AECOM

TRAFFIC IMPROVEMENT PLAN

Blythewood, South Carolina

Blythewood Traffic Improvement Area Plan

Prepared for:

Central Midlands COG and

Town of Blythewood, South Carolina

June 3, 2019

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Executive Summary

The Town of Blythewood is a desirable place to live with a high quality of life driven by a small town feel, strong neighborhoods and proximity to the Columbia Metro Area. With rapid development and the prospect of continued unprecedented growth come transportation challenges. This significant development is expected to impact existing traffic patterns in the Blythewood area by increasing congestion and creating potential safety issues if improvements to roadway infrastructure are not made. By understanding the potential growth patterns in the area, the traffic impacts can be anticipated and mitigated.

Traffic at Bethel-Hanberry Elementary

Recognizing the rapid growth in the area and the increasing traffic congestion and safety issues, Central Midlands Council of Governments (COG) contracted AECOM to conduct this traffic improvement plan by taking a holistic approach at growth and traffic issues in the area over the next 20 years. AECOM studied the entire Blythewood area and not just the official town limits as much of the growth surrounding Blythewood will have a huge influence on traffic within the town. Therefore, rather than focusing on one particular area or intersection, this study seeks to understand the existing and future growth patterns, in the Blythewood area, and to provide sequential recommendations on improvements that should be considered over the next 20 years.

The Study also focused on identifying the right balance between residential and commercial growth, transportation needs and the community's desires for the future. More importantly, seeking the right balance between land uses and increasing transportation demands while maintaining the unique character of the Blythewood area.

While the principal focus of the transportation plan was to address the growing demands placed on the town's roads and streets by developments in the study area, the plan also examined bicycle and pedestrian needs, public transportation and other future plans necessary to accommodate growth and development. This report represents the final deliverable for the study and documents the analysis conducted, its outcomes and potential recommended short-term, mid-term and long-term improvements.

Planning Process

The planning process used to guide the future transportation recommendations for the Town of Blythewood Traffic Improvement Study is outlined below:

- Analyze existing conditions of the transportation system
- Review historical and forecast sociodemographic data
- Engage local stakeholders, real estate professionals, business owners and the general public in discussions on potential solutions to solve Blythewood's transportation challenges
- Examine future transportation needs through traffic modeling efforts
- Identify a comprehensive list of transportation improvements that will address needs
- Develop a prioritized program of transportation improvements

Traffic Analysis

An analysis was conducted of existing conditions to include a review of over 20 intersections, crash data, traffic counts, environmental analysis as well as future projects being planned in the Blythewood area. Land use data was also gathered to be used in the traffic modeling efforts. The 2040 traffic model was developed and used to identify future network deficiencies as well as aiding in the identification of needed improvements throughout the area. The analysis identified six short-term project recommendations, four mid-term project recommendations and four long-term project recommendations. One recommended project in particular, the US 21 and Blythewood Road intersection seemed to come to the forefront of discussions with Blythewood Town Officials, the Stakeholder and Technical Working Groups and the general public.

Stakeholder Engagement

The project team also had 2 different stakeholder teams that met throughout the study. The first team was comprised of agency officials from the following entities: Town of Blythewood; Central Midlands Council of Governments; SCDOT; Richland County; and The COMET. The second team of stakeholders was comprised of business leaders representing: local realtors; All State Insurance agent; Essex Homes; Great Southern Home Builders; and others. The groups first met on August 23, 2018 for an interactive meeting with members of the project team presenting information about the overall project and gathering input from the stakeholders.

The stakeholder teams met for the second time on April 9, 2019. The purpose of that meeting was for the project team to present the preliminary recommendations to the stakeholders and gain their feedback.

Yard Sign Advertising Public Meeting

A public information meeting was also held on April 9th from 5:30pm till 7:30pm at Doko Manor in Blythewood. The project team met with citizens to present the recommendations of the study and gather feedback. A computer generated visualization depicting what future improvements in the area would look like was also presented.

Project Recommendations

The following six projects are short-term recommendations for the study area:

Short-Term Recommendations	Improvement
US 321 at Blythewood Road	Add turning lanes
US 21 at Rimer Pond Road	Add turning lanes
US 21 at Farrow Road	Add turning lanes
Langford Road at Trading Post Road	Add turning lanes
Rimer Pond Road at Longtown Road	Add turning lanes
US 21 at Community Road	Install Restricted Crossing U Turn (RCUT) intersection

The following four projects are mid-term recommendations for the study area:

Mid-Term Recommendation	Improvement
Blythewood Road at Muller Road	Install turn lanes
US 21 at Farrow Road	Realign intersection
Langford Road at Hardscrabble Road	Install Roundabout
Blythewood Road at I-77 NB Ramps	Install signal

The following four projects are long-term recommendations for the study area:

Long-Term Recommendation	Improvement
US 21 at Rimer Pond	Install Turn Lanes (4 lanes on US 21)
US 21 at Farrow Road	Install Turn Lanes (4 lanes on US 21)
Rimer Pond at Longtown Road	Intersection Reconfiguration
Blythewood Road at Langford Road/US 21	Intersection Reconfiguration

Chapter 1. Existing Conditions

The Town of Blythewood Traffic Improvement study area project encompasses a vast area extending beyond the Town's limits. Significant roadways studied include Blythewood Road (S-59), Main Street (US 21) north of I-77, Langford Road (S-54), Round Top Church Road (S-1051), Rimer Pond Road (S- 1041), and Hard Scrabble Road (S-83) which are all classified as major collectors. Main Street (US 21) south of I-77 and Hardscrabble Road (S-83) south of Rimer Pond Road (S-1041) are minor arterials. Boney Road (S-1367), Oakhurst Road (S-1143), McNulty Road (S-1362), and Trading Post Road (S-1899) are all local streets. See **Figure 1.1** below for a map of the study area.

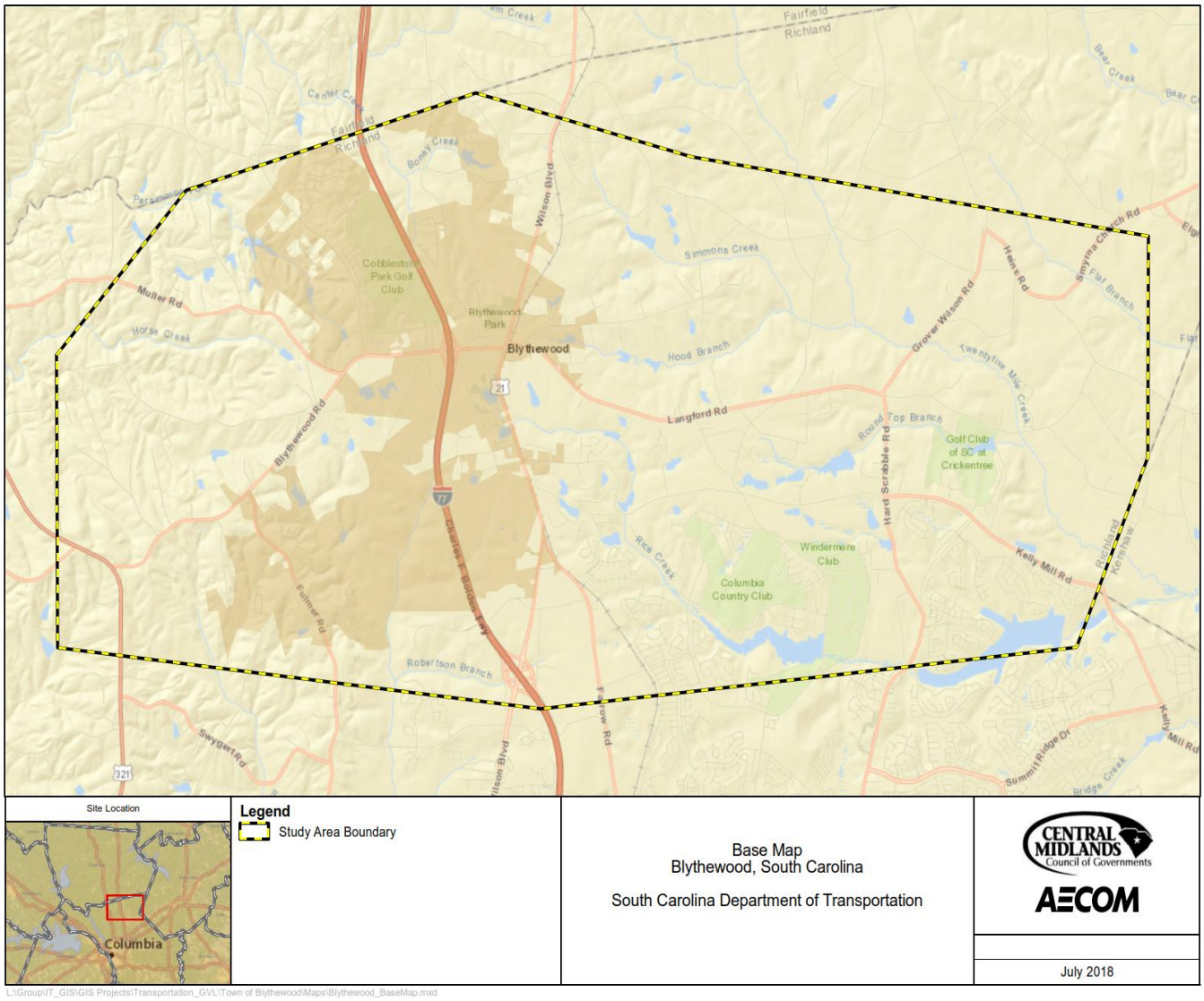


Figure 1.1: Map of Study Area

1.1 SCDOT Roadway Functional Classification

In an effort to balance the needs of mobility with the needs of access, the South Carolina Department of Transportation (SCDOT) has developed a system of roadway classification for all state maintained roadways. Arterials are divided into several categories such as principal and minor. In general, arterials are highways that have the ability to move large volumes of traffic at higher speeds over long distances. Principal arterials include freeways and major multilane highways. Minor arterials provide more access to properties but at lower travel speeds over shorter distances and can include two lane roadways. Collector roads provide both mobility and access in approximately equal portions at usually lower speeds and capacity than an arterial roadway. Finally, local streets include all roadways that are not classified as an arterial or a collector road. Travel speeds are generally low and trips are local. A roadway's classification will impact roadway design features such as the posted speed limit, lane widths, capacity, and clear zone. The SCDOT Roadway Functional Classification in the Blythewood area is shown below in **Figure 1.2**.

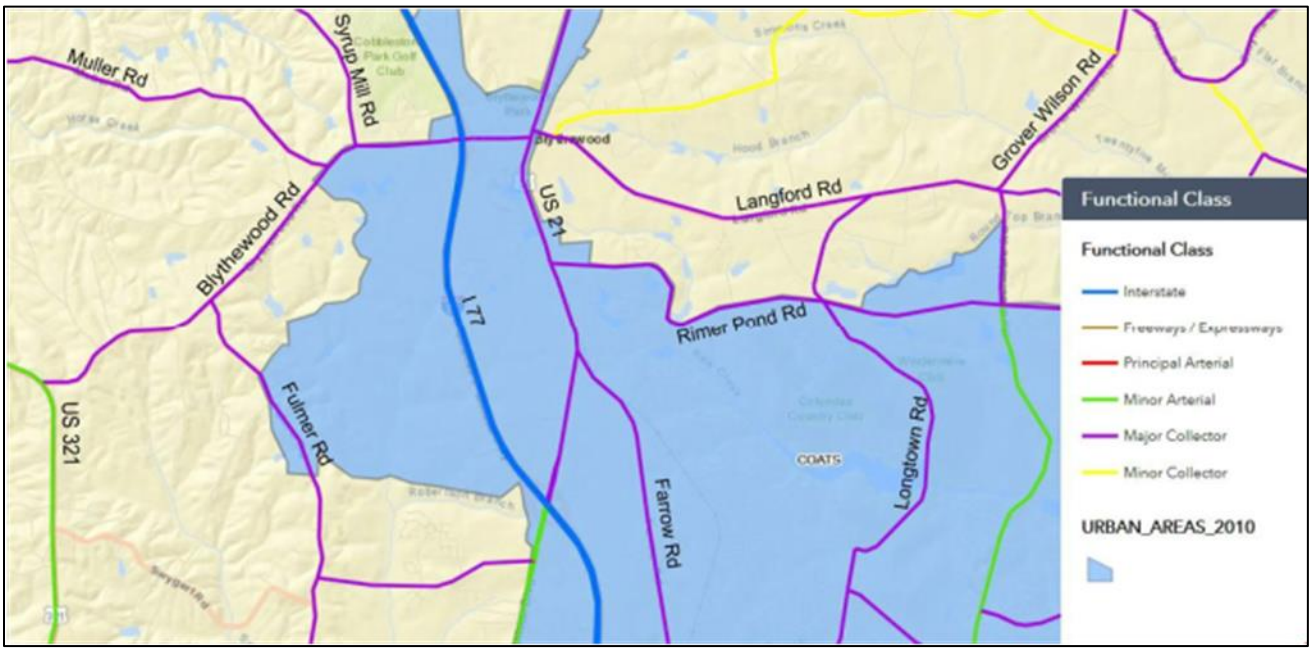


Figure 1.2: Map of SCDOT Roadway Functional Classification

1.2 Transit Routes

Summary of Existing Conditions

- The COMET (Central Midlands Regional Transit Authority) provides express transit service to the Town of Blythewood with Route 52X. This route connects the study area with downtown Columbia.
- Route 52X began providing service on September 1, 2017 following the recommendations of the 2010 Town of Blythewood Master Plan and 2015 Town of Blythewood Comprehensive Plan. Route 52X operates five days a week, Monday thru Friday, offering three trips in the morning and three trips in the afternoon.

- The first trip in the morning begins at Elizabeth Hagler Boulevard in Blythewood and stops at job destinations before reaching the Transit Center at Sumter Street and Laurel Street. The subsequent morning trips originate at the Transit Center deadheading to Blythewood. There are two stops in Blythewood and seven stops in Columbia, as shown below in **Figure 1.3**.
- The trips in the afternoon originate at Hampton Street and Huger Street and end at the Transit Center after serving the Blythewood community. The stop at Elizabeth Hagler Boulevard serves as park and ride for people using the express route. This stop is adjacent to the Doko Meadows Community Center.

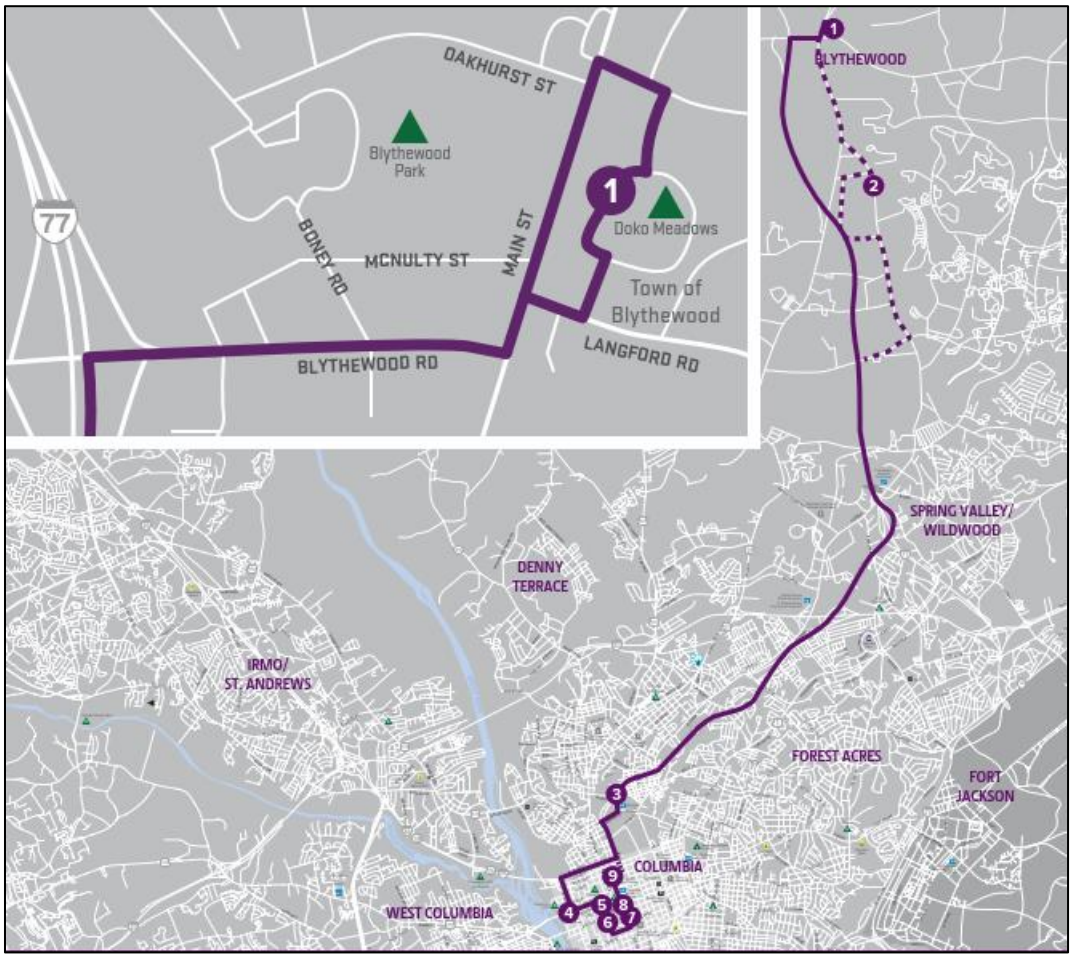


Figure 1.3 Route 52X connecting Blythewood to Columbia

Summary of Proposed Conditions

There is no additional transit service proposed in the study area.

At the time of this report in Spring of 2019, the project team understands that The COMET has suspended service on Route 52X due to low ridership. Presently, there are no plans to reintroduce a COMET Route to the Blythewood area. However, transit could certainly play an important role for travel patterns in the future.

