-	-	0.083	0.751	0.005	-	-
HCM Control Delay (s)	8.5	0	-	29.8	55.9	7.7	0	-
HCM Lane LOS	A	A	-	D	F	A	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0.3	5.2	0	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	65	226	0	461	148	0
Future Vol, veh/h	65	226	0	461	148	0
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	92	92	92	92	92	92
Heavy Vehicles, %	14	3	2	2	2	2
Mvmt Flow	71	246	0	501	161	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	662	161	-	0	-	0
Stage 1	161	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Critical Hdwy	6.54	6.23	-	-	-	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.327	-	-	-	-
Pot Cap-1 Maneuver	409	881	0	-	-	0
Stage 1	839	-	0	-	-	0
Stage 2	585	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	409	881	-	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	700	-
HCM Lane V/C Ratio	-	0.452	-
HCM Control Delay (s)	-	14.3	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	2.4	-

Intersection	
Int Delay, s/veh	0.5

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	167	24	0	159	12	4
Future Vol, veh/h	167	24	0	159	12	4
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	90	90	90	90	90	90
Heavy Vehicles, %	9	0	50	12	7	0
Mvmt Flow	186	27	0	177	13	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	212	0	376	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	-	-	4.6	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.65	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1119	-	616	847
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	842	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1119	-	616	847
Mov Cap-2 Maneuver	-	-	-	-	616	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	842	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1119	-	661
HCM Lane V/C Ratio	-	-	-	-	0.027
HCM Control Delay (s)	-	-	0	-	10.6
HCM Lane LOS	-	-	A	-	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	0.9

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	190	59	3	168	33	1
Future Vol, veh/h	190	59	3	168	33	1
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	90	90	90	90	90	90
Heavy Vehicles, %	6	0	0	2	0	0
Mvmt Flow	211	66	3	187	37	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	277	0	437	244
Stage 1	-	-	-	-	244	-
Stage 2	-	-	-	-	193	-
Critical Hdwy	-	-	4.1	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	6.1	-
Critical Hdwy Stg 2	-	-	-	-	6.1	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1298	-	533	800
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1298	-	532	800
Mov Cap-2 Maneuver	-	-	-	-	601	-
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	811	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1298	-	605
HCM Lane V/C Ratio	-	-	0.003	-	0.062
HCM Control Delay (s)	-	-	7.8	0	11.3
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.2

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	9	4	0	0	339	21
Future Vol, veh/h	9	4	0	0	339	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	92	92	90	90
Heavy Vehicles, %	24	23	2	2	16	7
Mvmt Flow	10	4	0	0	377	23

Major/Minor	Minor2		Major2	
Conflicting Flow All	388	388	-	0
Stage 1	388	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.64	6.43	-	-
Critical Hdwy Stg 1	5.64	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.716	3.507	-	-
Pot Cap-1 Maneuver	575	616	-	-
Stage 1	640	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	575	616	-	-
Mov Cap-2 Maneuver	575	-	-	-
Stage 1	640	-	-	-
Stage 2	-	-	-	-

Approach	EB	SW
HCM Control Delay, s	11.3	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SWT	SWR
Capacity (veh/h)	587	-	-
HCM Lane V/C Ratio	0.025	-	-
HCM Control Delay (s)	11.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

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	1	0	12	36	0	13	31	262	95	31	262	0
Future Vol, veh/h	1	0	12	36	0	13	31	262	95	31	262	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	92	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	89	14	0	0	25	0
Mvmt Flow	1	0	13	40	0	14	34	285	106	34	291	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	774	819	146	620	766	338	291	0	0	390	0	0
Stage 1	360	360	-	406	406	-	-	-	-	-	-	-
Stage 2	414	459	-	214	360	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	6.9	7.3	6.5	6.2	5.435	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	3.0455	-	-	2.2	-	-
Pot Cap-1 Maneuver	305	312	881	390	335	709	859	-	-	1180	-	-
Stage 1	636	630	-	626	601	-	-	-	-	-	-	-
Stage 2	620	570	-	774	630	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	280	286	881	360	307	709	859	-	-	1180	-	-
Mov Cap-2 Maneuver	280	286	-	360	307	-	-	-	-	-	-	-
Stage 1	604	609	-	594	570	-	-	-	-	-	-	-
Stage 2	576	541	-	736	609	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	15	0.8	1
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	859	-	-	756	414	1180	-	-
HCM Lane V/C Ratio	0.04	-	-	0.019	0.132	0.029	-	-
HCM Control Delay (s)	9.4	-	-	9.9	15	8.1	0.1	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.5	0.1	-	-

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	39	0	89	6	4	6	82	345	5	0	276	34
Future Vol, veh/h	39	0	89	6	4	6	82	345	5	0	276	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	4	0	0	0	0	18	0	0	25	0
Mvmt Flow	43	0	99	7	4	7	91	383	6	0	307	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	900	897	172	721	912	386	344	0	0	389	0	0
Stage 1	326	326	-	568	568	-	-	-	-	-	-	-
Stage 2	574	571	-	153	344	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	6.96	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.338	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	249	281	837	332	276	666	1226	-	-	1181	-	-
Stage 1	666	652	-	511	510	-	-	-	-	-	-	-
Stage 2	507	508	-	840	640	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	226	254	837	271	250	666	1226	-	-	1181	-	-
Mov Cap-2 Maneuver	226	254	-	271	250	-	-	-	-	-	-	-
Stage 1	603	652	-	462	462	-	-	-	-	-	-	-
Stage 2	450	460	-	741	640	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	16.2	1.6	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1226	-	-	459	339	1181	-	-
HCM Lane V/C Ratio	0.074	-	-	0.31	0.052	-	-	-
HCM Control Delay (s)	8.2	0	-	16.3	16.2	0	-	-
HCM Lane LOS	A	A	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	0.2	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	8	56	13	104	235	327	4	0	259	112
Future Volume (veh/h)	1	0	8	56	13	104	235	327	4	0	259	112
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1456	1900	1900	1676	1900	1900	1597	1439
Adj Flow Rate, veh/h	1	0	9	62	14	116	261	352	4	0	288	124
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	1
Peak Hour Factor	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.93	1.00	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	14	14	14	11	11	11	19	19	32
Cap, veh/h	78	27	397	157	52	206	329	386	4	0	931	713
Arrive On Green	0.28	0.00	0.28	0.28	0.28	0.28	0.58	0.58	0.58	0.00	0.58	0.58
Sat Flow, veh/h	60	98	1424	300	185	741	430	662	7	0	1597	1223
Grp Volume(v), veh/h	10	0	0	192	0	0	617	0	0	0	288	124
Grp Sat Flow(s),veh/h/ln	1582	0	0	1226	0	0	1098	0	0	0	1597	1223
Q Serve(g_s), s	0.0	0.0	0.0	4.4	0.0	0.0	29.3	0.0	0.0	0.0	6.0	3.1
Cycle Q Clear(g_c), s	0.3	0.0	0.0	8.5	0.0	0.0	35.3	0.0	0.0	0.0	6.0	3.1
Prop In Lane	0.10		0.90	0.32		0.60	0.42		0.01	0.00		1.00
Lane Grp Cap(c), veh/h	502	0	0	415	0	0	719	0	0	0	931	713
V/C Ratio(X)	0.02	0.00	0.00	0.46	0.00	0.00	0.86	0.00	0.00	0.00	0.31	0.17
Avail Cap(c_a), veh/h	502	0	0	415	0	0	719	0	0	0	931	713
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	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	0.0	19.9	0.0	0.0	14.3	0.0	0.0	0.0	6.9	6.3
Incr Delay (d2), s/veh	0.1	0.0	0.0	3.7	0.0	0.0	12.6	0.0	0.0	0.0	0.9	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	0.1	0.0	0.0	3.4	0.0	0.0	13.0	0.0	0.0	0.0	2.8	1.1
LnGrp Delay(d),s/veh	17.1	0.0	0.0	23.6	0.0	0.0	26.9	0.0	0.0	0.0	7.8	6.8
LnGrp LOS	B			C			C				A	A
Approach Vol, veh/h		10			192			617			412	
Approach Delay, s/veh		17.1			23.6			26.9			7.5	
Approach LOS		B			C			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		42.4		22.6		42.4		22.6
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		37.9		18.1		37.9		18.1
Max Q Clear Time (g_c+I1), s		37.3		2.3		8.0		10.5
Green Ext Time (p_c), s		0.4		1.0		8.5		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	9	314	0	0	0	0	421	55	74	239	10
Future Volume (veh/h)	145	9	314	0	0	0	0	421	55	74	239	10
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1470	1667				1900	1712	1557	1900	1591	1900
Adj Flow Rate, veh/h	161	10	0				0	468	61	82	266	11
Adj No. of Lanes	0	1	1				0	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.92				0.92	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	14	17	14				11	11	22	11	11	11
Cap, veh/h	476	30	510				0	787	609	162	436	16
Arrive On Green	0.36	0.36	0.00				0.00	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1322	82	1417				0	1712	1324	160	948	35
Grp Volume(v), veh/h	171	0	0				0	468	61	359	0	0
Grp Sat Flow(s),veh/h/ln	1404	0	1417				0	1712	1324	1143	0	0
Q Serve(g_s), s	4.4	0.0	0.0				0.0	10.2	1.3	3.6	0.0	0.0
Cycle Q Clear(g_c), s	4.4	0.0	0.0				0.0	10.2	1.3	13.7	0.0	0.0
Prop In Lane	0.94		1.00				0.00		1.00	0.23		0.03
Lane Grp Cap(c), veh/h	505	0	510				0	787	609	614	0	0
V/C Ratio(X)	0.34	0.00	0.00				0.00	0.59	0.10	0.58	0.00	0.00
Avail Cap(c_a), veh/h	505	0	510				0	787	609	614	0	0
HCM Platoon Ratio	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	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.7	0.0	0.0				0.0	10.0	7.6	10.2	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0				0.0	3.3	0.3	4.0	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
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0				0.0	5.4	0.5	4.7	0.0	0.0
LnGrp Delay(d),s/veh	13.5	0.0	0.0				0.0	13.3	8.0	14.2	0.0	0.0
LnGrp LOS	B							B	A	B		
Approach Vol, veh/h		171						529			359	
Approach Delay, s/veh		13.5						12.7			14.2	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		27.5		22.5		27.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		23.0		18.0		23.0		
Max Q Clear Time (g_c+I1), s		12.2		6.4		15.7		
Green Ext Time (p_c), s		4.3		0.7		3.3		

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

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	0	23	4	0	22	3	431	15	26	527	0
Future Vol, veh/h	23	0	23	4	0	22	3	431	15	26	527	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	92	90	90	92	90	90	90	90	90	92	92
Heavy Vehicles, %	8	0	0	0	2	44	0	11	8	31	10	2
Mvmt Flow	26	0	26	4	0	24	3	479	17	29	573	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	877	1133	286	838	1125	248	573	0	0	496	0	0
Stage 1	631	631	-	494	494	-	-	-	-	-	-	-
Stage 2	246	502	-	344	631	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.5	6.9	7.5	6.54	7.78	4.1	-	-	4.72	-	-
Critical Hdwy Stg 1	6.66	5.5	-	6.5	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.5	-	6.5	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4	3.3	3.5	4.02	3.74	2.2	-	-	2.51	-	-
Pot Cap-1 Maneuver	233	205	717	262	204	639	1010	-	-	885	-	-
Stage 1	421	477	-	531	545	-	-	-	-	-	-	-
Stage 2	719	545	-	650	473	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	215	194	717	243	193	639	1010	-	-	885	-	-
Mov Cap-2 Maneuver	215	194	-	243	193	-	-	-	-	-	-	-
Stage 1	419	454	-	529	543	-	-	-	-	-	-	-
Stage 2	689	543	-	597	450	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.9	12.5	0.1	0.6
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1010	-	-	331	511	885	-	-
HCM Lane V/C Ratio	0.003	-	-	0.154	0.057	0.033	-	-
HCM Control Delay (s)	8.6	0	-	17.9	12.5	9.2	0.2	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	177	1	0	0
Future Vol, veh/h	0	0	177	1	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	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	92	90	90	92	90
Heavy Vehicles, %	100	2	35	100	2	100
Mvmt Flow	0	0	197	1	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	198	-	-	0	-	197
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.1	-	-	-	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.1	-	-	-	-	4.2
Pot Cap-1 Maneuver	954	0	-	-	0	647
Stage 1	-	0	-	-	0	-
Stage 2	-	0	-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	954	-	-	-	-	647
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	WBT	WBR	SBLn1
Capacity (veh/h)	954	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	0	-	-	0
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	0	173	4	0	0
Future Vol, veh/h	4	0	173	4	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	90	90	90	90	92	92
Heavy Vehicles, %	0	0	33	0	2	2
Mvmt Flow	4	0	192	4	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	197	0	-	0	203	194
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	4.1	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1388	-	-	-	786	847
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1388	-	-	-	784	847
Mov Cap-2 Maneuver	-	-	-	-	784	-
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	1011	-

Approach	EB	WB	SB
HCM Control Delay, s	7.6	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1388	-	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-	-
HCM Control Delay (s)	7.6	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	6	0	6	35	1	9
Future Vol, veh/h	6	0	6	35	1	9
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	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	7	0	7	39	1	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	7	0	59	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	52	-
Critical Hdwy	-	-	4.12	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1614	-	953	1081
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	976	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1614	-	949	1081
Mov Cap-2 Maneuver	-	-	-	-	949	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	972	-

Approach	EB	WB	NE
HCM Control Delay, s	0	1.1	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1066	-	-	1614	-
HCM Lane V/C Ratio	0.01	-	-	0.004	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	10.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	5	103	13	13	209	41	0	0	22	15
Future Vol, veh/h	5	0	5	103	13	13	209	41	0	0	22	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	0	-	100	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	90	90	90	90	90	90	92	92	90	90
Heavy Vehicles, %	2	2	0	22	10	13	30	5	2	2	0	0
Mvmt Flow	5	0	6	114	14	14	232	46	0	0	24	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	557	-	33	543	551	46	41	0	-	-	-	0
Stage 1	33	-	-	510	510	-	-	-	-	-	-	-
Stage 2	524	-	-	33	41	-	-	-	-	-	-	-
Critical Hdwy	7.12	-	6.2	7.32	6.6	6.33	4.4	-	-	-	-	-
Critical Hdwy Stg 1	6.12	-	-	6.32	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	6.32	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	-	3.3	3.698	4.09	3.417	2.47	-	-	-	-	-
Pot Cap-1 Maneuver	441	0	1046	421	431	993	1406	-	0	0	-	-
Stage 1	983	0	-	511	525	-	-	-	0	0	-	-
Stage 2	537	0	-	934	845	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	367	-	1046	364	358	993	1406	-	-	-	-	-
Mov Cap-2 Maneuver	367	-	-	364	358	-	-	-	-	-	-	-
Stage 1	817	-	-	425	436	-	-	-	-	-	-	-
Stage 2	425	-	-	929	845	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	19.6	6.7	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	WBLn1	SBT	SBR
Capacity (veh/h)	1406	-	367	1046	388	-	-
HCM Lane V/C Ratio	0.165	-	0.015	0.005	0.369	-	-
HCM Control Delay (s)	8.1	0	15	8.5	19.6	-	-
HCM Lane LOS	A	A	C	A	C	-	-
HCM 95th %tile Q(veh)	0.6	-	0	0	1.7	-	-

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	178	0	49	0	0	73	6	45	1	5	31	26
Future Vol, veh/h	178	0	49	0	0	73	6	45	1	5	31	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	92	90	90	92	90	90	90	92	90	90	90
Heavy Vehicles, %	0	0	0	100	2	95	0	4	2	64	5	1
Mvmt Flow	198	0	54	0	0	81	7	50	1	6	34	29

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	164	124	49	151	138	51	63	0	0	51	0	0
Stage 1	60	60	-	64	64	-	-	-	-	-	-	-
Stage 2	104	64	-	87	74	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	8.1	6.52	7.15	4.1	-	-	4.74	-	-
Critical Hdwy Stg 1	6.1	5.5	-	7.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	7.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	4.4	4.018	4.155	2.2	-	-	2.776	-	-
Pot Cap-1 Maneuver	805	770	1025	638	753	806	1553	-	-	1237	-	-
Stage 1	957	849	-	750	842	-	-	-	-	-	-	-
Stage 2	907	846	-	726	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	718	762	1025	600	745	806	1553	-	-	1237	-	-
Mov Cap-2 Maneuver	718	762	-	600	745	-	-	-	-	-	-	-
Stage 1	952	845	-	746	838	-	-	-	-	-	-	-
Stage 2	812	842	-	684	829	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	10	0.8	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1553	-	-	768	806	1237	-	-
HCM Lane V/C Ratio	0.004	-	-	0.328	0.101	0.004	-	-
HCM Control Delay (s)	7.3	0	-	12	10	7.9	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.4	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	0	48	79	1	4	0
Future Vol, veh/h	0	48	79	1	4	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	92	90	90	100	90	90
Heavy Vehicles, %	0	0	10	40	0	0
Mvmt Flow	0	53	88	1	4	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	89	0	-	0	141	88
Stage 1	-	-	-	-	88	-
Stage 2	-	-	-	-	53	-
Critical Hdwy	4.1	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	6.1	-
Critical Hdwy Stg 2	-	-	-	-	6.1	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1519	-	-	-	833	976
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1519	-	-	-	833	976
Mov Cap-2 Maneuver	-	-	-	-	833	-
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	965	-

Approach	NB	SB	NE
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	833	1519	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	9.3	0	-	-	-
HCM Lane LOS	A	A	-	-	-
HCM 95th %tile Q(veh)	0	0	-	-	-

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	0	318	1	21	343	0	46	0	62	0	0	1
Future Vol, veh/h	0	318	1	21	343	0	46	0	62	0	0	1
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	90	90	90	90	90	90	90	90	90	92	92	90
Heavy Vehicles, %	0	13	0	29	11	0	90	0	50	0	0	100
Mvmt Flow	0	353	1	23	381	0	51	0	69	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	381	0	0	354	0	0	782	782	354	816	782	381
Stage 1	-	-	-	-	-	-	354	354	-	428	428	-
Stage 2	-	-	-	-	-	-	428	428	-	388	354	-
Critical Hdwy	4.1	-	-	4.39	-	-	8	6.5	6.7	7.1	6.5	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	7	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.461	-	-	4.31	4	3.75	3.5	4	4.2
Pot Cap-1 Maneuver	1189	-	-	1070	-	-	226	328	594	298	328	496
Stage 1	-	-	-	-	-	-	515	634	-	609	588	-
Stage 2	-	-	-	-	-	-	464	588	-	640	634	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1189	-	-	1070	-	-	221	319	594	258	319	496
Mov Cap-2 Maneuver	-	-	-	-	-	-	221	319	-	258	319	-
Stage 1	-	-	-	-	-	-	515	634	-	609	572	-
Stage 2	-	-	-	-	-	-	450	572	-	566	634	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	20.8	12.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	346	1189	-	-	1070	-	-	496
HCM Lane V/C Ratio	0.347	-	-	-	0.022	-	-	0.002
HCM Control Delay (s)	20.8	0	-	-	8.4	0	-	12.3
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	1.5	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	38	91	228	21	80	310
Future Vol, veh/h	38	91	228	21	80	310
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	90	90	90	90	93	90
Heavy Vehicles, %	9	0	7	0	2	2
Mvmt Flow	42	101	253	23	86	344

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	781	265	0	0	277	0
Stage 1	265	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Critical Hdwy	7.19	6.2	-	-	4.12	-
Critical Hdwy Stg 1	6.19	-	-	-	-	-
Critical Hdwy Stg 2	6.19	-	-	-	-	-
Follow-up Hdwy	3.581	3.3	-	-	2.218	-
Pot Cap-1 Maneuver	304	779	-	-	1286	-
Stage 1	725	-	-	-	-	-
Stage 2	529	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	285	779	-	-	1286	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	485	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	14.6	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	516	1286	-
HCM Lane V/C Ratio	-	-	0.278	0.067	-
HCM Control Delay (s)	-	-	14.6	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-

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	10	0	1	0	3	4	36	300	0	0	230	3
Future Vol, veh/h	10	0	1	0	3	4	36	300	0	0	230	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	92	90	92	92	92	90	90	92	90	90	90
Heavy Vehicles, %	0	0	0	2	2	2	4	8	2	0	20	29
Mvmt Flow	11	0	1	0	3	4	40	333	0	0	256	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	674	670	257	671	672	333	259	0	0	333	0	0
Stage 1	257	257	-	413	413	-	-	-	-	-	-	-
Stage 2	417	413	-	258	259	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.12	6.52	6.22	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.518	4.018	3.318	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	371	381	787	370	377	709	1294	-	-	1238	-	-
Stage 1	752	699	-	616	594	-	-	-	-	-	-	-
Stage 2	617	597	-	747	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	356	367	787	359	363	709	1294	-	-	1238	-	-
Mov Cap-2 Maneuver	356	367	-	359	363	-	-	-	-	-	-	-
Stage 1	723	699	-	593	571	-	-	-	-	-	-	-
Stage 2	587	574	-	746	694	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.9	12.3	0.8	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1294	-	-	375	503	1238	-	-
HCM Lane V/C Ratio	0.031	-	-	0.033	0.015	-	-	-
HCM Control Delay (s)	7.9	0	-	14.9	12.3	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

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	4	0	0	13	0	21	1	311	17	27	200	4
Future Vol, veh/h	4	0	0	13	0	21	1	311	17	27	200	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	92	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	24	0	0	36	0
Mvmt Flow	4	0	0	14	0	23	1	346	19	30	222	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	653	651	224	641	644	355	227	0	0	364	0	0
Stage 1	284	284	-	357	357	-	-	-	-	-	-	-
Stage 2	369	367	-	284	287	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	383	390	820	390	394	693	1353	-	-	1206	-	-
Stage 1	727	680	-	665	632	-	-	-	-	-	-	-
Stage 2	655	626	-	727	678	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	362	379	820	381	383	693	1353	-	-	1206	-	-
Mov Cap-2 Maneuver	362	379	-	381	383	-	-	-	-	-	-	-
Stage 1	726	661	-	664	631	-	-	-	-	-	-	-
Stage 2	632	625	-	707	659	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.1	12.3	0	0.9
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1353	-	-	362	528	1206	-	-
HCM Lane V/C Ratio	0.001	-	-	0.012	0.072	0.025	-	-
HCM Control Delay (s)	7.7	0	-	15.1	12.3	8.1	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-

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	0	0	0	55	0	87	0	242	0	0	213	0
Future Vol, veh/h	0	0	0	55	0	87	0	242	0	0	213	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	0	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	92	90	95	90	90	90	90	100	92	90	90
Heavy Vehicles, %	11	2	0	5	0	10	0	25	2	2	37	0
Mvmt Flow	0	0	0	58	0	97	0	269	0	0	237	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	554	-	237	506	506	269	237	0	-	-	-	0
Stage 1	237	-	-	269	269	-	-	-	-	-	-	-
Stage 2	317	-	-	237	237	-	-	-	-	-	-	-
Critical Hdwy	7.21	-	6.2	7.15	6.5	6.3	4.1	-	-	-	-	-
Critical Hdwy Stg 1	6.21	-	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.21	-	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.599	-	3.3	3.545	4	3.39	2.2	-	-	-	-	-
Pot Cap-1 Maneuver	430	0	807	472	472	751	1342	-	0	0	-	-
Stage 1	746	0	-	730	690	-	-	-	0	0	-	-
Stage 2	676	0	-	760	713	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	375	-	807	472	472	751	1342	-	-	-	-	-
Mov Cap-2 Maneuver	375	-	-	472	472	-	-	-	-	-	-	-
Stage 1	746	-	-	730	690	-	-	-	-	-	-	-
Stage 2	589	-	-	760	713	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	12.8	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	WBLn1	SBT	SBR
Capacity (veh/h)	1342	-	-	-	615	-	-
HCM Lane V/C Ratio	-	-	-	-	0.251	-	-
HCM Control Delay (s)	0	-	0	0	12.8	-	-
HCM Lane LOS	A	-	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	1	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	105	137	0	0	268
Future Vol, veh/h	5	105	137	0	0	268
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	92	92	93
Heavy Vehicles, %	25	21	28	2	2	36
Mvmt Flow	6	117	152	0	0	288

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	440	152	0	-	-	-
Stage 1	152	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	6.65	6.41	-	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.489	-	-	-	-
Pot Cap-1 Maneuver	534	847	-	0	0	-
Stage 1	823	-	-	0	0	-
Stage 2	711	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	534	847	-	-	-	-
Mov Cap-2 Maneuver	534	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	711	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	887	-
HCM Lane V/C Ratio	-	0.138	-
HCM Control Delay (s)	-	9.7	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0.5	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	14	5	3	103	28	23	168	26	1	0
Future Vol, veh/h	14	5	3	103	28	23	168	26	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Free	-	-	None	-	-
Storage Length	0	-	-	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	6	0	57	7	0	2	2
Mvmt Flow	16	6	3	114	31	26	187	29	1	0

Major/Minor	Minor2		Major1			Major2			Minor1	
Conflicting Flow All	380	201	216	0	-	114	0	0	384	114
Stage 1	252	-	-	-	-	-	-	-	121	-
Stage 2	128	-	-	-	-	-	-	-	263	-
Critical Hdwy	7.1	6.2	4.1	-	-	4.67	-	-	7.12	6.22
Critical Hdwy Stg 1	6.1	-	-	-	-	-	-	-	6.12	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-	-	-	6.12	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	2.713	-	-	3.518	3.318
Pot Cap-1 Maneuver	581	845	1366	-	0	1194	-	-	574	939
Stage 1	757	-	-	-	0	-	-	-	883	-
Stage 2	881	-	-	-	0	-	-	-	742	-
Platoon blocked, %				-			-	-		
Mov Cap-1 Maneuver	561	845	1366	-	-	1194	-	-	546	939
Mov Cap-2 Maneuver	561	-	-	-	-	-	-	-	546	-
Stage 1	755	-	-	-	-	-	-	-	881	-
Stage 2	867	-	-	-	-	-	-	-	702	-

Approach	EB	NB	SB	SW
HCM Control Delay, s	11.7	0.2	0.9	9.1
HCM LOS	B			A

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBL	SBT	SBR	SWLn1
Capacity (veh/h)	1366	-	579	1194	-	-	890
HCM Lane V/C Ratio	0.002	-	0.079	0.021	-	-	0.016
HCM Control Delay (s)	7.6	0	11.7	8.1	0	-	9.1
HCM Lane LOS	A	A	B	A	A	-	A
HCM 95th %tile Q(veh)	0	-	0.3	0.1	-	-	0

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	108	32	0	34
Future Vol, veh/h	0	0	108	32	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	90	90	92	90
Heavy Vehicles, %	2	2	18	0	2	0
Mvmt Flow	0	0	120	36	0	38

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	-	138
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	916
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	-	916
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	9.1
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	916
HCM Lane V/C Ratio	-	-	0.041
HCM Control Delay (s)	-	-	9.1
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	146	0	5	169
Future Vol, veh/h	0	1	146	0	5	169
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	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	7
Mvmt Flow	0	1	162	0	6	188

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	361	162	0	0	162	0
Stage 1	162	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	642	888	-	-	1429	-
Stage 1	872	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	639	888	-	-	1429	-
Mov Cap-2 Maneuver	639	-	-	-	-	-
Stage 1	872	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	888	1429	-
HCM Lane V/C Ratio	-	-	0.001	0.004	-
HCM Control Delay (s)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	38	0
Future Vol, veh/h	0	0	0	0	38	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Yield	Yield	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	0	-
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	0	-	0	-	0	-
Peak Hour Factor	92	92	92	92	90	92
Heavy Vehicles, %	2	2	2	2	32	0
Mvmt Flow	0	0	0	0	42	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	0	0	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0
Stage 1	0	-	-	0
Stage 2	0	-	-	0
Platoon blocked, %				
Mov Cap-1 Maneuver	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	NB	SE
HCM Control Delay, s	0	
HCM LOS	A	

Minor Lane/Major Mvmt	NBLn1	SEL
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	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	322	46	17	382	9	71	0	20	1	0	14
Future Vol, veh/h	9	322	46	17	382	9	71	0	20	1	0	14
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	92	90	90	92	90	90	90	92	90	92	92	92
Heavy Vehicles, %	2	4	6	0	3	5	6	2	8	2	2	2
Mvmt Flow	10	358	51	18	424	10	79	0	22	1	0	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	434	0	0	409	0	0	652	874	204	664	894	217
Stage 1	-	-	-	-	-	-	403	403	-	466	466	-
Stage 2	-	-	-	-	-	-	249	471	-	198	428	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.62	6.54	7.06	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.62	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.62	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.2	-	-	3.56	4.02	3.38	3.52	4.02	3.32
Pot Cap-1 Maneuver	1122	-	-	1161	-	-	345	287	784	346	279	787
Stage 1	-	-	-	-	-	-	584	598	-	546	561	-
Stage 2	-	-	-	-	-	-	722	558	-	785	583	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1122	-	-	1161	-	-	330	278	784	328	270	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	330	278	-	328	270	-
Stage 1	-	-	-	-	-	-	577	591	-	539	550	-
Stage 2	-	-	-	-	-	-	694	547	-	754	576	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.4	18	10.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	378	1122	-	-	1161	-	-	720
HCM Lane V/C Ratio	0.267	0.009	-	-	0.016	-	-	0.023
HCM Control Delay (s)	18	8.2	0	-	8.2	0.1	-	10.1
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	1	0	0	0	0	87	0	0	60	0
Future Vol, veh/h	1	0	1	0	0	0	0	87	0	0	60	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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	90	92	92	92	90	90	92	92	90	92
Heavy Vehicles, %	2	2	0	2	2	2	2	7	0	2	6	2
Mvmt Flow	1	0	1	0	0	0	0	97	0	0	67	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	164	164	67	164	164	97	67	0	0	97	0	0
Stage 1	67	67	-	97	97	-	-	-	-	-	-	-
Stage 2	97	97	-	67	67	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.2	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.3	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	801	729	1002	801	729	959	1535	-	-	1496	-	-
Stage 1	943	839	-	910	815	-	-	-	-	-	-	-
Stage 2	910	815	-	943	839	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	801	729	1002	800	729	959	1535	-	-	1496	-	-
Mov Cap-2 Maneuver	801	729	-	800	729	-	-	-	-	-	-	-
Stage 1	943	839	-	910	815	-	-	-	-	-	-	-
Stage 2	910	815	-	942	839	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1535	-	-	891	-	1496	-	-
HCM Lane V/C Ratio	-	-	-	0.002	-	-	-	-
HCM Control Delay (s)	0	-	-	9.1	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	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	1	1	1	9	0	12	2	74	0	1	59	1
Future Vol, veh/h	1	1	1	9	0	12	2	74	0	1	59	1
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	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	92	92	92	92	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	2	2	2	0	0	2	0	0	4	0
Mvmt Flow	1	1	1	10	0	13	2	82	0	1	66	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	161	155	66	156	156	82	67	0	0	82	0	0
Stage 1	68	68	-	87	87	-	-	-	-	-	-	-
Stage 2	93	87	-	69	69	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.22	7.12	6.52	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.318	3.518	4.018	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	809	737	998	810	736	983	1547	-	-	1528	-	-
Stage 1	947	838	-	921	823	-	-	-	-	-	-	-
Stage 2	919	823	-	941	837	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	797	736	998	807	735	983	1547	-	-	1528	-	-
Mov Cap-2 Maneuver	797	736	-	807	735	-	-	-	-	-	-	-
Stage 1	946	837	-	920	822	-	-	-	-	-	-	-
Stage 2	906	822	-	938	836	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	9.1	0.2	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1547	-	-	830	900	1528	-	-
HCM Lane V/C Ratio	0.001	-	-	0.004	0.026	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9.4	9.1	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Traffic Vol, veh/h	3	5	15	71	0	0	60	9	0	0
Future Vol, veh/h	3	5	15	71	0	0	60	9	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	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	-	0	-
Peak Hour Factor	90	90	90	90	90	92	90	90	92	92
Heavy Vehicles, %	100	0	2	2	2	2	5	0	2	2
Mvmt Flow	3	6	17	79	0	0	67	10	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	184	79	77	0	-	-	-	0
Stage 1	112	-	-	-	-	-	-	-
Stage 2	72	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	810	987	1522	-	0	0	-	-
Stage 1	918	-	-	-	0	0	-	-
Stage 2	956	-	-	-	0	0	-	-
Platoon blocked, %				-			-	-
Mov Cap-1 Maneuver	800	987	1522	-	-	-	-	-
Mov Cap-2 Maneuver	800	-	-	-	-	-	-	-
Stage 1	907	-	-	-	-	-	-	-
Stage 2	956	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1522	-	884	-	-
HCM Lane V/C Ratio	0.011	-	0.016	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Vol, veh/h	0	14	0	62	14	15	50	0	0	0
Future Vol, veh/h	0	14	0	62	14	15	50	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	Yield	-	-	None	-	-
Storage Length	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90	100	90	90	92
Heavy Vehicles, %	86	0	0	0	0	7	0	0	2	2
Mvmt Flow	0	16	0	69	16	17	50	0	0	0

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	152	50	50	0	0	69	0	0
Stage 1	83	-	-	-	-	-	-	-
Stage 2	69	-	-	-	-	-	-	-
Critical Hdwy	6.48	6.2	4.1	-	-	4.17	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	3.3	2.2	-	-	2.263	-	-
Pot Cap-1 Maneuver	826	1024	1570	-	-	1501	-	-
Stage 1	925	-	-	-	-	-	-	-
Stage 2	939	-	-	-	-	-	-	-
Platoon blocked, %				-	-		-	-
Mov Cap-1 Maneuver	816	1024	1570	-	-	1501	-	-
Mov Cap-2 Maneuver	816	-	-	-	-	-	-	-
Stage 1	914	-	-	-	-	-	-	-
Stage 2	939	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	1.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1570	-	-	886	1501	-	-
HCM Lane V/C Ratio	-	-	-	0.045	0.011	-	-
HCM Control Delay (s)	0	-	-	9.3	7.4	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	0	73	64	0	3	0
Future Vol, veh/h	0	73	64	0	3	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	90	90	90	90	90	90
Heavy Vehicles, %	0	3	0	5	0	0
Mvmt Flow	0	81	71	0	3	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	71	0	-	0	152	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	81	-
Critical Hdwy	4.1	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	6.1	-
Critical Hdwy Stg 2	-	-	-	-	6.1	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1542	-	-	-	820	997
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	932	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1542	-	-	-	820	997
Mov Cap-2 Maneuver	-	-	-	-	820	-
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	932	-

Approach	NB	SB	NE
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	820	1542	-	-	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	9.4	0	-	-	-
HCM Lane LOS	A	A	-	-	-
HCM 95th %tile Q(veh)	0	0	-	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	32	41	10	32	32
Future Vol, veh/h	9	32	41	10	32	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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	4	0	0	8	0
Mvmt Flow	10	36	28	6	36	36

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	138	31	0	0	34	0
Stage 1	31	-	-	-	-	-
Stage 2	107	-	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.18	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.272	-
Pot Cap-1 Maneuver	860	1037	-	-	1540	-
Stage 1	997	-	-	-	-	-
Stage 2	922	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	839	1037	-	-	1540	-
Mov Cap-2 Maneuver	839	-	-	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	900	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	986	1540	-
HCM Lane V/C Ratio	-	-	0.046	0.023	-
HCM Control Delay (s)	-	-	8.8	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

2040 BUILD CONDITIONS
SYNCHRO HCM ANALYSIS

2040 BUILD ALTERNATIVES
EXIT 100 – BLACKSBURG HIGHWAY

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	30	0	369	0	0	0	0	278	28	74	274	0
Future Vol, veh/h	30	0	369	0	0	0	0	278	28	74	274	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	200	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	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	33	0	401	0	0	0	0	302	30	80	298	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	776	792	298	-	0	0	333	0	0
Stage 1	459	459	-	-	-	-	-	-	-
Stage 2	317	333	-	-	-	-	-	-	-
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	366	322	741	0	-	-	1226	-	0
Stage 1	636	566	-	0	-	-	-	-	0
Stage 2	738	644	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	342	0	741	-	-	-	1226	-	-
Mov Cap-2 Maneuver	440	0	-	-	-	-	-	-	-
Stage 1	594	0	-	-	-	-	-	-	-
Stage 2	738	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.3	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	440	741	1226	-
HCM Lane V/C Ratio	-	-	0.074	0.541	0.066	-
HCM Control Delay (s)	-	-	13.8	15.4	8.1	-
HCM Lane LOS	-	-	B	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	3.3	0.2	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	58	13	4	174	134	0	0	285	61
Future Vol, veh/h	0	0	0	58	13	4	174	134	0	0	285	61
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	200	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	63	14	4	189	146	0	0	310	66

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	867	900	146	376	0	-	-	-	0
Stage 1	524	524	-	-	-	-	-	-	-
Stage 2	343	376	-	-	-	-	-	-	-
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	323	278	901	1182	-	0	0	-	-
Stage 1	594	530	-	-	-	0	0	-	-
Stage 2	719	616	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	271	0	901	1182	-	-	-	-	-
Mov Cap-2 Maneuver	358	0	-	-	-	-	-	-	-
Stage 1	499	0	-	-	-	-	-	-	-
Stage 2	719	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.3	4.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1182	-	358	901	-	-
HCM Lane V/C Ratio	0.16	-	0.216	0.005	-	-
HCM Control Delay (s)	8.6	-	17.8	9	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	0.8	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	0	22	14	0	11	16	158	14	2	319	3
Future Vol, veh/h	0	0	22	14	0	11	16	158	14	2	319	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	200	-	-	-	-	150	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	24	15	0	12	17	172	15	2	347	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	567	575	348	579	568	179	350	0	0	187	0	0
Stage 1	353	353	-	214	214	-	-	-	-	-	-	-
Stage 2	214	222	-	365	354	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	434	429	695	426	432	864	1209	-	-	1387	-	-
Stage 1	664	631	-	788	725	-	-	-	-	-	-	-
Stage 2	788	720	-	654	630	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	423	422	695	406	425	864	1209	-	-	1387	-	-
Mov Cap-2 Maneuver	423	422	-	406	425	-	-	-	-	-	-	-
Stage 1	655	630	-	777	715	-	-	-	-	-	-	-
Stage 2	766	710	-	631	629	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	12	0.7	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1209	-	-	-	695	406	864	1387	-	-
HCM Lane V/C Ratio	0.014	-	-	-	0.034	0.037	0.014	0.002	-	-
HCM Control Delay (s)	8	-	-	0	10.4	14.2	9.2	7.6	-	-
HCM Lane LOS	A	-	-	A	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	0	305	643	0
Future Vol, veh/h	1	1	0	305	643	0
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	0	332	699	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1031	699	699	0	-	0
Stage 1	699	-	-	-	-	-
Stage 2	332	-	-	-	-	-
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	258	440	898	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	258	440	898	-	-	-
Mov Cap-2 Maneuver	378	-	-	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	727	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	898	-	407	-	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	0	-	13.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	3	170	12	2	312
Future Vol, veh/h	12	3	170	12	2	312
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	3	185	13	2	339

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	534	191	0	0	198	0
Stage 1	191	-	-	-	-	-
Stage 2	343	-	-	-	-	-
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	507	851	-	-	1375	-
Stage 1	841	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	506	851	-	-	1375	-
Mov Cap-2 Maneuver	580	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	718	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	619	1375	-
HCM Lane V/C Ratio	-	-	0.026	0.002	-
HCM Control Delay (s)	-	-	11	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

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	30	0	369	0	0	0	0	278	28	74	274	0
Future Vol, veh/h	30	0	369	0	0	0	0	278	28	74	274	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	200	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	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	33	0	401	0	0	0	0	302	30	80	298	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	776	792	298	-	0	0	333	0	0
Stage 1	459	459	-	-	-	-	-	-	-
Stage 2	317	333	-	-	-	-	-	-	-
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	366	322	741	0	-	-	1226	-	0
Stage 1	636	566	-	0	-	-	-	-	0
Stage 2	738	644	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	342	0	741	-	-	-	1226	-	-
Mov Cap-2 Maneuver	440	0	-	-	-	-	-	-	-
Stage 1	594	0	-	-	-	-	-	-	-
Stage 2	738	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.3	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	440	741	1226	-
HCM Lane V/C Ratio	-	-	0.074	0.541	0.066	-
HCM Control Delay (s)	-	-	13.8	15.4	8.1	-
HCM Lane LOS	-	-	B	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	3.3	0.2	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	58	13	4	174	134	0	0	285	61
Future Vol, veh/h	0	0	0	58	13	4	174	134	0	0	285	61
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	200	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	63	14	4	189	146	0	0	310	66

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	867	900	146	376	0	-	-	-	0
Stage 1	524	524	-	-	-	-	-	-	-
Stage 2	343	376	-	-	-	-	-	-	-
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	323	278	901	1182	-	0	0	-	-
Stage 1	594	530	-	-	-	0	0	-	-
Stage 2	719	616	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	271	0	901	1182	-	-	-	-	-
Mov Cap-2 Maneuver	358	0	-	-	-	-	-	-	-
Stage 1	499	0	-	-	-	-	-	-	-
Stage 2	719	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.3	4.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1182	-	358	901	-	-
HCM Lane V/C Ratio	0.16	-	0.216	0.005	-	-
HCM Control Delay (s)	8.6	-	17.8	9	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	0.8	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	0	22	14	0	11	16	158	14	2	319	3
Future Vol, veh/h	0	0	22	14	0	11	16	158	14	2	319	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	200	-	-	-	-	150	200	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	24	15	0	12	17	172	15	2	347	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	567	575	348	579	568	179	350	0	0	187	0	0
Stage 1	353	353	-	214	214	-	-	-	-	-	-	-
Stage 2	214	222	-	365	354	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	434	429	695	426	432	864	1209	-	-	1387	-	-
Stage 1	664	631	-	788	725	-	-	-	-	-	-	-
Stage 2	788	720	-	654	630	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	423	422	695	406	425	864	1209	-	-	1387	-	-
Mov Cap-2 Maneuver	423	422	-	406	425	-	-	-	-	-	-	-
Stage 1	655	630	-	777	715	-	-	-	-	-	-	-
Stage 2	766	710	-	631	629	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	12	0.7	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1209	-	-	-	695	406	864	1387	-	-
HCM Lane V/C Ratio	0.014	-	-	-	0.034	0.037	0.014	0.002	-	-
HCM Control Delay (s)	8	-	-	0	10.4	14.2	9.2	7.6	-	-
HCM Lane LOS	A	-	-	A	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	0	305	643	0
Future Vol, veh/h	1	1	0	305	643	0
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	0	332	699	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1031	699	699	0	-	0
Stage 1	699	-	-	-	-	-
Stage 2	332	-	-	-	-	-
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	258	440	898	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	258	440	898	-	-	-
Mov Cap-2 Maneuver	378	-	-	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	727	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	898	-	407	-	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	0	-	13.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	3	170	12	2	312
Future Vol, veh/h	12	3	170	12	2	312
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	3	185	13	2	339

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	534	191	0	0	198	0
Stage 1	191	-	-	-	-	-
Stage 2	343	-	-	-	-	-
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	507	851	-	-	1375	-
Stage 1	841	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	506	851	-	-	1375	-
Mov Cap-2 Maneuver	580	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	718	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	619	1375	-
HCM Lane V/C Ratio	-	-	0.026	0.002	-
HCM Control Delay (s)	-	-	11	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

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	30	0	369	0	0	0	0	277	28	74	274	0
Future Vol, veh/h	30	0	369	0	0	0	0	277	28	74	274	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	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	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	33	0	401	0	0	0	0	301	30	80	298	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	775	791	298	-	0	0	332	0	0
Stage 1	459	459	-	-	-	-	-	-	-
Stage 2	316	332	-	-	-	-	-	-	-
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	366	322	741	0	-	-	1227	-	0
Stage 1	636	566	-	0	-	-	-	-	0
Stage 2	739	644	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	342	0	741	-	-	-	1227	-	-
Mov Cap-2 Maneuver	342	0	-	-	-	-	-	-	-
Stage 1	595	0	-	-	-	-	-	-	-
Stage 2	739	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.1	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	681	1227	-
HCM Lane V/C Ratio	-	-	0.637	0.066	-
HCM Control Delay (s)	-	-	19.1	8.1	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	4.6	0.2	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	58	13	4	174	133	0	0	285	61
Future Vol, veh/h	0	0	0	58	13	4	174	133	0	0	285	61
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	250	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	63	14	4	189	145	0	0	310	66

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	866	899	145	376	0	-	-	-	0
Stage 1	523	523	-	-	-	-	-	-	-
Stage 2	343	376	-	-	-	-	-	-	-
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	324	279	902	1182	-	0	0	-	-
Stage 1	595	530	-	-	-	0	0	-	-
Stage 2	719	616	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	272	0	902	1182	-	-	-	-	-
Mov Cap-2 Maneuver	272	0	-	-	-	-	-	-	-
Stage 1	500	0	-	-	-	-	-	-	-
Stage 2	719	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.6	4.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1182	-	272	902	-	-
HCM Lane V/C Ratio	0.16	-	0.284	0.005	-	-
HCM Control Delay (s)	8.6	-	23.4	9	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	1.1	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	0	22	14	0	11	16	157	14	2	319	3
Future Vol, veh/h	0	0	22	14	0	11	16	157	14	2	319	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	-	-	-	-	-	-	200	-	-	250	-	-
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	0	0	24	15	0	12	17	171	15	2	347	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	572	574	348	578	567	178	350	0	0	186	0	0
Stage 1	353	353	-	213	213	-	-	-	-	-	-	-
Stage 2	219	221	-	365	354	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	431	429	695	427	433	865	1209	-	-	1388	-	-
Stage 1	664	631	-	789	726	-	-	-	-	-	-	-
Stage 2	783	720	-	654	630	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	420	422	695	407	426	865	1209	-	-	1388	-	-
Mov Cap-2 Maneuver	420	422	-	407	426	-	-	-	-	-	-	-
Stage 1	655	630	-	778	716	-	-	-	-	-	-	-
Stage 2	761	710	-	631	629	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	12.1	0.7	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1209	-	-	695	531	1388	-	-
HCM Lane V/C Ratio	0.014	-	-	0.034	0.051	0.002	-	-
HCM Control Delay (s)	8	-	-	10.4	12.1	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	3	169	12	2	312
Future Vol, veh/h	12	3	169	12	2	312
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	3	184	13	2	339

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	533	190	0	0	197	0
Stage 1	190	-	-	-	-	-
Stage 2	343	-	-	-	-	-
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	507	852	-	-	1376	-
Stage 1	842	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	506	852	-	-	1376	-
Mov Cap-2 Maneuver	506	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	718	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	551	1376	-
HCM Lane V/C Ratio	-	-	0.03	0.002	-
HCM Control Delay (s)	-	-	11.7	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

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	64	0	223	0	0	0	0	429	32	65	165	0
Future Vol, veh/h	64	0	223	0	0	0	0	429	32	65	165	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	200	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	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	70	0	242	0	0	0	0	466	35	71	179	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	805	822	179	-	0	0	501	0	0
Stage 1	321	321	-	-	-	-	-	-	-
Stage 2	484	501	-	-	-	-	-	-	-
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	352	309	864	0	-	-	1063	-	0
Stage 1	735	652	-	0	-	-	-	-	0
Stage 2	620	543	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	328	0	864	-	-	-	1063	-	-
Mov Cap-2 Maneuver	424	0	-	-	-	-	-	-	-
Stage 1	686	0	-	-	-	-	-	-	-
Stage 2	620	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	0	2.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	424	864	1063	-
HCM Lane V/C Ratio	-	-	0.164	0.281	0.066	-
HCM Control Delay (s)	-	-	15.2	10.8	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	1.2	0.2	-

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	0	0	37	24	47	287	206	0	0	193	65
Future Vol, veh/h	0	0	0	37	24	47	287	206	0	0	193	65
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	200	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	40	26	51	312	224	0	0	210	71

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1093	1128	224	280	0	-	-	-	0
Stage 1	848	848	-	-	-	-	-	-	-
Stage 2	245	280	-	-	-	-	-	-	-
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	237	204	815	1283	-	0	0	-	-
Stage 1	420	378	-	-	-	0	0	-	-
Stage 2	796	679	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	179	0	815	1283	-	-	-	-	-
Mov Cap-2 Maneuver	251	0	-	-	-	-	-	-	-
Stage 1	318	0	-	-	-	-	-	-	-
Stage 2	796	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18	5.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1283	-	251	815	-	-
HCM Lane V/C Ratio	0.243	-	0.264	0.063	-	-
HCM Control Delay (s)	8.7	-	24.4	9.7	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	1	-	1	0.2	-	-

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	6	4	2	29	1	29	14	198	41	12	211	2
Future Vol, veh/h	6	4	2	29	1	29	14	198	41	12	211	2
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	200	-	-	-	-	150	200	-	-	200	-	-
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	7	4	2	32	1	32	15	215	45	13	229	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	525	547	230	528	526	238	232	0	0	260	0	0
Stage 1	257	257	-	268	268	-	-	-	-	-	-	-
Stage 2	268	290	-	260	258	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	463	445	809	461	457	801	1336	-	-	1304	-	-
Stage 1	748	695	-	738	687	-	-	-	-	-	-	-
Stage 2	738	672	-	745	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	437	436	809	449	447	801	1336	-	-	1304	-	-
Mov Cap-2 Maneuver	437	436	-	449	447	-	-	-	-	-	-	-
Stage 1	740	688	-	730	679	-	-	-	-	-	-	-
Stage 2	700	664	-	731	687	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	11.7	0.4	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1336	-	-	437	515	449	801	1304	-	-
HCM Lane V/C Ratio	0.011	-	-	0.015	0.013	0.073	0.039	0.01	-	-
HCM Control Delay (s)	7.7	-	-	13.4	12.1	13.6	9.7	7.8	-	-
HCM Lane LOS	A	-	-	B	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	2	0	459	388	0
Future Vol, veh/h	2	2	0	459	388	0
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	2	0	499	422	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	921	422	422	0	-	0
Stage 1	422	-	-	-	-	-
Stage 2	499	-	-	-	-	-
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	300	632	1137	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	300	632	1137	-	-	-
Mov Cap-2 Maneuver	426	-	-	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	610	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1137	-	509	-	-
HCM Lane V/C Ratio	-	-	0.009	-	-
HCM Control Delay (s)	0	-	12.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	24	233	26	3	232
Future Vol, veh/h	26	24	233	26	3	232
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	26	253	28	3	252

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	526	267	0	0	282	0
Stage 1	267	-	-	-	-	-
Stage 2	259	-	-	-	-	-
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	512	772	-	-	1280	-
Stage 1	778	-	-	-	-	-
Stage 2	784	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	510	772	-	-	1280	-
Mov Cap-2 Maneuver	589	-	-	-	-	-
Stage 1	778	-	-	-	-	-
Stage 2	782	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	665	1280	-
HCM Lane V/C Ratio	-	-	0.082	0.003	-
HCM Control Delay (s)	-	-	10.9	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

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	64	0	223	0	0	0	0	429	32	65	165	0
Future Vol, veh/h	64	0	223	0	0	0	0	429	32	65	165	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	200	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	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	70	0	242	0	0	0	0	466	35	71	179	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	805	822	179	-	0	0	501	0	0
Stage 1	321	321	-	-	-	-	-	-	-
Stage 2	484	501	-	-	-	-	-	-	-
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	352	309	864	0	-	-	1063	-	0
Stage 1	735	652	-	0	-	-	-	-	0
Stage 2	620	543	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	328	0	864	-	-	-	1063	-	-
Mov Cap-2 Maneuver	424	0	-	-	-	-	-	-	-
Stage 1	686	0	-	-	-	-	-	-	-
Stage 2	620	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	0	2.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	424	864	1063	-
HCM Lane V/C Ratio	-	-	0.164	0.281	0.066	-
HCM Control Delay (s)	-	-	15.2	10.8	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	1.2	0.2	-

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	0	0	37	24	47	287	206	0	0	193	65
Future Vol, veh/h	0	0	0	37	24	47	287	206	0	0	193	65
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	200	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	40	26	51	312	224	0	0	210	71

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1093	1128	224	280	0	-	-	-	0
Stage 1	848	848	-	-	-	-	-	-	-
Stage 2	245	280	-	-	-	-	-	-	-
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	237	204	815	1283	-	0	0	-	-
Stage 1	420	378	-	-	-	0	0	-	-
Stage 2	796	679	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	179	0	815	1283	-	-	-	-	-
Mov Cap-2 Maneuver	251	0	-	-	-	-	-	-	-
Stage 1	318	0	-	-	-	-	-	-	-
Stage 2	796	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18	5.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1283	-	251	815	-	-
HCM Lane V/C Ratio	0.243	-	0.264	0.063	-	-
HCM Control Delay (s)	8.7	-	24.4	9.7	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	1	-	1	0.2	-	-

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	6	4	2	29	1	29	14	198	41	12	211	2
Future Vol, veh/h	6	4	2	29	1	29	14	198	41	12	211	2
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	200	-	-	-	-	150	200	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	4	2	32	1	32	15	215	45	13	229	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	525	547	230	528	526	238	232	0	0	260	0	0
Stage 1	257	257	-	268	268	-	-	-	-	-	-	-
Stage 2	268	290	-	260	258	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	463	445	809	461	457	801	1336	-	-	1304	-	-
Stage 1	748	695	-	738	687	-	-	-	-	-	-	-
Stage 2	738	672	-	745	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	437	436	809	449	447	801	1336	-	-	1304	-	-
Mov Cap-2 Maneuver	437	436	-	449	447	-	-	-	-	-	-	-
Stage 1	740	688	-	730	679	-	-	-	-	-	-	-
Stage 2	700	664	-	731	687	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	11.7	0.4	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1336	-	-	437	515	449	801	1304	-	-
HCM Lane V/C Ratio	0.011	-	-	0.015	0.013	0.073	0.039	0.01	-	-
HCM Control Delay (s)	7.7	-	-	13.4	12.1	13.6	9.7	7.8	-	-
HCM Lane LOS	A	-	-	B	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	2	0	459	388	0
Future Vol, veh/h	2	2	0	459	388	0
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	2	0	499	422	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	921	422	422	0	-	0
Stage 1	422	-	-	-	-	-
Stage 2	499	-	-	-	-	-
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	300	632	1137	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	300	632	1137	-	-	-
Mov Cap-2 Maneuver	426	-	-	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	610	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1137	-	509	-	-
HCM Lane V/C Ratio	-	-	0.009	-	-
HCM Control Delay (s)	0	-	12.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	24	238	26	3	232
Future Vol, veh/h	26	24	238	26	3	232
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	26	259	28	3	252

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	532	273	0	0	287	0
Stage 1	273	-	-	-	-	-
Stage 2	259	-	-	-	-	-
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	508	766	-	-	1275	-
Stage 1	773	-	-	-	-	-
Stage 2	784	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	506	766	-	-	1275	-
Mov Cap-2 Maneuver	586	-	-	-	-	-
Stage 1	773	-	-	-	-	-
Stage 2	782	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	661	1275	-
HCM Lane V/C Ratio	-	-	0.082	0.003	-
HCM Control Delay (s)	-	-	10.9	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

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	64	0	223	0	0	0	0	427	32	65	165	0
Future Vol, veh/h	64	0	223	0	0	0	0	427	32	65	165	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	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	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	70	0	242	0	0	0	0	464	35	71	179	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	803	820	179	-	0	0	499	0	0
Stage 1	321	321	-	-	-	-	-	-	-
Stage 2	482	499	-	-	-	-	-	-	-
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	353	310	864	0	-	-	1065	-	0
Stage 1	735	652	-	0	-	-	-	-	0
Stage 2	621	544	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	329	0	864	-	-	-	1065	-	-
Mov Cap-2 Maneuver	329	0	-	-	-	-	-	-	-
Stage 1	686	0	-	-	-	-	-	-	-
Stage 2	621	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.1	0	2.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	634	1065	-
HCM Lane V/C Ratio	-	-	0.492	0.066	-
HCM Control Delay (s)	-	-	16.1	8.6	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	2.7	0.2	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	37	24	47	287	204	0	0	193	65
Future Vol, veh/h	0	0	0	37	24	47	287	204	0	0	193	65
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	-	-	-	-	-	-	250	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	40	26	51	312	222	0	0	210	71

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1091	1126	222	280	0	-	-	-	0
Stage 1	846	846	-	-	-	-	-	-	-
Stage 2	245	280	-	-	-	-	-	-	-
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	238	205	818	1283	-	0	0	-	-
Stage 1	421	378	-	-	-	0	0	-	-
Stage 2	796	679	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	180	0	818	1283	-	-	-	-	-
Mov Cap-2 Maneuver	180	0	-	-	-	-	-	-	-
Stage 1	319	0	-	-	-	-	-	-	-
Stage 2	796	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.7	5.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1283	-	319	-	-
HCM Lane V/C Ratio	0.243	-	0.368	-	-
HCM Control Delay (s)	8.7	-	22.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	1	-	1.6	-	-

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	6	4	2	29	1	29	14	196	41	12	211	2
Future Vol, veh/h	6	4	2	29	1	29	14	196	41	12	211	2
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	-	-	-	-	-	-	200	-	-	250	-	-
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	7	4	2	32	1	32	15	213	45	13	229	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	539	545	230	526	524	235	232	0	0	258	0	0
Stage 1	257	257	-	266	266	-	-	-	-	-	-	-
Stage 2	282	288	-	260	258	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	453	446	809	462	458	804	1336	-	-	1307	-	-
Stage 1	748	695	-	739	689	-	-	-	-	-	-	-
Stage 2	725	674	-	745	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	427	437	809	450	448	804	1336	-	-	1307	-	-
Mov Cap-2 Maneuver	427	437	-	450	448	-	-	-	-	-	-	-
Stage 1	740	688	-	731	681	-	-	-	-	-	-	-
Stage 2	688	666	-	731	687	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.9	12.1	0.4	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1336	-	-	467	574	1307	-	-
HCM Lane V/C Ratio	0.011	-	-	0.028	0.112	0.01	-	-
HCM Control Delay (s)	7.7	-	-	12.9	12.1	7.8	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	24	231	26	3	232
Future Vol, veh/h	26	24	231	26	3	232
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	26	251	28	3	252

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	524	265	0	0	279	0
Stage 1	265	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	7.12	6.22	-	-	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	464	774	-	-	1284	-
Stage 1	740	-	-	-	-	-
Stage 2	746	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	463	774	-	-	1284	-
Mov Cap-2 Maneuver	463	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	744	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	574	1284	-
HCM Lane V/C Ratio	-	-	0.095	0.003	-
HCM Control Delay (s)	-	-	11.9	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

2040 BUILD ALTERNATIVES
EXIT 102 – N. MOUNTAIN STREET

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	3	129	14	5	175
Future Vol, veh/h	22	3	129	14	5	175
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	3	140	15	5	190