1.3 Bicycle and Pedestrian Facilities

Pedestrian sidewalk facilities are limited to the downtown area of Blythewood and are located on US 21, Blythewood Road, and sections of McNulty Road and Boney Road. In addition, several subdivisions in the Blythewood area have included sidewalks as part of the original development.

Pedestrian crosswalks are installed at the signalized intersections of:

- Blythewood Road (S-59) at I-77 SB ramps
- Blythewood Road (S-59) at I-77 NB ramps
- Blythewood Road (S-59) at Boney Road (S-1367)
- Blythewood Road (S-59) at Main Street (US 21)
- Main Street (US 21) at Langford Road (S-54)
- Rimer Pond Road (S-1041) at Longtown Road E. (S-1051)

Currently there are no bicycle facilities or multiuse paths located in the study area, except a circular trail at Doko Meadows Park.

Bicyclist on Langford Road

1.4 Intersection Data

The following intersections shown below in **Figure 1.4** and listed below have been identified for detailed traffic analysis. Pertinent data was collected for each of these locations that include a review of the existing lane configuration, crash data and turning movement counts. That information is available in sections 1.5, 1.6 and 1.7 respectively.

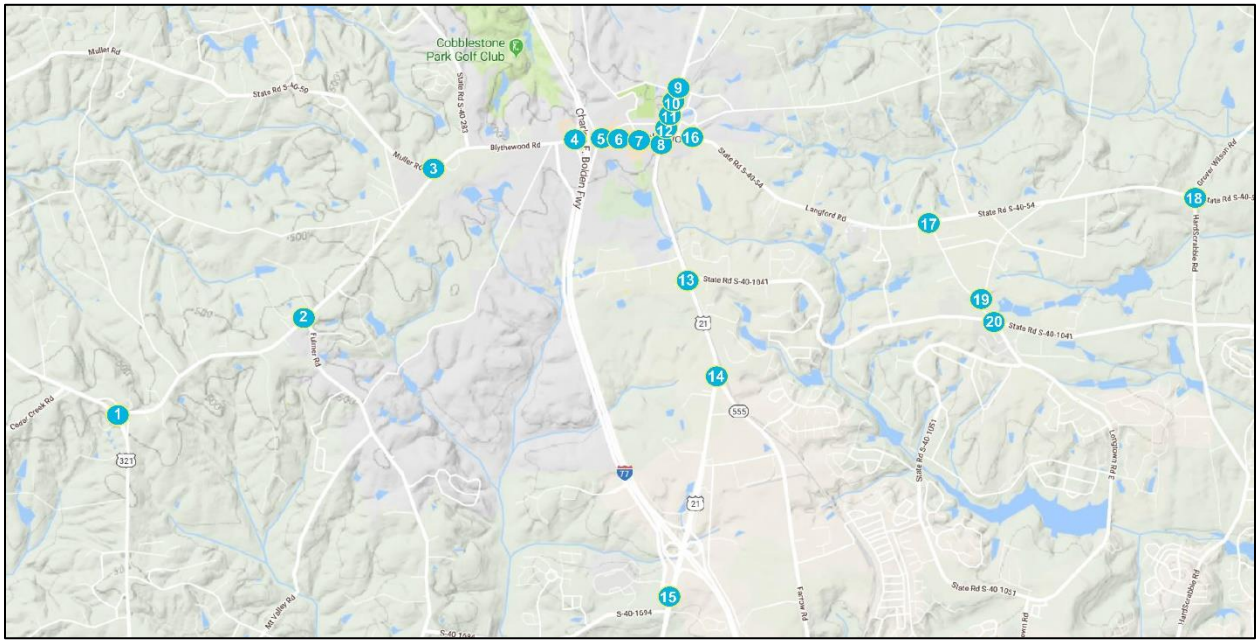


Figure 1.4: Map of Study Intersections

1. Blythewood Road (S-2200) at Winnsboro Road (US 321) - Unsignalized
2. Blythewood Road (S-2200) at Fulmer Road (S-1352) - Unsignalized
3. Blythewood Road (S-2200 / S-59) at Muller Road (S-59) - Signalized
4. Blythewood Road (S-59) at I-77 SB ramps – Signalized
5. Blythewood Road (S-59) at I-77 NB ramps – Signalized
6. Blythewood Road (S-59) at McNulty Street (S-1362) / Creech Road – Unsignalized
7. Blythewood Road (S-59) at Boney Road (S-1367) - Signalized
8. Blythewood Road (S-59) at Main Street (US 21) - Signalized
9. Main Street (US 21) at McLean Road (S-1143) - Unsignalized
10. Main Street (US 21) at Oakhurst Road (S-1143) - Unsignalized
11. Main Street (US 21) at McNulty Road (S-1362) - Unsignalized
12. Main Street (US 21) at Langford Road (S-54) - Signalized
13. Main Street (US 21) at Rimer Pond Road (S-1041) - Signalized
14. Main Street (US 21) at Farrow Road (SC 555) - Unsignalized
15. Main Street (US 21) at Community Road (S-2885) - Unsignalized
16. Langford Road (S-54) at Sandfield Road (S-220) - Unsignalized
17. Langford Road (S-54) at Trading Post (S-1899) - Unsignalized
18. Langford Road (S-54) at Hard Scrabble Road (S-83) - Unsignalized
19. Trading Post Road (S-1899) at Round Top Church Road (S-1051) - Unsignalized
20. Rimer Pond Road (S-1041) at Longtown Road E. (S-1051) - Signalized

1.5 Lane Configuration

Blythewood Road is a two lane roadway from US 321 to Community Road / University Parkway and then three lanes are provided east to Main Street (US 21). Left turn lanes are provided at the intersections of Muller Road and Syrup Mill Road. The posted speed limit is 55 mph from US 321 to west of Muller Road, 45 mph from west of Muller Road to east of Syrup Mill Road and finally to 35 mph from east of Syrup Mill Road to US 21.

US 21 is two lanes from McLean Road to McNulty Road, three lanes from McNulty Road to south of Rimer Pond Road, two lanes from south of Rimer Pond Road to one half mile north of I-77 and four lanes with auxiliary lanes for one half mile north and south of I-77 including Community Road. A by-pass lane is provided at Farrow Road. It is posted at 35 mph from McLean Road to south of Main Street and 45 mph from south of main street to south of Community Road.

Boney Road, Oakhurst Road, McNulty Road are two lane roadways posted at 30 mph, 30 mph and 25 mph respectively.

Langford Road is two lanes from US 21 to Hardscrabble Road and is posted at 35 mph from US 21 to east of Sandfield Road and 55 mph from east of Sandfield Road to Hard Scrabble Road. Left turn lanes are provided at Langford Elementary School.

Trading Post Road is two lanes posted at 45 mph and Round Top Church Road is two lanes posted at 40 mph with left turn lanes provided at Rimer Pond Road.

Rimer Pond Road is two lanes posted at 40 mph from US 21 to east of US 21 and 45 mph from east of US 21 to Hard Scrabble Road. Left turn lanes are provided at US 21, Round Top Elementary School and at Longtown Road E/ Round Top Church Road.

Hardscrabble Road is a two lane roadway between Langford Road and Rimer Pond Road and posted at 45 mph.

Auxiliary lanes are also provided at some intersections within the study area. The existing lane configuration and storage length for auxiliary lanes are shown in **Figures 1.5**, **1.6**, and **1.7** on the pages that follow.

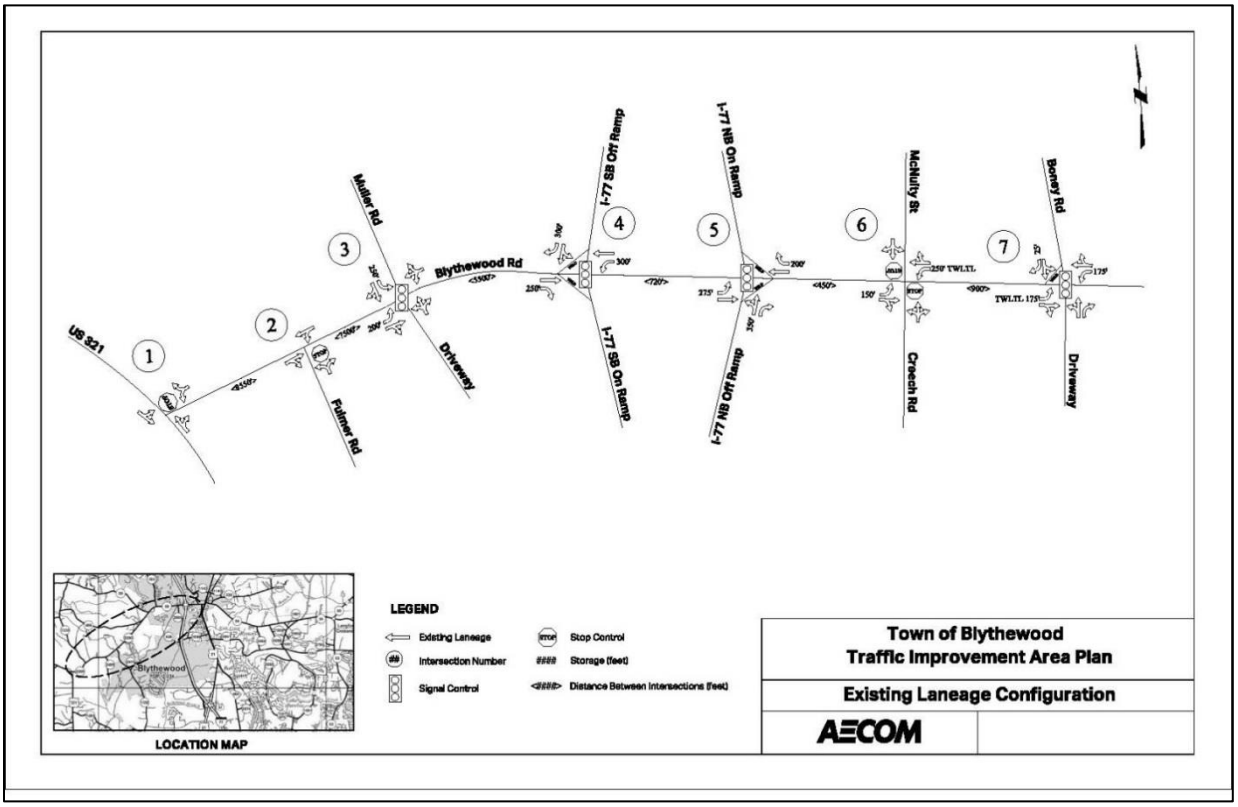


Figure 1.5: Existing Laneage Configuration

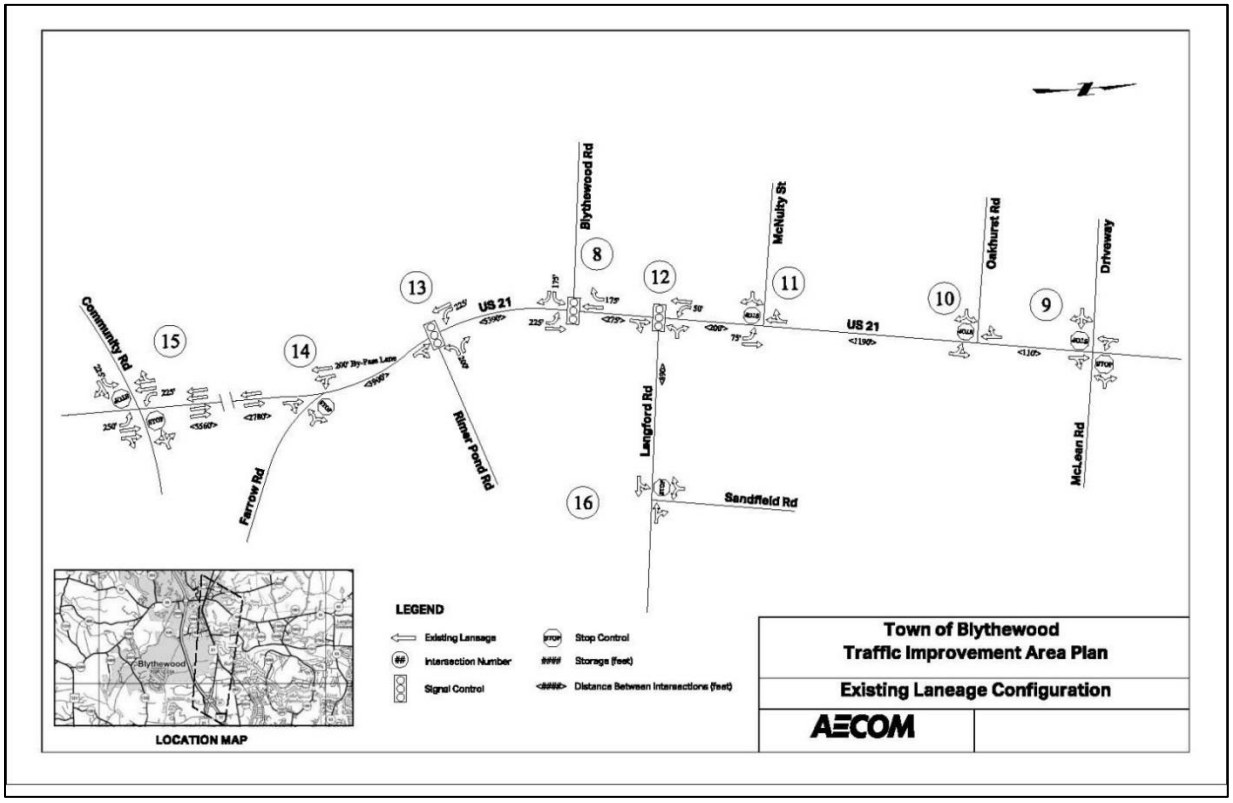


Figure 1.6: Existing Laneage Configuration

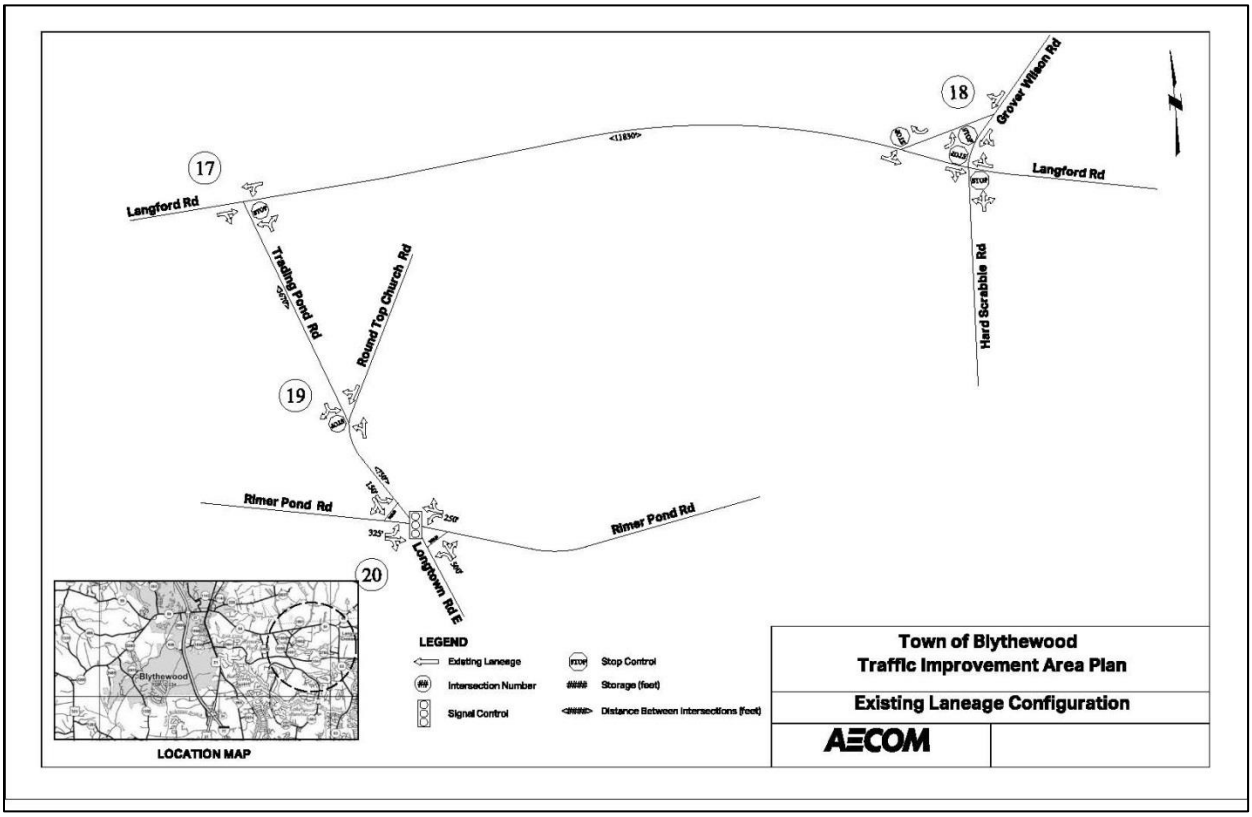


Figure 1.7: Existing Laneage Configuration

1.6 Crash Data

Crash data was provided by SCDOT for dates between January 1, 2015 and March 31, 2018 for all of the study intersections with exception of Blythewood Road at McNulty Street and Langford at Hard Scrabble Road which was reviewed between January 1, 2015 and December 31, 2017 and January 1, 2015 and June 30, 2018 respectively. The location with the greatest number of crashes and injuries is the intersection of Blythewood Road and I-77 NB ramps with 51 crashes and six injuries. Of these crashes 94% were rear end collisions. US 21 at Rimer Pond Road had the second highest number of crashes with 23 comprising of 65% rear end collisions. A detailed summary of crash data can be found in Appendix A. A summary of crash types is shown on the following page in **Table 1.1**.