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	349	148	0	0	155	0
Stage 1	148	-	-	-	-	-
Stage 2	201	-	-	-	-	-
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	648	899	-	-	1425	-
Stage 1	880	-	-	-	-	-
Stage 2	833	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	645	899	-	-	1425	-
Mov Cap-2 Maneuver	645	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	830	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	668	1425	-
HCM Lane V/C Ratio	-	-	0.041	0.004	-
HCM Control Delay (s)	-	-	10.6	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

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	5	0	38	94	0	3	16	135	22	0	187	10
Future Vol, veh/h	5	0	38	94	0	3	16	135	22	0	187	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	150	-	-	150	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	41	102	0	3	17	147	24	0	203	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	404	414	209	422	407	159	214	0	0	171	0	0
Stage 1	209	209	-	193	193	-	-	-	-	-	-	-
Stage 2	195	205	-	229	214	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	557	529	831	542	533	886	1356	-	-	1406	-	-
Stage 1	793	729	-	809	741	-	-	-	-	-	-	-
Stage 2	807	732	-	774	725	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	550	522	831	510	526	886	1356	-	-	1406	-	-
Mov Cap-2 Maneuver	550	522	-	510	526	-	-	-	-	-	-	-
Stage 1	783	729	-	799	732	-	-	-	-	-	-	-
Stage 2	794	723	-	736	725	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	13.7	0.7	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1356	-	-	550	831	510	886	1406	-	-
HCM Lane V/C Ratio	0.013	-	-	0.01	0.05	0.2	0.004	-	-	-
HCM Control Delay (s)	7.7	-	-	11.6	9.6	13.8	9.1	0	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.7	0	0	-	-

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	13	0	68	21	0	9	89	151	141	27	444	22
Future Vol, veh/h	13	0	68	21	0	9	89	151	141	27	444	22
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	-	-	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	14	0	74	23	0	10	97	164	153	29	483	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	992	1064	495	1024	999	241	507	0	0	317	0	0
Stage 1	553	553	-	434	434	-	-	-	-	-	-	-
Stage 2	439	511	-	590	565	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	225	223	575	214	243	798	1058	-	-	1243	-	-
Stage 1	517	514	-	600	581	-	-	-	-	-	-	-
Stage 2	597	537	-	494	508	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	198	191	575	166	208	798	1058	-	-	1243	-	-
Mov Cap-2 Maneuver	198	191	-	166	208	-	-	-	-	-	-	-
Stage 1	458	497	-	532	515	-	-	-	-	-	-	-
Stage 2	522	476	-	416	491	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.2	24.4	2	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1058	-	-	440	218	1243	-	-
HCM Lane V/C Ratio	0.091	-	-	0.2	0.15	0.024	-	-
HCM Control Delay (s)	8.7	0	-	15.2	24.4	8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.7	0.5	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	26	10	55	338	326	0	0	307	226
Future Volume (veh/h)	0	0	0	26	10	55	338	326	0	0	307	226
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				28	11	60	367	354	0	0	334	246
Adj No. of Lanes				1	1	0	1	1	0	0	1	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				139	20	107	709	1349	0	0	1349	1147
Arrive On Green				0.08	0.08	0.08	0.72	0.72	0.00	0.00	0.72	0.72
Sat Flow, veh/h				1774	251	1370	831	1863	0	0	1863	1583
Grp Volume(v), veh/h				28	0	71	367	354	0	0	334	246
Grp Sat Flow(s),veh/h/ln				1774	0	1621	831	1863	0	0	1863	1583
Q Serve(g_s), s				0.7	0.0	1.9	12.1	2.9	0.0	0.0	2.7	2.3
Cycle Q Clear(g_c), s				0.7	0.0	1.9	14.9	2.9	0.0	0.0	2.7	2.3
Prop In Lane				1.00		0.85	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				139	0	127	709	1349	0	0	1349	1147
V/C Ratio(X)				0.20	0.00	0.56	0.52	0.26	0.00	0.00	0.25	0.21
Avail Cap(c_a), veh/h				701	0	640	709	1349	0	0	1349	1147
HCM Platoon Ratio				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	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.7	0.0	20.2	4.6	2.1	0.0	0.0	2.1	2.1
Incr Delay (d2), s/veh				0.7	0.0	3.8	2.7	0.5	0.0	0.0	0.4	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
%ile BackOfQ(50%),veh/ln				0.4	0.0	1.0	3.2	1.7	0.0	0.0	1.6	1.1
LnGrp Delay(d),s/veh				20.4	0.0	24.0	7.3	2.6	0.0	0.0	2.6	2.5
LnGrp LOS				C		C	A	A			A	A
Approach Vol, veh/h					99			721			580	
Approach Delay, s/veh					23.0			5.0			2.5	
Approach LOS					C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		37.5				37.5		8.1
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		33.0				33.0		18.0
Max Q Clear Time (g_c+I1), s		16.9				4.7		3.9
Green Ext Time (p_c), s		7.1				9.0		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	5.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	9	225	0	0	0	0	555	94	83	252	0
Future Volume (veh/h)	109	9	225	0	0	0	0	555	94	83	252	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	118	10	245				0	603	102	90	274	0
Adj No. of Lanes	1	1	0				0	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	386	14	333				0	1103	938	446	1103	0
Arrive On Green	0.22	0.22	0.22				0.00	0.59	0.59	0.59	0.59	0.00
Sat Flow, veh/h	1774	62	1530				0	1863	1583	740	1863	0
Grp Volume(v), veh/h	118	0	255				0	603	102	90	274	0
Grp Sat Flow(s),veh/h/ln	1774	0	1593				0	1863	1583	740	1863	0
Q Serve(g_s), s	2.6	0.0	7.1				0.0	9.2	1.3	4.0	3.3	0.0
Cycle Q Clear(g_c), s	2.6	0.0	7.1				0.0	9.2	1.3	13.2	3.3	0.0
Prop In Lane	1.00		0.96				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	386	0	346				0	1103	938	446	1103	0
V/C Ratio(X)	0.31	0.00	0.74				0.00	0.55	0.11	0.20	0.25	0.00
Avail Cap(c_a), veh/h	675	0	606				0	1103	938	446	1103	0
HCM Platoon Ratio	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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.5	0.0	17.2				0.0	5.8	4.2	9.8	4.6	0.0
Incr Delay (d2), s/veh	0.4	0.0	3.1				0.0	1.9	0.2	1.0	0.5	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
%ile BackOfQ(50%),veh/ln	1.3	0.0	3.3				0.0	5.3	0.6	0.9	1.8	0.0
LnGrp Delay(d),s/veh	16.0	0.0	20.3				0.0	7.8	4.4	10.8	5.1	0.0
LnGrp LOS	B		C					A	A	B	A	
Approach Vol, veh/h		373						705			364	
Approach Delay, s/veh		18.9						7.3			6.5	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		32.5		14.8		32.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		28.0		18.0		28.0		
Max Q Clear Time (g_c+I1), s		11.2		9.1		15.2		
Green Ext Time (p_c), s		6.4		1.3		5.5		

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

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	17	0	17	4	0	46	4	586	76	56	421	0
Future Vol, veh/h	17	0	17	4	0	46	4	586	76	56	421	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	-	-	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	18	0	18	4	0	50	4	637	83	61	458	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	906	1307	229	1038	1266	360	458	0	0	720	0	0
Stage 1	579	579	-	687	687	-	-	-	-	-	-	-
Stage 2	327	728	-	351	579	-	-	-	-	-	-	-
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	231	158	774	185	168	637	1099	-	-	877	-	-
Stage 1	468	499	-	403	446	-	-	-	-	-	-	-
Stage 2	660	427	-	639	499	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	197	142	774	167	151	637	1099	-	-	877	-	-
Mov Cap-2 Maneuver	197	142	-	167	151	-	-	-	-	-	-	-
Stage 1	465	453	-	401	443	-	-	-	-	-	-	-
Stage 2	605	424	-	566	453	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18	12.7	0	1.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1099	-	-	314	520	877	-	-
HCM Lane V/C Ratio	0.004	-	-	0.118	0.105	0.069	-	-
HCM Control Delay (s)	8.3	0	-	18	12.7	9.4	0.3	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.3	0.2	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	12	0	661	422	20
Future Vol, veh/h	5	12	0	661	422	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	13	0	718	459	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	829	240	480	0	-	0
Stage 1	470	-	-	-	-	-
Stage 2	359	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	309	761	1079	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	309	761	1079	-	-	-
Mov Cap-2 Maneuver	429	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	677	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1079	-	429	761	-	-
HCM Lane V/C Ratio	-	-	0.013	0.017	-	-
HCM Control Delay (s)	0	-	13.5	9.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	26	10	55	338	309	0	0	307	226
Future Volume (veh/h)	0	0	0	26	10	55	338	309	0	0	307	226
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				28	11	60	367	336	0	0	334	246
Adj No. of Lanes				1	1	0	1	1	0	0	1	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				710	100	548	383	745	0	0	745	633
Arrive On Green				0.40	0.40	0.40	0.67	0.67	0.00	0.00	0.40	0.40
Sat Flow, veh/h				1774	251	1370	831	1863	0	0	1863	1583
Grp Volume(v), veh/h				28	0	71	367	336	0	0	334	246
Grp Sat Flow(s),veh/h/ln				1774	0	1621	831	1863	0	0	1863	1583
Q Serve(g_s), s				0.4	0.0	1.2	12.1	3.9	0.0	0.0	5.9	5.0
Cycle Q Clear(g_c), s				0.4	0.0	1.2	18.0	3.9	0.0	0.0	5.9	5.0
Prop In Lane				1.00		0.85	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				710	0	648	383	745	0	0	745	633
V/C Ratio(X)				0.04	0.00	0.11	0.96	0.45	0.00	0.00	0.45	0.39
Avail Cap(c_a), veh/h				710	0	648	383	745	0	0	745	633
HCM Platoon Ratio				1.00	1.00	1.00	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				8.2	0.0	8.5	12.8	5.1	0.0	0.0	9.9	9.6
Incr Delay (d2), s/veh				0.1	0.0	0.3	36.4	2.0	0.0	0.0	1.9	1.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.2	0.0	0.6	8.3	2.3	0.0	0.0	3.4	2.4
LnGrp Delay(d),s/veh				8.3	0.0	8.8	49.2	7.1	0.0	0.0	11.8	11.4
LnGrp LOS				A		A	D	A			B	B
Approach Vol, veh/h					99			703			580	
Approach Delay, s/veh					8.7			29.1			11.6	
Approach LOS					A			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		22.5				22.5		22.5
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		18.0				18.0		18.0
Max Q Clear Time (g_c+I1), s		20.0				7.9		3.2
Green Ext Time (p_c), s		0.0				5.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	9	225	0	0	0	0	538	94	83	252	0
Future Volume (veh/h)	109	9	225	0	0	0	0	538	94	83	252	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	118	10	245				0	585	102	90	274	0
Adj No. of Lanes	0	1	1				0	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	657	56	633				0	745	633	254	745	0
Arrive On Green	0.40	0.40	0.40				0.00	0.40	0.40	0.80	0.80	0.00
Sat Flow, veh/h	1642	139	1583				0	1863	1583	752	1863	0
Grp Volume(v), veh/h	128	0	245				0	585	102	90	274	0
Grp Sat Flow(s),veh/h/ln	1781	0	1583				0	1863	1583	752	1863	0
Q Serve(g_s), s	2.1	0.0	4.9				0.0	12.4	1.9	5.3	1.9	0.0
Cycle Q Clear(g_c), s	2.1	0.0	4.9				0.0	12.4	1.9	17.7	1.9	0.0
Prop In Lane	0.92		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	712	0	633				0	745	633	254	745	0
V/C Ratio(X)	0.18	0.00	0.39				0.00	0.79	0.16	0.35	0.37	0.00
Avail Cap(c_a), veh/h	712	0	633				0	745	633	254	745	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.7	0.0	9.6				0.0	11.8	8.7	10.6	2.9	0.0
Incr Delay (d2), s/veh	0.6	0.0	1.8				0.0	8.1	0.5	3.8	1.4	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
%ile BackOfQ(50%),veh/ln	1.1	0.0	2.4				0.0	7.9	0.9	1.3	1.1	0.0
LnGrp Delay(d),s/veh	9.3	0.0	11.4				0.0	20.0	9.2	14.4	4.3	0.0
LnGrp LOS	A		B					B	A	B	A	
Approach Vol, veh/h		373						687			364	
Approach Delay, s/veh		10.6						18.4			6.8	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		22.5		22.5		22.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		18.0		18.0		18.0		
Max Q Clear Time (g_c+I1), s		14.4		6.9		19.7		
Green Ext Time (p_c), s		2.1		1.2		0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

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	5	0	38	94	0	3	16	135	22	0	187	10
Future Vol, veh/h	5	0	38	94	0	3	16	135	22	0	187	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	150	-	-	150	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	41	102	0	3	17	147	24	0	203	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	404	414	209	422	407	159	214	0	0	171	0	0
Stage 1	209	209	-	193	193	-	-	-	-	-	-	-
Stage 2	195	205	-	229	214	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	557	529	831	542	533	886	1356	-	-	1406	-	-
Stage 1	793	729	-	809	741	-	-	-	-	-	-	-
Stage 2	807	732	-	774	725	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	550	522	831	510	526	886	1356	-	-	1406	-	-
Mov Cap-2 Maneuver	550	522	-	510	526	-	-	-	-	-	-	-
Stage 1	783	729	-	799	732	-	-	-	-	-	-	-
Stage 2	794	723	-	736	725	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	13.7	0.7	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1356	-	-	550	831	510	886	1406	-	-
HCM Lane V/C Ratio	0.013	-	-	0.01	0.05	0.2	0.004	-	-	-
HCM Control Delay (s)	7.7	-	-	11.6	9.6	13.8	9.1	0	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.7	0	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	12	0	657	422	20
Future Vol, veh/h	5	12	0	657	422	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	13	0	714	459	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	827	240	480	0	-	0
Stage 1	470	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	310	761	1079	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	679	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	310	761	1079	-	-	-
Mov Cap-2 Maneuver	430	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	679	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1079	-	430	761	-	-
HCM Lane V/C Ratio	-	-	0.013	0.017	-	-
HCM Control Delay (s)	0	-	13.5	9.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0.1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	46	586	76	56	421
Future Vol, veh/h	4	46	586	76	56	421
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	50	637	83	61	458

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1029	360	0	0	720	0
Stage 1	678	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	230	637	-	-	877	-
Stage 1	466	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	209	637	-	-	877	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	466	-	-	-	-	-
Stage 2	620	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	594	877	-
HCM Lane V/C Ratio	-	-	0.091	0.069	-
HCM Control Delay (s)	-	-	11.7	9.4	0.3
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

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	13	0	68	21	0	9	89	134	141	27	444	22
Future Vol, veh/h	13	0	68	21	0	9	89	134	141	27	444	22
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	-	-	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	14	0	74	23	0	10	97	146	153	29	483	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	974	1045	253	716	981	222	507	0	0	299	0	0
Stage 1	553	553	-	416	416	-	-	-	-	-	-	-
Stage 2	421	492	-	300	565	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.93	7.33	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	218	228	747	331	249	817	1056	-	-	1261	-	-
Stage 1	486	513	-	613	591	-	-	-	-	-	-	-
Stage 2	609	547	-	685	507	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	192	196	747	266	214	817	1056	-	-	1261	-	-
Mov Cap-2 Maneuver	192	196	-	266	214	-	-	-	-	-	-	-
Stage 1	432	497	-	544	525	-	-	-	-	-	-	-
Stage 2	534	486	-	597	491	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.5	17	2.1	0.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1056	-	-	510	333	1261	-	-
HCM Lane V/C Ratio	0.092	-	-	0.173	0.098	0.023	-	-
HCM Control Delay (s)	8.8	0	-	13.5	17	7.9	0.1	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.6	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	3	118	14	5	175
Future Vol, veh/h	22	3	118	14	5	175
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	3	128	15	5	190

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	337	136	0	0	143	0
Stage 1	136	-	-	-	-	-
Stage 2	201	-	-	-	-	-
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	658	913	-	-	1440	-
Stage 1	890	-	-	-	-	-
Stage 2	833	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	655	913	-	-	1440	-
Mov Cap-2 Maneuver	655	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	830	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	678	1440	-
HCM Lane V/C Ratio	-	-	0.04	0.004	-
HCM Control Delay (s)	-	-	10.5	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	4	171	24	0	159
Future Vol, veh/h	12	4	171	24	0	159
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	4	186	26	0	173

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	372	199	0	0	212	0
Stage 1	199	-	-	-	-	-
Stage 2	173	-	-	-	-	-
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	629	842	-	-	1358	-
Stage 1	835	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	629	842	-	-	1358	-
Mov Cap-2 Maneuver	629	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	857	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	671	1358	-
HCM Lane V/C Ratio	-	-	0.026	-	-
HCM Control Delay (s)	-	-	10.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	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	1	0	12	33	0	1	14	193	59	3	161	7
Future Vol, veh/h	1	0	12	33	0	1	14	193	59	3	161	7
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	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	13	36	0	1	15	210	64	3	175	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	458	489	179	464	461	242	183	0	0	274	0	0
Stage 1	185	185	-	272	272	-	-	-	-	-	-	-
Stage 2	273	304	-	192	189	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	513	480	864	508	497	797	1392	-	-	1289	-	-
Stage 1	817	747	-	734	685	-	-	-	-	-	-	-
Stage 2	733	663	-	810	744	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	507	474	864	495	491	797	1392	-	-	1289	-	-
Mov Cap-2 Maneuver	507	474	-	495	491	-	-	-	-	-	-	-
Stage 1	808	745	-	726	678	-	-	-	-	-	-	-
Stage 2	724	656	-	796	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	12.7	0.4	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1392	-	-	507	864	495	797	1289	-	-
HCM Lane V/C Ratio	0.011	-	-	0.002	0.015	0.072	0.001	0.003	-	-
HCM Control Delay (s)	7.6	-	-	12.1	9.2	12.8	9.5	7.8	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	0	101	36	0	13	142	213	95	31	228	34
Future Vol, veh/h	40	0	101	36	0	13	142	213	95	31	228	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	-	-	-	-	-	-	-	-	-	-	-	-
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	43	0	110	39	0	14	154	232	103	34	248	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	933	977	266	981	944	283	285	0	0	335	0	0
Stage 1	334	334	-	592	592	-	-	-	-	-	-	-
Stage 2	599	643	-	389	352	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	246	251	773	229	262	756	1277	-	-	1224	-	-
Stage 1	680	643	-	493	494	-	-	-	-	-	-	-
Stage 2	488	468	-	635	632	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	208	206	773	170	215	756	1277	-	-	1224	-	-
Mov Cap-2 Maneuver	208	206	-	170	215	-	-	-	-	-	-	-
Stage 1	578	622	-	419	420	-	-	-	-	-	-	-
Stage 2	407	398	-	527	611	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.6	27.3	2.6	0.8
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1277	-	-	437	214	1224	-	-
HCM Lane V/C Ratio	0.121	-	-	0.351	0.249	0.028	-	-
HCM Control Delay (s)	8.2	0	-	17.6	27.3	8	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	1.6	0.9	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	56	13	104	221	346	0	0	256	109
Future Volume (veh/h)	0	0	0	56	13	104	221	346	0	0	256	109
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				61	14	113	240	376	0	0	278	118
Adj No. of Lanes				1	1	0	1	1	0	0	1	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				213	21	172	778	1288	0	0	1288	1094
Arrive On Green				0.12	0.12	0.12	0.69	0.69	0.00	0.00	0.69	0.69
Sat Flow, veh/h				1774	177	1432	984	1863	0	0	1863	1583
Grp Volume(v), veh/h				61	0	127	240	376	0	0	278	118
Grp Sat Flow(s),veh/h/ln				1774	0	1610	984	1863	0	0	1863	1583
Q Serve(g_s), s				1.5	0.0	3.6	5.6	3.7	0.0	0.0	2.6	1.2
Cycle Q Clear(g_c), s				1.5	0.0	3.6	8.2	3.7	0.0	0.0	2.6	1.2
Prop In Lane				1.00		0.89	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				213	0	194	778	1288	0	0	1288	1094
V/C Ratio(X)				0.29	0.00	0.66	0.31	0.29	0.00	0.00	0.22	0.11
Avail Cap(c_a), veh/h				669	0	607	778	1288	0	0	1288	1094
HCM Platoon Ratio				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	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.1	0.0	20.1	4.2	2.9	0.0	0.0	2.7	2.5
Incr Delay (d2), s/veh				0.7	0.0	3.7	1.0	0.6	0.0	0.0	0.4	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
%ile BackOfQ(50%),veh/ln				0.8	0.0	1.8	1.7	2.1	0.0	0.0	1.5	0.6
LnGrp Delay(d),s/veh				19.9	0.0	23.8	5.2	3.4	0.0	0.0	3.1	2.7
LnGrp LOS				B		C	A	A			A	A
Approach Vol, veh/h					188			616			396	
Approach Delay, s/veh					22.5			4.1			2.9	
Approach LOS					C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		37.5				37.5		10.2
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		33.0				33.0		18.0
Max Q Clear Time (g_c+I1), s		10.2				4.6		5.6
Green Ext Time (p_c), s		6.0				6.4		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	9	306	0	0	0	0	427	55	74	238	0
Future Volume (veh/h)	140	9	306	0	0	0	0	427	55	74	238	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	152	10	333				0	464	60	80	259	0
Adj No. of Lanes	1	1	0				0	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	476	12	414				0	1032	877	498	1032	0
Arrive On Green	0.27	0.27	0.27				0.00	0.55	0.55	0.55	0.55	0.00
Sat Flow, veh/h	1774	46	1544				0	1863	1583	875	1863	0
Grp Volume(v), veh/h	152	0	343				0	464	60	80	259	0
Grp Sat Flow(s),veh/h/ln	1774	0	1590				0	1863	1583	875	1863	0
Q Serve(g_s), s	3.5	0.0	10.2				0.0	7.5	0.9	3.0	3.6	0.0
Cycle Q Clear(g_c), s	3.5	0.0	10.2				0.0	7.5	0.9	10.5	3.6	0.0
Prop In Lane	1.00		0.97				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	476	0	426				0	1032	877	498	1032	0
V/C Ratio(X)	0.32	0.00	0.80				0.00	0.45	0.07	0.16	0.25	0.00
Avail Cap(c_a), veh/h	632	0	566				0	1032	877	498	1032	0
HCM Platoon Ratio	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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.8	0.0	17.3				0.0	6.7	5.2	9.8	5.8	0.0
Incr Delay (d2), s/veh	0.4	0.0	6.2				0.0	1.4	0.2	0.7	0.6	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
%ile BackOfQ(50%),veh/ln	1.7	0.0	5.1				0.0	4.1	0.4	0.8	2.0	0.0
LnGrp Delay(d),s/veh	15.2	0.0	23.5				0.0	8.1	5.4	10.5	6.4	0.0
LnGrp LOS	B		C					A	A	B	A	
Approach Vol, veh/h		495						524			339	
Approach Delay, s/veh		20.9						7.8			7.4	
Approach LOS		C						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		32.5		18.0		32.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		28.0		18.0		28.0		
Max Q Clear Time (g_c+I1), s		9.5		12.2		12.5		
Green Ext Time (p_c), s		5.1		1.4		4.7		

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

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	23	0	23	4	0	22	3	440	15	6	552	0
Future Vol, veh/h	23	0	23	4	0	22	3	440	15	6	552	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	-	-	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	25	0	25	4	0	24	3	478	16	7	600	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	859	1114	300	806	1106	247	600	0	0	495	0	0
Stage 1	613	613	-	493	493	-	-	-	-	-	-	-
Stage 2	246	501	-	313	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	250	207	696	273	209	753	973	-	-	1065	-	-
Stage 1	446	481	-	526	545	-	-	-	-	-	-	-
Stage 2	736	541	-	672	481	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	239	204	696	260	206	753	973	-	-	1065	-	-
Mov Cap-2 Maneuver	239	204	-	260	206	-	-	-	-	-	-	-
Stage 1	444	476	-	524	543	-	-	-	-	-	-	-
Stage 2	710	539	-	641	476	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.8	11.5	0.1	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	973	-	-	356	583	1065	-	-
HCM Lane V/C Ratio	0.003	-	-	0.14	0.048	0.006	-	-
HCM Control Delay (s)	8.7	0	-	16.8	11.5	8.4	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	11	0	447	569	10
Future Vol, veh/h	6	11	0	447	569	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	150	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	12	0	486	618	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	867	315	629	0	-	0
Stage 1	624	-	-	-	-	-
Stage 2	243	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	292	681	949	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	292	681	949	-	-	-
Mov Cap-2 Maneuver	397	-	-	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	775	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	949	-	397	681	-	-
HCM Lane V/C Ratio	-	-	0.016	0.018	-	-
HCM Control Delay (s)	0	-	14.2	10.4	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	56	13	104	221	346	0	0	256	109
Future Volume (veh/h)	0	0	0	56	13	104	221	346	0	0	256	109
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				61	14	113	240	376	0	0	278	118
Adj No. of Lanes				1	1	0	1	1	0	0	1	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				710	71	573	450	745	0	0	745	633
Arrive On Green				0.40	0.40	0.40	0.80	0.80	0.00	0.00	0.40	0.40
Sat Flow, veh/h				1774	177	1432	984	1863	0	0	1863	1583
Grp Volume(v), veh/h				61	0	127	240	376	0	0	278	118
Grp Sat Flow(s),veh/h/ln				1774	0	1610	984	1863	0	0	1863	1583
Q Serve(g_s), s				1.0	0.0	2.3	8.8	3.0	0.0	0.0	4.7	2.2
Cycle Q Clear(g_c), s				1.0	0.0	2.3	13.5	3.0	0.0	0.0	4.7	2.2
Prop In Lane				1.00		0.89	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				710	0	644	450	745	0	0	745	633
V/C Ratio(X)				0.09	0.00	0.20	0.53	0.50	0.00	0.00	0.37	0.19
Avail Cap(c_a), veh/h				710	0	644	450	745	0	0	745	633
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				8.4	0.0	8.8	6.0	3.0	0.0	0.0	9.5	8.8
Incr Delay (d2), s/veh				0.2	0.0	0.7	4.5	2.4	0.0	0.0	1.4	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
%ile BackOfQ(50%),veh/ln				0.5	0.0	1.1	2.8	1.9	0.0	0.0	2.7	1.1
LnGrp Delay(d),s/veh				8.6	0.0	9.5	10.4	5.4	0.0	0.0	11.0	9.4
LnGrp LOS				A		A	B	A			B	A
Approach Vol, veh/h					188			616			396	
Approach Delay, s/veh					9.2			7.4			10.5	
Approach LOS					A			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		22.5				22.5		22.5
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		18.0				18.0		18.0
Max Q Clear Time (g_c+I1), s		15.5				6.7		4.3
Green Ext Time (p_c), s		1.4				4.4		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	9	225	0	0	0	0	427	55	74	238	0
Future Volume (veh/h)	109	9	225	0	0	0	0	427	55	74	238	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	118	10	245				0	464	60	80	259	0
Adj No. of Lanes	0	1	1				0	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	657	56	633				0	745	633	336	745	0
Arrive On Green	0.40	0.40	0.40				0.00	0.40	0.40	0.80	0.80	0.00
Sat Flow, veh/h	1642	139	1583				0	1863	1583	875	1863	0
Grp Volume(v), veh/h	128	0	245				0	464	60	80	259	0
Grp Sat Flow(s),veh/h/ln	1781	0	1583				0	1863	1583	875	1863	0
Q Serve(g_s), s	2.1	0.0	4.9				0.0	9.0	1.1	3.0	1.7	0.0
Cycle Q Clear(g_c), s	2.1	0.0	4.9				0.0	9.0	1.1	12.0	1.7	0.0
Prop In Lane	0.92		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	712	0	633				0	745	633	336	745	0
V/C Ratio(X)	0.18	0.00	0.39				0.00	0.62	0.09	0.24	0.35	0.00
Avail Cap(c_a), veh/h	712	0	633				0	745	633	336	745	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.7	0.0	9.6				0.0	10.8	8.4	7.2	2.9	0.0
Incr Delay (d2), s/veh	0.6	0.0	1.8				0.0	3.9	0.3	1.7	1.3	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
%ile BackOfQ(50%),veh/ln	1.1	0.0	2.4				0.0	5.3	0.5	0.8	1.1	0.0
LnGrp Delay(d),s/veh	9.3	0.0	11.4				0.0	14.7	8.7	8.8	4.2	0.0
LnGrp LOS	A		B					B	A	A	A	
Approach Vol, veh/h		373						524			339	
Approach Delay, s/veh		10.6						14.0			5.3	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		22.5		22.5		22.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		18.0		18.0		18.0		
Max Q Clear Time (g_c+I1), s		11.0		6.9		14.0		
Green Ext Time (p_c), s		2.9		1.2		1.9		

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

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	1	0	12	33	0	1	14	193	59	3	161	7
Future Vol, veh/h	1	0	12	33	0	1	14	193	59	3	161	7
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	-	-	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	13	36	0	1	15	210	64	3	175	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	458	489	179	464	461	242	183	0	0	274	0	0
Stage 1	185	185	-	272	272	-	-	-	-	-	-	-
Stage 2	273	304	-	192	189	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	513	480	864	508	497	797	1392	-	-	1289	-	-
Stage 1	817	747	-	734	685	-	-	-	-	-	-	-
Stage 2	733	663	-	810	744	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	507	474	864	495	491	797	1392	-	-	1289	-	-
Mov Cap-2 Maneuver	507	474	-	495	491	-	-	-	-	-	-	-
Stage 1	808	745	-	726	678	-	-	-	-	-	-	-
Stage 2	724	656	-	796	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	12.7	0.4	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1392	-	-	507	864	495	797	1289	-	-
HCM Lane V/C Ratio	0.011	-	-	0.002	0.015	0.072	0.001	0.003	-	-
HCM Control Delay (s)	7.6	-	-	12.1	9.2	12.8	9.5	7.8	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	11	0	444	569	10
Future Vol, veh/h	6	11	0	444	569	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	200	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	12	0	483	618	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	865	315	629	0	-	0
Stage 1	624	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	293	681	949	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	293	681	949	-	-	-
Mov Cap-2 Maneuver	398	-	-	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	776	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	949	-	398	681	-	-
HCM Lane V/C Ratio	-	-	0.016	0.018	-	-
HCM Control Delay (s)	0	-	14.2	10.4	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	22	440	15	6	552
Future Vol, veh/h	4	22	440	15	6	552
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	24	478	16	7	600

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	799	247	0	0	495	0
Stage 1	486	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	323	753	-	-	1065	-
Stage 1	584	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	320	753	-	-	1065	-
Mov Cap-2 Maneuver	435	-	-	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	677	1065	-
HCM Lane V/C Ratio	-	-	0.042	0.006	-
HCM Control Delay (s)	-	-	10.5	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

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	40	0	101	36	0	13	142	213	95	31	228	34
Future Vol, veh/h	40	0	101	36	0	13	142	213	95	31	228	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	-	-	-	-	-	-	-	-	-	-	-	-
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	43	0	110	39	0	14	154	232	103	34	248	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	933	977	142	783	944	283	285	0	0	335	0	0
Stage 1	334	334	-	592	592	-	-	-	-	-	-	-
Stage 2	599	643	-	191	352	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.93	7.33	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	233	250	880	297	261	755	1276	-	-	1223	-	-
Stage 1	654	642	-	492	493	-	-	-	-	-	-	-
Stage 2	487	468	-	793	631	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	197	205	880	224	215	755	1276	-	-	1223	-	-
Mov Cap-2 Maneuver	197	205	-	224	215	-	-	-	-	-	-	-
Stage 1	556	621	-	418	419	-	-	-	-	-	-	-
Stage 2	406	398	-	671	610	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	21.2	2.6	0.9
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1276	-	-	444	275	1223	-	-
HCM Lane V/C Ratio	0.121	-	-	0.345	0.194	0.028	-	-
HCM Control Delay (s)	8.2	0	-	17.3	21.2	8	0.1	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	1.5	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	4	171	24	0	159
Future Vol, veh/h	12	4	171	24	0	159
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	4	186	26	0	173

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	372	199	0	0	212	0
Stage 1	199	-	-	-	-	-
Stage 2	173	-	-	-	-	-
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	629	842	-	-	1358	-
Stage 1	835	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	629	842	-	-	1358	-
Mov Cap-2 Maneuver	629	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	857	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	671	1358	-
HCM Lane V/C Ratio	-	-	0.026	-	-
HCM Control Delay (s)	-	-	10.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

2040 BUILD ALTERNATIVES
EXIT 104 – TRIBAL ROAD

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	180	75	50	153	97	0	0	70	26
Future Vol, veh/h	0	0	0	180	75	50	153	97	0	0	70	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	-	-	-	250	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	196	82	54	166	105	0	0	76	28

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	528	542	105	104	0	-	-	-	0
Stage 1	438	438	-	-	-	-	-	-	-
Stage 2	90	104	-	-	-	-	-	-	-
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	511	447	949	1488	-	0	0	-	-
Stage 1	651	579	-	-	-	0	0	-	-
Stage 2	934	809	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	454	0	949	1488	-	-	-	-	-
Mov Cap-2 Maneuver	454	0	-	-	-	-	-	-	-
Stage 1	578	0	-	-	-	-	-	-	-
Stage 2	934	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	4.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1488	-	454	949	-	-
HCM Lane V/C Ratio	0.112	-	0.431	0.143	-	-
HCM Control Delay (s)	7.7	-	18.8	9.4	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	2.1	0.5	-	-

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	12	0	104	0	0	0	0	235	57	84	166	0
Future Vol, veh/h	12	0	104	0	0	0	0	235	57	84	166	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	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	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	13	0	113	0	0	0	0	255	62	91	180	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	649	680	180	-	0	0	317	0	0
Stage 1	363	363	-	-	-	-	-	-	-
Stage 2	286	317	-	-	-	-	-	-	-
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	434	373	863	0	-	-	1243	-	0
Stage 1	704	625	-	0	-	-	-	-	0
Stage 2	763	654	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	402	0	863	-	-	-	1243	-	-
Mov Cap-2 Maneuver	402	0	-	-	-	-	-	-	-
Stage 1	652	0	-	-	-	-	-	-	-
Stage 2	763	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0	2.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	402	863	1243	-
HCM Lane V/C Ratio	-	-	0.032	0.131	0.073	-
HCM Control Delay (s)	-	-	14.3	9.8	8.1	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.5	0.2	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	25	74	69	71	9
Future Vol, veh/h	0	25	74	69	71	9
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	27	80	75	77	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	318	82	87	0	-	0
Stage 1	82	-	-	-	-	-
Stage 2	236	-	-	-	-	-
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	675	978	1509	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	803	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	639	978	1509	-	-	-
Mov Cap-2 Maneuver	639	-	-	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	760	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	3.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1509	-	978	-	-
HCM Lane V/C Ratio	0.053	-	0.028	-	-
HCM Control Delay (s)	7.5	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection	
Int Delay, s/veh	8.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	232	60	48	195	75
Future Vol, veh/h	63	232	60	48	195	75
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	252	65	52	212	82

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	596	91	0	0	117	0
Stage 1	91	-	-	-	-	-
Stage 2	505	-	-	-	-	-
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	466	967	-	-	1471	-
Stage 1	933	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	396	967	-	-	1471	-
Mov Cap-2 Maneuver	396	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	514	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	5.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	739	1471	-
HCM Lane V/C Ratio	-	-	0.434	0.144	-
HCM Control Delay (s)	-	-	13.6	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	2.2	0.5	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	3	4	0	0	1	0	105	0	0	315	3
Future Vol, veh/h	3	3	4	0	0	1	0	105	0	0	315	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	200	-	-	200	-	0	-	-	-	200	-	-
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	3	3	4	0	0	1	0	114	0	0	342	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	458	458	344	462	-	114	346	0	0	114	0	0
Stage 1	344	344	-	114	-	-	-	-	-	-	-	-
Stage 2	114	114	-	348	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	513	499	699	510	0	939	1213	-	-	1475	-	-
Stage 1	671	637	-	891	0	-	-	-	-	-	-	-
Stage 2	891	801	-	668	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	512	499	699	504	-	939	1213	-	-	1475	-	-
Mov Cap-2 Maneuver	512	499	-	504	-	-	-	-	-	-	-	-
Stage 1	671	637	-	891	-	-	-	-	-	-	-	-
Stage 2	890	801	-	660	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	8.8	0	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1213	-	-	512	597	-	939	1475	-	-
HCM Lane V/C Ratio	-	-	-	0.006	0.013	-	0.001	-	-	-
HCM Control Delay (s)	0	-	-	12.1	11.1	0	8.8	0	-	-
HCM Lane LOS	A	-	-	B	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	-	0	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	7	0	288	437	3
Future Vol, veh/h	3	7	0	288	437	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	8	0	313	475	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	790	477	478	0	-	0
Stage 1	477	-	-	-	-	-
Stage 2	313	-	-	-	-	-
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	359	588	1084	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	359	588	1084	-	-	-
Mov Cap-2 Maneuver	359	-	-	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	741	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1084	-	494	-	-
HCM Lane V/C Ratio	-	-	0.022	-	-
HCM Control Delay (s)	0	-	12.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	0	12	63	0	232	36	37	48	195	89	160
Future Vol, veh/h	19	0	12	63	0	232	36	37	48	195	89	160
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	-	-	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	21	0	13	68	0	252	39	40	52	212	97	174

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	879	779	184	759	840	66	271	0	0	92	0	0
Stage 1	608	608	-	145	145	-	-	-	-	-	-	-
Stage 2	271	171	-	614	695	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	268	327	858	323	302	998	1292	-	-	1503	-	-
Stage 1	483	486	-	858	777	-	-	-	-	-	-	-
Stage 2	735	757	-	479	444	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	170	263	858	270	243	998	1292	-	-	1503	-	-
Mov Cap-2 Maneuver	170	263	-	270	243	-	-	-	-	-	-	-
Stage 1	468	403	-	831	752	-	-	-	-	-	-	-
Stage 2	532	733	-	392	369	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.9	16.4	2.3	3.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1292	-	-	247	633	1503	-	-
HCM Lane V/C Ratio	0.03	-	-	0.136	0.507	0.141	-	-
HCM Control Delay (s)	7.9	0	-	21.9	16.4	7.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	2.9	0.5	-	-

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	263	75	50	153	93	0	0	74	26
Future Vol, veh/h	0	0	0	263	75	50	153	93	0	0	74	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	-	-	-	250	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	286	82	54	166	101	0	0	80	28

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	529	543	101	109	0	-	-	-	0
Stage 1	434	434	-	-	-	-	-	-	-
Stage 2	95	109	-	-	-	-	-	-	-
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	510	447	954	1481	-	0	0	-	-
Stage 1	653	581	-	-	-	0	0	-	-
Stage 2	929	805	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	453	0	954	1481	-	-	-	-	-
Mov Cap-2 Maneuver	453	0	-	-	-	-	-	-	-
Stage 1	580	0	-	-	-	-	-	-	-
Stage 2	929	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.1	4.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1481	-	453	560	-	-
HCM Lane V/C Ratio	0.112	-	0.421	0.413	-	-
HCM Control Delay (s)	7.7	-	18.6	15.9	-	-
HCM Lane LOS	A	-	C	C	-	-
HCM 95th %tile Q(veh)	0.4	-	2.1	2	-	-

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	12	0	187	0	0	0	0	234	57	84	253	0
Future Vol, veh/h	12	0	187	0	0	0	0	234	57	84	253	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	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	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	13	0	203	0	0	0	0	254	62	91	275	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	743	774	275	-	0	0	316	0	0
Stage 1	458	458	-	-	-	-	-	-	-
Stage 2	285	316	-	-	-	-	-	-	-
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	383	329	764	0	-	-	1244	-	0
Stage 1	637	567	-	0	-	-	-	-	0
Stage 2	763	655	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	355	0	764	-	-	-	1244	-	-
Mov Cap-2 Maneuver	355	0	-	-	-	-	-	-	-
Stage 1	590	0	-	-	-	-	-	-	-
Stage 2	763	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	355	764	1244	-
HCM Lane V/C Ratio	-	-	0.037	0.266	0.073	-
HCM Control Delay (s)	-	-	15.5	11.4	8.1	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	1.1	0.2	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	25	74	69	75	9
Future Vol, veh/h	0	25	74	69	75	9
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	27	80	75	82	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	322	86	91	0	-	0
Stage 1	86	-	-	-	-	-
Stage 2	236	-	-	-	-	-
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	672	973	1504	-	-	-
Stage 1	937	-	-	-	-	-
Stage 2	803	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	636	973	1504	-	-	-
Mov Cap-2 Maneuver	636	-	-	-	-	-
Stage 1	937	-	-	-	-	-
Stage 2	760	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	3.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1504	-	973	-	-
HCM Lane V/C Ratio	0.053	-	0.028	-	-
HCM Control Delay (s)	7.5	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

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	4	0	0	0	0	1	0	116	0	0	158	6
Future Vol, veh/h	4	0	0	0	0	1	0	116	0	0	158	6
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	-	0	-	-	-	175	-	-
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	4	0	0	0	0	1	0	126	0	0	172	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	301	301	175	301	-	126	178	0	0	126	0	0
Stage 1	175	175	-	126	-	-	-	-	-	-	-	-
Stage 2	126	126	-	175	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	651	612	868	651	0	924	1398	-	-	1460	-	-
Stage 1	827	754	-	878	0	-	-	-	-	-	-	-
Stage 2	878	792	-	827	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	650	612	868	651	-	924	1398	-	-	1460	-	-
Mov Cap-2 Maneuver	650	612	-	651	-	-	-	-	-	-	-	-
Stage 1	827	754	-	878	-	-	-	-	-	-	-	-
Stage 2	877	792	-	827	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	8.9	0	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1398	-	-	650	-	924	1460	-	-
HCM Lane V/C Ratio	-	-	-	0.007	-	0.001	-	-	-
HCM Control Delay (s)	0	-	-	10.6	0	8.9	0	-	-
HCM Lane LOS	A	-	-	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	0	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	25	74	69	75	9
Future Vol, veh/h	0	25	74	69	75	9
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	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	27	80	75	82	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	322	86	91	0	-	0
Stage 1	86	-	-	-	-	-
Stage 2	236	-	-	-	-	-
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	672	973	1504	-	-	-
Stage 1	937	-	-	-	-	-
Stage 2	803	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	636	973	1504	-	-	-
Mov Cap-2 Maneuver	636	-	-	-	-	-
Stage 1	937	-	-	-	-	-
Stage 2	760	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	3.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1504	-	973	-	-
HCM Lane V/C Ratio	0.053	-	0.028	-	-
HCM Control Delay (s)	7.5	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection	
Int Delay, s/veh	12.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	263	75	50	153	93	0	0	74	26
Future Vol, veh/h	0	0	0	263	75	50	153	93	0	0	74	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	-	-	-	250	-	-	250	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	286	82	54	166	101	0	0	80	28

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	529	543	101	109	0	-	-	-	0
Stage 1	434	434	-	-	-	-	-	-	-
Stage 2	95	109	-	-	-	-	-	-	-
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	510	447	954	1481	-	0	0	-	-
Stage 1	653	581	-	-	-	0	0	-	-
Stage 2	929	805	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	453	0	954	1481	-	-	-	-	-
Mov Cap-2 Maneuver	453	0	-	-	-	-	-	-	-
Stage 1	580	0	-	-	-	-	-	-	-
Stage 2	929	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.4	4.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1481	-	453	954	-	-
HCM Lane V/C Ratio	0.112	-	0.631	0.142	-	-
HCM Control Delay (s)	7.7	-	25.6	9.4	-	-
HCM Lane LOS	A	-	D	A	-	-
HCM 95th %tile Q(veh)	0.4	-	4.3	0.5	-	-

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	12	0	187	0	0	0	0	234	57	84	253	0
Future Vol, veh/h	12	0	187	0	0	0	0	234	57	84	253	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	200	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	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	13	0	203	0	0	0	0	254	62	91	275	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	743	774	275	-	0	0	316	0	0
Stage 1	458	458	-	-	-	-	-	-	-
Stage 2	285	316	-	-	-	-	-	-	-
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	383	329	764	0	-	-	1244	-	0
Stage 1	637	567	-	0	-	-	-	-	0
Stage 2	763	655	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	355	0	764	-	-	-	1244	-	-
Mov Cap-2 Maneuver	355	0	-	-	-	-	-	-	-
Stage 1	590	0	-	-	-	-	-	-	-
Stage 2	763	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	355	764	1244	-
HCM Lane V/C Ratio	-	-	0.037	0.266	0.073	-
HCM Control Delay (s)	-	-	15.5	11.4	8.1	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	1.1	0.2	-

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	3	16	63	0	233	36	32	48	195	76	169
Future Vol, veh/h	26	3	16	63	0	233	36	32	48	195	76	169
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	-	-	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	28	3	17	68	0	253	39	35	52	212	83	184

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	864	763	174	748	829	61	266	0	0	87	0	0
Stage 1	598	598	-	139	139	-	-	-	-	-	-	-
Stage 2	266	165	-	609	690	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	274	334	869	329	306	1004	1298	-	-	1509	-	-
Stage 1	489	491	-	864	782	-	-	-	-	-	-	-
Stage 2	739	762	-	482	446	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	174	269	869	271	246	1004	1298	-	-	1509	-	-
Mov Cap-2 Maneuver	174	269	-	271	246	-	-	-	-	-	-	-
Stage 1	473	408	-	836	757	-	-	-	-	-	-	-
Stage 2	535	738	-	389	371	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.8	16.3	2.4	3.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1298	-	-	251	637	1509	-	-
HCM Lane V/C Ratio	0.03	-	-	0.195	0.505	0.14	-	-
HCM Control Delay (s)	7.9	0	-	22.8	16.3	7.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	2.9	0.5	-	-

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	0	0	0	90	11	15	176	30	0	0	18	17
Future Vol, veh/h	0	0	0	90	11	15	176	30	0	0	18	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	-	-	-	200	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	98	12	16	191	33	0	0	20	18

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	444	453	33	38	0	-	-	-	0
Stage 1	415	415	-	-	-	-	-	-	-
Stage 2	29	38	-	-	-	-	-	-	-
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	571	503	1041	1572	-	0	0	-	-
Stage 1	666	592	-	-	-	0	0	-	-
Stage 2	994	863	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	502	0	1041	1572	-	-	-	-	-
Mov Cap-2 Maneuver	502	0	-	-	-	-	-	-	-
Stage 1	585	0	-	-	-	-	-	-	-
Stage 2	994	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	6.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1572	-	502	1041	-	-
HCM Lane V/C Ratio	0.122	-	0.195	0.027	-	-
HCM Control Delay (s)	7.6	-	13.9	8.6	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	0.7	0.1	-	-

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	26	0	13	0	0	0	0	180	90	74	108	0
Future Vol, veh/h	26	0	13	0	0	0	0	180	90	74	108	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	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	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	28	0	14	0	0	0	0	196	98	80	117	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	523	571	117	-	0	0	293	0	0
Stage 1	278	278	-	-	-	-	-	-	-
Stage 2	245	293	-	-	-	-	-	-	-
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	514	431	935	0	-	-	1269	-	0
Stage 1	769	680	-	0	-	-	-	-	0
Stage 2	796	670	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	482	0	935	-	-	-	1269	-	-
Mov Cap-2 Maneuver	482	0	-	-	-	-	-	-	-
Stage 1	721	0	-	-	-	-	-	-	-
Stage 2	796	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0	3.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	482	935	1269	-
HCM Lane V/C Ratio	-	-	0.059	0.015	0.063	-
HCM Control Delay (s)	-	-	12.9	8.9	8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	0.2	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	9	35	10	26	2
Future Vol, veh/h	5	9	35	10	26	2
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	10	38	11	28	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	116	29	30	0	-	0
Stage 1	29	-	-	-	-	-
Stage 2	87	-	-	-	-	-
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	880	1046	1583	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	859	1046	1583	-	-	-
Mov Cap-2 Maneuver	859	-	-	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	914	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	5.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1583	-	971	-	-
HCM Lane V/C Ratio	0.024	-	0.016	-	-
HCM Control Delay (s)	7.3	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	137	133	44	95	26
Future Vol, veh/h	15	137	133	44	95	26
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	149	145	48	103	28

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	403	168	0	0	192	0
Stage 1	168	-	-	-	-	-
Stage 2	235	-	-	-	-	-
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	603	876	-	-	1381	-
Stage 1	862	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	557	876	-	-	1381	-
Mov Cap-2 Maneuver	557	-	-	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	743	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	6.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	829	1381	-
HCM Lane V/C Ratio	-	-	0.199	0.075	-
HCM Control Delay (s)	-	-	10.4	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.2	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	3	1	0	2	0	145	1	5	30	6
Future Vol, veh/h	0	0	3	1	0	2	0	145	1	5	30	6
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	200	-	-	200	-	0	-	-	-	200	-	-
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	0	0	3	1	0	2	0	158	1	5	33	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	205	206	36	206	-	158	39	0	0	159	0	0
Stage 1	47	47	-	158	-	-	-	-	-	-	-	-
Stage 2	158	159	-	48	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	753	691	1037	752	0	887	1571	-	-	1420	-	-
Stage 1	967	856	-	844	0	-	-	-	-	-	-	-
Stage 2	844	766	-	965	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	749	689	1037	748	-	887	1571	-	-	1420	-	-
Mov Cap-2 Maneuver	749	689	-	748	-	-	-	-	-	-	-	-
Stage 1	967	853	-	844	-	-	-	-	-	-	-	-
Stage 2	842	766	-	959	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	9.3	0	0.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1571	-	-	-	1037	748	887	1420	-	-
HCM Lane V/C Ratio	-	-	-	-	0.003	0.001	0.002	0.004	-	-
HCM Control Delay (s)	0	-	-	0	8.5	9.8	9.1	7.5	-	-
HCM Lane LOS	A	-	-	A	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	0	349	145	6
Future Vol, veh/h	0	3	0	349	145	6
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	0	379	158	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	540	161	164	0	-	0
Stage 1	161	-	-	-	-	-
Stage 2	379	-	-	-	-	-
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	503	884	1414	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	503	884	1414	-	-	-
Mov Cap-2 Maneuver	503	-	-	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	692	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1414	-	884	-	-
HCM Lane V/C Ratio	-	-	0.004	-	-
HCM Control Delay (s)	0	-	9.1	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	178	0	49	15	0	137	6	34	14	95	24	26
Future Vol, veh/h	178	0	49	15	0	137	6	34	14	95	24	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	-	-	-	-	-	-	-	-	-	-	-	-
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	193	0	53	16	0	149	7	37	15	103	26	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	379	312	40	331	319	45	54	0	0	52	0	0
Stage 1	247	247	-	58	58	-	-	-	-	-	-	-
Stage 2	132	65	-	273	261	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	579	603	1031	622	598	1025	1551	-	-	1554	-	-
Stage 1	757	702	-	954	847	-	-	-	-	-	-	-
Stage 2	871	841	-	733	692	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	467	559	1031	557	554	1025	1551	-	-	1554	-	-
Mov Cap-2 Maneuver	467	559	-	557	554	-	-	-	-	-	-	-
Stage 1	753	654	-	949	843	-	-	-	-	-	-	-
Stage 2	741	837	-	647	644	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.6	9.6	0.8	4.9
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1551	-	-	530	947	1554	-	-
HCM Lane V/C Ratio	0.004	-	-	0.466	0.174	0.066	-	-
HCM Control Delay (s)	7.3	0	-	17.6	9.6	7.5	0	-
HCM Lane LOS	A	A	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.4	0.6	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	103	11	15	176	109	0	0	14	17
Future Vol, veh/h	0	0	0	103	11	15	176	109	0	0	14	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	-	-	-	250	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	112	12	16	191	118	0	0	15	18

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	525	535	118	34	0	-	-	-	0
Stage 1	501	501	-	-	-	-	-	-	-
Stage 2	24	34	-	-	-	-	-	-	-
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	513	452	934	1578	-	0	0	-	-
Stage 1	609	543	-	-	-	0	0	-	-
Stage 2	999	867	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	451	0	934	1578	-	-	-	-	-
Mov Cap-2 Maneuver	451	0	-	-	-	-	-	-	-
Stage 1	535	0	-	-	-	-	-	-	-
Stage 2	999	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	4.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1578	-	451	535	-	-
HCM Lane V/C Ratio	0.121	-	0.165	0.123	-	-
HCM Control Delay (s)	7.6	-	14.6	12.7	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.6	0.4	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	0	164	0	0	0	0	259	90	74	43	0
Future Vol, veh/h	26	0	164	0	0	0	0	259	90	74	43	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	-
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	28	0	178	0	0	0	0	282	98	80	47	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	538	587	47	-	0	0	379	0	0
Stage 1	208	208	-	-	-	-	-	-	-
Stage 2	330	379	-	-	-	-	-	-	-
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	504	422	1022	0	-	-	1179	-	0
Stage 1	827	730	-	0	-	-	-	-	0
Stage 2	728	615	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	470	0	1022	-	-	-	1179	-	-
Mov Cap-2 Maneuver	470	0	-	-	-	-	-	-	-
Stage 1	771	0	-	-	-	-	-	-	-
Stage 2	728	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0	5.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	470	1022	1179	-
HCM Lane V/C Ratio	-	-	0.06	0.174	0.068	-
HCM Control Delay (s)	-	-	13.1	9.3	8.3	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.6	0.2	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	9	35	89	22	2
Future Vol, veh/h	5	9	35	89	22	2
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	10	38	97	24	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	198	25	26	0	-	0
Stage 1	25	-	-	-	-	-
Stage 2	173	-	-	-	-	-
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	791	1051	1588	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	772	1051	1588	-	-	-
Mov Cap-2 Maneuver	772	-	-	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	836	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	2.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1588	-	931	-	-
HCM Lane V/C Ratio	0.024	-	0.016	-	-
HCM Control Delay (s)	7.3	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

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	4	0	0	1	0	2	0	48	1	5	82	1
Future Vol, veh/h	4	0	0	1	0	2	0	48	1	5	82	1
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	-	-	-	200	-	0	-	-	-	175	-	-
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	4	0	0	1	0	2	0	52	1	5	89	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	154	154	90	154	-	53	90	0	0	53	0	0
Stage 1	101	101	-	53	-	-	-	-	-	-	-	-
Stage 2	53	53	-	101	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	813	738	968	813	0	1014	1505	-	-	1553	-	-
Stage 1	905	811	-	960	0	-	-	-	-	-	-	-
Stage 2	960	851	-	905	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	809	736	968	811	-	1014	1505	-	-	1553	-	-
Mov Cap-2 Maneuver	809	736	-	811	-	-	-	-	-	-	-	-
Stage 1	905	808	-	960	-	-	-	-	-	-	-	-
Stage 2	958	851	-	902	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	8.9	0	0.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1505	-	-	809	811	1014	1553	-	-
HCM Lane V/C Ratio	-	-	-	0.005	0.001	0.002	0.003	-	-
HCM Control Delay (s)	0	-	-	9.5	9.4	8.6	7.3	-	-
HCM Lane LOS	A	-	-	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	9	35	89	22	2
Future Vol, veh/h	5	9	35	89	22	2
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	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	10	38	97	24	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	198	25	26	0	-	0
Stage 1	25	-	-	-	-	-
Stage 2	173	-	-	-	-	-
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	791	1051	1588	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	772	1051	1588	-	-	-
Mov Cap-2 Maneuver	772	-	-	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	836	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	2.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1588	-	931	-	-
HCM Lane V/C Ratio	0.024	-	0.016	-	-
HCM Control Delay (s)	7.3	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	103	11	15	176	109	0	0	14	17
Future Vol, veh/h	0	0	0	103	11	15	176	109	0	0	14	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	-	-	-	250	-	-	250	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	112	12	16	191	118	0	0	15	18

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	525	535	118	34	0	-	-	-	0
Stage 1	501	501	-	-	-	-	-	-	-
Stage 2	24	34	-	-	-	-	-	-	-
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	513	452	934	1578	-	0	0	-	-
Stage 1	609	543	-	-	-	0	0	-	-
Stage 2	999	867	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	451	0	934	1578	-	-	-	-	-
Mov Cap-2 Maneuver	451	0	-	-	-	-	-	-	-
Stage 1	535	0	-	-	-	-	-	-	-
Stage 2	999	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	4.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1578	-	451	934	-	-
HCM Lane V/C Ratio	0.121	-	0.248	0.03	-	-
HCM Control Delay (s)	7.6	-	15.6	9	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	1	0.1	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	0	164	0	0	0	0	259	90	74	43	0
Future Vol, veh/h	26	0	164	0	0	0	0	259	90	74	43	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	200	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	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	28	0	178	0	0	0	0	282	98	80	47	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	538	587	47	-	0	0	379	0	0
Stage 1	208	208	-	-	-	-	-	-	-
Stage 2	330	379	-	-	-	-	-	-	-
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	504	422	1022	0	-	-	1179	-	0
Stage 1	827	730	-	0	-	-	-	-	0
Stage 2	728	615	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	470	0	1022	-	-	-	1179	-	-
Mov Cap-2 Maneuver	470	0	-	-	-	-	-	-	-
Stage 1	771	0	-	-	-	-	-	-	-
Stage 2	728	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0	5.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	470	1022	1179	-
HCM Lane V/C Ratio	-	-	0.06	0.174	0.068	-
HCM Control Delay (s)	-	-	13.1	9.3	8.3	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.6	0.2	-

Intersection	
Int Delay, s/veh	10.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	186	0	15	16	0	139	6	28	15	100	14	33
Future Vol, veh/h	186	0	15	16	0	139	6	28	15	100	14	33
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	-	-	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	202	0	16	17	0	151	7	30	16	109	15	36

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	378	311	33	311	320	39	51	0	0	47	0	0
Stage 1	251	251	-	52	52	-	-	-	-	-	-	-
Stage 2	127	60	-	259	268	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	580	604	1041	642	597	1033	1555	-	-	1560	-	-
Stage 1	753	699	-	961	852	-	-	-	-	-	-	-
Stage 2	877	845	-	746	687	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	466	558	1041	595	551	1033	1555	-	-	1560	-	-
Mov Cap-2 Maneuver	466	558	-	595	551	-	-	-	-	-	-	-
Stage 1	749	649	-	956	848	-	-	-	-	-	-	-
Stage 2	745	841	-	681	638	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.3	9.5	0.9	5.1
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1555	-	-	486	960	1560	-	-
HCM Lane V/C Ratio	0.004	-	-	0.45	0.175	0.07	-	-
HCM Control Delay (s)	7.3	0	-	18.3	9.5	7.5	0	-
HCM Lane LOS	A	A	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.3	0.6	0.2	-	-

2040 BUILD ALTERNATIVES
EXIT 106 – E. CHEROKEE STREET

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	128	0	0	81
Future Vol, veh/h	0	5	128	0	0	81
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	139	0	0	88