ID #	Intersection	Rear End	Angle	Side Swipe	Head On	Run Off Road	Injury Crashes	PDO	Total
1	Blythewood Rd @ US 321	2		1		5	1	7	8
2	Blythewood Rd @ Fulmer Rd	2				1		3	3
3	Blythewood Rd @ Muller Rd	2	1				1	2	3
4	Blythewood Rd @ I 77 SB ramps	12	1	3				16	16
5	Blythewood Rd @ I 77 NB ramps	48	2			1	6	45	51
6	Blythewood Rd @ McNulty St/Creech Rd	6	9	1			3	13	16
7	Blythewood Rd @ Boney Rd	11	4	1			3	13	16
8	Blythewood Rd @ US 21	7	5	1		3	4	12	16
9	US 21 @ McLean Rd	3	1				1	3	4
10	US 21 @ Oakhurst Rd	1	1		1		1	2	3
11	US 21 @ McNulty Rd	3	1	2				6	6
12	US 21 @ Langford Rd	9	3	1		2	2	13	15
13	US 21 @ Rimer Pond Rd	15	5	1		2	3	20	23
14	US 21 @ Farrow Rd	15	3		1	2	3	18	21
15	US 21 @ Community Rd	6	7	1			5	9	14
16	Langford Rd @ Sandfield Road	2	1				2	1	3
17	Langford Rd @ Trading Post Rd		1	1			1	1	2
18	Langford Rd @ Hard Scrabble Rd	4	8	1		4	5	12	17
19	Trading Post Rd @ Round Top Church Rd		1					1	1
20	Rimer Pond Rd @ Longtown Rd E.	2	4	2			3	5	8

Table 1.1 Intersection Crash Summary

1.7 Intersection Turn Movement Counts

To analyze traffic conditions, existing traffic data was utilized when available and new traffic data collected at the remaining study intersections. Peak hour turning movement counts for 2018 are shown in **Figures 1.8, 1.9** and **1.10** on the pages that follow.

S-59 (Blythewood Road) Widening Project P030152 – Turning movement count conducted on April 21, 2016 between 7:00–9:00 a.m. and 4:00–6:00 p.m. was performed by Short Counts, LLC. A 3% yearly growth rate was applied to the traffic data to estimate 2018 volumes. This was estimated by reviewing SCDOT AADT traffic data over an eight year period from 2009 to 2017 on Blythewood Road.

- ID #3 - Blythewood Road (S-59) at Muller Road (S-59)

Traffic Impact Study for Blythewood Farms Subdivision dated July 2018 – Turning movement counts conducted on May 31, 2018 between 7:00–9:00 a.m. and 4:00–6:00 p.m. was performed by Quality Counts, LLC.

- ID #8 - Blythewood Road (S-59) at Main Street (US 21)
- ID #12 - Main Street (US 21) at Langford Road (S-54)
- ID #13 - Main Street (US 21) at Rimer Pond Road (S-1041)
- ID #16 - Langford Road (S-54) at Sandfield Road (S-220)

Richland County McNulty Street Improvement Project – Turning movement counts conducted in October 2018 between 7:00–9:00 a.m. and 4:00–6:00 p.m. was performed by CECS, Inc.

- ID #6 - Blythewood Road (S-59) at McNulty Street (S-1362) / Creech Road
- ID #11 - Main Street (US 21) at McNulty Road (S-1362)

Town of Blythewood Traffic Improvement Area Plan – Turning movement counts conducted on October 2, 2018 between 7:00–9:00 a.m. and 4:00–6:00 p.m. was performed by All Traffic Data Services, Inc.

- ID #1 - Blythewood Road (S-2200) at Winnsboro Road (US 321)
- ID #2 - Blythewood Road (S-2200) at Fulmer Road (S-1352)
- ID #4 - Blythewood Road (S-59) at I-77 SB ramps
- ID #5 - Blythewood Road (S-59) at I-77 NB ramps
- ID #7 - Blythewood Road (S-59) at Boney Road (S-1367)
- ID #9 - Main Street (US 21) at McLean Road (S-1143)
- ID #10 - Main Street (US 21) at Oakhurst Road (S-1143)
- ID #14 - Main Street (US 21) at Farrow Road (SC 555)
- ID #15 - Main Street (US 21) at Community Road (S-2885)
- ID #17 - Langford Road (S-54) at Trading Post (S-1899)
- ID #18 - Langford Road (S-54) at Hard Scrabble Road (S-83)
- ID #19 - Trading Post Road (S-1899) at Round Top Church Road (S-1051)
- ID #20 - Rimer Pond Road (S-1041) at Longtown Road E. (S-1051)

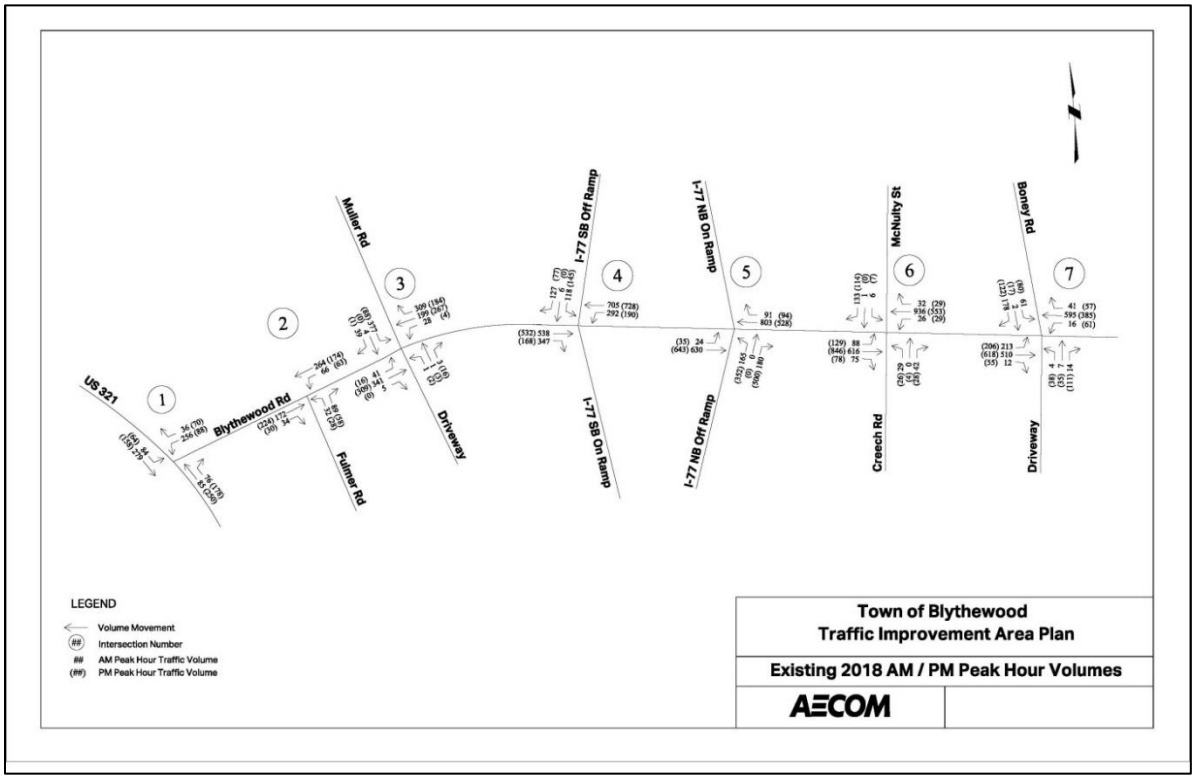


Figure 1.8 Peak Hour Turning Movement Counts

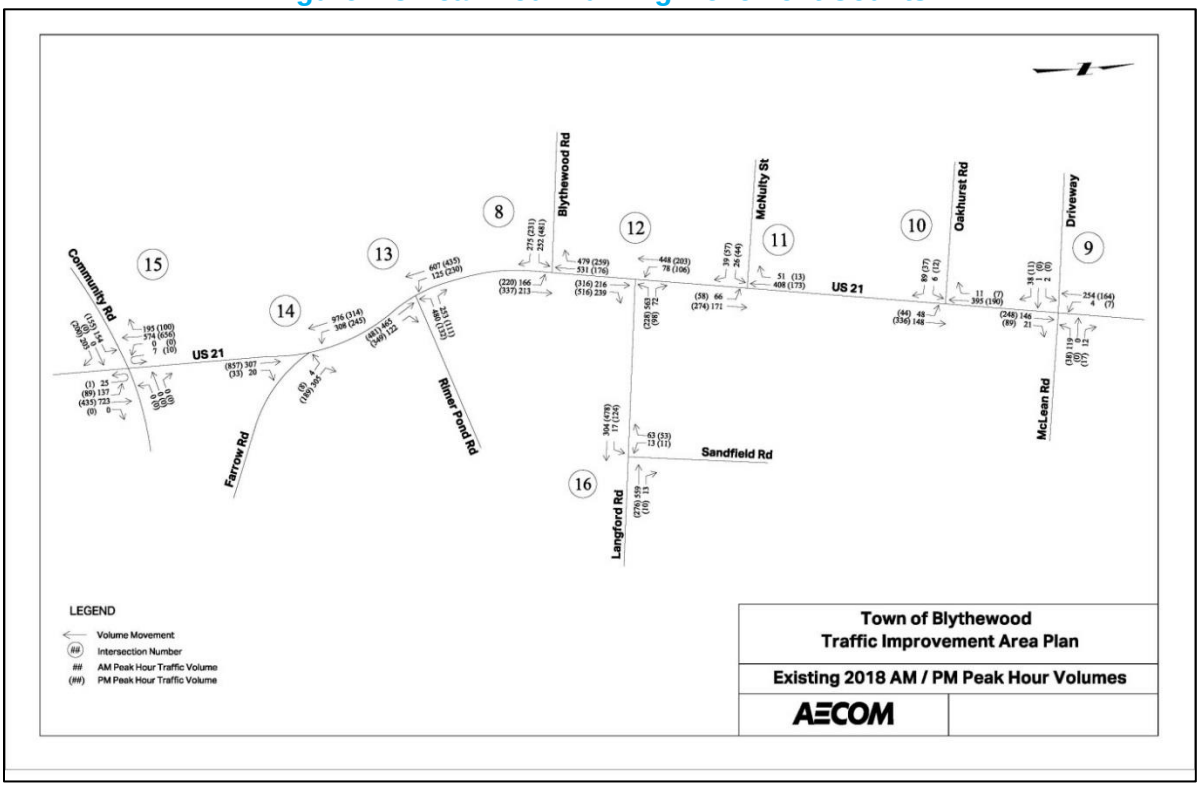


Figure 1.9 Peak Hour Turning Movement Counts

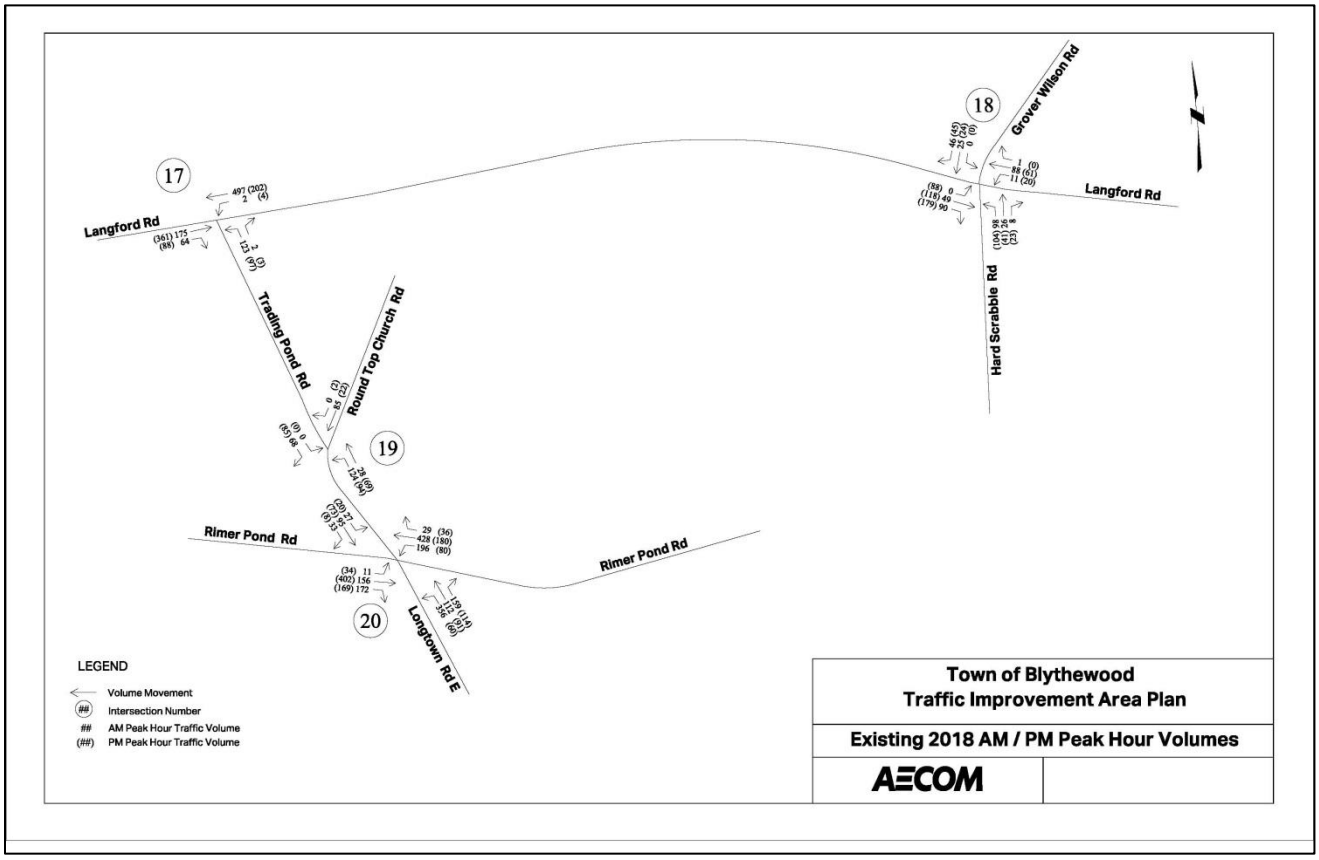


Figure 1.10 Peak Hour Turning Movement Counts

1.8 Traffic Analysis

Capacity Analysis

The traffic carrying ability of an uninterrupted flow roadway is described by levels-of-service (LOS) that range from LOS A to LOS F:

- LOS A represents unrestricted maneuverability and operating speeds.
- LOS B represents reduced maneuverability and operating speeds.
- LOS C represents restricted maneuverability and operating speeds closer to the speed limit.
- LOS D represents severely restricted maneuverability and unstable, low operating speeds.
- LOS E represents operating conditions at or near the capacity level.
- LOS F represents breakdown conditions characterized by stop and go travel.

A visual representation of each LOS is shown on the following page in **Figure 1.11.**

Figure 1.11 Uninterrupted Flow Level of Service

The Highway Capacity Manual (HCM) 2010 also defines LOS at an unsignalized intersection by average control delay per vehicle, which includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Several factors affect the controlled delay for unsignalized intersections, such as availability and distribution of gaps in the conflicting traffic stream, critical gaps, and follow-up time for a vehicle in the queue. The Highway Capacity Manual explains that drivers perceive that a signalized intersection is designed to carry higher traffic volumes and therefore expect to experience greater delays at signalized intersections. Unsignalized intersections are assigned a LOS for each minor movement. Typically, LOS D is considered the minimum acceptable level of service at an intersection. However, for low volume minor approaches a LOS of F can be considered acceptable at a stop controlled intersection.

LOS for a signalized intersection is defined in terms of average control delay per vehicle, which is composed of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. A single LOS describes a signalized intersection. **Table 1.2** below presents LOS thresholds for unsignalized and signalized intersections.

LOS	Unsignalized Average Control Delay (sec/veh)	Signalized Average Control Delay (sec/veh)
A	≤ 10.0	≤ 10.0
B	> 10.0 and ≤ 15.0	> 10.0 and ≤ 20.0
C	> 15.0 and ≤ 25.0	> 20.0 and ≤ 35.0
D	> 25.0 and ≤ 35.0	> 35.0 and ≤ 55.0
E	> 35.0 and ≤ 50.0	> 55.0 and ≤ 80.0
F	> 50.0	> 80.0

Table 1.2 LOS Thresholds for Unsignalized Intersections

1.9 2018 Intersection Level-of-Service

Traffic volumes from the peak hour turning movement counts collected and were utilized to calculate the intersection LOS, control delay, volume to capacity (v/c) ratio, and 95th percentile queue using Synchro and SimTraffic software. When the v/c ratio exceeds one it is an indication that the roadway volumes exceed the capacity of the roadway. The results for year 2018 are summarized below in **Table 1.3** for the AM peak hour and in **Table 1.4** on the following page for the PM peak hour.