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	227	139	0	0	139	0
Stage 1	139	-	-	-	-	-
Stage 2	88	-	-	-	-	-
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	909	-	-	1445	-
Stage 1	888	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	761	909	-	-	1445	-
Mov Cap-2 Maneuver	761	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	909	1445	-
HCM Lane V/C Ratio	-	-	0.006	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBR	SWL
Lane Configurations				
Traffic Vol, veh/h	100	53	136	208
Future Vol, veh/h	100	53	136	208
Conflicting Peds, #/hr	0	0	0	0
Sign Control	Stop	Stop	Free	Free
RT Channelized	-	None	-	None
Storage Length	0	-	0	0
Veh in Median Storage, #	0	-	0	0
Grade, %	0	-	0	0
Peak Hour Factor	92	92	92	92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	109	58	148	226

Major/Minor	Minor1		Major1	Major2
Conflicting Flow All	496	168	0	189
Stage 1	168	-	-	-
Stage 2	328	-	-	-
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	533	876	-	1385
Stage 1	862	-	-	-
Stage 2	730	-	-	-
Platoon blocked, %			-	
Mov Cap-1 Maneuver	511	876	-	1385
Mov Cap-2 Maneuver	511	-	-	-
Stage 1	862	-	-	-
Stage 2	699	-	-	-

Approach	WB	NB	SW
HCM Control Delay, s	13.3	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBR	NBR2	WBLn1	SWL2	SWL
Capacity (veh/h)	-	-	597	1385	-
HCM Lane V/C Ratio	-	-	0.279	0.037	-
HCM Control Delay (s)	-	-	13.3	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.1	-

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	27	0	48	31	123	0	0	189	119
Future Vol, veh/h	0	0	0	27	0	48	31	123	0	0	189	119
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	-	-	-	-	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	29	0	52	34	134	0	0	205	129

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	471	536	134	335	0	-	-	-	0
Stage 1	201	201	-	-	-	-	-	-	-
Stage 2	270	335	-	-	-	-	-	-	-
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	551	451	915	1224	-	0	0	-	-
Stage 1	833	735	-	-	-	0	0	-	-
Stage 2	775	643	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	536	0	915	1224	-	-	-	-	-
Mov Cap-2 Maneuver	596	0	-	-	-	-	-	-	-
Stage 1	810	0	-	-	-	-	-	-	-
Stage 2	775	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	1.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1224	-	767	-	-
HCM Lane V/C Ratio	0.028	-	0.106	-	-
HCM Control Delay (s)	8	-	10.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	0	12	0	0	0	0	105	34	98	92	0
Future Vol, veh/h	49	0	12	0	0	0	0	105	34	98	92	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	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	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	53	0	13	0	0	0	0	114	37	107	100	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	446	464	100	-	0	0	151	0	0
Stage 1	313	313	-	-	-	-	-	-	-
Stage 2	133	151	-	-	-	-	-	-	-
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	570	495	956	0	-	-	1430	-	0
Stage 1	741	657	-	0	-	-	-	-	0
Stage 2	893	772	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	527	0	956	-	-	-	1430	-	-
Mov Cap-2 Maneuver	527	0	-	-	-	-	-	-	-
Stage 1	686	0	-	-	-	-	-	-	-
Stage 2	893	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	0	4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	578	1430	-
HCM Lane V/C Ratio	-	-	0.115	0.074	-
HCM Control Delay (s)	-	-	12	7.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	174	308	0
Future Vol, veh/h	0	0	0	174	308	0
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	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	189	335	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	524	335	335	0	-	0
Stage 1	335	-	-	-	-	-
Stage 2	189	-	-	-	-	-
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	514	707	1224	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	843	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	514	707	1224	-	-	-
Mov Cap-2 Maneuver	514	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	843	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1224	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	40	130	3	8	80
Future Vol, veh/h	1	40	130	3	8	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	43	141	3	9	87

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	247	143	0	0	145	0
Stage 1	143	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Critical Hdwy	7.12	6.22	-	-	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	707	905	-	-	1437	-
Stage 1	860	-	-	-	-	-
Stage 2	902	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	704	905	-	-	1437	-
Mov Cap-2 Maneuver	704	-	-	-	-	-
Stage 1	860	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	899	1437	-
HCM Lane V/C Ratio	-	-	0.05	0.006	-
HCM Control Delay (s)	-	-	9.2	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	100	53	136	38	47	208
Future Vol, veh/h	100	53	136	38	47	208
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	58	148	41	51	226

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	496	168	0	0	189	0
Stage 1	168	-	-	-	-	-
Stage 2	328	-	-	-	-	-
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	533	876	-	-	1385	-
Stage 1	862	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	511	876	-	-	1385	-
Mov Cap-2 Maneuver	511	-	-	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	699	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.3	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	597	1385	-
HCM Lane V/C Ratio	-	-	0.279	0.037	-
HCM Control Delay (s)	-	-	13.3	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	174	308	0
Future Vol, veh/h	0	0	0	174	308	0
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	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	189	335	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	524	335	335	0	-	0
Stage 1	335	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	7.12	6.22	4.12	-	-	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	464	707	1224	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	464	707	1224	-	-	-
Mov Cap-2 Maneuver	464	-	-	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	813	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1224	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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	27	0	45	31	123	0	0	189	119
Future Vol, veh/h	0	0	0	27	0	45	31	123	0	0	189	119
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	-	-	-	200	-	-	250	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	29	0	49	34	134	0	0	205	129

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	471	536	134	335	0	-	-	-	0
Stage 1	201	201	-	-	-	-	-	-	-
Stage 2	270	335	-	-	-	-	-	-	-
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	551	451	915	1224	-	0	0	-	-
Stage 1	833	735	-	-	-	0	0	-	-
Stage 2	775	643	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	536	0	915	1224	-	-	-	-	-
Mov Cap-2 Maneuver	536	0	-	-	-	-	-	-	-
Stage 1	810	0	-	-	-	-	-	-	-
Stage 2	775	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	1.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1224	-	536	915	-	-
HCM Lane V/C Ratio	0.028	-	0.055	0.053	-	-
HCM Control Delay (s)	8	-	12.1	9.2	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	0	12	0	0	0	0	105	34	98	92	0
Future Vol, veh/h	49	0	12	0	0	0	0	105	34	98	92	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	200	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	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	53	0	13	0	0	0	0	114	37	107	100	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	446	464	100	-	0	0	151	0	0
Stage 1	313	313	-	-	-	-	-	-	-
Stage 2	133	151	-	-	-	-	-	-	-
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	570	495	956	0	-	-	1430	-	0
Stage 1	741	657	-	0	-	-	-	-	0
Stage 2	893	772	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	527	0	956	-	-	-	1430	-	-
Mov Cap-2 Maneuver	527	0	-	-	-	-	-	-	-
Stage 1	686	0	-	-	-	-	-	-	-
Stage 2	893	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0	4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	527	956	1430	-
HCM Lane V/C Ratio	-	-	0.101	0.014	0.074	-
HCM Control Delay (s)	-	-	12.6	8.8	7.7	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	0.2	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	45	129	3	8	80
Future Vol, veh/h	1	45	129	3	8	80
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	49	140	3	9	87

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	246	142	0	0	143	0
Stage 1	142	-	-	-	-	-
Stage 2	104	-	-	-	-	-
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	742	906	-	-	1440	-
Stage 1	885	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	737	906	-	-	1440	-
Mov Cap-2 Maneuver	737	-	-	-	-	-
Stage 1	885	-	-	-	-	-
Stage 2	914	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	902	1440	-
HCM Lane V/C Ratio	-	-	0.055	0.006	-
HCM Control Delay (s)	-	-	9.2	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	145	0	5	165
Future Vol, veh/h	0	1	145	0	5	165
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	158	0	5	179

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	348	158	0	0	158	0
Stage 1	158	-	-	-	-	-
Stage 2	190	-	-	-	-	-
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	649	887	-	-	1422	-
Stage 1	871	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	646	887	-	-	1422	-
Mov Cap-2 Maneuver	646	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	839	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	887	1422	-
HCM Lane V/C Ratio	-	-	0.001	0.004	-
HCM Control Delay (s)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBR	SWL
Lane Configurations				
Traffic Vol, veh/h	84	153	163	247
Future Vol, veh/h	84	153	163	247
Conflicting Peds, #/hr	0	0	0	0
Sign Control	Stop	Stop	Free	Free
RT Channelized	-	None	-	None
Storage Length	0	-	0	0
Veh in Median Storage, #	0	-	0	0
Grade, %	0	-	0	0
Peak Hour Factor	92	92	92	92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	91	166	177	268

Major/Minor	Minor1		Major1	Major2
Conflicting Flow All	717	229	0	280
Stage 1	229	-	-	-
Stage 2	488	-	-	-
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	396	810	-	1283
Stage 1	809	-	-	-
Stage 2	617	-	-	-
Platoon blocked, %			-	
Mov Cap-1 Maneuver	356	810	-	1283
Mov Cap-2 Maneuver	356	-	-	-
Stage 1	809	-	-	-
Stage 2	555	-	-	-

Approach	WB	NB	SW
HCM Control Delay, s	16.9	0	2.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBR	NBR2	WBLn1	SWL2	SWL
Capacity (veh/h)	-	-	558	1283	-
HCM Lane V/C Ratio	-	-	0.462	0.086	-
HCM Control Delay (s)	-	-	16.9	8.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.4	0.3	-

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	0	0	24	0	50	36	208	0	0	213	118
Future Vol, veh/h	0	0	0	24	0	50	36	208	0	0	213	118
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	-	-	-	-	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	26	0	54	39	226	0	0	232	128

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	600	664	226	360	0	-	-	-	0
Stage 1	304	304	-	-	-	-	-	-	-
Stage 2	296	360	-	-	-	-	-	-	-
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	464	381	813	1199	-	0	0	-	-
Stage 1	748	663	-	-	-	0	0	-	-
Stage 2	755	626	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	449	0	813	1199	-	-	-	-	-
Mov Cap-2 Maneuver	533	0	-	-	-	-	-	-	-
Stage 1	724	0	-	-	-	-	-	-	-
Stage 2	755	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1199	-	695	-	-
HCM Lane V/C Ratio	0.033	-	0.116	-	-
HCM Control Delay (s)	8.1	-	10.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	0	5	0	0	0	0	139	44	69	168	0
Future Vol, veh/h	105	0	5	0	0	0	0	139	44	69	168	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	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	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	114	0	5	0	0	0	0	151	48	75	183	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	508	532	183	-	0	0	199	0	0
Stage 1	333	333	-	-	-	-	-	-	-
Stage 2	175	199	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	475	453	859	0	-	-	1373	-	0
Stage 1	681	644	-	0	-	-	-	-	0
Stage 2	827	736	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	455	428	859	-	-	-	1373	-	-
Mov Cap-2 Maneuver	455	428	-	-	-	-	-	-	-
Stage 1	681	609	-	-	-	-	-	-	-
Stage 2	827	736	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.4	0	2.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	465	1373	-
HCM Lane V/C Ratio	-	-	0.257	0.055	-
HCM Control Delay (s)	-	-	15.4	7.8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1	0.2	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	258	331	0
Future Vol, veh/h	0	0	0	258	331	0
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	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	280	360	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	640	360	360	0	-	0
Stage 1	360	-	-	-	-	-
Stage 2	280	-	-	-	-	-
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	440	684	1199	-	-	-
Stage 1	706	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	440	684	1199	-	-	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	706	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1199	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	12	145	1	4	169
Future Vol, veh/h	1	12	145	1	4	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	13	158	1	4	184

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	350	158	0	0	159	0
Stage 1	158	-	-	-	-	-
Stage 2	192	-	-	-	-	-
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	647	887	-	-	1420	-
Stage 1	871	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	645	887	-	-	1420	-
Mov Cap-2 Maneuver	645	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	839	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	862	1420	-
HCM Lane V/C Ratio	-	-	0.016	0.003	-
HCM Control Delay (s)	-	-	9.2	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	84	153	163	95	101	247
Future Vol, veh/h	84	153	163	95	101	247
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	166	177	103	110	268

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	717	229	0	0	280	0
Stage 1	229	-	-	-	-	-
Stage 2	488	-	-	-	-	-
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	396	810	-	-	1283	-
Stage 1	809	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	356	810	-	-	1283	-
Mov Cap-2 Maneuver	356	-	-	-	-	-
Stage 1	809	-	-	-	-	-
Stage 2	555	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.9	0	2.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	558	1283	-
HCM Lane V/C Ratio	-	-	0.462	0.086	-
HCM Control Delay (s)	-	-	16.9	8.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.4	0.3	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	258	331	0
Future Vol, veh/h	0	0	0	258	331	0
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	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	280	360	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	640	360	360	0	-	0
Stage 1	360	-	-	-	-	-
Stage 2	280	-	-	-	-	-
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	440	684	1199	-	-	-
Stage 1	706	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	440	684	1199	-	-	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	706	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1199	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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	0	0	24	0	50	36	208	0	0	213	118
Future Vol, veh/h	0	0	0	24	0	50	36	208	0	0	213	118
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	-	-	-	200	-	-	250	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	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	0	0	0	26	0	54	39	226	0	0	232	128

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	600	664	226	360	0	-	-	-	0
Stage 1	304	304	-	-	-	-	-	-	-
Stage 2	296	360	-	-	-	-	-	-	-
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	464	381	813	1199	-	0	0	-	-
Stage 1	748	663	-	-	-	0	0	-	-
Stage 2	755	626	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	449	0	813	1199	-	-	-	-	-
Mov Cap-2 Maneuver	449	0	-	-	-	-	-	-	-
Stage 1	724	0	-	-	-	-	-	-	-
Stage 2	755	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1199	-	449	813	-	-
HCM Lane V/C Ratio	0.033	-	0.058	0.067	-	-
HCM Control Delay (s)	8.1	-	13.5	9.7	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0.2	-	-

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	105	0	5	0	0	0	0	139	44	69	168	0
Future Vol, veh/h	105	0	5	0	0	0	0	139	44	69	168	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	200	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	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	114	0	5	0	0	0	0	151	48	75	183	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	508	532	183	-	0	0	199	0	0
Stage 1	333	333	-	-	-	-	-	-	-
Stage 2	175	199	-	-	-	-	-	-	-
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	525	453	859	0	-	-	1373	-	0
Stage 1	726	644	-	0	-	-	-	-	0
Stage 2	855	736	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	496	0	859	-	-	-	1373	-	-
Mov Cap-2 Maneuver	496	0	-	-	-	-	-	-	-
Stage 1	686	0	-	-	-	-	-	-	-
Stage 2	855	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0	2.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	496	859	1373	-
HCM Lane V/C Ratio	-	-	0.23	0.006	0.055	-
HCM Control Delay (s)	-	-	14.4	9.2	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0	0.2	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	13	145	1	9	164
Future Vol, veh/h	1	13	145	1	9	164
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	14	158	1	10	178

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	356	158	0	0	159	0
Stage 1	158	-	-	-	-	-
Stage 2	198	-	-	-	-	-
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	642	887	-	-	1420	-
Stage 1	871	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	637	887	-	-	1420	-
Mov Cap-2 Maneuver	637	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	829	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	863	1420	-
HCM Lane V/C Ratio	-	-	0.018	0.007	-
HCM Control Delay (s)	-	-	9.2	7.6	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

APPENDIX I

HCM QUEUING ANALYSIS

2015 EXISTING CONDITIONS HCM QUEUING ANALYSIS

Intersection: 24: Shelby Highway & Victory Trail Road

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	74	135	96
Average Queue (ft)	35	62	47
95th Queue (ft)	67	113	77
Link Distance (ft)		502	502
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	300		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25: Shelby Highway & I-85 NB Off-Ramp & I-85 NB On-Ramp

Movement	EB	SB
Directions Served	<LR	L
Maximum Queue (ft)	97	19
Average Queue (ft)	44	2
95th Queue (ft)	70	10
Link Distance (ft)	752	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 31: Victory Trail Road/Victory Trail Rd & Wind Hill Road

Movement	SB
Directions Served	LR
Maximum Queue (ft)	47
Average Queue (ft)	5
95th Queue (ft)	26
Link Distance (ft)	382
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 32: Shelby Highway & Wilcox Ave/I-85 SB Off-Ramp

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	67	74	87
Average Queue (ft)	18	33	34
95th Queue (ft)	47	65	69
Link Distance (ft)	190	64	737
Upstream Blk Time (%)		2	
Queuing Penalty (veh)		1	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 35: Wilcox Ave & Lemeul Rd

Movement	NB
Directions Served	LT
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	29
Link Distance (ft)	303
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 36: I-85 SB Off-Ramp/Wilcox Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 37: I-85 NB On-Ramp & I-85 SB Off-Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 38: I-85 SB Off-Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 39: Wilcox Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 45: Wilcox Ave & Restaurant Dwy

Movement	EB	SB
Directions Served	R	LR
Maximum Queue (ft)	74	46
Average Queue (ft)	27	2
95th Queue (ft)	59	15
Link Distance (ft)	590	104
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 47: I-85 SB On-Ramp/Wilcox Ave

Movement	WB	SE
Directions Served	TR	LR
Maximum Queue (ft)	54	74
Average Queue (ft)	8	6
95th Queue (ft)	33	35
Link Distance (ft)	303	45
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 48: Shelby Highway & Service Station Dwy 2M

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	72	76
Average Queue (ft)	4	36
95th Queue (ft)	30	61
Link Distance (ft)	178	139
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 50: Shelby Highway & Service Station Dwy 3

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	29	52
Average Queue (ft)	7	22
95th Queue (ft)	27	46
Link Distance (ft)		146
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 171: I-85 NB Off-Ramp & I-85 SB On-Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 190: Shelby Highway & Service Station Dwy 2E

Movement	SB
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	9
95th Queue (ft)	40
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1

Intersection: 16: Blacksburg Hwy & Frontage Road

Movement	EB
Directions Served	LR
Maximum Queue (ft)	100
Average Queue (ft)	50
95th Queue (ft)	80
Link Distance (ft)	143
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 43: Frontage Road & I-85 NB Off-Ramp & Milliken Road

Movement	SE
Directions Served	LR
Maximum Queue (ft)	33
Average Queue (ft)	1
95th Queue (ft)	11
Link Distance (ft)	103
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 53: Milliken Road & Blacksburg Hwy & I-85 NB On-Ramp

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	30
Average Queue (ft)	9
95th Queue (ft)	31
Link Distance (ft)	392
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 58: Blacksburg Hwy & I-85 SB On-Ramp/Crawford Rd/Simper Road

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	29	54	52
Average Queue (ft)	1	31	16
95th Queue (ft)	10	48	43
Link Distance (ft)	684	88	392
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 62: Simper Road & Service Dwy 2

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 65: Blacksburg Hwy & Service Station Dwy 1

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 67: Blacksburg Hwy & Service Station Dwy 2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	77
Average Queue (ft)	7
95th Queue (ft)	37
Link Distance (ft)	119
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 69: Simper Road & Service Dwy 1

Movement	SB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	120
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 70: Simper Road & Retail Store

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 73: I-85 SB On-Ramp/Crawford Rd & Crawford Road

Movement	SB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	1
95th Queue (ft)	8
Link Distance (ft)	400
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 5: N. Mountain Street & White Farm Rd

Movement	SW
Directions Served	LR
Maximum Queue (ft)	47
Average Queue (ft)	23
95th Queue (ft)	37
Link Distance (ft)	627
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 77: N. Mountain Street & Holly Grove Rd

Movement	SW
Directions Served	LR
Maximum Queue (ft)	21
Average Queue (ft)	12
95th Queue (ft)	28
Link Distance (ft)	636
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 79: N. Mountain Street & Flying J Dwy (north)/McDonald's

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	TR
Maximum Queue (ft)	29	55	146	98	44
Average Queue (ft)	1	14	14	7	1
95th Queue (ft)	10	42	66	38	14
Link Distance (ft)	98	87	160	274	274
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 82: N. Mountain Street & Flying J Dwy (south)/Waffle House

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	TR
Maximum Queue (ft)	120	30	95	83
Average Queue (ft)	31	11	30	3
95th Queue (ft)	68	35	82	28
Link Distance (ft)	105	197	125	160
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 85: N. Mountain Street & I-85 SB On-Ramp/Crawford Road/I-85 SB Off-Ramp

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	53	112	474	138	133
Average Queue (ft)	15	40	310	74	52
95th Queue (ft)	42	83	532	123	96
Link Distance (ft)	345	107	458	125	125
Upstream Blk Time (%)		1	2	1	1
Queuing Penalty (veh)		1	12	2	1
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 87: I-85 SB Off-Ramp & Truck Pull-off Area

Movement	SB
Directions Served	R
Maximum Queue (ft)	48
Average Queue (ft)	2
95th Queue (ft)	16
Link Distance (ft)	100
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 89: I-85 SB Off-Ramp & Waffle House

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 92: I-85 SB On-Ramp/I-85 SB On-Ramp/Crawford Road & Rock Springs Rd

Movement	EB	SW
Directions Served	LR	TR
Maximum Queue (ft)	73	55
Average Queue (ft)	33	2
95th Queue (ft)	68	18
Link Distance (ft)	652	345
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 94: N. Mountain Street & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	NB	NB	SB
Directions Served	LT	LT	R	LTR
Maximum Queue (ft)	115	435	371	295
Average Queue (ft)	45	126	34	117
95th Queue (ft)	100	260	142	227
Link Distance (ft)	307	425	425	458
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		1		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 97: I-85 NB Off-Ramp & Henson Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 98: Henson Rd & Henson Access

Movement	SE
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	15
95th Queue (ft)	40
Link Distance (ft)	59
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 99: Henson Rd & I-85 NB Off-Ramp

Movement	NE
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	3
95th Queue (ft)	18
Link Distance (ft)	315
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 101: N. Mountain Street & Service Station

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	TR	LT
Maximum Queue (ft)	55	66	43	14	71
Average Queue (ft)	21	32	1	0	23
95th Queue (ft)	49	64	14	5	67
Link Distance (ft)	118	96	482	482	425
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 192: Driveway & I-85 NB Off-Ramp

Movement	WB
Directions Served	L
Maximum Queue (ft)	68
Average Queue (ft)	4
95th Queue (ft)	29
Link Distance (ft)	687
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 16

Intersection: 110: Tribal Road & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	EB	WB	NB	SB
Directions Served	R	LTR	LT	TR
Maximum Queue (ft)	31	168	78	19
Average Queue (ft)	9	65	13	1
95th Queue (ft)	32	122	54	6
Link Distance (ft)		705	720	280
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 114: I-85 SB On-Ramp & Holly Grove Rd

Movement	SB
Directions Served	LT
Maximum Queue (ft)	29
Average Queue (ft)	9
95th Queue (ft)	30
Link Distance (ft)	105
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 116: Tribal Road & Gibbons Rd/Priester Rd & I-85 NB Off-Ramp

Movement	EB	WB	WB	NB	SB	SE
Directions Served	LTR	LT	>	TR	LTR	<LR
Maximum Queue (ft)	31	53	79	41	100	122
Average Queue (ft)	4	30	37	2	36	65
95th Queue (ft)	20	53	67	16	78	109
Link Distance (ft)	1040	78	78	152	720	766
Upstream Blk Time (%)			0			
Queuing Penalty (veh)			0			
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 118: Priester Rd & Loves Travel Stop Dwy

Movement	WB
Directions Served	TR
Maximum Queue (ft)	79
Average Queue (ft)	45
95th Queue (ft)	71
Link Distance (ft)	224
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 120: Tribal Road & Indistrial Plant Dwy (north)/Love's Travel Stop (truck dwy)

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	131	30
Average Queue (ft)	17	70	4
95th Queue (ft)	41	117	21
Link Distance (ft)	289	232	337
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 122: Industrial Plant Dwy (south) & Tribal Road

Movement	NE
Directions Served	LR
Maximum Queue (ft)	26
Average Queue (ft)	3
95th Queue (ft)	16
Link Distance (ft)	160
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 123: White Farm Rd & Holly Grove Rd

Movement	NE
Directions Served	LR
Maximum Queue (ft)	14
Average Queue (ft)	1
95th Queue (ft)	6
Link Distance (ft)	908
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 125: Priester Rd & Love's Travel Stop Dwy & I-85 NB On-Ramp

Movement	WB	WB	SW
Directions Served	L	R>	<L
Maximum Queue (ft)	46	29	18
Average Queue (ft)	16	17	1
95th Queue (ft)	37	40	6
Link Distance (ft)	161		249
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		60	
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 129: E. Cherokee St & Service Station Dwy & I-85 NB On-Ramp/Mill Creek Rd

Movement	EB	NB	SB	SW
Directions Served	<LR	LTR	LTR	LR>
Maximum Queue (ft)	28	32	79	25
Average Queue (ft)	13	1	18	16
95th Queue (ft)	36	11	59	35
Link Distance (ft)	129	295	142	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 131: E. Cherokee St & I-85 NB Off-Ramp

Movement	WB
Directions Served	LR
Maximum Queue (ft)	52
Average Queue (ft)	7
95th Queue (ft)	31
Link Distance (ft)	762
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 132: I-85 NB On-Ramp & Mill Creek Rd

Movement	SW
Directions Served	LR
Maximum Queue (ft)	68
Average Queue (ft)	7
95th Queue (ft)	36
Link Distance (ft)	562
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 133: E. Cherokee St & Lakeview Dr

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	3
95th Queue (ft)	17
Link Distance (ft)	639
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 136: E. Cherokee St & Service Station Dwy/I-85 SB Off-Ramp

Movement	EB	EB	WB
Directions Served	L	R	LTR
Maximum Queue (ft)	74	30	50
Average Queue (ft)	12	8	27
95th Queue (ft)	42	30	46
Link Distance (ft)	106	106	74
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 138: I-85 SB Off-Ramp & Service Station Dwy 2

Movement	SB
Directions Served	R
Maximum Queue (ft)	14
Average Queue (ft)	8
95th Queue (ft)	19
Link Distance (ft)	54
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 140: E. Cherokee St & Fireworks Store/Service Station

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	28	27	22
Average Queue (ft)	4	7	1
95th Queue (ft)	20	27	7
Link Distance (ft)	102	138	123
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 142: E. Cherokee St & I-85 SB On-Ramp/Liquor Store

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	30	28	41
Average Queue (ft)	1	3	1
95th Queue (ft)	10	16	14
Link Distance (ft)	118	123	39
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 143: I-85 SB On-Ramp

Movement	WB
Directions Served	L
Maximum Queue (ft)	29
Average Queue (ft)	2
95th Queue (ft)	14
Link Distance (ft)	118
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 144: I-85 SB On-Ramp & E. Cherokee St

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 146: I-85 SB Off-Ramp & Service Station Dwy 1

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 148: E. Cherokee St & Retail Store/Service Station

Movement	WB	NE	SW
Directions Served	LR	TR	LT
Maximum Queue (ft)	67	20	52
Average Queue (ft)	25	1	6
95th Queue (ft)	50	7	28
Link Distance (ft)	150	183	118
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 150: Service Station Dwy/Retail Store & E. Cherokee St

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	77	30	128
Average Queue (ft)	4	2	56
95th Queue (ft)	28	14	100
Link Distance (ft)	118	136	140
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 199: E. Cherokee St & Service Station Dwy South

Movement	SB
Directions Served	LT
Maximum Queue (ft)	40
Average Queue (ft)	1
95th Queue (ft)	13
Link Distance (ft)	48
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 201: I-85 SB On-Ramp & Abandoned Lot

Movement	NW
Directions Served	R
Maximum Queue (ft)	28
Average Queue (ft)	1
95th Queue (ft)	9
Link Distance (ft)	158
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 11: Battleground Rd/Restaurant Dwy & US 29/Battleground Ave

Movement	WB	NB
Directions Served	LT	LTR
Maximum Queue (ft)	52	45
Average Queue (ft)	7	21
95th Queue (ft)	30	43
Link Distance (ft)	734	21
Upstream Blk Time (%)		5
Queuing Penalty (veh)		3
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 18: South Access & Battleground Rd

Movement	NE
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	886
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Battleground Rd & Dixon School Road

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	15
95th Queue (ft)	39
Link Distance (ft)	980
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: Battleground Rd & Alleyway

Movement	NB
Directions Served	TR
Maximum Queue (ft)	31
Average Queue (ft)	4
95th Queue (ft)	21
Link Distance (ft)	396
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 153: Battleground Rd & I-85 NB Off-Ramp & I-85 NB On-Ramp

Movement	EB	SB
Directions Served	<LR	LTR
Maximum Queue (ft)	79	30
Average Queue (ft)	19	1
95th Queue (ft)	55	10
Link Distance (ft)	495	683
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 156: I-85 SB On-Ramp & Battleground Rd & I-85 SB Off-Ramp

Movement	WB
Directions Served	<LR
Maximum Queue (ft)	121
Average Queue (ft)	19
95th Queue (ft)	65
Link Distance (ft)	529
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 159: Battleground Rd & Indian Motorcycle/Pioneer Motor Bearing Co.

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	30	29
Average Queue (ft)	1	2
95th Queue (ft)	10	13
Link Distance (ft)	102	146
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 162: Battleground Rd & Truck Dwy/Commercial Access

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	30
Average Queue (ft)	3
95th Queue (ft)	18
Link Distance (ft)	103
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 168: Banks Road & I-85 NB Off-Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 3

Intersection: 24: Shelby Highway & Victory Trail Rd

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	107	120	98
Average Queue (ft)	36	54	55
95th Queue (ft)	77	95	86
Link Distance (ft)		502	502
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	300		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25: Shelby Highway & I-85 NB Off-Ramp & I-85 NB On-Ramp

Movement	EB	NB	NB	SB
Directions Served	<LR	T	R	L
Maximum Queue (ft)	131	43	46	42
Average Queue (ft)	60	1	2	3
95th Queue (ft)	100	14	15	18
Link Distance (ft)	426	502	502	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 31: Victory Trail Rd & Wind Hill Rd

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	30	47
Average Queue (ft)	1	9
95th Queue (ft)	10	32
Link Distance (ft)		382
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 32: Shelby Highway & Wilcox Ave/I-85 SB Off-Ramp

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	57	80	162	22
Average Queue (ft)	18	52	34	1
95th Queue (ft)	45	86	96	7
Link Distance (ft)	190	64	737	300
Upstream Blk Time (%)		4		
Queuing Penalty (veh)		3		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Wilcox Ave & Lemeul Rd

Movement	NB
Directions Served	LT
Maximum Queue (ft)	31
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	308
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 36: I-85 SB Off-Ramp & Wilcox Ave

Movement	NW
Directions Served	L
Maximum Queue (ft)	50
Average Queue (ft)	8
95th Queue (ft)	34
Link Distance (ft)	95
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 38: I-85 SB Off-Ramp & Wilcox Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 39: Wilcox Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 45: Wilcox Ave & Restaraunt Dwy

Movement	EB	EB	SE
Directions Served	<	R	TR
Maximum Queue (ft)	22	56	52
Average Queue (ft)	2	23	6
95th Queue (ft)	13	53	29
Link Distance (ft)	578		98
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 47: I-85 SB On-Ramp/Wilcox Ave

Movement	WB	SE
Directions Served	TR	LR
Maximum Queue (ft)	32	63
Average Queue (ft)	5	9
95th Queue (ft)	24	39
Link Distance (ft)	308	38
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 48: Shelby Highway & Service Station Dwy 2M

Movement	SB
Directions Served	LR
Maximum Queue (ft)	102
Average Queue (ft)	50
95th Queue (ft)	81
Link Distance (ft)	139
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 50: Shelby Highway & Service Station Dwy 3

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	28	53
Average Queue (ft)	5	30
95th Queue (ft)	23	49
Link Distance (ft)		146
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 190: Shelby Highway & Service Station Dwy 2E

Movement	SB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	6
95th Queue (ft)	25
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 3

Intersection: 16: Blacksburg Hwy & I-85 NB Off-Ramp

Movement	EB
Directions Served	LR
Maximum Queue (ft)	76
Average Queue (ft)	42
95th Queue (ft)	69
Link Distance (ft)	143
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 43: Frontage Road & I-85 NB Off-Ramp & Milliken Road

Movement	EB
Directions Served	T
Maximum Queue (ft)	31
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	710
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 53: Milliken Road & I-85 NB On-Ramp & Blacksburg Hwy

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	28	30
Average Queue (ft)	1	7
95th Queue (ft)	9	27
Link Distance (ft)	27	391
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 58: Blacksburg Hwy & I-85 SB On-Ramp/Crawford Rd/I-85 SB Off-Ramp

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	80	77
Average Queue (ft)	2	39	21
95th Queue (ft)	15	64	57
Link Distance (ft)	684	88	391
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 62: I-85 SB Off-Ramp & Service Dwy 2

Movement	SB
Directions Served	LR
Maximum Queue (ft)	67
Average Queue (ft)	3
95th Queue (ft)	25
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 65: Blacksburg Hwy & Service Station Dwy 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	76
Average Queue (ft)	8
95th Queue (ft)	39
Link Distance (ft)	117
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 67: Blacksburg Hwy & Service Station Dwy 2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	66
Average Queue (ft)	7
95th Queue (ft)	38
Link Distance (ft)	119
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 69: I-85 SB Off-Ramp/Simper Rd & Service Dwy 1

Movement	SB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	120
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 70: Simper Rd/I-85 SB Off-Ramp & Retail Store

Movement	SB
Directions Served	R
Maximum Queue (ft)	26
Average Queue (ft)	9
95th Queue (ft)	30
Link Distance (ft)	91
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 73: I-85 SB On-Ramp & I-85 SB On-Ramp/Crawford Rd & Crawford Rd

Movement	SB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	2
95th Queue (ft)	12
Link Distance (ft)	400
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 5: N. Mountain Street & White Farm Rd

Movement	SW
Directions Served	LR
Maximum Queue (ft)	47
Average Queue (ft)	11
95th Queue (ft)	35
Link Distance (ft)	627
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 77: N. Mountain Street & Holly Grove Rd

Movement	SW
Directions Served	LR
Maximum Queue (ft)	68
Average Queue (ft)	9
95th Queue (ft)	37
Link Distance (ft)	636
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 79: N. Mountain Street & Flying J Dwy (north)/McDonald's

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	TR
Maximum Queue (ft)	30	29	62	48	44
Average Queue (ft)	13	16	7	5	3
95th Queue (ft)	37	40	35	25	19
Link Distance (ft)	98	87	160	274	274
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 82: N. Mountain Street & Flying J Dwy (south)/Waffle House

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LT
Maximum Queue (ft)	71	30	68	63
Average Queue (ft)	37	12	15	2
95th Queue (ft)	63	35	51	21
Link Distance (ft)	105	197	125	160
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 85: N. Mountain Street & I-85 SB On-Ramp/Rock Springs Rd/I-85 SB Off-Ramp

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	31	114	240	125	78
Average Queue (ft)	4	60	150	63	26
95th Queue (ft)	21	105	246	113	73
Link Distance (ft)	345	107	458	125	125
Upstream Blk Time (%)		1		0	
Queuing Penalty (veh)		2		0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 87: I-85 SB Off-Ramp & Truck Pull-off Area

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 89: I-85 SB Off-Ramp & Waffle House

Movement	WB
Directions Served	TR
Maximum Queue (ft)	69
Average Queue (ft)	3
95th Queue (ft)	25
Link Distance (ft)	328
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 92: I-85 SB On-Ramp/I-85 SB On-Ramp/Rock Springs Rd & Rock Springs Rd

Movement	EB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	4
95th Queue (ft)	19
Link Distance (ft)	652
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 94: N. Mountain Street & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	NB	NB	SB
Directions Served	LT	LT	R	LTR
Maximum Queue (ft)	180	221	67	233
Average Queue (ft)	49	103	16	103
95th Queue (ft)	122	171	48	190
Link Distance (ft)	307	425	425	458
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 97: I-85 NB Off-Ramp & Henson Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 98: Henson Rd & Henson Access

Movement	SE
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	59
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 99: Henson Rd & I-85 NB Off-Ramp

Movement	WB	NE
Directions Served	LT	R
Maximum Queue (ft)	31	52
Average Queue (ft)	5	6
95th Queue (ft)	22	31
Link Distance (ft)	307	315
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 101: N. Mountain Street & Service Station

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LT
Maximum Queue (ft)	77	78	25	68
Average Queue (ft)	25	19	1	7
95th Queue (ft)	60	59	10	34
Link Distance (ft)	118	96	482	425
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 192: Driveway & I-85 NB Off-Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 2

Intersection: 110: Tribal Road & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	EB	EB	WB	NB	SB
Directions Served	L	R	LTR	LT	TR
Maximum Queue (ft)	31	31	91	76	22
Average Queue (ft)	3	5	43	9	1
95th Queue (ft)	18	23	68	42	7
Link Distance (ft)	416		627	720	283
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		100			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 114: I-85 SB On-Ramp & Holly Grove Rd

Movement	SB
Directions Served	LT
Maximum Queue (ft)	28
Average Queue (ft)	10
95th Queue (ft)	32
Link Distance (ft)	99
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 116: Tribal Road & Gibbons Rd/Priester Rd & I-85 NB Off-Ramp

Movement	EB	WB	WB	NB	SB	SE
Directions Served	LTR	LT	>	TR	LTR	<LR
Maximum Queue (ft)	29	31	78	111	80	156
Average Queue (ft)	1	5	29	9	28	67
95th Queue (ft)	10	24	67	51	67	123
Link Distance (ft)	1030	78	78	152	720	416
Upstream Blk Time (%)			0			
Queuing Penalty (veh)			0			
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 118: Priester Rd & Love's Travel Stop Dwy

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	78	29
Average Queue (ft)	10	9
95th Queue (ft)	49	31
Link Distance (ft)	78	310
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	1	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 120: Tribal Road & Industrial Plant Dwy (north)/Love's Travel Stop (truck dwy)

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	80	94
Average Queue (ft)	41	49
95th Queue (ft)	63	94
Link Distance (ft)	289	232
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 122: Industrial Plant Dwy (south) & Tribal Road

Movement	NE
Directions Served	LR
Maximum Queue (ft)	26
Average Queue (ft)	2
95th Queue (ft)	13
Link Distance (ft)	160
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 123: White Farm Rd & Holly Grove Rd

Movement	NE
Directions Served	LR
Maximum Queue (ft)	16
Average Queue (ft)	3
95th Queue (ft)	12
Link Distance (ft)	908
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 125: Priester Rd & Love's Travel Stop Dwy & I-85 NB On-Ramp

Movement	WB	WB	SW
Directions Served	L	R>	<L
Maximum Queue (ft)	25	29	30
Average Queue (ft)	8	21	1
95th Queue (ft)	26	41	10
Link Distance (ft)	161		251
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		60	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 1

Intersection: 129: E. Cherokee Street & Service Station Dwy & I-85 NB On-Ramp/Mill Creek Rd

Movement	EB	NB	SB	SW
Directions Served	<LR	LTR	LTR	LR>
Maximum Queue (ft)	49	36	50	42
Average Queue (ft)	18	2	6	7
95th Queue (ft)	42	16	27	26
Link Distance (ft)	129	295	142	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 131: E. Cherokee Street & I-85 NB Off-Ramp

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	4
95th Queue (ft)	21
Link Distance (ft)	762
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 132: I-85 NB On-Ramp & Mill Creek Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 133: E. Cherokee Street & Lakeview Dr

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 136: E. Cherokee Street & Service Station Dwy/I-85 SB Off-Ramp

Movement	WB
Directions Served	LTR
Maximum Queue (ft)	74
Average Queue (ft)	40
95th Queue (ft)	70
Link Distance (ft)	74
Upstream Blk Time (%)	1
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 138: I-85 SB Off-Ramp & Service Station Dwy 2

Movement	WB	SB
Directions Served	TR	R
Maximum Queue (ft)	91	39
Average Queue (ft)	3	10
95th Queue (ft)	30	29
Link Distance (ft)	127	54
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 140: E. Cherokee Street & Fireworks Store/Service Station

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	28	51	30	23
Average Queue (ft)	4	15	1	4
95th Queue (ft)	19	40	10	18
Link Distance (ft)	102	138	82	123
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 142: E. Cherokee Street & I-85 SB On-Ramp/Liquor Store

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	30	26	28	14
Average Queue (ft)	8	4	1	0
95th Queue (ft)	29	20	9	5
Link Distance (ft)	118	97	123	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 143: I-85 SB On-Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 144: I-85 SB On-Ramp/E. Cherokee Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 146: I-85 SB Off-Ramp & Service Station Dwy 1

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 148: E. Cherokee Street & Retail Store/Service Station

Movement	WB	SW
Directions Served	LR	LT
Maximum Queue (ft)	110	74
Average Queue (ft)	34	16
95th Queue (ft)	69	52
Link Distance (ft)	150	118
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 150: Service Station Dwy/Retail Store & E. Cherokee Street

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	80	78	144
Average Queue (ft)	3	5	62
95th Queue (ft)	26	34	112
Link Distance (ft)	118	136	140
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 199: E. Cherokee Street & Service Station Dwy South

Movement	NB
Directions Served	TR
Maximum Queue (ft)	51
Average Queue (ft)	3
95th Queue (ft)	23
Link Distance (ft)	39
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 201: I-85 SB On-Ramp & Abandoned Lot

Movement	NW
Directions Served	R
Maximum Queue (ft)	29
Average Queue (ft)	8
95th Queue (ft)	29
Link Distance (ft)	158
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1

Intersection: 11: Battleground Rd/Restaurant Dwy & US 29/Battleground Ave

Movement	EB	WB	NB	SB
Directions Served	LT	LT	LTR	LTR
Maximum Queue (ft)	29	52	30	31
Average Queue (ft)	5	4	27	7
95th Queue (ft)	23	23	39	28
Link Distance (ft)	1235	734	21	134
Upstream Blk Time (%)			9	
Queuing Penalty (veh)			6	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: South Access & Battleground Rd

Movement	NE
Directions Served	LR
Maximum Queue (ft)	29
Average Queue (ft)	4
95th Queue (ft)	20
Link Distance (ft)	886
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Battleground Rd & Dixon School Rd

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	31	31
Average Queue (ft)	20	1
95th Queue (ft)	43	10
Link Distance (ft)	980	1227
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 22: Battleground Rd & Alleyway

Movement	NB
Directions Served	TR
Maximum Queue (ft)	55
Average Queue (ft)	12
95th Queue (ft)	44
Link Distance (ft)	396
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 153: Battleground Rd & I-85 NB Off-Ramp & I-85 NB On-Ramp

Movement	EB
Directions Served	<LR
Maximum Queue (ft)	68
Average Queue (ft)	23
95th Queue (ft)	52
Link Distance (ft)	495
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 156: I-85 SB On-Ramp & Battleground Rd & I-85 SB Off-Ramp

Movement	WB
Directions Served	<LR
Maximum Queue (ft)	50
Average Queue (ft)	13
95th Queue (ft)	39
Link Distance (ft)	529
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 159: Battleground Rd & Indian Motorcycle/Pioneer Motor Bearing Co.

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	30	29
Average Queue (ft)	3	9
95th Queue (ft)	18	30
Link Distance (ft)	102	146
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 162: Battleground Rd & Truck Dwy/Commercial Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 168: Banks Road & I-85 NB Off-Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 6

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Intersection: 24: Shelby Highway & Victory Trail Rd

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	75	261	98
Average Queue (ft)	39	123	60
95th Queue (ft)	65	235	91
Link Distance (ft)		496	496
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	300		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25: Shelby Highway & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	143	17
Average Queue (ft)	66	4
95th Queue (ft)	110	15
Link Distance (ft)	526	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 31: Victory Trail Rd & Wind Hill Rd

Movement	SB
Directions Served	LR
Maximum Queue (ft)	64
Average Queue (ft)	7
95th Queue (ft)	36
Link Distance (ft)	410
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 32: Shelby Highway & Wilcox Ave/I-85 SB Off-Ramp

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	57	74	251	27
Average Queue (ft)	25	46	71	2
95th Queue (ft)	53	74	150	11
Link Distance (ft)	185	64	736	300
Upstream Blk Time (%)		4		
Queuing Penalty (veh)		2		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Wilcox Ave & Lemeul Rd

Movement	NB
Directions Served	LT
Maximum Queue (ft)	52
Average Queue (ft)	16
95th Queue (ft)	43
Link Distance (ft)	303
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 36: I-85 SB Off-Ramp & Wilcox Ave

Movement	WB	NW
Directions Served	T	L
Maximum Queue (ft)	31	27
Average Queue (ft)	1	3
95th Queue (ft)	10	16
Link Distance (ft)	201	95
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 38: I-85 SB Off-Ramp & Wilcox Ave

Movement	SE
Directions Served	L
Maximum Queue (ft)	30
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	95
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 39: Wilcox Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 45: Wilcox Ave & Restaurant Dwy

Movement	EB
Directions Served	R
Maximum Queue (ft)	65
Average Queue (ft)	27
95th Queue (ft)	51
Link Distance (ft)	579
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 47: I-85 SB On-Ramp/Wilcox Ave

Movement	WB	SE
Directions Served	TR	LR
Maximum Queue (ft)	31	73
Average Queue (ft)	15	11
95th Queue (ft)	41	44
Link Distance (ft)	303	44
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 48: Shelby Highway & Service Station Dwy 2M

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	28	120
Average Queue (ft)	1	41
95th Queue (ft)	9	84
Link Distance (ft)	178	139
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 50: Shelby Highway & Service Station Dwy 3

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	28	26	56
Average Queue (ft)	3	1	28
95th Queue (ft)	16	9	52
Link Distance (ft)		178	146
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	300		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 190: Shelby Highway & Service Station Dwy 2E

Movement	SB
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	12
95th Queue (ft)	45
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 2

Intersection: 16: Blacksburg Hwy & I-85 NB Off-Ramp

Movement	EB
Directions Served	LR
Maximum Queue (ft)	135
Average Queue (ft)	86
95th Queue (ft)	131
Link Distance (ft)	143
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 43: Frontage Road & I-85 NB Off-Ramp & Milliken Road

Movement	EB	SE
Directions Served	T	LR
Maximum Queue (ft)	30	78
Average Queue (ft)	1	4
95th Queue (ft)	10	28
Link Distance (ft)	419	103
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 53: Milliken Road & I-85 NB On-Ramp & Blacksburg Hwy

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	76
Average Queue (ft)	23
95th Queue (ft)	59
Link Distance (ft)	392
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 58: Blacksburg Hwy & I-85 SB On-Ramp/Crawford Rd/Simper Road

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	76	98
Average Queue (ft)	8	47	46
95th Queue (ft)	29	72	88
Link Distance (ft)	684	88	392
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 62: Simper Road & Service Dwy 2

Movement	SB
Directions Served	LR
Maximum Queue (ft)	49
Average Queue (ft)	5
95th Queue (ft)	25
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 65: Blacksburg Hwy & Service Station Dwy 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	66
Average Queue (ft)	9
95th Queue (ft)	41
Link Distance (ft)	117
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 67: Blacksburg Hwy & Service Dwy 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	77
Average Queue (ft)	18
95th Queue (ft)	59
Link Distance (ft)	119
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 69: Simper Road & Service Dwy 1

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	30	30
Average Queue (ft)	1	8
95th Queue (ft)	10	30
Link Distance (ft)	143	120
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 70: Simper Road/I-85 SB Off-Ramp & Retail Store

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 73: I-85 SB On-Ramp & I-85 SB On-Ramp/Crawford Rd & Crawford Rd

Movement	SB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	7
95th Queue (ft)	24
Link Distance (ft)	400
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1

Intersection: 5: N. Mountain Street & White Farm Rd

Movement	SW
Directions Served	LR
Maximum Queue (ft)	49
Average Queue (ft)	28
95th Queue (ft)	48
Link Distance (ft)	627
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 77: N. Mountain Street & Holly Grove Rd

Movement	SW
Directions Served	LR
Maximum Queue (ft)	40
Average Queue (ft)	15
95th Queue (ft)	32
Link Distance (ft)	636
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 79: N. Mountain Street & Flying J Dwy (north)/McDonald's

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LT
Maximum Queue (ft)	29	56	85	132
Average Queue (ft)	1	24	24	12
95th Queue (ft)	10	53	71	63
Link Distance (ft)	98	87	160	274
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 82: N. Mountain Street & Flying J Dwy (south)/Waffle House

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	TR
Maximum Queue (ft)	73	30	138	88	37
Average Queue (ft)	31	7	38	12	2
95th Queue (ft)	55	27	97	53	13
Link Distance (ft)	105	197	125	160	160
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			1		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 85: N. Mountain Street & I-85 SB On-Ramp/Rock Springs Rd/I-85 SB Off-Ramp

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	72	117	483	154	109
Average Queue (ft)	16	65	465	72	49
95th Queue (ft)	45	120	482	142	97
Link Distance (ft)	345	107	458	125	125
Upstream Blk Time (%)		2	22	2	0
Queuing Penalty (veh)		2	148	6	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 87: I-85 SB Off-Ramp & Truck Pull-off Area

Movement	SB
Directions Served	R
Maximum Queue (ft)	43
Average Queue (ft)	3
95th Queue (ft)	21
Link Distance (ft)	100
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 89: I-85 SB Off-Ramp & Waffle House

Movement	WB
Directions Served	TR
Maximum Queue (ft)	68
Average Queue (ft)	5
95th Queue (ft)	31
Link Distance (ft)	328
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 92: I-85 SB On-Ramp/I-85 SB On-Ramp/Rock Springs Rd & Rock Springs Rd

Movement	EB
Directions Served	LR
Maximum Queue (ft)	85
Average Queue (ft)	29
95th Queue (ft)	64
Link Distance (ft)	652
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 94: N. Mountain Street & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	NB	NB	SB
Directions Served	LT	R	LT	R	LTR
Maximum Queue (ft)	194	214	474	507	239
Average Queue (ft)	65	7	448	329	131
95th Queue (ft)	133	71	468	629	221
Link Distance (ft)	307		425	425	458
Upstream Blk Time (%)			56	16	
Queuing Penalty (veh)			181	52	
Storage Bay Dist (ft)		200			
Storage Blk Time (%)	0	0			
Queuing Penalty (veh)	0	0			

Intersection: 97: I-85 NB Off-Ramp & Henson Access

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 98: Henson Rd & Henson Access

Movement	SE
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	10
95th Queue (ft)	34
Link Distance (ft)	59
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 99: Henson Rd & I-85 NB Off-Ramp

Movement	NE
Directions Served	R
Maximum Queue (ft)	68
Average Queue (ft)	8
95th Queue (ft)	37
Link Distance (ft)	315
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 101: N. Mountain Street & Service Station

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	TR	LT
Maximum Queue (ft)	133	129	534	534	132
Average Queue (ft)	73	46	449	436	38
95th Queue (ft)	133	110	664	681	94
Link Distance (ft)	118	96	482	482	425
Upstream Blk Time (%)	35	8	68	60	
Queuing Penalty (veh)	0	0	0	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 192: I-85 NB Off-Ramp

Movement	WB
Directions Served	L
Maximum Queue (ft)	79
Average Queue (ft)	12
95th Queue (ft)	51
Link Distance (ft)	687
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 389

Intersection: 110: Tribal Road & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	EB	WB	NB	SB
Directions Served	R	LTR	LT	TR
Maximum Queue (ft)	72	255	68	22
Average Queue (ft)	13	121	25	1
95th Queue (ft)	43	208	64	7
Link Distance (ft)		221	720	283
Upstream Blk Time (%)		2		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)	100			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 114: I-85 SB On-Ramp & Holly Grove Rd

Movement	SB
Directions Served	LT
Maximum Queue (ft)	54
Average Queue (ft)	12
95th Queue (ft)	38
Link Distance (ft)	100
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 116: Tribal Road & Gibbons Rd/Priester Rd & I-85 NB Off-Ramp

Movement	EB	WB	WB	NB	SB	SE
Directions Served	LTR	LT	>	TR	LTR	<LR
Maximum Queue (ft)	29	72	79	166	557	391
Average Queue (ft)	6	37	48	80	158	338
95th Queue (ft)	25	61	74	169	381	435
Link Distance (ft)	1014	78	78	152	720	328
Upstream Blk Time (%)		0	1	4		80
Queuing Penalty (veh)		0	1	11		0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 118: Priester Rd & Love's Travel Stop Dwy

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	92	153	29
Average Queue (ft)	77	55	22
95th Queue (ft)	89	95	42
Link Distance (ft)	78	224	310
Upstream Blk Time (%)	7		
Queuing Penalty (veh)	26		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 120: Tribal Road & Industrial Plant Dwy (north)/Love's Travel Stop (truck dwy)

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	244	73	32
Average Queue (ft)	19	101	15	2
95th Queue (ft)	43	194	46	15
Link Distance (ft)	289	232	337	152
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 122: Industrial Plant Dwy (south) & Tribal Road

Movement	NE
Directions Served	LR
Maximum Queue (ft)	26
Average Queue (ft)	2
95th Queue (ft)	13
Link Distance (ft)	160
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 123: White Farm Rd & Holly Grove Rd

Movement	EB	WB	NE
Directions Served	TR	LT	LR
Maximum Queue (ft)	22	22	16
Average Queue (ft)	1	2	2
95th Queue (ft)	7	13	10
Link Distance (ft)	673	100	908
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 125: Priester Rd & Love's Travel Stop Dwy & I-85 NB On-Ramp

Movement	WB	WB	SW
Directions Served	L	R>	<L
Maximum Queue (ft)	51	29	28
Average Queue (ft)	19	23	1
95th Queue (ft)	39	40	9
Link Distance (ft)	161		248
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		60	
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Network Summary

Network wide Queuing Penalty: 38

Intersection: 129: E. Cherokee Street & Service Station Dwy & I-85 NB On-Ramp/Mill Creek Rd

Movement	EB	SB	SW
Directions Served	<LR	LTR	LR>
Maximum Queue (ft)	28	67	25
Average Queue (ft)	16	15	17
95th Queue (ft)	38	50	35
Link Distance (ft)	129	142	529
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 131: E. Cherokee Street & I-85 NB Off-Ramp

Movement	WB
Directions Served	LR
Maximum Queue (ft)	75
Average Queue (ft)	20
95th Queue (ft)	61
Link Distance (ft)	762
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 132: I-85 NB On-Ramp & Mill Creek Rd

Movement	SW
Directions Served	LR
Maximum Queue (ft)	50
Average Queue (ft)	4
95th Queue (ft)	23
Link Distance (ft)	570
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 133: E. Cherokee Street & Lakeview Dr

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	639
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 136: Service Station Dwy/I-85 SB Off-Ramp & E. Cherokee Street

Movement	EB	EB	WB
Directions Served	L	R	LTR
Maximum Queue (ft)	55	31	56
Average Queue (ft)	18	12	36
95th Queue (ft)	46	35	56
Link Distance (ft)	106	106	74
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 138: I-85 SB Off-Ramp & Service Station Dwy 2

Movement	SB
Directions Served	R
Maximum Queue (ft)	38
Average Queue (ft)	13
95th Queue (ft)	28
Link Distance (ft)	54
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 140: E. Cherokee Street & Fireworks Store/Service Station

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	28	28	48	23
Average Queue (ft)	3	19	2	2
95th Queue (ft)	16	39	16	11
Link Distance (ft)	102	138	82	123
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 142: E. Cherokee Street & I-85 SB On-Ramp/Liquor Store

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	30	25	38
Average Queue (ft)	3	1	2
95th Queue (ft)	17	8	14
Link Distance (ft)	118	123	
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 143: I-85 SB On-Ramp

Movement	WB
Directions Served	L
Maximum Queue (ft)	49
Average Queue (ft)	4
95th Queue (ft)	24
Link Distance (ft)	118
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 144: I-85 SB On-Ramp/E. Cherokee Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 146: I-85 SB Off-Ramp & Service Station Dwy 1

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 148: E. Cherokee Street & Retail Store/Service Station

Movement	WB	SW
Directions Served	LR	LT
Maximum Queue (ft)	54	31
Average Queue (ft)	31	3
95th Queue (ft)	54	18
Link Distance (ft)	150	118
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 150: Service Station Dwy/Retail Store & E. Cherokee Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	21	72	159	77
Average Queue (ft)	1	2	69	3
95th Queue (ft)	7	24	120	26
Link Distance (ft)	118	136	140	87
Upstream Blk Time (%)			0	0
Queuing Penalty (veh)			0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 199: Service Station Dwy South

Movement	NB
Directions Served	TR
Maximum Queue (ft)	69
Average Queue (ft)	6
95th Queue (ft)	34
Link Distance (ft)	39
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 201: I-85 SB On-Ramp & Abandoned Lot

Movement	NW
Directions Served	R
Maximum Queue (ft)	28
Average Queue (ft)	3
95th Queue (ft)	16
Link Distance (ft)	158
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 11: Battleground Rd/Restaurant Dwy & US 29/Battleground Ave

Movement	WB	NB
Directions Served	LT	LTR
Maximum Queue (ft)	76	45
Average Queue (ft)	16	27
95th Queue (ft)	52	42
Link Distance (ft)	734	21
Upstream Blk Time (%)		12
Queuing Penalty (veh)		8
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 18: South Access & Battleground Rd

Movement	NE
Directions Served	LR
Maximum Queue (ft)	29
Average Queue (ft)	3
95th Queue (ft)	17
Link Distance (ft)	886
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Battleground Rd & Dixon School Road

Movement	WB
Directions Served	LR
Maximum Queue (ft)	52
Average Queue (ft)	25
95th Queue (ft)	49
Link Distance (ft)	980
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: Battleground Rd & Alleyway

Movement	NB
Directions Served	TR
Maximum Queue (ft)	53
Average Queue (ft)	13
95th Queue (ft)	44
Link Distance (ft)	396
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 153: Battleground Rd & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	68	26
Average Queue (ft)	30	3
95th Queue (ft)	65	17
Link Distance (ft)	495	683
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 156: I-85 SB On-Ramp & Battleground Rd & I-85 SB Off-Ramp

Movement	WB	NB
Directions Served	<LR	LT
Maximum Queue (ft)	50	22
Average Queue (ft)	16	1
95th Queue (ft)	45	7
Link Distance (ft)	529	683
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 159: Battleground Rd & Indian Motorcycle/Pioneer Motor Bearing Co.