ID #	Intersection	Control	LOS	Delay	v/c	95th %tile Queue (ft)	Comments
1	Blythewood Rd @ US 321	Stop	F	59.9	0.91	137	WB Thru
2	Blythewood Rd @ Fulmer Rd	Stop	B	12.0	0.22	45	NB Thru
3	Blythewood Rd @ Muller Rd	Signal	D	54.1	0.99	302	v/c & queue WB Thru
4	Blythewood Rd @ I 77 SB ramps	Signal	B	12.2	0.82	190	v/c & queue SB Left
5	Blythewood Rd @ I 77 NB ramps	Signal	A	9.4	0.83	204	v/c & queue NB Left
6	Blythewood Rd @ McNulty Street/Creech Rd	Stop	F	300+	3.16	97	NB Thru
7	Blythewood Rd @ Boney Rd	Signal	D	46.1	1.10	188	v/c & queue WB Thru
8	Blythewood Rd @ US 21	Signal	D	41.5	1.25	308	v/c & queue NB Left
9	US 21 @ McLean Rd	Stop	C	18.4	0.39	63	WB Thru
10	US 21 @ Oakhurst Rd	Stop	B	13.7	0.23	63	EB Thru
11	US 21 @ McNulty Rd	Stop	C	16.1	0.24	63	EB Thru
12	US 21 @ Langford Road	Signal	C	34.5	0.90	1147	v/c & queue WB Thru
13	US 21 @ Rimer Pond Road	Signal	C	28.1	0.93	330	v/c & queue WB Left
14	US 21 @ Farrow Road	Stop	E	36.7	0.79	487	WB Thru
15	US 21 @ Community Road	Stop	F	300+	3.15	404	EB Left
16	Langford Road @ Sandfield Road	Stop	C	15.5	0.21	379	SB Thru
17	Langford Road @ Trading Post	Stop	D	25.1	0.49	78	NB Thru
18	Langford Road @ Hard Scrabble Road	Stop	C	15.7	0.38	58	NB Thru
19	Trading Post Road @ Round Top Church Road	Stop	A	9.4	0.09	40	EB Thru
20	Rimer Pond Road @ Longtown Road E.	Signal	C	25.4	0.84	201	v/c & queue WB Left

Table 1.3 2018 Existing AM Intersection Level-of-Service

ID #	Intersection	Control	LOS	Delay	v/c	95th %tile Queue (ft)	Comments
1	Blythewood Rd @ US 321	Stop	C	18.6	0.41	69	WB Thru
2	Blythewood Rd @ Fulmer Rd	Stop	B	12.0	0.15	46	NB Thru
3	Blythewood Rd @ Muller Rd	Signal	B	11.6	0.63	126	v/c & queue WB Thru
4	Blythewood Rd @ I 77 SB ramps	Signal	B	10.8	0.77	132	v/c & queue SB Left
5	Blythewood Rd @ I 77 NB ramps	Signal	B	18.6	0.87	282	v/c & queue NB Left
6	Blythewood Rd @ McNulty Street/Creech Rd	Stop	F	300+	1.39	97	NB Thru
7	Blythewood Rd @ Boney Rd	Signal	B	15.4	0.68	213	v/c & queue EB Thru
8	Blythewood Rd @ US 21	Signal	C	23.4	0.88	294	v/c & queue EB Left
9	US 21 @ McLean Rd	Stop	B	12.8	0.12	50	WB Thru
10	US 21 @ Oakhurst Rd	Stop	B	11.2	0.12	52	EB Thru
11	US 21 @ McNulty Rd	Stop	B	13.3	0.24	135	EB Thru
12	US 21 @ Langford Road	Signal	C	30.6	0.96	212	v/c & queue SB Thru
13	US 21 @ Rimer Pond Road	Signal	B	14.3	0.76	128	v/c & queue WB Left
14	US 21 @ Farrow Road	Stop	F	141.7	1.12	1054	WB Thru
15	US 21 @ Community Road	Stop	F	300+	1.51	402	EB Left
16	Langford Road @ Sandfield Road	Stop	B	13.9	0.18	43	SB Thru
17	Langford Road @ Trading Post	Stop	C	17.9	0.30	57	NB Thru
18	Langford Road @ Hard Scrabble Road	Stop	C	21.2	0.47	68	NB Thru
19	Trading Post Road @ Round Top Church Road	Stop	A	8.8	0.11	24	EB Thru
20	Rimer Pond Road @ Longtown Road E.	Signal	A	9.7	0.70	171	v/c & queue EB Thru

Table 1.4 2018 Existing PM Intersection Level-of-Service

1.10 Traffic Summary

Under existing conditions, traffic flows smoothly at most of the study intersections with the following exceptions:

- WB traffic on Blythewood Road at US 321 experiences some delay during the a.m. peak hour.
- The intersection of Blythewood Road with I-77 northbound ramps has 51 crashes over a 3.3 year period of which 94% are rear end collisions. This type of crash may indicate a congestion and queuing problem in the vicinity of the intersection.
- Northbound left turning or through traffic on Creech Road operates at a LOS F and has a volume to capacity (v/c) ratio that exceeds one in the a.m. and p.m. peak hours. This is a stop sign controlled intersection without adequate gaps in the mainline roadway's traffic flow.
- US 21 does not have adequate storage between these signalized intersections for the traffic volumes. Langford Road has long queues in the a.m. peak hour that extend past the intersection of Sandfield Road.
- Southbound left turns from US 21 into Farrow Road create queues on US 21. Queues also form on Farrow Road in the a.m. and p.m. peak hours. The v/c ratio exceeds one during the p.m. peak hour for Farrow Road.
- Eastbound left turns on Community Road experience long delays in the a.m. and p.m. peak hours. The v/c ratio exceeds one during the a.m. and p.m. peak hours.

Chapter 2. Environmental Analysis

This chapter documents the existing 2018 Natural and Cultural Resources Inventory along with a Summary of Existing Environmental Permits and Implications for Plan Development for the Town of Blythewood Traffic Improvement Area study. The intent is to ensure that environmental issues within the study area could be identified, addressed and mitigated if impacts to these sites are necessary. Three Oaks Engineering and New South Associates both contributed to this portion of the study.

For the purposes of this review, the project study area was divided into four quadrants (NW, SW, NE, SE). Interstate 77 (I-77) was used to divide east and west, while Blythewood Road/Langford Road were used as guidelines to divide north and south (refer to **Figure 2.1** below). Readers should know that this is a planning level environmental analysis. As projects move forward into preliminary engineering, more detailed environmental analyses with field work will be required.

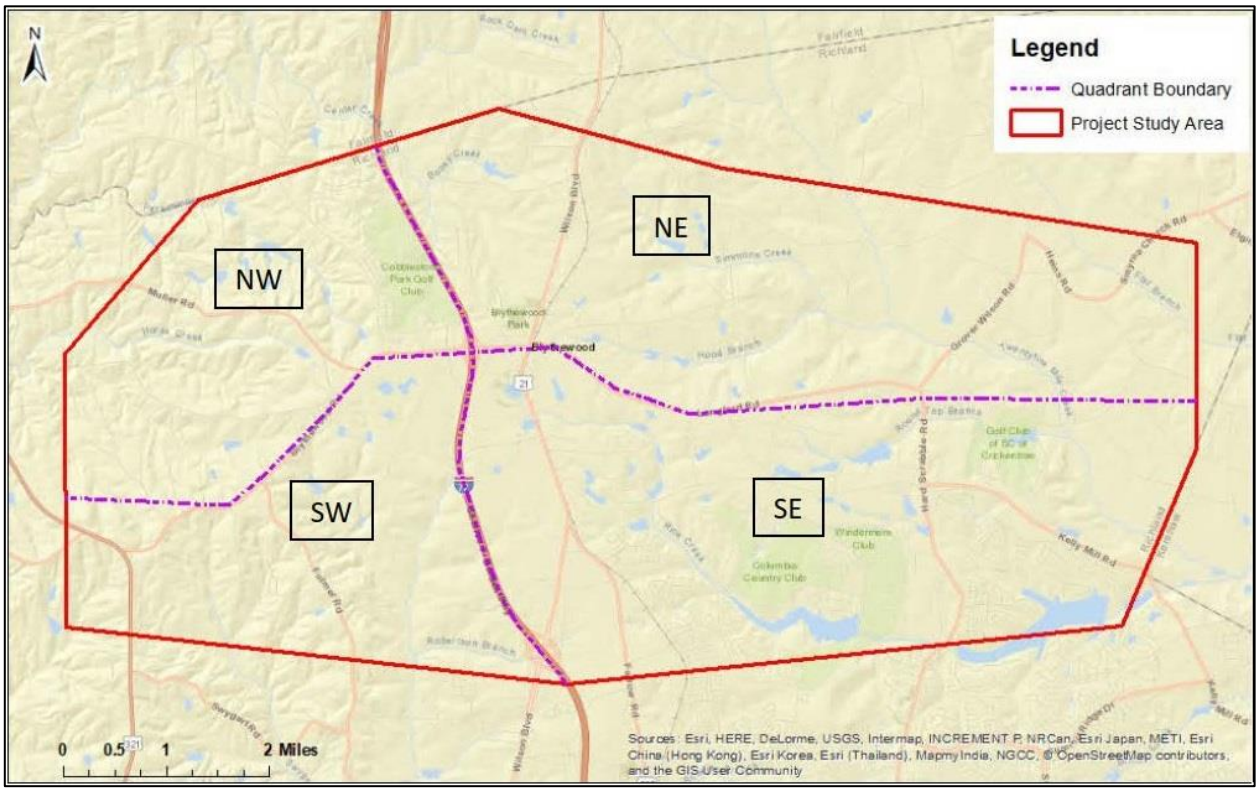


Figure 2.1: Project Study Area Quadrants (Environmental)

2.1 Wetlands and Streams

According to the National Wetland Inventory mapping, the southeast quadrant of the study area contains the highest quantity of wetlands (refer to **Figure 2.2** below). Rice Creek extends the entire southeast quadrant, flowing into Lake Columbia and Lake Carolina, this portion of the study area also contains freshwater ponds, freshwater emergent wetlands, and freshwater forest/shrub wetlands. The northeast quadrant encompasses freshwater ponds, freshwater emergent wetlands, freshwater forested/shrub wetlands, and several riverine systems. Including Simmons Creek, Hood Branch and Round Top Branch that feed into Twenty-five Mile Creek. The area west of I-77 includes fewer freshwater ponds, freshwater emergent wetlands, freshwater forested/shrub wetlands. Riverine systems in the southwest quadrant include Swygert Creek, Beasley Creek, and Robertson Branch. Riverine systems in the northwest quadrant include Horse Creek and Persimmon Fork.

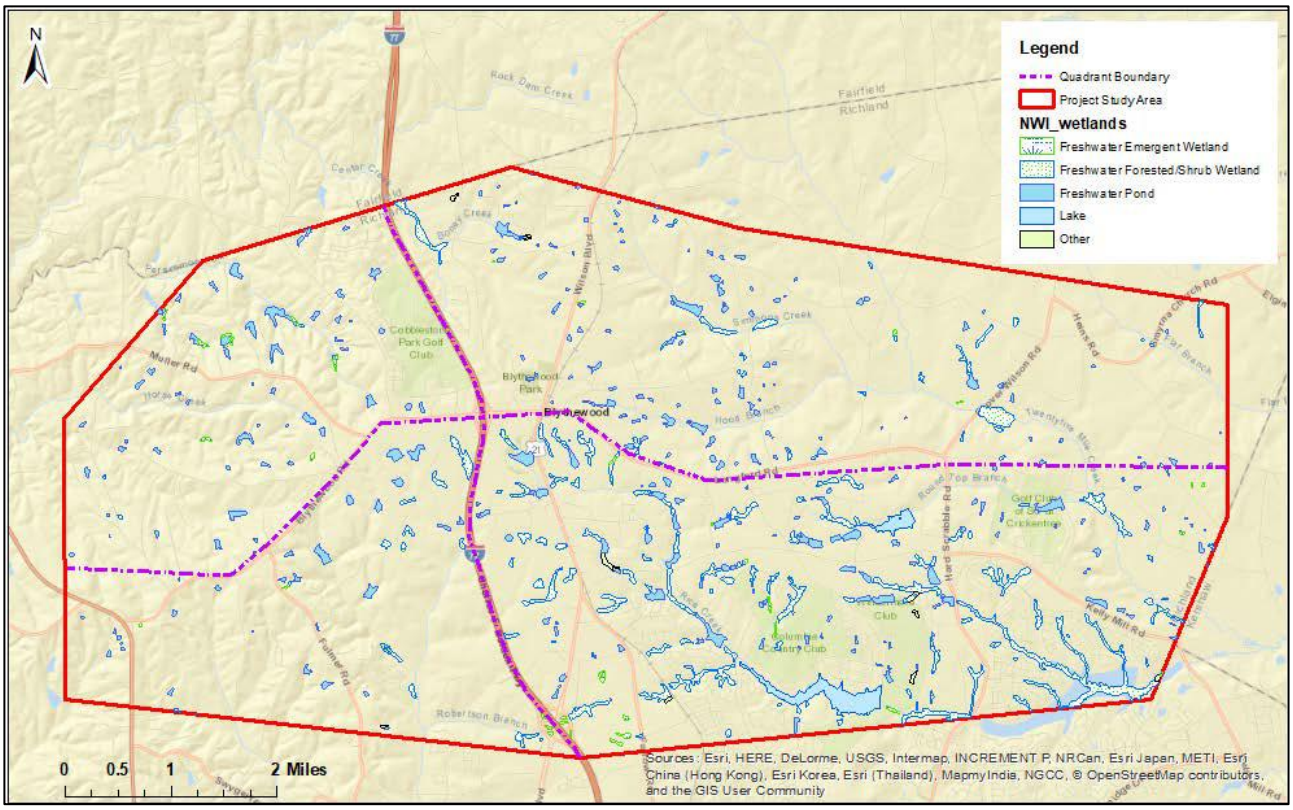


Figure 2.2 Wetlands within the project study area.

Once a preferred alternative is chosen, all streams and wetlands should be delineated to determine potential impacts. This field delineation would be completed in accordance with US Army Corps of Engineers (USACE) guidelines. A Jurisdictional Determination (JD) could then be prepared for submittal to USACE in order to define the limits of Federal jurisdiction. Following the approval of the JD, a permit application could be developed for the USACE. Coordination with USACE and South Carolina Department of Health and Environmental Control (SCDHEC) may be completed through site visits with these agencies to allow for better communication and help improve the permitting process efficiency.

A conceptual mitigation plan will have to be developed for the potential impacts through coordination with USACE. According to the Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS) there are several mitigation banks that service this area (refer to **Table 2.1** below).

Mitigation Bank	Service Area	Study Area Quadrant	Credit Types Available
Arrowhead Mitigation Bank	Secondary	Northwest	
Mill Creek Wetland Mitigation	Primary & Secondary	Southeast	Stream & Freshwater Wetland
Taylor Creek Stream	Primary & Secondary	Northwest	Stream
Turners Branch	Tertiary	Northwest	Stream

Table 2.1 Available Mitigation Banks

Federally threatened and endangered species (T&E species) listed by the US Fish and Wildlife Service for Richland County are included below in **Table 2.2**. There are no known occurrences for any of the listed T&E species near the proposed study area. Additionally, there are several At Risk Species that may become listed as threatened or endangered at some point in the future.

Once a preferred alternative is chosen, a field visit to review the area for potential habitat or occurrences of T&E species would be completed.

Common Name	Scientific Name	Federal Status
American wood stork	*Mycteria americana*	T
Red-cockaded woodpecker	*Picoides borealis*	E
Atlantic sturgeon	*Acipenser oxyrinchus*	E
Shortnose sturgeon	*Acipenser brevirostrum*	E
Canby's dropwort	*Oxypolis canbyi*	E
Michaux's sumac	*Rhus michauxii*	E
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	E
Smooth coneflower	*Echinacea laevigata*	E
Bald Eagle	*Haliaeetus leucocephalus*	BGEPA
T = Threatened; E = Federally Endangered; BGEPA = Federally protected under the Bald and Golden Eagle Protection Act		

Table 2.2 Federally Protected Species in Richland County

2.2 Hazmat

During a desktop evaluation, several hazmat sites were identified within the project area, mostly concentrated in the south portion of the study area (refer to **Figure 2.3** below). There are four (4) hazmat sites along Blythewood Road/Langford Road (refer to **Figure 2.4** on the following page), while I-77 and Farrow Road (refer to **Figure 2.5** on the following page) have fifteen (15) hazmat sites. These sites include hazardous waste, air pollution, water discharge and toxic releases. Once a preferred alternative is chosen, a Phase 1 and/or Phase 2 Hazardous Material assessment maybe recommended to further evaluate sites that may be impacted.

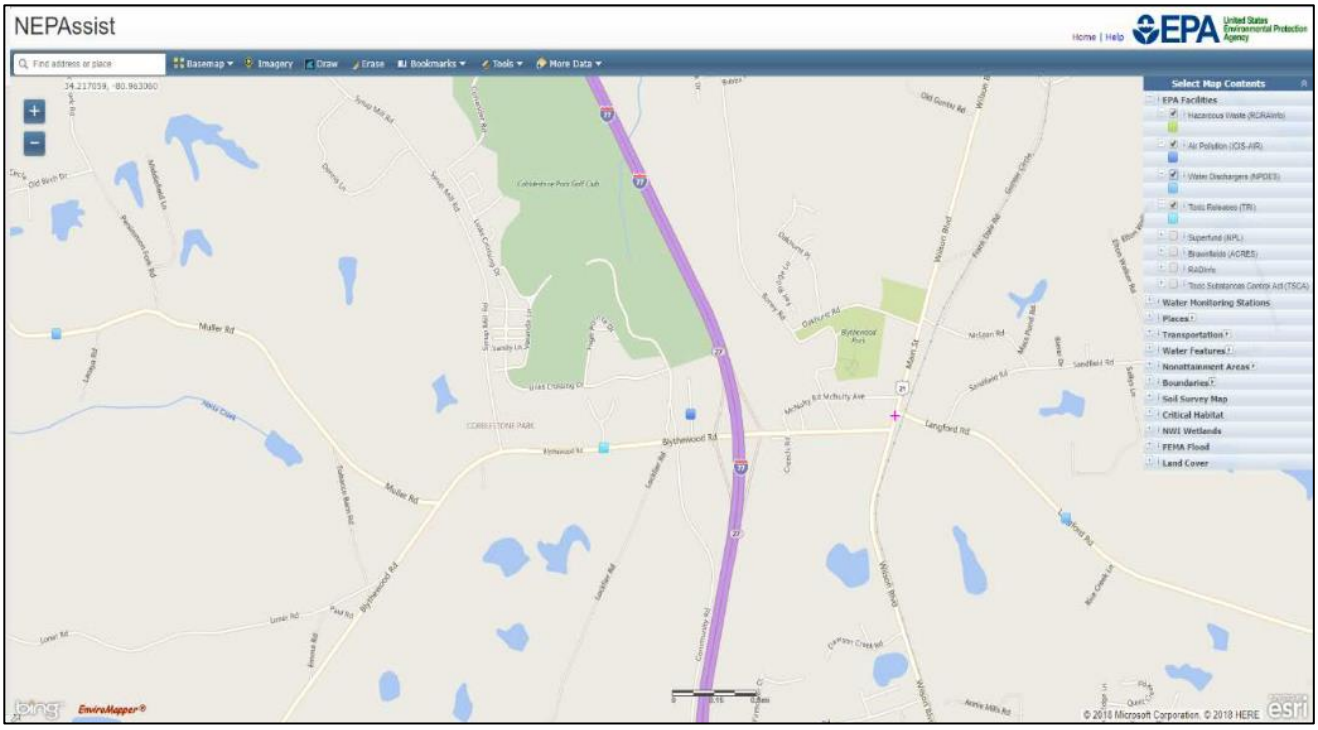


Figure 2.3: Hazmat sites within project study area.