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	30	29	31	29
Average Queue (ft)	2	4	1	2
95th Queue (ft)	15	19	10	14
Link Distance (ft)	102	146	410	247
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 162: Battleground Rd & Truck Dwy/Commercial Access

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	30
Average Queue (ft)	7
95th Queue (ft)	27
Link Distance (ft)	103
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 168: Banks Road & I-85 NB Off-Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 8

Intersection: 24: Shelby Highway & Victory Trail Rd

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	152	160	159
Average Queue (ft)	54	69	73
95th Queue (ft)	116	119	126
Link Distance (ft)		502	502
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	300		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25: Shelby Highway & I-85 NB Off-Ramp & I-85 NB On-Ramp

Movement	EB	SB
Directions Served	<LR	L
Maximum Queue (ft)	337	20
Average Queue (ft)	139	4
95th Queue (ft)	255	17
Link Distance (ft)	426	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 31: Victory Trail Rd & Wind Hill Rd

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	50	63
Average Queue (ft)	2	10
95th Queue (ft)	16	41
Link Distance (ft)		410
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 32: Shelby Highway & Wilcox Ave/I-85 SB Off-Ramp

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	55	98	162	22
Average Queue (ft)	25	49	34	1
95th Queue (ft)	51	79	93	7
Link Distance (ft)	185	64	737	300
Upstream Blk Time (%)		5		
Queuing Penalty (veh)		3		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Wilcox Ave & Lemeul Rd

Movement	NB
Directions Served	LT
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	304
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 36: I-85 SB Off-Ramp & Wilcox Ave

Movement	WB	NW
Directions Served	T	L
Maximum Queue (ft)	54	48
Average Queue (ft)	3	3
95th Queue (ft)	23	21
Link Distance (ft)	201	95
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 38: I-85 SB Off-Ramp & Wilcox Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 39: Wilcox Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 45: Wilcox Ave & Restaurant Dwy

Movement	EB	EB	SB
Directions Served	L	R	TR
Maximum Queue (ft)	24	56	65
Average Queue (ft)	1	23	16
95th Queue (ft)	10	53	49
Link Distance (ft)	578		98
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 47: I-85 SB On-Ramp/Wilcox Ave

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	72	44
Average Queue (ft)	7	4
95th Queue (ft)	34	22
Link Distance (ft)	304	37
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 48: Shelby Highway & Service Station Dwy 2M

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	28	74
Average Queue (ft)	1	43
95th Queue (ft)	9	71
Link Distance (ft)	178	139
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 50: Shelby Highway & Service Station Dwy 3

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	31	75
Average Queue (ft)	10	35
95th Queue (ft)	32	61
Link Distance (ft)		146
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 190: Shelby Highway & Service Station Dwy 2E

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	50	67
Average Queue (ft)	3	21
95th Queue (ft)	19	61
Link Distance (ft)	152	128
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 3

Intersection: 16: Blacksburg Hwy & I-85 NB Off-Ramp

Movement	EB	NB
Directions Served	LR	T
Maximum Queue (ft)	143	22
Average Queue (ft)	71	1
95th Queue (ft)	123	7
Link Distance (ft)	143	581
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	1	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 43: Frontage Rd & I-85 NB Off-Ramp & Milliken Rd

Movement	EB	SE
Directions Served	T	LR
Maximum Queue (ft)	29	70
Average Queue (ft)	1	2
95th Queue (ft)	10	23
Link Distance (ft)	419	103
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 53: Milliken Rd & I-85 NB On-Ramp & Blacksburg Hwy

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	99
Average Queue (ft)	1	22
95th Queue (ft)	10	60
Link Distance (ft)	28	392
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 58: Blacksburg Hwy & I-85 SB On-Ramp/Crawford Rd/Simper Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	97	189	50
Average Queue (ft)	10	55	48	4
95th Queue (ft)	34	90	102	23
Link Distance (ft)	684	88	392	123
Upstream Blk Time (%)		2		
Queuing Penalty (veh)		3		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 62: Simper Rd & Service Dwy 2

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	31	49
Average Queue (ft)	1	6
95th Queue (ft)	10	27
Link Distance (ft)	143	128
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 65: Blacksburg Hwy & Service Station Dwy 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	48
Average Queue (ft)	6
95th Queue (ft)	28
Link Distance (ft)	117
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 67: Blacksburg Hwy & Service Station Dwy 2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	77	30
Average Queue (ft)	8	2
95th Queue (ft)	39	14
Link Distance (ft)	119	236
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 69: Simper Rd & Service Dwy 1

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	31	30
Average Queue (ft)	1	16
95th Queue (ft)	10	41
Link Distance (ft)	143	120
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 70: Simper Rd/I-85 SB Off-Ramp & Retail Store

Movement	EB	SB
Directions Served	L	R
Maximum Queue (ft)	30	29
Average Queue (ft)	1	16
95th Queue (ft)	10	40
Link Distance (ft)	342	95
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 73: I-85 SB On-Ramp & I-85 SB On-Ramp/Crawford Rd & Crawford Rd

Movement	SB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	8
95th Queue (ft)	27
Link Distance (ft)	400
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 4

Intersection: 5: N. Mountain Street & White Farm Rd

Movement	SB	SW
Directions Served	LT	LR
Maximum Queue (ft)	31	25
Average Queue (ft)	1	20
95th Queue (ft)	10	35
Link Distance (ft)	487	627
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 77: N. Mountain Street & Holly Grove Rd

Movement	SW
Directions Served	LR
Maximum Queue (ft)	58
Average Queue (ft)	9
95th Queue (ft)	30
Link Distance (ft)	636
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 79: N. Mountain Street & Flying J Dwy (north)/McDonald's

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LT
Maximum Queue (ft)	29	52	140	27
Average Queue (ft)	10	25	26	10
95th Queue (ft)	32	47	92	30
Link Distance (ft)	98	87	160	274
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 82: N. Mountain Street & Flying J Dwy (south)/Waffle House

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	78	51	139
Average Queue (ft)	44	15	39
95th Queue (ft)	72	41	107
Link Distance (ft)	105	197	125
Upstream Blk Time (%)			0
Queuing Penalty (veh)			2
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 85: N. Mountain Street & I-85 SB On-Ramp/Rock Springs Rd/I-85 SB Off-Ramp

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	31	121	474	124	136
Average Queue (ft)	4	76	270	67	38
95th Queue (ft)	20	128	466	113	87
Link Distance (ft)	345	107	458	125	125
Upstream Blk Time (%)		4	1	0	0
Queuing Penalty (veh)		6	8	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 87: I-85 SB Off-Ramp & Truck Pull-off Area

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 89: I-85 SB Off-Ramp & Waffle House

Movement	WB
Directions Served	TR
Maximum Queue (ft)	93
Average Queue (ft)	11
95th Queue (ft)	54
Link Distance (ft)	328
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 92: I-85 SB On-Ramp/I-85 SB On-Ramp/Rock Springs Rd & Rock Springs Rd

Movement	EB
Directions Served	LR
Maximum Queue (ft)	73
Average Queue (ft)	8
95th Queue (ft)	36
Link Distance (ft)	652
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 94: N. Mountain Street & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	NB	NB	SB
Directions Served	LT	LT	R	LTR
Maximum Queue (ft)	149	390	71	215
Average Queue (ft)	67	123	21	131
95th Queue (ft)	119	234	58	208
Link Distance (ft)	307	425	425	458
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 97: I-85 NB Off-Ramp & Henson Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 98: Henson Rd & Henson Access

Movement	SE
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	59
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 99: Henson Rd & I-85 NB Off-Ramp

Movement	WB	NE
Directions Served	LT	R
Maximum Queue (ft)	49	50
Average Queue (ft)	10	9
95th Queue (ft)	35	35
Link Distance (ft)	307	315
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 101: N. Mountain Street & Service Station

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	99	78	90
Average Queue (ft)	34	30	15
95th Queue (ft)	73	75	55
Link Distance (ft)	118	96	425
Upstream Blk Time (%)	0	0	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 192: Driveway & I-85 NB Off-Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 16

Intersection: 110: Tribal Road & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	EB	EB	WB	NB
Directions Served	L	R	LTR	LT
Maximum Queue (ft)	31	31	125	100
Average Queue (ft)	6	6	62	15
95th Queue (ft)	26	26	103	62
Link Distance (ft)	416		221	720
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 114: I-85 SB On-Ramp & Holly Grove Rd

Movement	SB
Directions Served	LT
Maximum Queue (ft)	29
Average Queue (ft)	15
95th Queue (ft)	38
Link Distance (ft)	102
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 116: Tribal Road & Gibbons Rd/Priester Rd & I-85 NB Off-Ramp

Movement	EB	WB	WB	NB	SB	SE
Directions Served	LTR	LT	>	TR	LTR	<LR
Maximum Queue (ft)	30	31	77	82	134	226
Average Queue (ft)	4	15	36	27	51	93
95th Queue (ft)	19	40	64	74	113	177
Link Distance (ft)	1014	78	78	152	720	328
Upstream Blk Time (%)			0			
Queuing Penalty (veh)			0			
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 118: Priester Rd & Love's Travel Stop Dwy

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	88	29
Average Queue (ft)	13	11
95th Queue (ft)	54	34
Link Distance (ft)	78	310
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	1	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 120: Tribal Road & Industrial Plant Dwy (north)/Love's Travel Stop (truck dwy)

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	78	120	30
Average Queue (ft)	47	58	1
95th Queue (ft)	71	89	10
Link Distance (ft)	289	232	337
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 122: Industrial Plant Dwy (south) & Tribal Road

Movement	NE
Directions Served	LR
Maximum Queue (ft)	26
Average Queue (ft)	3
95th Queue (ft)	16
Link Distance (ft)	160
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 123: White Farm Rd & Holly Grove Rd

Movement	NE
Directions Served	LR
Maximum Queue (ft)	38
Average Queue (ft)	5
95th Queue (ft)	19
Link Distance (ft)	908
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 125: Priester Rd & Love's Travel Stop Dwy & I-85 NB On-Ramp

Movement	WB	WB	SW
Directions Served	L	R>	<L
Maximum Queue (ft)	25	29	30
Average Queue (ft)	7	23	6
95th Queue (ft)	26	41	25
Link Distance (ft)	161		248
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		60	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 1

Intersection: 129: E. Cherokee Street & Service Station Dwy & I-85 NB On-Ramp/Mill Creek Rd

Movement	EB	NB	SB	SW
Directions Served	<LR	LTR	LTR	LR>
Maximum Queue (ft)	29	30	100	25
Average Queue (ft)	25	2	7	12
95th Queue (ft)	40	14	47	31
Link Distance (ft)	129	295	142	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 131: E. Cherokee Street & I-85 NB Off-Ramp

Movement	WB
Directions Served	LR
Maximum Queue (ft)	75
Average Queue (ft)	5
95th Queue (ft)	33
Link Distance (ft)	762
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 132: I-85 NB On-Ramp/Mill Creek Rd/I-85 NB On-Ramp & Mill Creek Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 133: E. Cherokee Street & Lakeview Dr

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	28	31
Average Queue (ft)	3	2
95th Queue (ft)	16	15
Link Distance (ft)	639	888
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 136: E. Cherokee Street & Service Station Dwy/I-85 SB Off-Ramp

Movement	WB	SB
Directions Served	LTR	TR
Maximum Queue (ft)	94	48
Average Queue (ft)	50	2
95th Queue (ft)	78	16
Link Distance (ft)	74	82
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	2	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 138: I-85 SB Off-Ramp & Service Station Dwy 2

Movement	WB	SB
Directions Served	TR	R
Maximum Queue (ft)	68	38
Average Queue (ft)	4	9
95th Queue (ft)	28	23
Link Distance (ft)	118	54
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 140: E. Cherokee Street & Fireworks Store/Service Station

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	28	71	24	93
Average Queue (ft)	3	22	1	8
95th Queue (ft)	17	49	8	41
Link Distance (ft)	102	138	82	123
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 142: E. Cherokee Street & I-85 SB On-Ramp/Liquor Store

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	29	26	47	38
Average Queue (ft)	8	5	3	5
95th Queue (ft)	30	20	21	24
Link Distance (ft)	118	97	123	
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 143: I-85 SB On-Ramp

Movement	WB
Directions Served	L
Maximum Queue (ft)	30
Average Queue (ft)	2
95th Queue (ft)	14
Link Distance (ft)	118
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 144: I-85 SB On-Ramp/E. Cherokee Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 146: I-85 SB Off-Ramp & Service Station Dwy 1

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 148: E. Cherokee Street & Retail Store/Service Station

Movement	WB	SW
Directions Served	LR	LT
Maximum Queue (ft)	92	78
Average Queue (ft)	44	20
95th Queue (ft)	73	56
Link Distance (ft)	150	118
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 150: Service Station Dwy/Retail Store & E. Cherokee Street

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	77	74	122
Average Queue (ft)	6	6	64
95th Queue (ft)	31	31	103
Link Distance (ft)	118	136	140
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 199: Retail Store/Service Station Dwy South

Movement	NB
Directions Served	TR
Maximum Queue (ft)	77
Average Queue (ft)	7
95th Queue (ft)	38
Link Distance (ft)	39
Upstream Blk Time (%)	0
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 201: Abandoned Lot & I-85 SB On-Ramp

Movement	NW
Directions Served	R
Maximum Queue (ft)	28
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	158
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 2

Intersection: 11: Battleground Rd/Restaurant Dwy & US 29/Battleground Ave

Movement	EB	WB	NB	SB
Directions Served	LT	LT	LTR	LTR
Maximum Queue (ft)	51	115	63	29
Average Queue (ft)	6	15	34	7
95th Queue (ft)	27	58	51	27
Link Distance (ft)	1235	734	21	134
Upstream Blk Time (%)			17	
Queuing Penalty (veh)			16	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: South Access & Battleground Rd

Movement	NE
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	4
95th Queue (ft)	20
Link Distance (ft)	886
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Battleground Rd & Dixon School Rd

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	54	30
Average Queue (ft)	21	1
95th Queue (ft)	45	10
Link Distance (ft)	980	1227
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 22: Battleground Rd & Alleyway

Movement	WB	NB
Directions Served	LR	TR
Maximum Queue (ft)	28	56
Average Queue (ft)	3	15
95th Queue (ft)	16	46
Link Distance (ft)	503	396
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 153: Battleground Rd & I-85 NB Off-Ramp & I-85 NB On-Ramp

Movement	EB	SB
Directions Served	<LR	LTR
Maximum Queue (ft)	54	30
Average Queue (ft)	21	1
95th Queue (ft)	47	10
Link Distance (ft)	495	683
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 156: I-85 SB On-Ramp & Battleground Rd & I-85 SB Off-Ramp

Movement	WB	NB
Directions Served	<LR	LT
Maximum Queue (ft)	50	21
Average Queue (ft)	11	1
95th Queue (ft)	38	7
Link Distance (ft)	529	683
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 159: Battleground Rd & Indian Motorcycle/Pioneer Motor Bearing Co.

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	28	53
Average Queue (ft)	1	17
95th Queue (ft)	9	42
Link Distance (ft)	102	146
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 162: Battleground Rd & Truck Dwy/Commercial Access

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	30
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	103
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 168: Banks Road & I-85 NB Off-Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 16

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Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	L	TR	L
Maximum Queue (ft)	52	143	75
Average Queue (ft)	24	84	19
95th Queue (ft)	49	139	46
Link Distance (ft)		1773	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		150
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	LT	R	L
Maximum Queue (ft)	55	24	76
Average Queue (ft)	28	1	40
95th Queue (ft)	54	8	63
Link Distance (ft)	1341		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Blacksburg Hwy & Crawford Rd/Simper Road

Movement	EB	WB	WB	NB
Directions Served	TR	LT	R	L
Maximum Queue (ft)	29	31	30	49
Average Queue (ft)	17	10	11	10
95th Queue (ft)	39	32	34	34
Link Distance (ft)	651	1357		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			150	150
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Blacksburg Hwy & Milliken Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 63: Blacksburg Hwy & Service Station

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	15
95th Queue (ft)	39
Link Distance (ft)	310
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	L	TR	L
Maximum Queue (ft)	30	143	75
Average Queue (ft)	21	85	17
95th Queue (ft)	43	139	46
Link Distance (ft)		1773	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	200		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	SB
Directions Served	LT	R	L	TR
Maximum Queue (ft)	70	24	73	12
Average Queue (ft)	30	1	39	1
95th Queue (ft)	61	8	64	6
Link Distance (ft)	1341			306
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		150	150	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Blacksburg Hwy & Crawford Rd/Simper Road

Movement	EB	WB	WB	NB
Directions Served	TR	LT	R	L
Maximum Queue (ft)	29	30	29	30
Average Queue (ft)	16	9	11	7
95th Queue (ft)	39	31	33	27
Link Distance (ft)	651	1356		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			150	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Blacksburg Hwy & Milliken Road

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Blacksburg Hwy & Service Station

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	15
95th Queue (ft)	40
Link Distance (ft)	422
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	220	73
Average Queue (ft)	88	16
95th Queue (ft)	154	49
Link Distance (ft)	1568	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	72	56
Average Queue (ft)	33	31
95th Queue (ft)	61	57
Link Distance (ft)	622	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Blacksburg Hwy & Crawford Rd/Simper Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	27	51	29	28
Average Queue (ft)	13	16	3	2
95th Queue (ft)	36	41	17	13
Link Distance (ft)	114	193		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Blacksburg Hwy & Service Station

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	52	31
Average Queue (ft)	11	1
95th Queue (ft)	37	10
Link Distance (ft)	441	443
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 15: N. Mountain St & Service Station

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LT
Maximum Queue (ft)	52	54	56	53
Average Queue (ft)	21	29	3	23
95th Queue (ft)	46	45	21	49
Link Distance (ft)	312	462	579	422
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 17: N. Mountain St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	T	R
Maximum Queue (ft)	36	66	173	215	76	50
Average Queue (ft)	9	26	104	47	18	8
95th Queue (ft)	23	49	170	123	54	28
Link Distance (ft)		1024		525	289	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		150			150
Storage Blk Time (%)			3			
Queuing Penalty (veh)			10			

Intersection: 18: N. Mountain St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	NB	NB	SB	SB
Directions Served	LT	R	T	R	L	T
Maximum Queue (ft)	109	74	136	37	76	73
Average Queue (ft)	38	45	67	10	39	39
95th Queue (ft)	75	68	119	29	70	74
Link Distance (ft)	1305		422	422		525
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150			150	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 23: N. Mountain St & Shaman Rd/White Farm Rd

Movement	EB	EB	WB	WB	NB
Directions Served	L	TR	L	TR	L
Maximum Queue (ft)	31	79	72	28	30
Average Queue (ft)	4	27	37	3	4
95th Queue (ft)	21	56	63	16	20
Link Distance (ft)		874		1050	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150		150		150
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 29: N. Mountain St & Henson Rd

Movement	EB	EB
Directions Served	L	R
Maximum Queue (ft)	29	30
Average Queue (ft)	2	7
95th Queue (ft)	14	26
Link Distance (ft)		348
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 31: N. Mountain St & Flying J Dwy/McDonald's

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	74	54	91	155
Average Queue (ft)	38	20	40	20
95th Queue (ft)	63	44	87	74
Link Distance (ft)	156	270	289	487
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 65: N. Mountain St & Holly Grove Rd

Movement	WB
Directions Served	LR
Maximum Queue (ft)	47
Average Queue (ft)	14
95th Queue (ft)	36
Link Distance (ft)	287
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 10

Intersection: 17: N. Mountain St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	T	R
Maximum Queue (ft)	39	69	175	547	162	94
Average Queue (ft)	8	20	174	493	65	21
95th Queue (ft)	26	46	175	631	122	53
Link Distance (ft)		1030		525	301	301
Upstream Blk Time (%)				11		
Queuing Penalty (veh)				74		
Storage Bay Dist (ft)	400		150			
Storage Blk Time (%)			85	5		
Queuing Penalty (veh)			262	17		

Intersection: 18: N. Mountain St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	NB	NB	SB	SB
Directions Served	LT	R	T	R	L	T
Maximum Queue (ft)	104	138	441	458	133	135
Average Queue (ft)	39	50	396	298	44	84
95th Queue (ft)	68	88	524	586	87	140
Link Distance (ft)	1306		406	406		525
Upstream Blk Time (%)			46	10		
Queuing Penalty (veh)			146	31		
Storage Bay Dist (ft)		150			150	
Storage Blk Time (%)		0			0	0
Queuing Penalty (veh)		0			0	0

Intersection: 23: N. Mountain St & Shaman Rd/White Farm Rd

Movement	EB	EB	WB	WB	NB
Directions Served	L	TR	L	TR	L
Maximum Queue (ft)	28	78	74	29	25
Average Queue (ft)	1	25	38	3	1
95th Queue (ft)	9	56	58	17	8
Link Distance (ft)		869		1052	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150		150		150
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 29: N. Mountain St & Henson Rd

Movement	EB	EB
Directions Served	L	R
Maximum Queue (ft)	30	30
Average Queue (ft)	4	9
95th Queue (ft)	20	30
Link Distance (ft)		346
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 30: N. Mountain St & Service Station

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	LT
Maximum Queue (ft)	161	504	514	74
Average Queue (ft)	45	223	178	30
95th Queue (ft)	116	450	438	69
Link Distance (ft)	484	596	596	406
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 32: N. Mountain St & Flying J Service Station/McDonald's

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LT
Maximum Queue (ft)	94	52	184	79
Average Queue (ft)	37	21	45	8
95th Queue (ft)	64	45	121	36
Link Distance (ft)	179	266	301	264
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 71: N. Mountain St & Holly Grove Rd

Movement	WB
Directions Served	LR
Maximum Queue (ft)	32
Average Queue (ft)	19
95th Queue (ft)	44
Link Distance (ft)	1146
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 530

Intersection: 33: Tribal Rd & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	TR	L
Maximum Queue (ft)	93	72	49
Average Queue (ft)	48	40	16
95th Queue (ft)	77	61	42
Link Distance (ft)		1275	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 34: Tribal Rd & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	LT	R	L
Maximum Queue (ft)	30	52	52
Average Queue (ft)	9	34	14
95th Queue (ft)	31	56	42
Link Distance (ft)	1504		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 40: Tribal Rd & White Farm Rd

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	31	31
Average Queue (ft)	20	7
95th Queue (ft)	43	27
Link Distance (ft)	2280	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 43: Tribal Rd & Love'sTravel Stop

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	155	31
Average Queue (ft)	61	16
95th Queue (ft)	111	42
Link Distance (ft)	692	420
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 45: Tribal Rd & Gibbons Rd/Priester Rd

Movement	EB	EB
Directions Served	L	TR
Maximum Queue (ft)	30	30
Average Queue (ft)	6	7
95th Queue (ft)	25	27
Link Distance (ft)		547
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Tribal Rd & Gibbons Rd

Movement	EB
Directions Served	LR
Maximum Queue (ft)	29
Average Queue (ft)	6
95th Queue (ft)	24
Link Distance (ft)	406
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Tribal Rd & Industrial Plant Dwy (north)/Love's Travel Stop

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	161	30	72
Average Queue (ft)	20	58	7	21
95th Queue (ft)	44	101	27	57
Link Distance (ft)	600	521	348	149
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 33: Tribal Rd & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	LTR	L
Maximum Queue (ft)	54	118	47
Average Queue (ft)	36	75	18
95th Queue (ft)	52	115	42
Link Distance (ft)		1015	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 34: Tribal Rd & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	LT	R	L
Maximum Queue (ft)	30	75	72
Average Queue (ft)	14	48	18
95th Queue (ft)	38	73	48
Link Distance (ft)	1504		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 40: Tribal Rd & White Farm Rd

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	52	31
Average Queue (ft)	16	6
95th Queue (ft)	43	27
Link Distance (ft)	2143	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 45: Tribal Rd & Industrial Plant Dwy (south)/Priester Rd

Movement	EB	WB
Directions Served	LTR	R
Maximum Queue (ft)	28	27
Average Queue (ft)	2	3
95th Queue (ft)	14	15
Link Distance (ft)	302	846
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Tribal Road & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	TR	L
Maximum Queue (ft)	150	74	71
Average Queue (ft)	77	40	15
95th Queue (ft)	117	62	47
Link Distance (ft)		1170	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		250
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Tribal Road & Gibbons Rd/Priester Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	50	114	53	91
Average Queue (ft)	24	70	8	23
95th Queue (ft)	46	108	32	62
Link Distance (ft)	487	251	402	385
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Tribal Road & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	96	32
Average Queue (ft)	48	17
95th Queue (ft)	81	43
Link Distance (ft)	1176	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Tribal Road & White Farm Rd

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	68	31
Average Queue (ft)	21	10
95th Queue (ft)	51	34
Link Distance (ft)	179	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: E. Cherokee St & Lakeview Dr

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	28	75	74
Average Queue (ft)	2	34	26
95th Queue (ft)	13	65	56
Link Distance (ft)	444	283	284
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 47: E. Cherokee St & Service Station

Movement	WB	NB
Directions Served	LR	R>
Maximum Queue (ft)	93	39
Average Queue (ft)	42	3
95th Queue (ft)	69	19
Link Distance (ft)	389	157
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 49: E. Cherokee St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	72	47
Average Queue (ft)	29	10
95th Queue (ft)	52	36
Link Distance (ft)	1481	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 50: E. Cherokee St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	46	28
Average Queue (ft)	19	10
95th Queue (ft)	39	32
Link Distance (ft)	1060	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 55: E. Cherokee St & Crossover Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 59: E. Cherokee St & Mill Creek Rd

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	54	29
Average Queue (ft)	27	1
95th Queue (ft)	52	10
Link Distance (ft)	525	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: E. Cherokee St & Lakeview Dr

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	66	29
Average Queue (ft)	22	2
95th Queue (ft)	48	14
Link Distance (ft)	840	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: E. Cherokee St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	53	30
Average Queue (ft)	29	17
95th Queue (ft)	53	41
Link Distance (ft)	518	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 21: E. Cherokee St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	73	29
Average Queue (ft)	27	5
95th Queue (ft)	46	22
Link Distance (ft)	613	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 26: E. Cherokee St & Crossover Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 31: E. Cherokee St & Service Station

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	78	53
Average Queue (ft)	47	11
95th Queue (ft)	69	39
Link Distance (ft)	188	686
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	L	TR	L
Maximum Queue (ft)	55	86	46
Average Queue (ft)	29	48	19
95th Queue (ft)	48	74	41
Link Distance (ft)		1773	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	200		200
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	SB
Directions Served	LT	R	L	TR
Maximum Queue (ft)	52	50	112	10
Average Queue (ft)	26	24	43	0
95th Queue (ft)	46	47	76	3
Link Distance (ft)	1341			297
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		400	200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Blacksburg Hwy & Crawford Rd/Simper Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	LT	R	L	L
Maximum Queue (ft)	30	29	52	54	30	26
Average Queue (ft)	5	6	17	21	2	2
95th Queue (ft)	23	24	46	49	14	12
Link Distance (ft)		651	1357			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200			200	200	200
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 12: Blacksburg Hwy & Milliken Rd

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	4
95th Queue (ft)	21
Link Distance (ft)	2628
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 63: Blacksburg Hwy & Service Station

Movement	WB
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	23
95th Queue (ft)	48
Link Distance (ft)	180
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	L	TR	L
Maximum Queue (ft)	55	88	72
Average Queue (ft)	29	50	23
95th Queue (ft)	45	78	50
Link Distance (ft)		1773	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	200		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	SB
Directions Served	LT	R	L	TR
Maximum Queue (ft)	52	50	69	12
Average Queue (ft)	28	25	35	0
95th Queue (ft)	52	47	63	4
Link Distance (ft)	1341			386
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		150	150	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Blacksburg Hwy & Crawford Rd/Simper Road

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	LT	R	L	L
Maximum Queue (ft)	30	29	52	54	30	26
Average Queue (ft)	5	7	18	22	3	4
95th Queue (ft)	23	26	46	50	18	19
Link Distance (ft)		651	1357			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150			150	200	150
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 12: Blacksburg Hwy & Milliken Road

Movement	EB
Directions Served	LR
Maximum Queue (ft)	26
Average Queue (ft)	4
95th Queue (ft)	18
Link Distance (ft)	1972
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Blacksburg Hwy & Service Station

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	51	31
Average Queue (ft)	23	1
95th Queue (ft)	46	10
Link Distance (ft)	438	356
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	160	30
Average Queue (ft)	70	17
95th Queue (ft)	111	41
Link Distance (ft)	1568	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	NB	SB
Directions Served	LTR	L	TR
Maximum Queue (ft)	78	100	22
Average Queue (ft)	38	42	1
95th Queue (ft)	68	73	7
Link Distance (ft)	622		274
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		250	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Blacksburg Hwy & Crawford Rd/Simper Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	27	54	29	29
Average Queue (ft)	9	27	4	6
95th Queue (ft)	29	50	19	26
Link Distance (ft)	114	193		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Blacksburg Hwy & Service Station

Movement	WB
Directions Served	LR
Maximum Queue (ft)	78
Average Queue (ft)	30
95th Queue (ft)	56
Link Distance (ft)	439
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 15: N. Mountain St & Service Station

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	71	55	51
Average Queue (ft)	27	20	3
95th Queue (ft)	56	47	20
Link Distance (ft)	312	462	422
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: N. Mountain St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	T	R
Maximum Queue (ft)	57	94	113	118	55	2
Average Queue (ft)	22	35	63	52	16	0
95th Queue (ft)	45	71	105	105	46	1
Link Distance (ft)		1024		525	289	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		150			150
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 18: N. Mountain St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	NB	NB	SB	SB
Directions Served	LT	R	T	R	L	T
Maximum Queue (ft)	124	97	191	38	69	114
Average Queue (ft)	57	62	82	8	34	42
95th Queue (ft)	104	89	156	23	63	88
Link Distance (ft)	1305		422	422		525
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150			150	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 23: N. Mountain St & Shaman Rd/White Farm Rd

Movement	EB	WB	WB	NB	NB	SB
Directions Served	TR	L	TR	L	TR	L
Maximum Queue (ft)	30	29	28	29	20	28
Average Queue (ft)	13	20	1	2	1	2
95th Queue (ft)	37	42	9	13	6	13
Link Distance (ft)	874		1050		487	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150		150		150
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 29: N. Mountain St & Henson Rd

Movement	EB	EB
Directions Served	L	R
Maximum Queue (ft)	29	50
Average Queue (ft)	4	12
95th Queue (ft)	20	37
Link Distance (ft)		348
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 31: N. Mountain St & Flying J Dwy/McDonald's

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	96	98	112	90
Average Queue (ft)	44	34	28	15
95th Queue (ft)	76	66	77	50
Link Distance (ft)	156	270	289	487
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 65: N. Mountain St & Holly Grove Rd

Movement	WB
Directions Served	LR
Maximum Queue (ft)	47
Average Queue (ft)	13
95th Queue (ft)	35
Link Distance (ft)	287
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 17: N. Mountain St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	T	R
Maximum Queue (ft)	61	59	175	381	118	31
Average Queue (ft)	14	32	104	131	51	9
95th Queue (ft)	38	57	164	245	101	22
Link Distance (ft)		1030		525	301	301
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	400		150			
Storage Blk Time (%)			4	3		
Queuing Penalty (veh)			15	7		

Intersection: 18: N. Mountain St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	NB	NB	SB	SB
Directions Served	LT	R	T	R	L	T
Maximum Queue (ft)	115	112	186	38	114	113
Average Queue (ft)	31	45	98	8	43	62
95th Queue (ft)	74	78	164	24	85	106
Link Distance (ft)	1306		406	406		525
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150			150	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 23: N. Mountain St & Shaman Rd/White Farm Rd

Movement	EB	EB	WB	WB	NB
Directions Served	L	TR	L	TR	L
Maximum Queue (ft)	28	31	48	30	25
Average Queue (ft)	1	5	20	5	4
95th Queue (ft)	9	24	45	23	19
Link Distance (ft)		869		1052	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150		150		150
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 29: N. Mountain St & Henson Rd

Movement	EB	EB
Directions Served	L	R
Maximum Queue (ft)	30	30
Average Queue (ft)	4	6
95th Queue (ft)	21	24
Link Distance (ft)		346
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 30: N. Mountain St & Service Station

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	30	56
Average Queue (ft)	20	4
95th Queue (ft)	42	24
Link Distance (ft)	484	406
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 32: N. Mountain St & Flying J Service Station/McDonald's

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	TR
Maximum Queue (ft)	101	55	222	30	20
Average Queue (ft)	47	30	36	8	1
95th Queue (ft)	78	54	108	30	7
Link Distance (ft)	179	266	301	264	264
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 71: N. Mountain St & Holly Grove Rd

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	14
95th Queue (ft)	38
Link Distance (ft)	1146
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 23

Intersection: 33: Tribal Rd & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	TR	L
Maximum Queue (ft)	72	31	52
Average Queue (ft)	37	19	6
95th Queue (ft)	62	42	29
Link Distance (ft)		1275	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 34: Tribal Rd & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	LT	R	L
Maximum Queue (ft)	78	28	92
Average Queue (ft)	22	11	15
95th Queue (ft)	53	32	51
Link Distance (ft)	1504		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 40: Tribal Rd & White Farm Rd

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	11
95th Queue (ft)	35
Link Distance (ft)	2280
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 43: Tribal Rd & Love'sTravel Stop

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	53	32
Average Queue (ft)	36	13
95th Queue (ft)	52	39
Link Distance (ft)	692	420
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 45: Tribal Rd & Gibbons Rd/Priester Rd

Movement	EB	WB
Directions Served	TR	L
Maximum Queue (ft)	28	20
Average Queue (ft)	1	1
95th Queue (ft)	9	7
Link Distance (ft)	547	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Tribal Rd & Gibbons Rd

Movement	EB
Directions Served	LR
Maximum Queue (ft)	50
Average Queue (ft)	3
95th Queue (ft)	22
Link Distance (ft)	406
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Tribal Rd & Industrial Plant Dwy (north)/Love's Travel Stop

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	96	78	29
Average Queue (ft)	55	42	4
95th Queue (ft)	84	69	19
Link Distance (ft)	600	521	149
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 33: Tribal Rd & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	LTR	L
Maximum Queue (ft)	52	52	29
Average Queue (ft)	27	28	6
95th Queue (ft)	46	45	24
Link Distance (ft)		1015	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 34: Tribal Rd & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	LT	R	L
Maximum Queue (ft)	51	98	31
Average Queue (ft)	19	42	20
95th Queue (ft)	45	71	44
Link Distance (ft)	1504		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 40: Tribal Rd & White Farm Rd

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	30	29
Average Queue (ft)	10	1
95th Queue (ft)	32	9
Link Distance (ft)	2143	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 45: Tribal Rd & Industrial Plant Dwy (south)/Priester Rd

Movement	EB	WB
Directions Served	LTR	R
Maximum Queue (ft)	29	27
Average Queue (ft)	5	3
95th Queue (ft)	22	18
Link Distance (ft)	302	846
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Tribal Rd & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	TR	L
Maximum Queue (ft)	73	53	50
Average Queue (ft)	38	19	9
95th Queue (ft)	68	45	37
Link Distance (ft)		1170	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		250
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Tribal Rd & Gibbons Rd/Priester Rd

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	94	77	26
Average Queue (ft)	49	49	4
95th Queue (ft)	79	74	20
Link Distance (ft)	259	251	384
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Tribal Rd & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	98	53
Average Queue (ft)	47	16
95th Queue (ft)	73	43
Link Distance (ft)	1176	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Tribal Rd & White Farm Rd

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	53	31
Average Queue (ft)	13	2
95th Queue (ft)	39	15
Link Distance (ft)	179	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: E. Cherokee St & Lakeview Dr

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	28	99	97
Average Queue (ft)	2	44	55
95th Queue (ft)	13	81	88
Link Distance (ft)	444	283	284
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 47: E. Cherokee St & Service Station

Movement	WB	NB
Directions Served	LR	R>
Maximum Queue (ft)	187	78
Average Queue (ft)	73	7
95th Queue (ft)	130	37
Link Distance (ft)	389	157
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 49: E. Cherokee St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	50	50
Average Queue (ft)	31	8
95th Queue (ft)	49	31
Link Distance (ft)	1481	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 50: E. Cherokee St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	69	51
Average Queue (ft)	29	10
95th Queue (ft)	49	34
Link Distance (ft)	1060	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 55: E. Cherokee St & Crossover Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 59: E. Cherokee St & Mill Creek Rd

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	6
95th Queue (ft)	25
Link Distance (ft)	525
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: E. Cherokee St & Lakeview Dr

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	9
95th Queue (ft)	31
Link Distance (ft)	235
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: E. Cherokee St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	115	51
Average Queue (ft)	43	12
95th Queue (ft)	77	37
Link Distance (ft)	518	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 21: E. Cherokee St & I-85 SB On-Ramp/I-85 SB Of-Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	72	29
Average Queue (ft)	28	6
95th Queue (ft)	53	25
Link Distance (ft)	460	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 26: E. Cherokee St & Crossover Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 31: E. Cherokee St & Service Station

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	203	20	98
Average Queue (ft)	70	1	25
95th Queue (ft)	130	7	67
Link Distance (ft)	188	236	686
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

2040 BUILD ALTERNATIVES
EXIT 100 – BLACKSBURG HIGHWAY

Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	L	TR	L
Maximum Queue (ft)	52	143	75
Average Queue (ft)	24	84	19
95th Queue (ft)	49	139	46
Link Distance (ft)		1773	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		150
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	LT	R	L
Maximum Queue (ft)	55	24	76
Average Queue (ft)	28	1	40
95th Queue (ft)	54	8	63
Link Distance (ft)	1341		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Blacksburg Hwy & Crawford Rd/Simper Road

Movement	EB	WB	WB	NB
Directions Served	TR	LT	R	L
Maximum Queue (ft)	29	31	30	49
Average Queue (ft)	17	10	11	10
95th Queue (ft)	39	32	34	34
Link Distance (ft)	651	1357		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			150	150
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Blacksburg Hwy & Milliken Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 63: Blacksburg Hwy & Service Station

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	15
95th Queue (ft)	39
Link Distance (ft)	310
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	L	TR	L
Maximum Queue (ft)	30	143	75
Average Queue (ft)	21	85	17
95th Queue (ft)	43	139	46
Link Distance (ft)		1773	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	200		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	SB
Directions Served	LT	R	L	TR
Maximum Queue (ft)	70	24	73	12
Average Queue (ft)	30	1	39	1
95th Queue (ft)	61	8	64	6
Link Distance (ft)	1341			306
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		150	150	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Blacksburg Hwy & Crawford Rd/Simper Road

Movement	EB	WB	WB	NB
Directions Served	TR	LT	R	L
Maximum Queue (ft)	29	30	29	30
Average Queue (ft)	16	9	11	7
95th Queue (ft)	39	31	33	27
Link Distance (ft)	651	1356		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			150	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Blacksburg Hwy & Milliken Road

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Blacksburg Hwy & Service Station

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	15
95th Queue (ft)	40
Link Distance (ft)	422
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	220	73
Average Queue (ft)	88	16
95th Queue (ft)	154	49
Link Distance (ft)	1568	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	72	56
Average Queue (ft)	33	31
95th Queue (ft)	61	57
Link Distance (ft)	622	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Blacksburg Hwy & Crawford Rd/Simper Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	27	51	29	28
Average Queue (ft)	13	16	3	2
95th Queue (ft)	36	41	17	13
Link Distance (ft)	114	193		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Blacksburg Hwy & Service Station

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	52	31
Average Queue (ft)	11	1
95th Queue (ft)	37	10
Link Distance (ft)	441	443
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	L	TR	L
Maximum Queue (ft)	55	86	46
Average Queue (ft)	29	48	19
95th Queue (ft)	48	74	41
Link Distance (ft)		1773	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	200		200
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	SB
Directions Served	LT	R	L	TR
Maximum Queue (ft)	52	50	112	10
Average Queue (ft)	26	24	43	0
95th Queue (ft)	46	47	76	3
Link Distance (ft)	1341			297
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		400	200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Blacksburg Hwy & Crawford Rd/Simper Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	LT	R	L	L
Maximum Queue (ft)	30	29	52	54	30	26
Average Queue (ft)	5	6	17	21	2	2
95th Queue (ft)	23	24	46	49	14	12
Link Distance (ft)		651	1357			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200			200	200	200
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 12: Blacksburg Hwy & Milliken Rd

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	4
95th Queue (ft)	21
Link Distance (ft)	2628
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 63: Blacksburg Hwy & Service Station

Movement	WB
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	23
95th Queue (ft)	48
Link Distance (ft)	180
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	L	TR	L
Maximum Queue (ft)	55	88	72
Average Queue (ft)	29	50	23
95th Queue (ft)	45	78	50
Link Distance (ft)		1773	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	200		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	SB
Directions Served	LT	R	L	TR
Maximum Queue (ft)	52	50	69	12
Average Queue (ft)	28	25	35	0
95th Queue (ft)	52	47	63	4
Link Distance (ft)	1341			386
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		150	150	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Blacksburg Hwy & Crawford Rd/Simper Road

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	LT	R	L	L
Maximum Queue (ft)	30	29	52	54	30	26
Average Queue (ft)	5	7	18	22	3	4
95th Queue (ft)	23	26	46	50	18	19
Link Distance (ft)		651	1357			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150			150	200	150
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 12: Blacksburg Hwy & Milliken Road

Movement	EB
Directions Served	LR
Maximum Queue (ft)	26
Average Queue (ft)	4
95th Queue (ft)	18
Link Distance (ft)	1972
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Blacksburg Hwy & Service Station

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	51	31
Average Queue (ft)	23	1
95th Queue (ft)	46	10
Link Distance (ft)	438	356
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Blacksburg Hwy & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	160	30
Average Queue (ft)	70	17
95th Queue (ft)	111	41
Link Distance (ft)	1568	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Blacksburg Hwy & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	NB	SB
Directions Served	LTR	L	TR
Maximum Queue (ft)	78	100	22
Average Queue (ft)	38	42	1
95th Queue (ft)	68	73	7
Link Distance (ft)	622		274
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		250	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Blacksburg Hwy & Crawford Rd/Simper Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	27	54	29	29
Average Queue (ft)	9	27	4	6
95th Queue (ft)	29	50	19	26
Link Distance (ft)	114	193		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Blacksburg Hwy & Service Station

Movement	WB
Directions Served	LR
Maximum Queue (ft)	78
Average Queue (ft)	30
95th Queue (ft)	56
Link Distance (ft)	439
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

2040 BUILD ALTERNATIVES
EXIT 102 – N. MOUNTAIN STREET

Intersection: 15: N. Mountain St & Service Station

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LT
Maximum Queue (ft)	52	54	56	53
Average Queue (ft)	21	29	3	23
95th Queue (ft)	46	45	21	49
Link Distance (ft)	312	462	579	422
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 17: N. Mountain St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	T	R
Maximum Queue (ft)	36	66	173	215	76	50
Average Queue (ft)	9	26	104	47	18	8
95th Queue (ft)	23	49	170	123	54	28
Link Distance (ft)		1024		525	289	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		150			150
Storage Blk Time (%)			3			
Queuing Penalty (veh)			10			

Intersection: 18: N. Mountain St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	NB	NB	SB	SB
Directions Served	LT	R	T	R	L	T
Maximum Queue (ft)	109	74	136	37	76	73
Average Queue (ft)	38	45	67	10	39	39
95th Queue (ft)	75	68	119	29	70	74
Link Distance (ft)	1305		422	422		525
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150			150	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 23: N. Mountain St & Shaman Rd/White Farm Rd

Movement	EB	EB	WB	WB	NB
Directions Served	L	TR	L	TR	L
Maximum Queue (ft)	31	79	72	28	30
Average Queue (ft)	4	27	37	3	4
95th Queue (ft)	21	56	63	16	20
Link Distance (ft)		874		1050	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150		150		150
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 29: N. Mountain St & Henson Rd

Movement	EB	EB
Directions Served	L	R
Maximum Queue (ft)	29	30
Average Queue (ft)	2	7
95th Queue (ft)	14	26
Link Distance (ft)		348
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 31: N. Mountain St & Flying J Dwy/McDonald's

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	74	54	91	155
Average Queue (ft)	38	20	40	20
95th Queue (ft)	63	44	87	74
Link Distance (ft)	156	270	289	487
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 65: N. Mountain St & Holly Grove Rd

Movement	WB
Directions Served	LR
Maximum Queue (ft)	47
Average Queue (ft)	14
95th Queue (ft)	36
Link Distance (ft)	287
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 10

Intersection: 17: N. Mountain St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	T	R
Maximum Queue (ft)	39	69	175	547	162	94
Average Queue (ft)	8	20	174	493	65	21
95th Queue (ft)	26	46	175	631	122	53
Link Distance (ft)		1030		525	301	301
Upstream Blk Time (%)				11		
Queuing Penalty (veh)				74		
Storage Bay Dist (ft)	400		150			
Storage Blk Time (%)			85	5		
Queuing Penalty (veh)			262	17		

Intersection: 18: N. Mountain St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	NB	NB	SB	SB
Directions Served	LT	R	T	R	L	T
Maximum Queue (ft)	104	138	441	458	133	135
Average Queue (ft)	39	50	396	298	44	84
95th Queue (ft)	68	88	524	586	87	140
Link Distance (ft)	1306		406	406		525
Upstream Blk Time (%)			46	10		
Queuing Penalty (veh)			146	31		
Storage Bay Dist (ft)		150			150	
Storage Blk Time (%)		0			0	0
Queuing Penalty (veh)		0			0	0

Intersection: 23: N. Mountain St & Shaman Rd/White Farm Rd

Movement	EB	EB	WB	WB	NB
Directions Served	L	TR	L	TR	L
Maximum Queue (ft)	28	78	74	29	25
Average Queue (ft)	1	25	38	3	1
95th Queue (ft)	9	56	58	17	8
Link Distance (ft)		869		1052	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150		150		150
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 29: N. Mountain St & Henson Rd

Movement	EB	EB
Directions Served	L	R
Maximum Queue (ft)	30	30
Average Queue (ft)	4	9
95th Queue (ft)	20	30
Link Distance (ft)		346
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 30: N. Mountain St & Service Station

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	LT
Maximum Queue (ft)	161	504	514	74
Average Queue (ft)	45	223	178	30
95th Queue (ft)	116	450	438	69
Link Distance (ft)	484	596	596	406
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 32: N. Mountain St & Flying J Service Station/McDonald's

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LT
Maximum Queue (ft)	94	52	184	79
Average Queue (ft)	37	21	45	8
95th Queue (ft)	64	45	121	36
Link Distance (ft)	179	266	301	264
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 71: N. Mountain St & Holly Grove Rd

Movement	WB
Directions Served	LR
Maximum Queue (ft)	32
Average Queue (ft)	19
95th Queue (ft)	44
Link Distance (ft)	1146
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 530

Intersection: 15: N. Mountain St & Service Station

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	71	55	51
Average Queue (ft)	27	20	3
95th Queue (ft)	56	47	20
Link Distance (ft)	312	462	422
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: N. Mountain St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	T	R
Maximum Queue (ft)	57	94	113	118	55	2
Average Queue (ft)	22	35	63	52	16	0
95th Queue (ft)	45	71	105	105	46	1
Link Distance (ft)		1024		525	289	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		150			150
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 18: N. Mountain St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	NB	NB	SB	SB
Directions Served	LT	R	T	R	L	T
Maximum Queue (ft)	124	97	191	38	69	114
Average Queue (ft)	57	62	82	8	34	42
95th Queue (ft)	104	89	156	23	63	88
Link Distance (ft)	1305		422	422		525
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150			150	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 23: N. Mountain St & Shaman Rd/White Farm Rd

Movement	EB	WB	WB	NB	NB	SB
Directions Served	TR	L	TR	L	TR	L
Maximum Queue (ft)	30	29	28	29	20	28
Average Queue (ft)	13	20	1	2	1	2
95th Queue (ft)	37	42	9	13	6	13
Link Distance (ft)	874		1050		487	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150		150		150
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 29: N. Mountain St & Henson Rd

Movement	EB	EB
Directions Served	L	R
Maximum Queue (ft)	29	50
Average Queue (ft)	4	12
95th Queue (ft)	20	37
Link Distance (ft)		348
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 31: N. Mountain St & Flying J Dwy/McDonald's

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	96	98	112	90
Average Queue (ft)	44	34	28	15
95th Queue (ft)	76	66	77	50
Link Distance (ft)	156	270	289	487
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 65: N. Mountain St & Holly Grove Rd

Movement	WB
Directions Served	LR
Maximum Queue (ft)	47
Average Queue (ft)	13
95th Queue (ft)	35
Link Distance (ft)	287
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 17: N. Mountain St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	T	R
Maximum Queue (ft)	61	59	175	381	118	31
Average Queue (ft)	14	32	104	131	51	9
95th Queue (ft)	38	57	164	245	101	22
Link Distance (ft)		1030		525	301	301
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	400		150			
Storage Blk Time (%)			4	3		
Queuing Penalty (veh)			15	7		

Intersection: 18: N. Mountain St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	NB	NB	SB	SB
Directions Served	LT	R	T	R	L	T
Maximum Queue (ft)	115	112	186	38	114	113
Average Queue (ft)	31	45	98	8	43	62
95th Queue (ft)	74	78	164	24	85	106
Link Distance (ft)	1306		406	406		525
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150			150	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 23: N. Mountain St & Shaman Rd/White Farm Rd

Movement	EB	EB	WB	WB	NB
Directions Served	L	TR	L	TR	L
Maximum Queue (ft)	28	31	48	30	25
Average Queue (ft)	1	5	20	5	4
95th Queue (ft)	9	24	45	23	19
Link Distance (ft)		869		1052	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150		150		150
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 29: N. Mountain St & Henson Rd

Movement	EB	EB
Directions Served	L	R
Maximum Queue (ft)	30	30
Average Queue (ft)	4	6
95th Queue (ft)	21	24
Link Distance (ft)		346
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 30: N. Mountain St & Service Station

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	30	56
Average Queue (ft)	20	4
95th Queue (ft)	42	24
Link Distance (ft)	484	406
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 32: N. Mountain St & Flying J Service Station/McDonald's

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	TR
Maximum Queue (ft)	101	55	222	30	20
Average Queue (ft)	47	30	36	8	1
95th Queue (ft)	78	54	108	30	7
Link Distance (ft)	179	266	301	264	264
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 71: N. Mountain St & Holly Grove Rd

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	14
95th Queue (ft)	38
Link Distance (ft)	1146
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 23

2040 BUILD ALTERNATIVES
EXIT 104 – TRIBAL ROAD

Intersection: 33: Tribal Rd & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	TR	L
Maximum Queue (ft)	93	72	49
Average Queue (ft)	48	40	16
95th Queue (ft)	77	61	42
Link Distance (ft)		1275	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 34: Tribal Rd & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	LT	R	L
Maximum Queue (ft)	30	52	52
Average Queue (ft)	9	34	14
95th Queue (ft)	31	56	42
Link Distance (ft)	1504		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 40: Tribal Rd & White Farm Rd

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	31	31
Average Queue (ft)	20	7
95th Queue (ft)	43	27
Link Distance (ft)	2280	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 43: Tribal Rd & Love'sTravel Stop

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	155	31
Average Queue (ft)	61	16
95th Queue (ft)	111	42
Link Distance (ft)	692	420
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 45: Tribal Rd & Gibbons Rd/Priester Rd

Movement	EB	EB
Directions Served	L	TR
Maximum Queue (ft)	30	30
Average Queue (ft)	6	7
95th Queue (ft)	25	27
Link Distance (ft)		547
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Tribal Rd & Gibbons Rd

Movement	EB
Directions Served	LR
Maximum Queue (ft)	29
Average Queue (ft)	6
95th Queue (ft)	24
Link Distance (ft)	406
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Tribal Rd & Industrial Plant Dwy (north)/Love's Travel Stop

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	161	30	72
Average Queue (ft)	20	58	7	21
95th Queue (ft)	44	101	27	57
Link Distance (ft)	600	521	348	149
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 33: Tribal Rd & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	LTR	L
Maximum Queue (ft)	54	118	47
Average Queue (ft)	36	75	18
95th Queue (ft)	52	115	42
Link Distance (ft)		1015	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 34: Tribal Rd & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	LT	R	L
Maximum Queue (ft)	30	75	72
Average Queue (ft)	14	48	18
95th Queue (ft)	38	73	48
Link Distance (ft)	1504		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 40: Tribal Rd & White Farm Rd

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	52	31
Average Queue (ft)	16	6
95th Queue (ft)	43	27
Link Distance (ft)	2143	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 45: Tribal Rd & Industrial Plant Dwy (south)/Priester Rd

Movement	EB	WB
Directions Served	LTR	R
Maximum Queue (ft)	28	27
Average Queue (ft)	2	3
95th Queue (ft)	14	15
Link Distance (ft)	302	846
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Tribal Road & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	TR	L
Maximum Queue (ft)	150	74	71
Average Queue (ft)	77	40	15
95th Queue (ft)	117	62	47
Link Distance (ft)		1170	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		250
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Tribal Road & Gibbons Rd/Priester Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	50	114	53	91
Average Queue (ft)	24	70	8	23
95th Queue (ft)	46	108	32	62
Link Distance (ft)	487	251	402	385
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Tribal Road & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	96	32
Average Queue (ft)	48	17
95th Queue (ft)	81	43
Link Distance (ft)	1176	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Tribal Road & White Farm Rd

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	68	31
Average Queue (ft)	21	10
95th Queue (ft)	51	34
Link Distance (ft)	179	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 33: Tribal Rd & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	TR	L
Maximum Queue (ft)	72	31	52
Average Queue (ft)	37	19	6
95th Queue (ft)	62	42	29
Link Distance (ft)		1275	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 34: Tribal Rd & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	LT	R	L
Maximum Queue (ft)	78	28	92
Average Queue (ft)	22	11	15
95th Queue (ft)	53	32	51
Link Distance (ft)	1504		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 40: Tribal Rd & White Farm Rd

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	11
95th Queue (ft)	35
Link Distance (ft)	2280
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 43: Tribal Rd & Love'sTravel Stop

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	53	32
Average Queue (ft)	36	13
95th Queue (ft)	52	39
Link Distance (ft)	692	420
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 45: Tribal Rd & Gibbons Rd/Priester Rd

Movement	EB	WB
Directions Served	TR	L
Maximum Queue (ft)	28	20
Average Queue (ft)	1	1
95th Queue (ft)	9	7
Link Distance (ft)	547	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Tribal Rd & Gibbons Rd

Movement	EB
Directions Served	LR
Maximum Queue (ft)	50
Average Queue (ft)	3
95th Queue (ft)	22
Link Distance (ft)	406
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Tribal Rd & Industrial Plant Dwy (north)/Love's Travel Stop

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	96	78	29
Average Queue (ft)	55	42	4
95th Queue (ft)	84	69	19
Link Distance (ft)	600	521	149
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 33: Tribal Rd & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	LTR	L
Maximum Queue (ft)	52	52	29
Average Queue (ft)	27	28	6
95th Queue (ft)	46	45	24
Link Distance (ft)		1015	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 34: Tribal Rd & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	EB	SB
Directions Served	LT	R	L
Maximum Queue (ft)	51	98	31
Average Queue (ft)	19	42	20
95th Queue (ft)	45	71	44
Link Distance (ft)	1504		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	150
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 40: Tribal Rd & White Farm Rd

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	30	29
Average Queue (ft)	10	1
95th Queue (ft)	32	9
Link Distance (ft)	2143	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 45: Tribal Rd & Industrial Plant Dwy (south)/Priester Rd

Movement	EB	WB
Directions Served	LTR	R
Maximum Queue (ft)	29	27
Average Queue (ft)	5	3
95th Queue (ft)	22	18
Link Distance (ft)	302	846
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 2: Tribal Rd & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	WB	NB
Directions Served	L	TR	L
Maximum Queue (ft)	73	53	50
Average Queue (ft)	38	19	9
95th Queue (ft)	68	45	37
Link Distance (ft)		1170	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		250
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Tribal Rd & Gibbons Rd/Priester Rd

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	94	77	26
Average Queue (ft)	49	49	4
95th Queue (ft)	79	74	20
Link Distance (ft)	259	251	384
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Tribal Rd & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	98	53
Average Queue (ft)	47	16
95th Queue (ft)	73	43
Link Distance (ft)	1176	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Tribal Rd & White Farm Rd

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	53	31
Average Queue (ft)	13	2
95th Queue (ft)	39	15
Link Distance (ft)	179	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

2040 BUILD ALTERNATIVES
EXIT 106 – E. CHEROKEE STREET

Intersection: 1: E. Cherokee St & Lakeview Dr

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	28	75	74
Average Queue (ft)	2	34	26
95th Queue (ft)	13	65	56
Link Distance (ft)	444	283	284
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 47: E. Cherokee St & Service Station

Movement	WB	NB
Directions Served	LR	R>
Maximum Queue (ft)	93	39
Average Queue (ft)	42	3
95th Queue (ft)	69	19
Link Distance (ft)	389	157
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 49: E. Cherokee St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	72	47
Average Queue (ft)	29	10
95th Queue (ft)	52	36
Link Distance (ft)	1481	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 50: E. Cherokee St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	46	28
Average Queue (ft)	19	10
95th Queue (ft)	39	32
Link Distance (ft)	1060	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 55: E. Cherokee St & Crossover Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 59: E. Cherokee St & Mill Creek Rd

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	54	29
Average Queue (ft)	27	1
95th Queue (ft)	52	10
Link Distance (ft)	525	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: E. Cherokee St & Lakeview Dr

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	66	29
Average Queue (ft)	22	2
95th Queue (ft)	48	14
Link Distance (ft)	840	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: E. Cherokee St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	53	30
Average Queue (ft)	29	17
95th Queue (ft)	53	41
Link Distance (ft)	518	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 21: E. Cherokee St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	73	29
Average Queue (ft)	27	5
95th Queue (ft)	46	22
Link Distance (ft)	613	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 26: E. Cherokee St & Crossover Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 31: E. Cherokee St & Service Station

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	78	53
Average Queue (ft)	47	11
95th Queue (ft)	69	39
Link Distance (ft)	188	686
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: E. Cherokee St & Lakeview Dr

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	28	99	97
Average Queue (ft)	2	44	55
95th Queue (ft)	13	81	88
Link Distance (ft)	444	283	284
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 47: E. Cherokee St & Service Station

Movement	WB	NB
Directions Served	LR	R>
Maximum Queue (ft)	187	78
Average Queue (ft)	73	7
95th Queue (ft)	130	37
Link Distance (ft)	389	157
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 49: E. Cherokee St & I-85 SB On-Ramp/I-85 SB Off-Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	50	50
Average Queue (ft)	31	8
95th Queue (ft)	49	31
Link Distance (ft)	1481	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 50: E. Cherokee St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	69	51
Average Queue (ft)	29	10
95th Queue (ft)	49	34
Link Distance (ft)	1060	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 55: E. Cherokee St & Crossover Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 59: E. Cherokee St & Mill Creek Rd

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	6
95th Queue (ft)	25
Link Distance (ft)	525
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: E. Cherokee St & Lakeview Dr

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	9
95th Queue (ft)	31
Link Distance (ft)	235
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: E. Cherokee St & I-85 NB Off-Ramp/I-85 NB On-Ramp

Movement	EB	SB
Directions Served	LTR	L
Maximum Queue (ft)	115	51
Average Queue (ft)	43	12
95th Queue (ft)	77	37
Link Distance (ft)	518	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 21: E. Cherokee St & I-85 SB On-Ramp/I-85 SB Of-Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	72	29
Average Queue (ft)	28	6
95th Queue (ft)	53	25
Link Distance (ft)	460	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 26: E. Cherokee St & Crossover Rd

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 31: E. Cherokee St & Service Station

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	203	20	98
Average Queue (ft)	70	1	25
95th Queue (ft)	130	7	67
Link Distance (ft)	188	236	686
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0