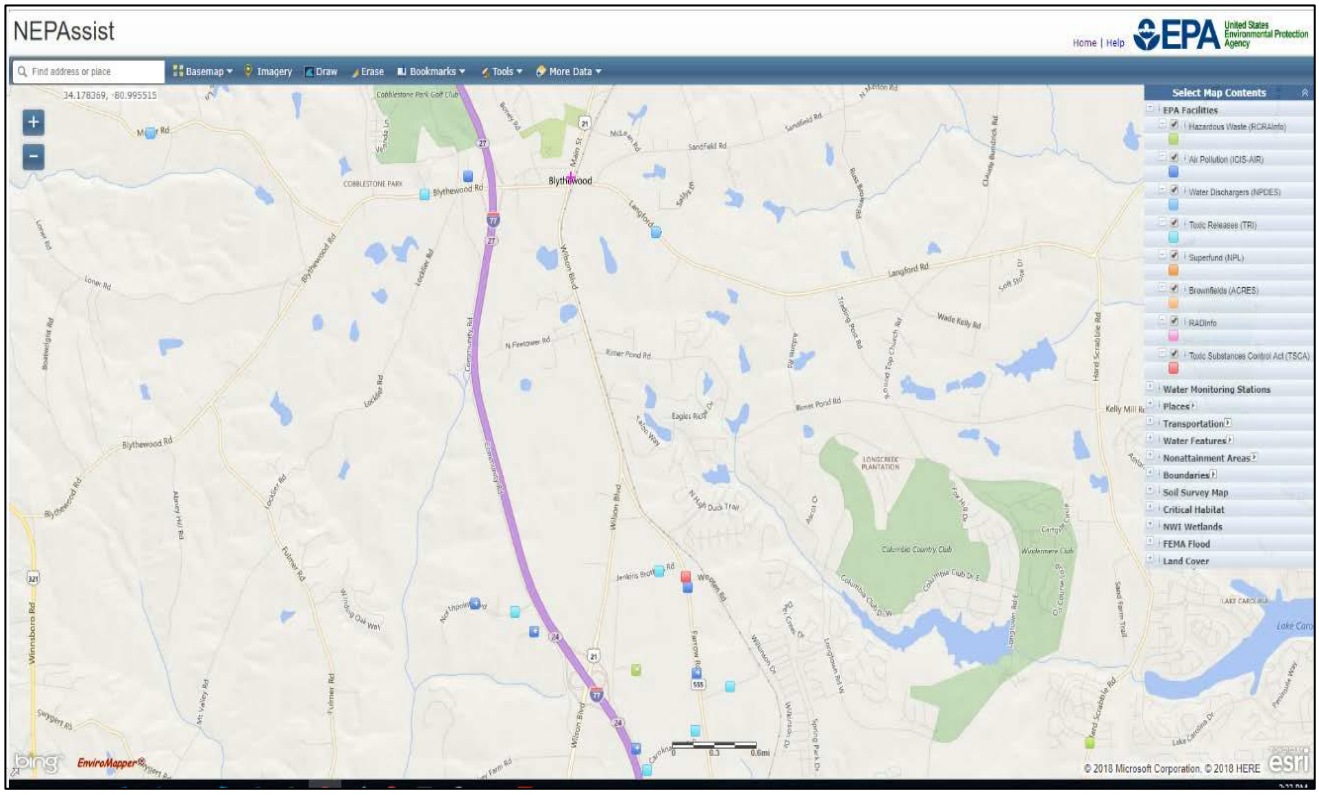


Figure 2.4: Blythewood/ Langford Rd. hazmat sites.

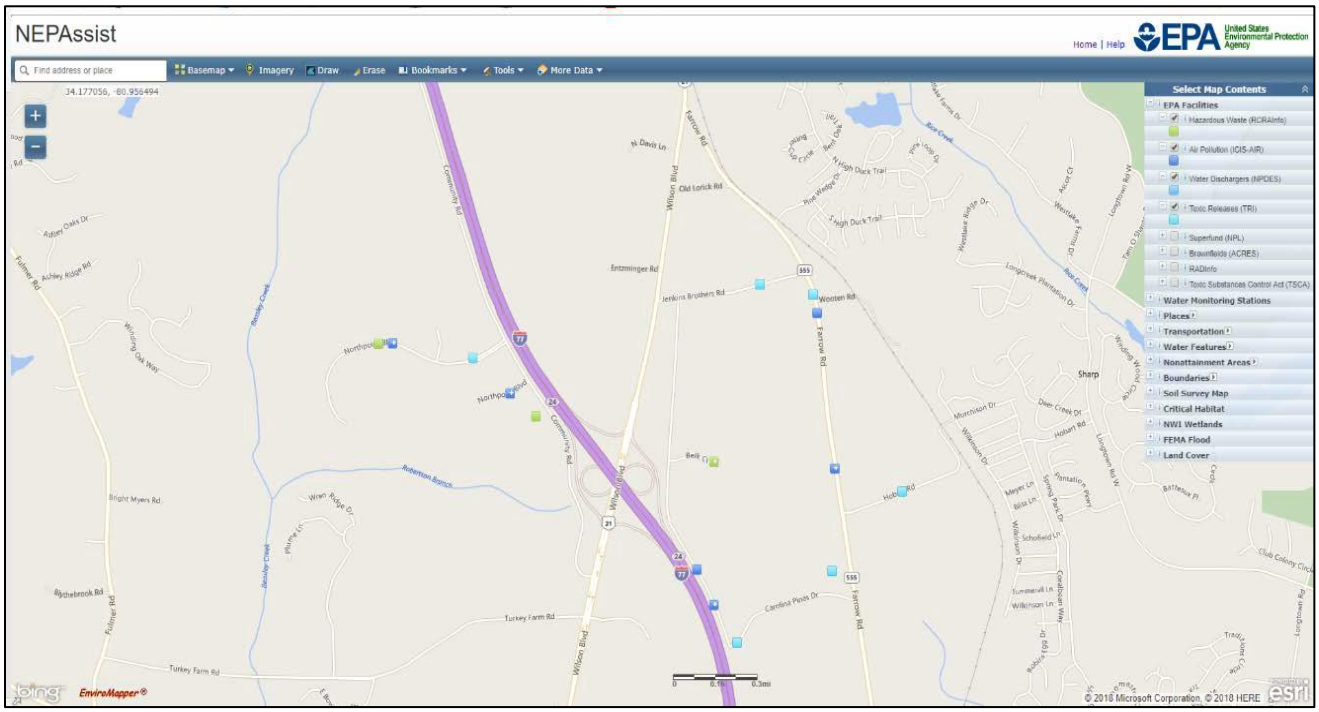


Figure 2.5: I-77/Farrow Rd. hazmat sites.

2.3 Cultural Analysis

New South Associates conducted a Cultural Resources literature review for the proposed traffic improvement plan to the town of Blythewood, South Carolina. There are 111 previously recorded resources found within the study area. Forty-nine of these 111 resources are identified archaeology sites. The remaining 62 resources are historic structures.

Of the identified resources one archaeology site (38RD1293) and three historic structures (Frank Brown House-4833, Abney House-4856, and George Hoffman House-48) are either eligible for or listed in the National Register of Historic Places (NRHP). Direct effects to these resources should be avoided. Also, adverse effects to the view shed of the historic structures should also be avoided. The NRHP eligibility of an additional 26 resources is unknown. These resources should be fully assessed for their NRHP eligibility or should be avoided. Resources that are listed or eligible are summarized in **Table 2.3** on the following page along with resources that's NRHP eligibility is unknown.

Site Number	Resource Type/Name	Component/Period of Significance	Eligibility
38RD0096	Archaeology Site	Unknown	Unknown
38RD0099	Archaeology Site	Unknown	Unknown
38RD0098	Archaeology Site	Unknown	Unknown
38RD0145	Archaeology Site	Unknown	Unknown
38RD0104	Archaeology Site	Prehistoric	Unknown
38RD0132	Archaeology Site	Prehistoric	Unknown
38RD0146	Archaeology Site	Late Archaic	Unknown
38RD0149	Archaeology Site	Early Archaic	Unknown
38RD0150	Archaeology Site	Unknown	Unknown
38RD0279	Archaeology Site	Prehistoric	Unknown
38RD0280	Archaeology Site	Historic	Unknown
38RD0281	Archaeology Site	Historic	Unknown
38RD1082	Archaeology Site	Prehistoric	Unknown
38RD1205	Archaeology Site	Prehistoric	Unknown
38RD1206	Archaeology Site	Historic	Unknown
38RD1207	Archaeology Site	Historic	Unknown
38RD1293	Archaeology Site	Prehistoric	Eligible
38RD1367	Archaeology Site	Prehistoric	Unknown
38RD1368	Archaeology Site	Prehistoric	Unknown
38RD1369	Archaeology Site	Unknown	Unknown
38RD1382	Archaeology Site	Unknown	Unknown
38RD1435	Archaeology Site	Historic	Unknown
38RD1466	Archaeology Site	Prehistoric	Unknown
38RD1467	Archaeology Site	Historic	Unknown
38RD1468	Archaeology Site	Prehistoric	Unknown
38RD1469	Archaeology Site	Prehistoric	Unknown
38RD1470	Archaeology Site	Prehistoric	Unknown
4833	Brown, Frank, house	ca. 1932	Eligible
4856	Abney house	ca. 1850	Eligible
48	Hoffman, George House	ca. 1855	Listed

Table 2.3: Cultural Resource Table

Chapter 3. Land Use Analysis and Permits

To understand the existing land uses within the study area several plans were reviewed for relevant information and these include the Town of Blythewood Master Plan completed in April 2010 and Zoning Map version June 27, 2017. In addition, input from stakeholders during public meetings was incorporated and a visual survey of the area particularly along major roads such as Langford Road, Blythewood Road, and US 21 was conducted to have a better handle on current conditions and potential impact to the transportation system. This chapter presents existing land use conditions and future growth that would add vehicle capacity to the transportation network within the study area.

3.1 Existing Land Uses

The Land Use Map (Figure 3.1 on the next page) and Town of Blythewood Zoning Map (**Figure 3.2** on the page following) within the study area have a range of land uses, from active farms to rural areas in the western and northern part. Residential uses are concentrated in the eastern part of the study area. However, residential uses are also found within the rural areas. Commercial, developing and industrial uses are concentrated along both sides of I-77 in the southern section of the study area for easy access to the interstate.

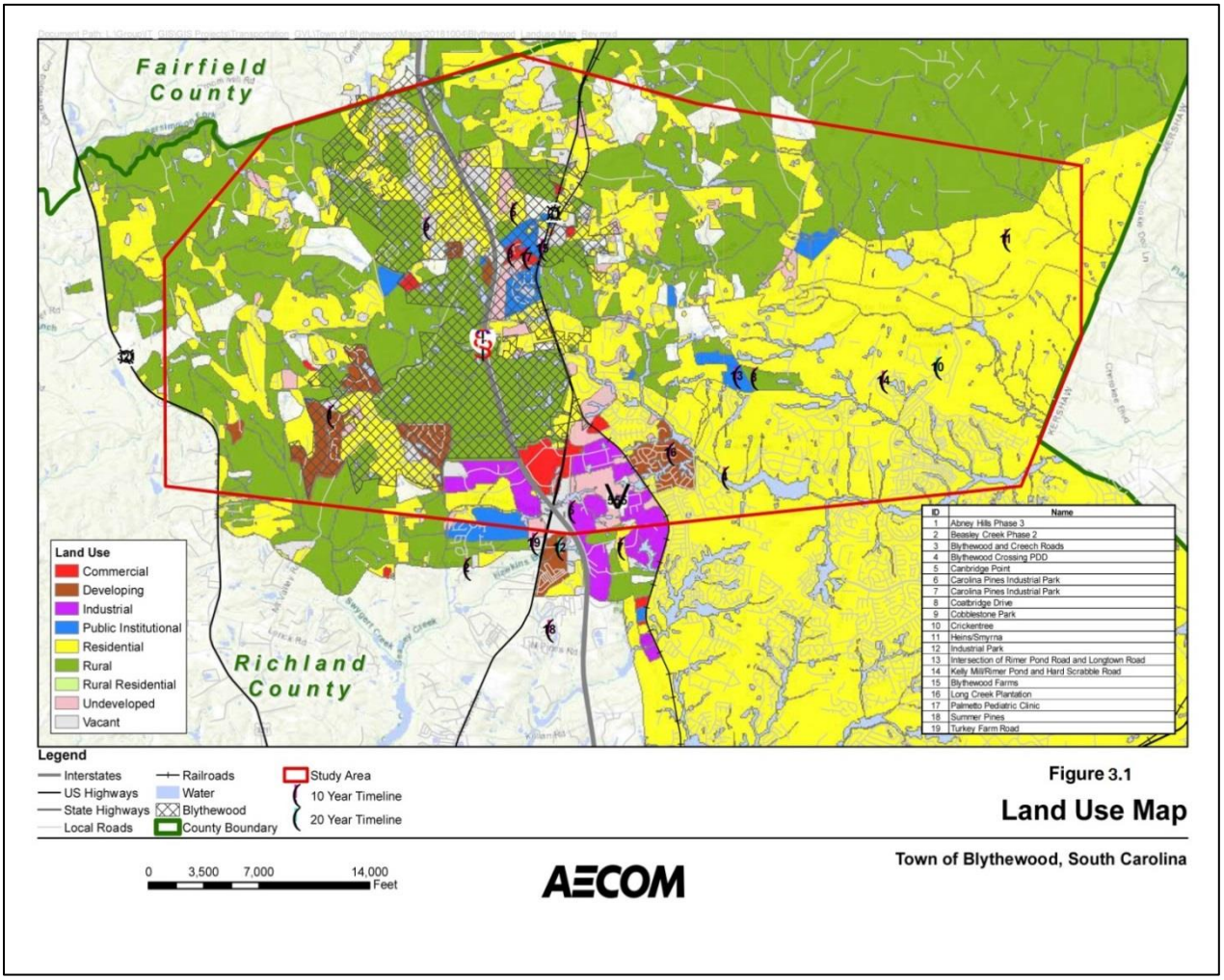


Figure 3.1 Land Use Map

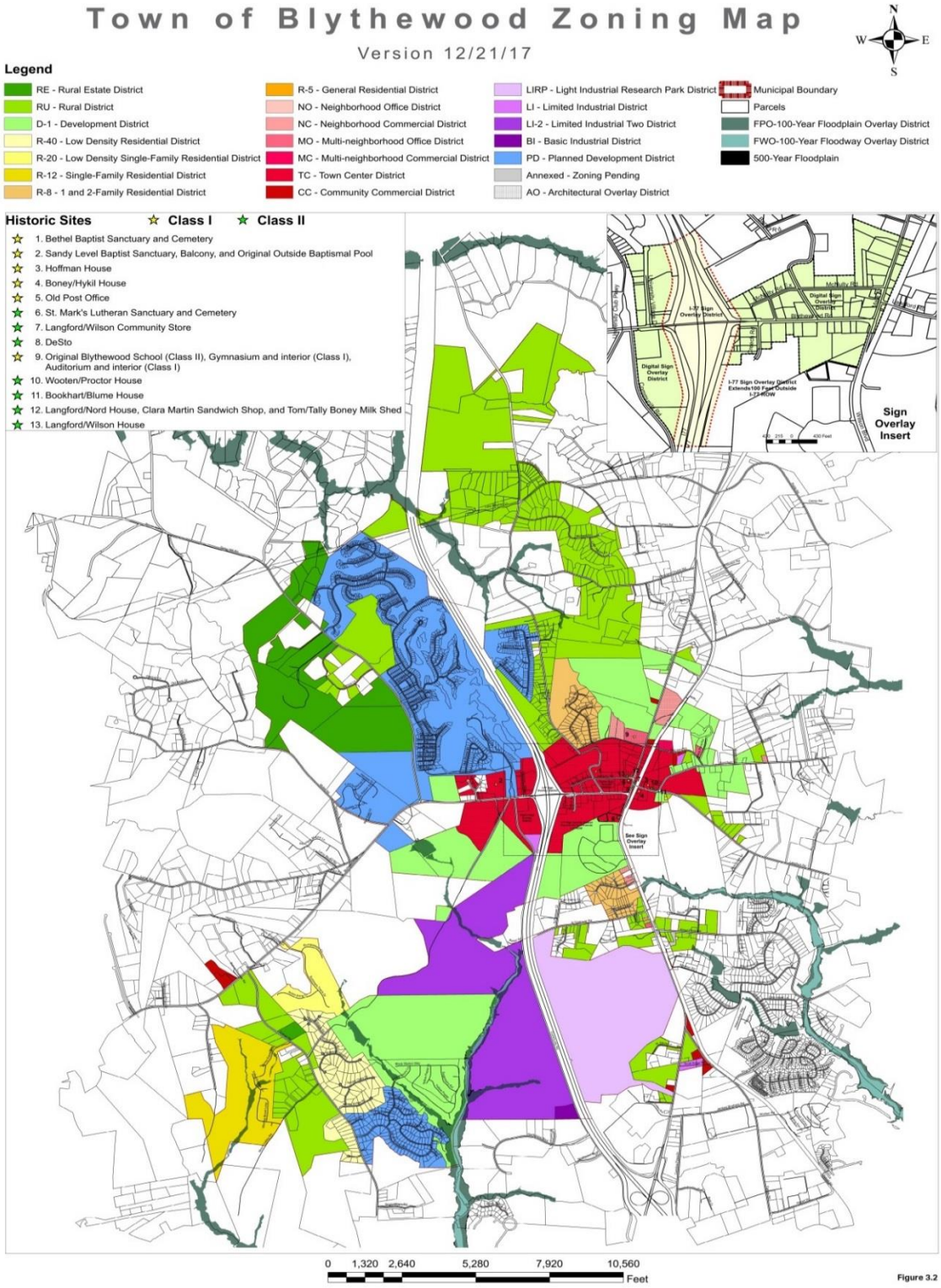


Figure 3.2 Town of Blythewood Zoning Map

3.2 Residential

Residential uses are found along the western and northern section of Blythewood Road. These residential varies to include Planned Development Districts (PD), General Residential District (R-5), Single-Family Residential Districts (R-8 to R-12), Low Density residential (R-20 to R-40) and Rural District (RU) and Rural Estate District (RE).

The Planned Development Districts, General Residential, Single-Family and Low Density Residential Districts were probably constructed in the last fifteen years from the condition of the homes 10 to 15 years. These homes vary in height from single story to about 3 stories and with varying lot sizes. These homes are also built close to the street.

Residential homes in Blythewood.

Planned Development District in Blythewood

Homes located in the Rural District and/or Rural Estate Districts occupy larger lots and are located further back from the street. The age of these homes varies as well and could be custom built.

Homes in Rural District and Rural Estate District

3.3 Commercial/Office

Blythewood's commercial district is found primarily along both sides of Blythewood Road and are either designated as Neighborhood Office District (NO), Neighborhood Commercial District (NC), Multi-neighborhood Office District (MO), Multi-neighborhood Commercial District (MC), Town Center District (TC), or Community Commercial District (CC). Blythewood Road provides direct access to these commercial districts from I-77 and from the surrounding residential areas. Most of the commercial buildings are single story and are relatively new in construction. National, regional and local commercial establishments occupy these buildings which include Food Lion, IGA, Dollar General and many others. McDonald's, Hardees, Bojangles, Wendy's and many others are also located along Blythewood Road or within a block off this road. In addition, gas stations, hotels, banks, and offices make up the commercial character of this district.

Commercial Development in Blythewood

Fast food restaurant along Blythewood Road

3.4 Industrial

Located south of Blythewood Road along both sides of I-77 is the Town's Industrial District. This district consists of Light Industrial Research Park District (LIRP), Limited Industrial District (LI), Limited Industrial Two District (LI-2), and Basic Industrial District (BI).

3.5 Institution

Churches, schools and parks are also found within a block from Blythewood Road. The churches include Trinity United Methodist Church, Bethel Baptist Church and Sandy Level Baptist Church. Bethel-Hanberry Elementary School and Blythewood High School are also within the vicinity of Blythewood Road. Doko Meadows Park, an indoor and outdoor facility, a community attraction that is located along Langford Road.

Hoffman House / Town Hall

3.6 Historic Sites

Several historic sites are also located in the commercial district of the Town. These sites include the Hoffman House, Boney/Hykil House, Bethel Baptist Church, Old Post Office, DeSto, Langford/Wilson Community Store, Wooten/Proctor House and Bookhart/Blume House.

3.7 Future Development

Several residential developments and new commercial construction along Blythewood Road are currently planned or underway. These housing and commercial units will certainly add additional traffic to Blythewood Road and to the surrounding road network which would increase peak traffic volumes to the Town's transportation network.

3.8 Existing Land Use Permits and Conditions

To further understand the potential impact to the existing transportation network, the team collected and reviewed recently issued development permits by the Town. This section describes the permits and the projected development, as well as the environmental and cultural resources that would be affected by the development. Finally, recommendations for outreach are summarized.

3.9 Existing Land Uses Permits

The Town of Blythewood provided the team with four months of permit requests in the town for April through July 2018 totaling nearly 300 permits. The team selected a representative number of permits to review for existing conditions, including authorized existing and future development and traffic conditions, if included. **Table 3.1** below displays a summary of the permits issued.

Month	Number of Permits
April	*93*
May	*74*
June	*56*
July	*66*
Total	***289***
Average per Month	*72*

Table 3.1 Town of Blythewood Permits Issued April – July 2018

Source: Town of Blythewood

The majority of the permits issued were for new construction (92 percent) and only 7 percent were for existing construction or remodeling, as shown below in **Table 3.2**.

Month	New Construction	Existing/Remodel
April	85	7
May	68	5
June	53	3
July	60	6
Total	**266**	**21**
Percent Share	92%	7%

Table 3.2 Town of Blythewood Permits Issued April – July 2018

*Source: Town of Blythewood *note may not match total due to incomplete records*

Further analysis of the permits shows the number of permits issued for the different categories of work: general contracting, mechanical, electrical, plumbing, and roofing. Most permits were issued for mechanical (30 percent) while only one permit was issued for roofing. The other three categories represented 22-24 percent of the total.

In terms of value, over $13 million in permit value was issued for general contracting, representing 91 percent of the value over the four months. The value of issued permits is summarized below in **Table 3.3**. Assuming a similar value over the rest of the months, a total of $45 million in permits could be expected to be issued in the Town of Blythewood annually.1 In addition, the work locations were reviewed and it was found that the 289 permits were for 123 unique addresses. In general, the new construction permits are for residential locations; assuming that each new home has at least two occupants, at least 348 new residents can be expected annually.

Permit Type	Permit Value	Share
General Contractor	$ 13,704,000	91%
Mechanical	$ 633,000	4%
Electrical	$ 236,000	2%
Plumbing	$ 485,000	3%
Roofing	$ 6,000	0%
Total	$ 15,064,000	

Table 3.3 Summary of Permit Value by Type

Source: Town of Blythewood
**note totals are rounded*

A request was made to the Town of Blythewood for more information on the number of permits, inclusive of environmental conditions and traffic estimations. Upon consultation with a contact at the Town, it was determined that this information is not provided to the Town. There has not been construction in environmentally sensitive areas in a number of years; when this does occur, the Army Corps of Engineers issues a permit. In addition, because the majority of the permits were issued for single family homes, traffic estimations are not required unless 75 or more homes are being permitted for construction.

[1] Note that seasonality is not considered in this analysis

Chapter 4. 2040 No-Build

Following the review and analysis of current traffic conditions, future land use, existing roadway network, Chapter 4 is intended to document the 2040 No-Build conditions for the study area which includes the 2040 traffic data and analysis of No-build conditions.

4.1 Intersection Data

The following intersections shown below on **Figure 4.1** and listed below and on the following page are identified as critical for this study. Data was collected for each of these locations and grown to estimated 2040 values.

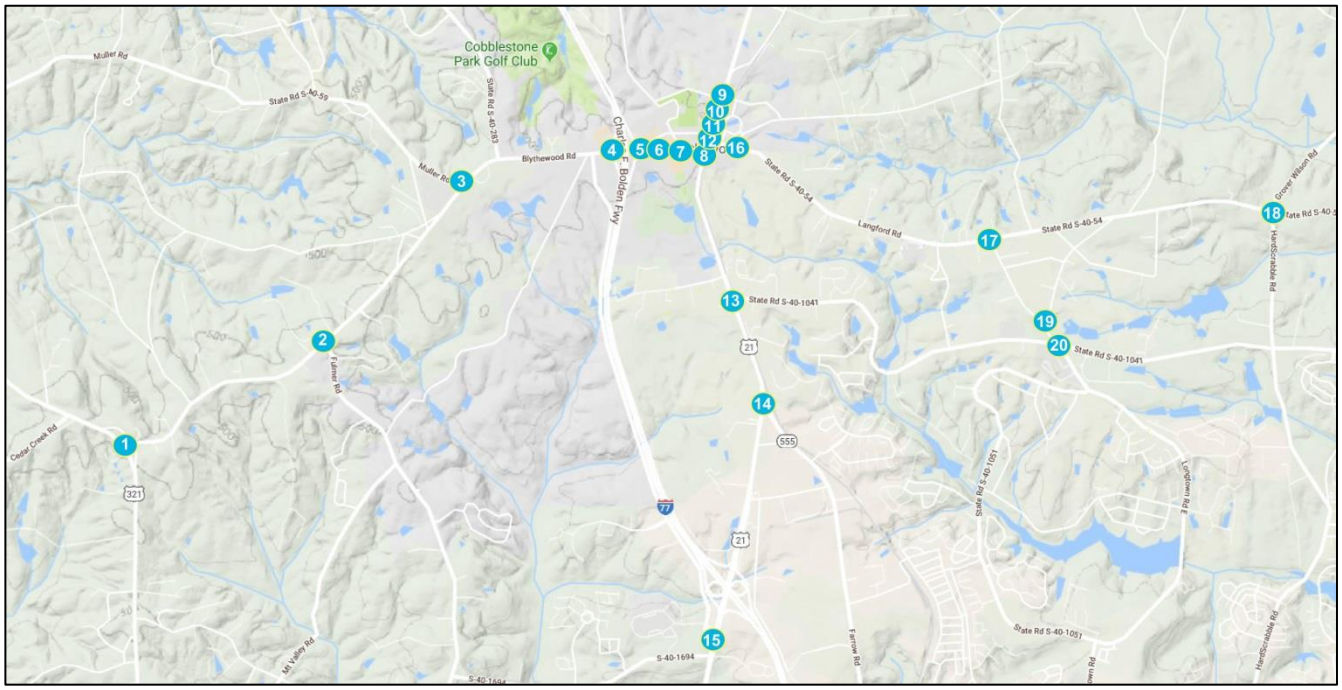


Figure 4.1 Map of Study Intersections

1. Blythewood Road (S-2200) @ US 321 - Unsignalized
2. Blythewood Road (S-2200) @ Fulmer Road (S-1352) - Unsignalized
3. Blythewood Road (S-2200 / 59) @ Muller Road (S-59) - Signalized
4. Blythewood Road (S-59) @ I 77 SB ramps – Signalized
5. Blythewood Road (S-59) @ I 77 NB ramps – Signalized
6. Blythewood Road (S-59) @ McNulty Street (S-1362) / Creech Road - Unsignalized
7. Blythewood Road (S-59) @ Boney Road (s-1367) - Signalized
8. Blythewood Road (S-59) @ US 21 - Signalized
9. US 21 @ McLean Road (S-1143) - Unsignalized
10. US 21 @ Oakhurst Road (S-1143) - Unsignalized
11. US 21 @ McNulty Road (S-1362) - Unsignalized
12. US 21 @ Langford Road (S-54) - Signalized
13. US 21 @ Rimer Pond Road (S-1041) - Signalized
14. US 21 @ Farrow Road (SC 555) - Unsignalized
15. US 21 @ Community Road (S-2885) - Unsignalized

16. Langford Road (S-54) @ Sandfield Road (S-220) - Unsignalized
17. Langford Road (S-54) @ Trading Post (S-1899) - Unsignalized
18. Langford Road (S-54) @ Hard Scrabble Road (S-83) - Unsignalized
19. Trading Post Road (S-1899) @ Round Top Church Road (S-1051) - Unsignalized
20. Rimer Pond Road (S-1041) @ Longtown Road E. (S-1051) – Signalized

4.2 Background Traffic Growth

To analyze 2040 No-Build traffic conditions, traffic data from 2018 was grown to estimated 2040 values. This was done by utilizing the information provided by the South Carolina Department of Transportation (SCDOT) from the South Carolina Statewide Model. Using the base year of 2018 and the future model year of 2040, the traffic growth on key corridors was estimated using an exponential growth formula. Turning movement counts made at the study intersections were then grown by the estimated percentage for 22 years for the estimated background growth. The estimated yearly growth rate is shown below on **Figure 4.2**.

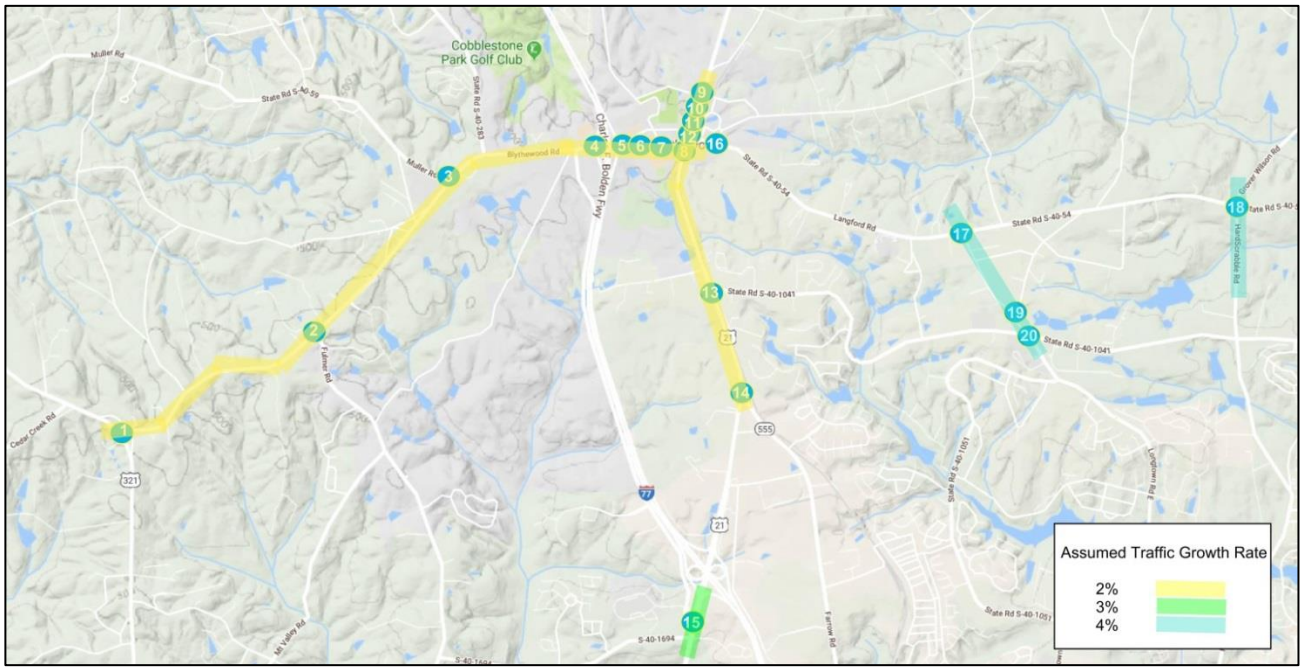


Figure 4.2 Yearly Background Growth Rate

4.3 Planned Developments

Development plans are underway for new developments large and small in the Blythewood area. Nineteen projects are identified for construction to begin within the next five years. Each development is expected to increase traffic volumes and these can be estimated utilizing the Institute of Traffic Engineers (ITE) Trip Generation Manual. The expected trips are summarized in **Table 4.1** below and the general locations of these developments are shown on **Figure 4.3** on the following page.

Blythewood Trip Generation
Table 2 - Trip Generation

ID	Land Use		Intensity		Daily			AM Peak Hour			PM Peak Hour		
					Total	In	Out	Total	In	Out	Total	In	Out
1	210	Abney Hills Phase 3	33	lots	375	187	186	28	7	21	35	22	13
2	210	Beasley Creek Phase 2	Unknown										
3	310	Blythewood & Creech Roads (Commercial)	80	rooms	476	238	238	35	20	14	34	17	17
4	210	Blythewood Crossing PDD	286	units	2,734	1,367	1,366	208	52	156	279	176	279
5	210	Canbridge Pointe	68	lots	729	365	364	53	13	40	70	44	26
6	130	Carolina Pines Industrial Park	101	ac	5,350	2,675	2,675	614	510	104	592	124	467
7	130	Carolina Pines Industrial Park (auto repair/car lot)	1.9	ac	611	306	306	28	23	5	34	7	27
8	210	Coatbridge Drive	100	lots	1,040	520	519	76	19	57	102	64	102
9	210	Cobblestone Park and the Village at Blythewood	Unknown										
10	210	Crickentree	450	lots	4,149	2,074	2,073	324	81	243	430	271	159
11	210	Heins / Smyrna (Residential)	200	ac	1,967	984	983	147	37	110	198	125	198
12	130	Industrial Park	636	ac	30,934	15,467	15,467	2,579	2,140	438	2,226	467	1,758
13	820	Inter. of Rimer Pond Rd & Longtown Rd (Commer.)	43.56	1000 SF	3,417	1,708	1,707	174	108	66	294	141	153
14	210	Kelly Mill/Rimer Pond & Hard Scrabble Rd (Res.)	88	lots	924	462	461	67	17	50	90	57	33
15	210	Blythewood Farms (Residential)	599	units	5,397	2,699	2,698	430	108	323	566	357	566
16	210	Long Creek Plantation	Unknown										
17	630	Palmetto Pediatric Clinic	0.75	ac	382	191	191	37	29	8	33	10	23
18	210	Summer Pines	110	lots	1,135	568	567	83	21	62	111	70	41
19	210	Turkey Farm Road	918	units	7,994	3,997	3,996	657	164	492	853	538	316
	Subtotal				56,298	28,149	28,142	4,497	2,704	1,793	4,801	2,035	3,248

Table 4.1 Future Developments Trip Generation

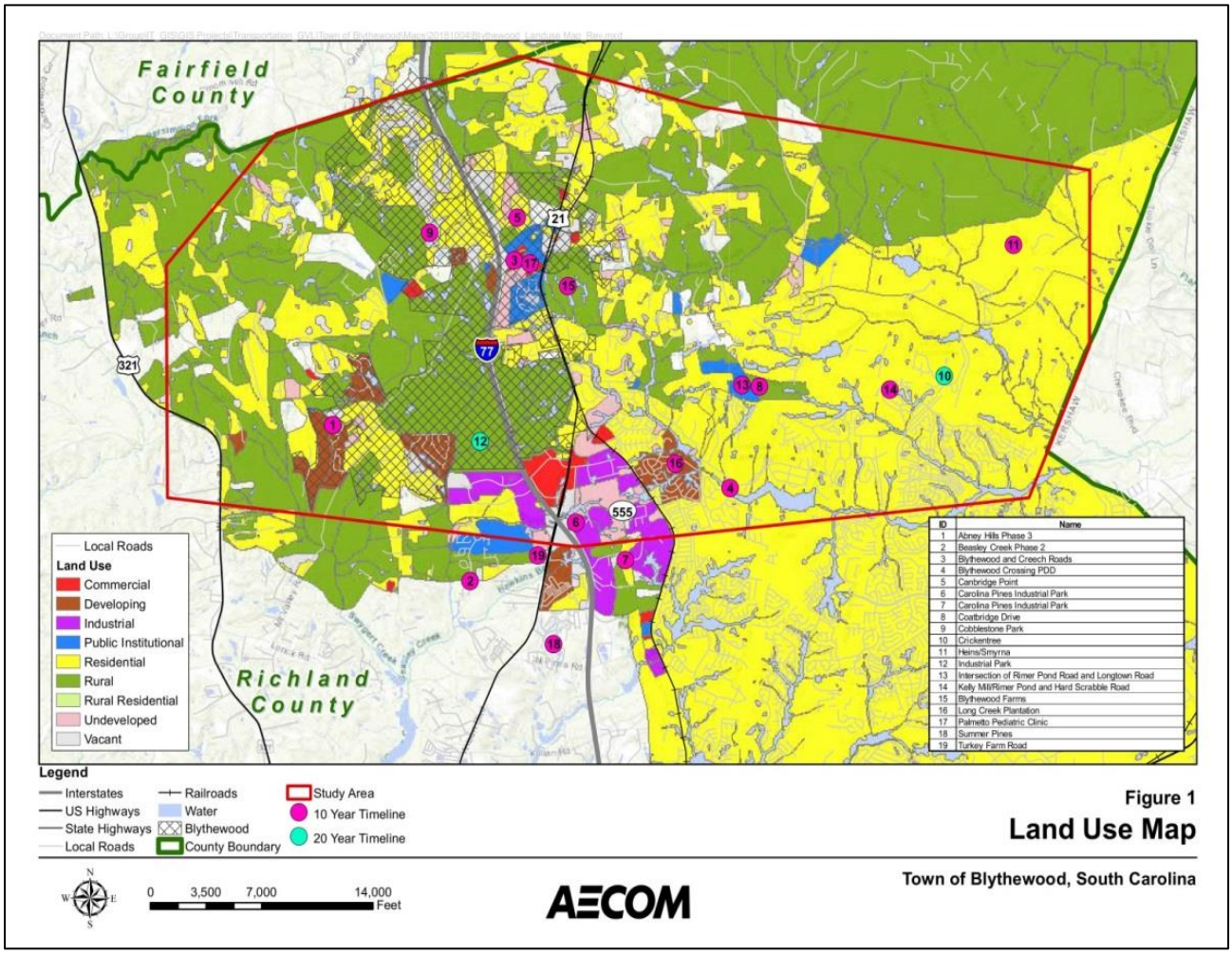


Figure 4.3 Approximate Development Locations on Land Use Map

Several large developments are planned near to some of the study intersections. These include development 15, Blythewood Farms, near intersections 8, 12, and 16; development 12, an Industrial Park, and development 19, Turkey Farm Road, near intersection 15; development 8, Coatbridge Drive, and development 13, a commercial development at Rimer Pond and Longtown Road, near intersection 20. At these spot locations, future background traffic volumes were increased by the estimated impact of these specific developments. The resulting volumes are shown below in **Figures 4.4** – **4.6** and are also provided in **Appendix A**.

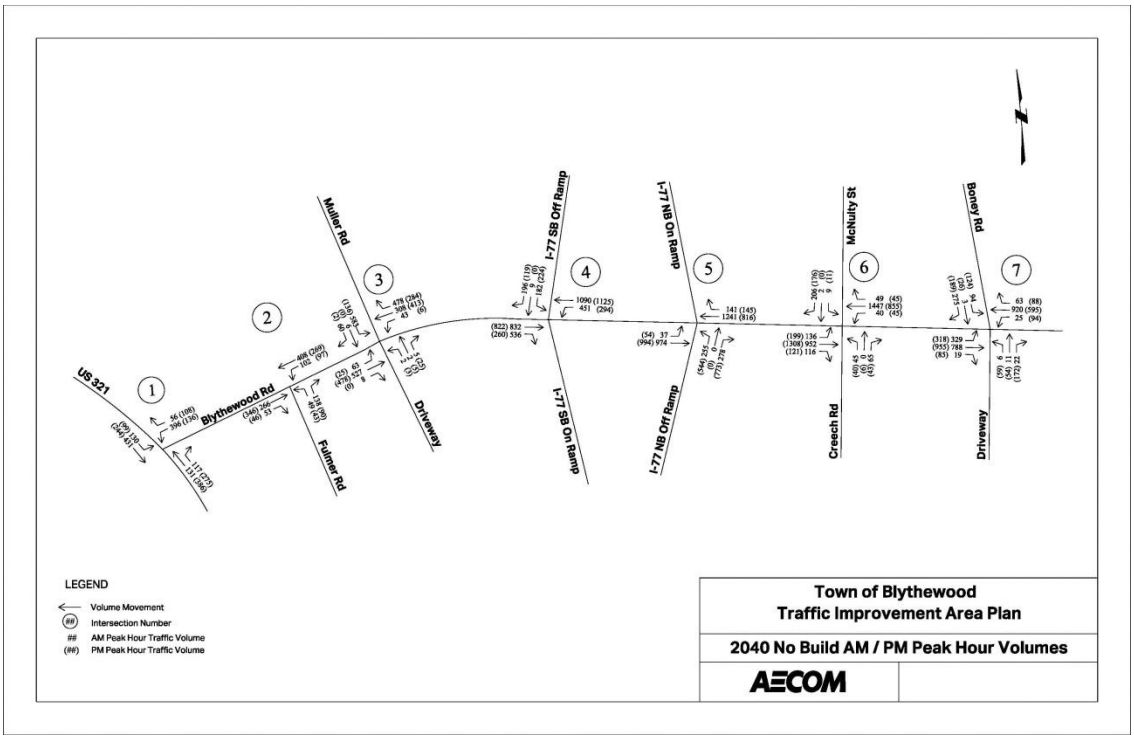


Figure 4.4 2040 No-Build Peak Hour Volumes

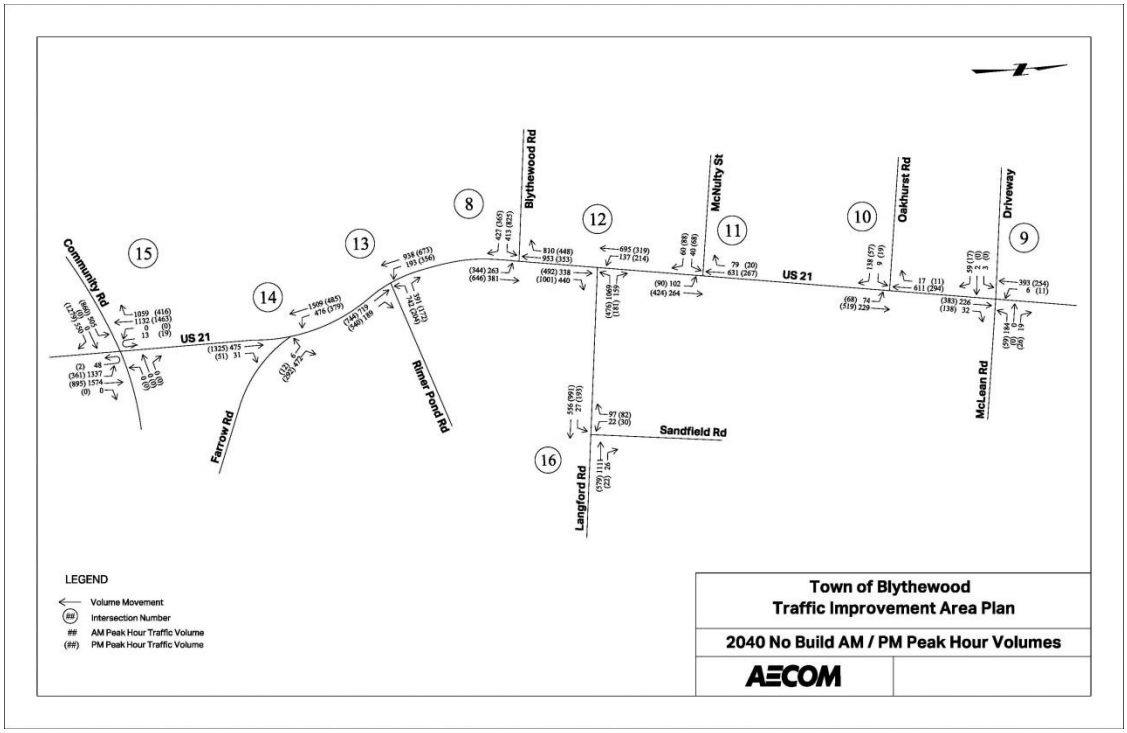


Figure 4.5 2040 No-Build Peak Hour Volumes

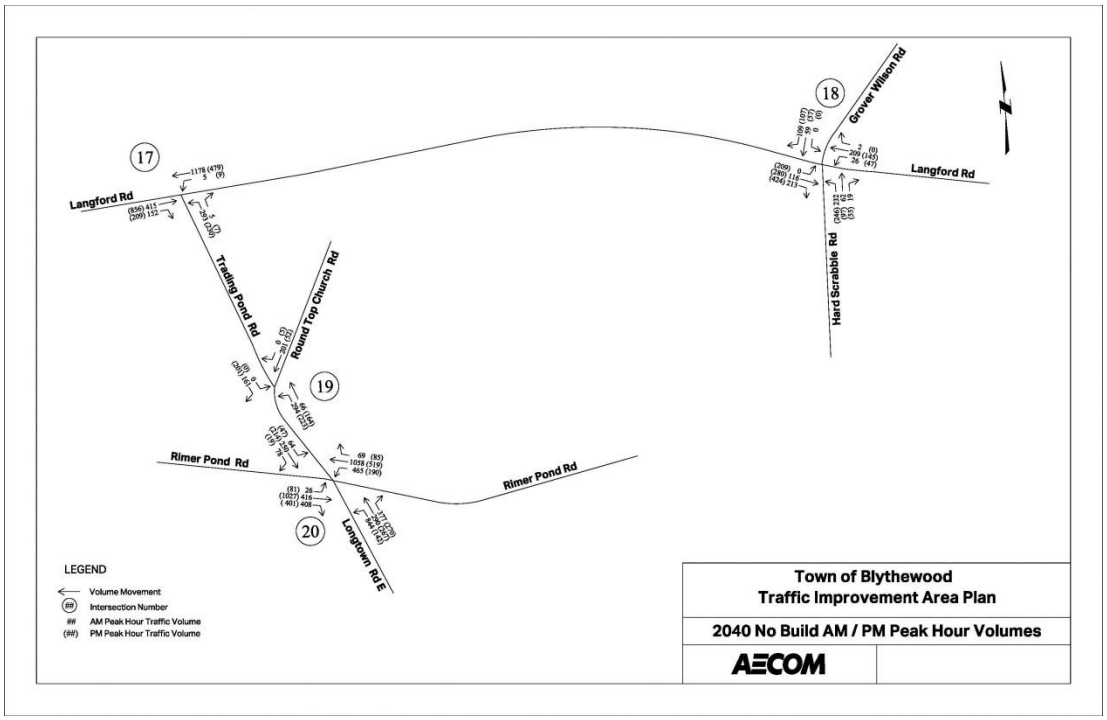


Figure 4.6 2040 No-Build Peak Hour Volumes

4.4 Traffic Capacity Analysis

The traffic carrying ability of an uninterrupted flow roadway is described by levels-of-service (LOS) that range from LOS A to LOS F. LOS A represents unrestricted maneuverability and operating speeds. LOS B represents reduced maneuverability and operating speeds. LOS C represents restricted maneuverability and operating speeds closer to the speed limit. LOS D represents severely restricted maneuverability and unstable, low operating speeds. LOS E represents operating conditions at or near the capacity level. LOS F represents breakdown conditions characterized by stop and go travel.

The Highway Capacity Manual (HCM) 2010 also defines LOS at an unsignalized intersection by average control delay per vehicle, which includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Several factors affect the controlled delay for unsignalized intersections, such as availability and distribution of gaps in the conflicting traffic stream, critical gaps, and follow-up time for a vehicle in the queue. The Highway Capacity Manual explains that drivers perceive that a signalized intersection is designed to carry higher traffic volumes and therefore expect to experience greater delays at signalized intersections. Unsignalized intersections are assigned a LOS for each minor movement. Typically, LOS D is considered the minimum acceptable level of service at an intersection. However, for low volume minor approaches a LOS of F can be considered acceptable at a stop controlled intersection.

LOS for a signalized intersection is defined in terms of average control delay per vehicle, which is composed of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. A single LOS describes a signalized intersection. **Table 4.2** on the following page presents LOS thresholds for unsignalized and signalized intersections.

Table 4.2 LOS Thresholds for Unsignalized Intersections

LOS	Unsignalized Average Control Delay (sec/veh)	Signalized Average Control Delay (sec/veh)
A	≤ 10.0	≤ 10.0
B	> 10.0 and ≤ 15.0	> 10.0 and ≤ 20.0
C	> 15.0 and ≤ 25.0	> 20.0 and ≤ 35.0
D	> 25.0 and ≤ 35.0	> 35.0 and ≤ 55.0
E	> 35.0 and ≤ 50.0	> 55.0 and ≤ 80.0
F	> 50.0	> 80.0

4.5 2040 No-Build Intersection Level-of-Service

Traffic volumes from the peak hour turning movement counts collected and shown on **Figures 4.7** – **4.9** were utilized to calculate the intersection LOS, control delay, volume to capacity (v/c) ratio, and 95th percentile queue using Synchro and SimTraffic software. When the v/c ratio exceeds one, it is an indication that volume of traffic has exceeded the roadway capacity. The results for the 2040 No-Build Scenario are summarized in **Table 4.3** for the AM peak hour and **Table 4.4** for the PM peak hour with the worst intersections shown in red.

Table 4.3 2040 No-Build AM Intersection Level-of-Service

ID #	Intersection	Control	LOS	Delay	v/c	95th %tile Queue (ft)	Comments
1	Blythewood Rd @ US 321	Stop	F	300+	1.95	1512	v/c & WB Left / Right
2	Blythewood Rd @ Fulmer Rd	Stop	C	18.8	0.45	74	NB Left / Right
3	Blythewood Rd @ Muller Rd	Signal	F	109.2	1.23	1282	v/c & SB & WB Appr.
4	Blythewood Rd @ I-77 SB ramps	Signal	D	48.5	1.11	427	v/c & queue EB Thru
5	Blythewood Rd @ I-77 NB ramps	Signal	C	27.9	1.03	392	v/c & queue WB Thru
6	Blythewood Rd @ McNulty Street/Creech Rd	Stop	F	300+	5.48	398	v/c & queue SB & NB LTR
7	Blythewood Rd @ Boney Rd	Signal	F	106.1	1.43	721	v/c & queue WB & SB
8	Blythewood Rd @ US 21	Signal	F	172.5	1.25	1380	v/c & queue NB Thru
9	US 21 @ McLean Rd	Stop	E	43.3	0.74	633	WB & SB Approach
10	US 21 @ Oakhurst Rd	Stop	C	19.1	0.39	959	EB Approach
11	US 21 @ McNulty Rd	Stop	D	29.6	0.44	1621	EB & SB Approaches
12	US 21 @ Langford Road	Signal	F	228.7	2.20	1101	v/c & queue WB Approach
13	US 21 @ Rimer Pond Road	Signal	F	102.9	1.31	1130	v/c & queue WB Approach
14	US 21 @ Farrow Road	Stop	F	63.4	0.99	4184	SB & WB Approaches
15	US 21 @ Community Road	Stop	F	300+	3.53	882	EB & NB Approach
16	Langford Road @ Sandfield Road	Stop	F	101.7	0.88	1385	WB & SB Approaches

ID #	Intersection	Control	LOS	Delay	v/c	95th %tile Queue (ft)	Comments
17	Langford Road @ Trading Post	Stop	F	300+	4.18	309	v/c & NB Approach
18	Langford Road @ Hard Scrabble Road	Stop	F	87.9	1.01	137	NB LTR
19	Trading Post Road @ Round Top Church Road	Stop	B	10.6	0.22	46	EB & NB Approach
20	Rimer Pond Road @ Longtown Road E	Signal	F	300+	3.95	1155	v/c & queue WB Left & EB

Table 4.4 2040 No-Build PM Intersection Level-of-Service

ID #	Intersection	Control	LOS	Delay	v/c	95th %tile Queue (ft)	Comments
1	Blythewood Rd @ US 321	Stop	F	83.9	0.96	500	WB Approach
2	Blythewood Rd @ Fulmer Rd	Stop	C	17.3	0.34	68	NB Approach
3	Blythewood Rd @ Muller Rd	Signal	B	15.1	0.79	199	v/c & queue WB Approach
4	Blythewood Rd @ I 77 SB ramps	Signal	C	20.2	0.91	657	Queue SB Left / Thru
5	Blythewood Rd @ I 77 NB ramps	Signal	D	41.4	1.06	987	EBT & NB Approach
6	Blythewood Rd @ McNulty Street/Creech Rd	Stop	F	300+	24.7	665	NB & WB Thru / Right
7	Blythewood Rd @ Boney Rd	Signal	D	38.9	1.10	1014	Queue EBTR & WBTR
8	Blythewood Rd @ US 21	Signal	F	84.1	1.07	1808	Queue NB Thru / Right
9	US 21 @ McLean Rd	Stop	C	19.9	0.28	993	WB Approach
10	US 21 @ Oakhurst Rd	Stop	B	14.6	0.18	837	EB Thru
11	US 21 @ McNulty Rd	Stop	C	20.5	0.43	1666	EB Approach
12	US 21 @ Langford Road	Signal	F	300+	4.86	982	v/c & WB Approach
13	US 21 @ Rimer Pond Road	Signal	C	32.1	1.09	3094	WB, NB, SB Approaches
14	US 21 @ Farrow Road	Stop	F	300+	2.25	3548	NB & SB Approaches
15	US 21 @ Community Road	Stop	F	300+	318.5	1386	NB Thru / Right
16	Langford Road @ Sandfield Road	Stop	F	300+	1.86	1111	WB Thru / Right
17	Langford Road @ Trading Post	Stop	F	300+	2.33	1089	NB Arpproach
18	Langford Road @ Hard Scrabble Road	Stop	F	300+	11.34	435	v/c & NB Approach
19	Trading Post Road @ Round Top Church Rd	Stop	A	9.6	0.22	50	EB Approach
20	Rimer Pond Road @ Longtown Road E	Signal	F	170.1	2.64	970	v/c & EB, WB, NB Appr.

4.6 2040 Future Year Traffic Summary

In the year 2040 under No-Build conditions, long delays and queues are expected at many of the study intersections.

- Fourteen (14) intersections operate at LOS E or F in the AM 2040 No-Build Scenario. In comparison, four (4) intersections operated at LOS F in the AM Existing 2018 Scenario.
- Ten (10) intersections operate at LOS E or F in the PM 2040 No-Build Scenario. In comparison, three (3) intersections operated at LOS F in the PM Existing 2018 Scenario.
- The signalized intersections at Blythewood Road and US 21 and at US 21 and Langford Road are operating at LOS F in the AM and PM peak hours. They experience significant delay and queuing and each have a v/c ratio greater than 1.0. The volume of traffic exceeds the capacity of the intersections.
- Stop controlled westbound traffic on Blythewood Road at US 321 experiences long delays during the AM peak hour. The PM peak hour still operates at LOS F but with a shorter delay. This is due to few entry gaps for the left and right turning traffic.
- Traffic signal on Blythewood Road at Muller Road operates at LOS E in the AM peak hour with significant southbound queuing that exceeds 1000 feet.
- The northbound left turning or through traffic on Creech Road operates at an LOS F. The v/c ratio of 5.48 in the AM peak and 24.7 in the PM peak indicate that the approach is greatly over capacity.
- Southbound left turns from US 21 onto Farrow Road create queues on US 21. Queues also form on Farrow Road in the AM and PM peak hours. The overall intersection LOS is F.
- US 21 at Community Road is substantially over capacity in the PM peak hour for Community Road if this should be fully developed as an industrial park.

Chapter 5. Public/Stakeholder Involvement

As soon as the project team was engaged, efforts were made to "brand" the corridor study. Several different versions of a project logo were created and ultimately Central Midlands COG and officials with the Town of Blythewood chose the logo shown to the right as the project logo.

Once the project logo was established, the project team with assistance from Central Midlands COG and the Town of Blythewood prepared a list consisting of two groups to assist in gathering information and feedback. The Stakeholder Advisory Group consisted primarily of representatives from the business community including a cross section from real estate developers to insurance agents. The Technical Advisory Group consisted of technical staff from government agencies including CMCOG, SCDOT, Richland County, COMET, Richland Penny Program and the Town of Blythewood.

Twenty-nine Stakeholder and Technical Advisory Group members attended the first meeting held on August 23, 2018 at DOKO Manor. During the Stakeholder meeting, members of the project team gave an overview of the study area and gathered feedback on vital issues related to the study area. Several real estate developers provided important information on upcoming residential developments and number of dwelling units included. This information was vital in the future year land use forecast and the travel demand modeling efforts. During the Technical Advisory Group members of the project team gave an overview of the corridor study and gathered important feedback from SCDOT, Richland County Penny Program and COMET on current and future projects they are undertaking.

Some of the organizations represented at the stakeholder meetings are shown below in **Table 5.1**.

Town of Blythewood	Central Midlands COG	Richland County
Richland County Penny Program	Richland County School District 2	SCDOT
COMET	Great Southern Homes	Essex Homes
4D Engineering	Kellie Ballentine Allstate	Emily Estep RE/MAX Realty

Table 5.1. Stakeholder and Technical Advisory Group Meeting Attendees

Meeting summaries from the August 23, 2018 Stakeholder and Technical Advisory Group meetings can be found in **Appendix B**.

After learning more about the study area and specific changes that are occurring and likely to occur in the area, the project team was ready to begin analyzing what candidate traffic improvements would mean for the study area. During the late summer and early fall of 2018, project team members developed land use data, acquired environmental data and ran the traffic models with input gained from the Stakeholder and Technical Advisory Groups, and began formulating recommendations.

April 9 Public Meeting

The project team hosted officials with the Town of Blythewood and CMCOG on March 6, 2019 at the AE COM office in Columbia. Those in attendance included Mayor J. Michael Ross, Councilman Malcolm Gordge, Town Administrator Brian Cook, Town Economic Consultant Ed Parler and Reginald Simmons from CMCOG. The purpose of this meeting was to share the study results and seek feedback prior to the taking study recommendations out to a public information meeting.

April 9 Public Meeting

On April 9, 2019 at 2:00 the project team hosted another Stakeholder and Technical Advisory Group Meeting at Doko Manor. Twenty-two Stakeholder and Technical Advisory Group members attended the meeting. The purpose of this meeting was to share the study recommendations and seek feedback from the group members. From 5:30 to 7:30 that afternoon, a public information meeting was also conducted at Doko Manor. In all, twenty-five citizens and members of the community attended the public information meeting and learned more about the traffic improvement study including the recommendations brought forward by the project team. During this meeting members of the project team were stationed at boards around the room and had one on one conversation with property owners, residents, and business owners. In general, the recommendations were received positively by the public with several citizens noting the recommendations made sense and needed to be implemented quickly with the current and forecasted unprecedented growth occurring in Blythewood.

During the Stakeholder and Technical Advisory Group as well as Public Information Meeting, attendees were given the opportunity to provide written comments. The overall consensus was the proposed projects in the study look great and appears to be well considered ideas. Several comments however did address that the projects may need to be expedited.

Some of the issues in the written comments included:

> *"The proposal plan looks great! I only hope it does not take 20 years to complete!"*
>
> *"Intersection Blythewood & Langford is needed now."*
>
> *"Not a fan of "round-abouts" but understand the necessity."*
>
> *"Can we have addition of Creech Rd and the Langford/Blythewood first."*

The attendance list along with all comments received during the Public Information and Technical Advisory and Stakeholder Groups involvement process can be found in **Appendix B**.

Chapter 6. Recommendations

This chapter describes the recommendation for transportation improvement within the study area. The recommendations were made after careful analysis of the traffic information, crash data, land use, permits, environmental and natural resources and other pertinent information available to ensure that the recommendations address existing and future growth to the area. The recommendations are categorized into three phases: short-term; mid-term; and long-term.

6.1 Short-Term Project Recommendations

Short-term recommendations are small projects that may not require additional right-of-way or lengthy and multiple permit approvals. Minimum right-of-way acquisition would be needed and these projects are intended to be constructed within the current right-of-way.

The following six projects are short-term recommendations for the study area with a description of improvements for each project. A location of each project is also identified. Construction cost for these projects varies. The short-term recommendation maps are shown below in **Figures 6.1** and **6.2** on the pages that follow.

1. US 321 and Blythewood Road
   - Install a NB right turn lane on US 321 with 250 feet of storage
   - Install a SB left-turn lane on US 321 with 200 feet of storage
   - Install a WB right-turn lane on Blythewood Road with 150 feet of storage
   - Install a traffic signal when warranted

2. US 21 at Rimer Pond Road
   - Install a NB right-turn lane along US 21 with a 100 feet storage.
   - Install a WB left-turn lane with 230 feet storage
   - Install a SB left-turn lane with 225 feet storage

3. US 21 at Farrow Road
   - Install a WB left-turn lane along Farrow Road with 150 feet of storage
   - Install a SB left-turn lane along US 21 with 300 feet of storage
   - Install NB channelized right-turn lane and a signal

4. Langford Road at Trading Post Road
   - Install an EB right-turn lane along Langford Road with 200 feet of storage
   - Install a WB left-turn lane along Langford Road with 150 feet of storage
   - Install a NB right-turn lane along Trading Post Road with 100 feet of storage
   - Install a traffic signal when warranted

5. Rimer Pond Road at Longtown Road
   - Install a NB right-turn lane along Longtown Road with 300 feet of storage
   - Install an EB right-turn lane along Rimer Pond Road with 325 feet of storage

6. US 21 at Community Road
   - Install a RCUT (right-out only from Community Road as lefts will have to go down to Turkey Farm Road signal and make a U-turn)
   - Allow lefts into Community Road from US 21

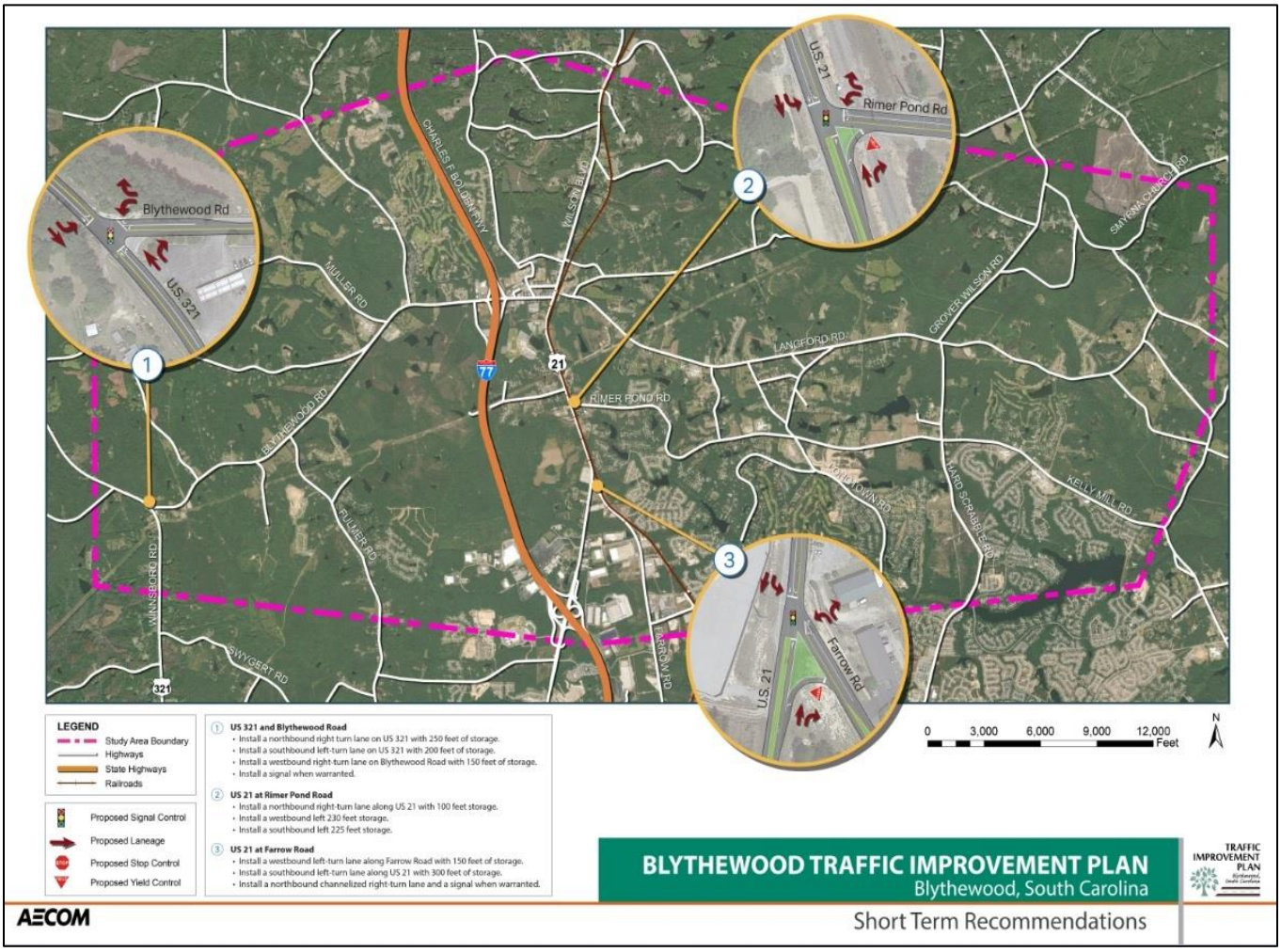


Figure 6.1 Short-Term Recommendations Map

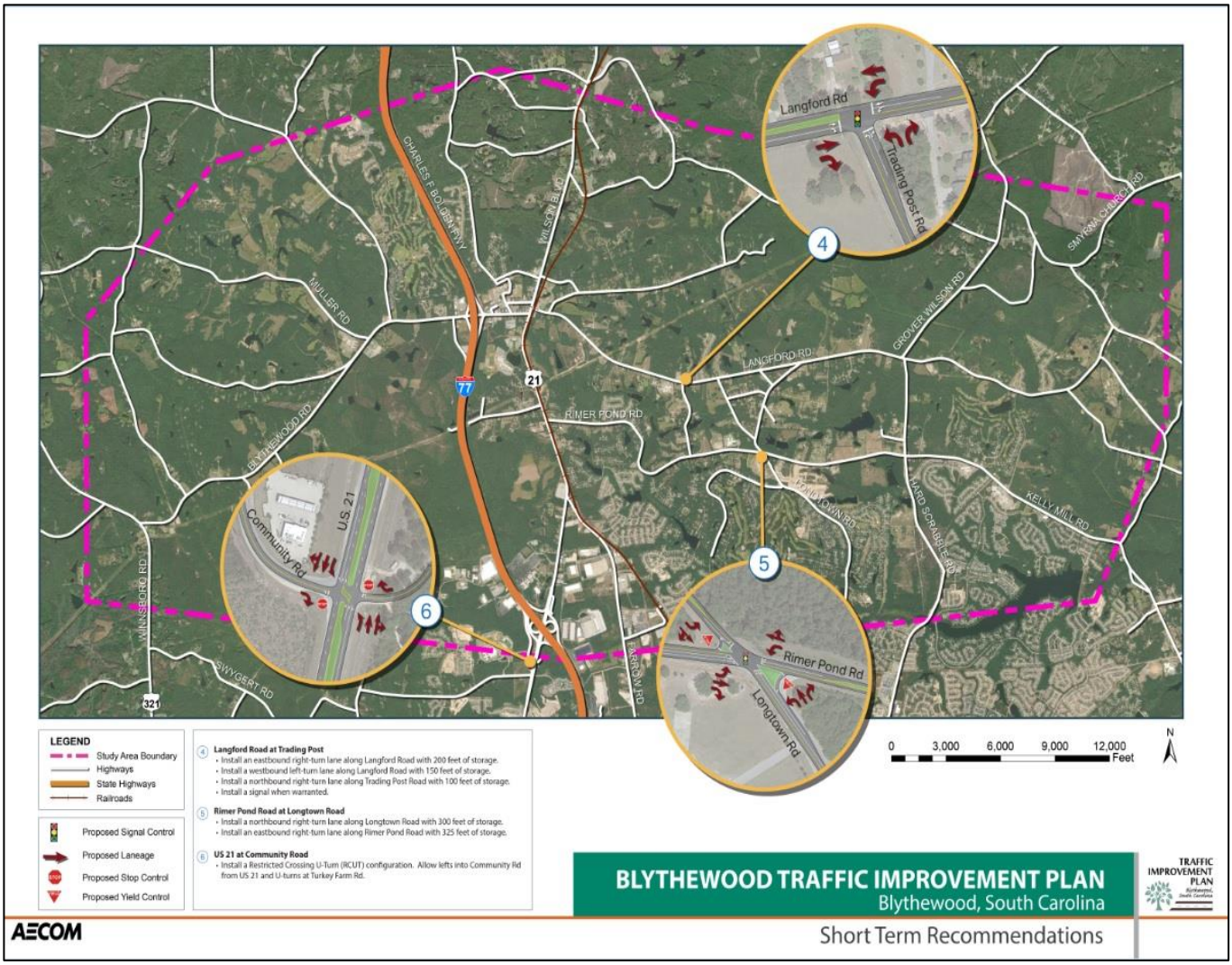


Figure 6.2 Short-Term Recommendations Map

6.2 Mid-Term Project Recommendations

These are medium size projects that may require additional right-of-way and permits to be secured prior to construction. There are four projects identified in this category and a description of improvements for each project. The mid-term recommendation map is shown below in **Figure 6.3** on the following page.

7. Blythewood Road and Muller Road
   - Extend 5 lane section on Blythewood Road from Syrup Mill Road to Muller Road
   - Install an additional southbound left-turn lane on Muller Road to provide dual left-turns with 250 feet of storage. (pending Blythewood Rd widening extension to accept dual lefts)

8. US 21 at Farrow Road
   - Realign Farrow Road perpendicular with US 21
   - WB left turn 150 feet storage
   - SB left turn 500 feet storage

9. Langford Road and Hardscrabble Road
   - Install a roundabout with an eastbound right-turn slip lane from Langford Road to Hardscrabble Road.

10. Blythewood Road at I-77 NB Ramps
    - Remove northbound channelized right-turn under yield control and replace with dual right-turn under signal control with 350 feet of storage.

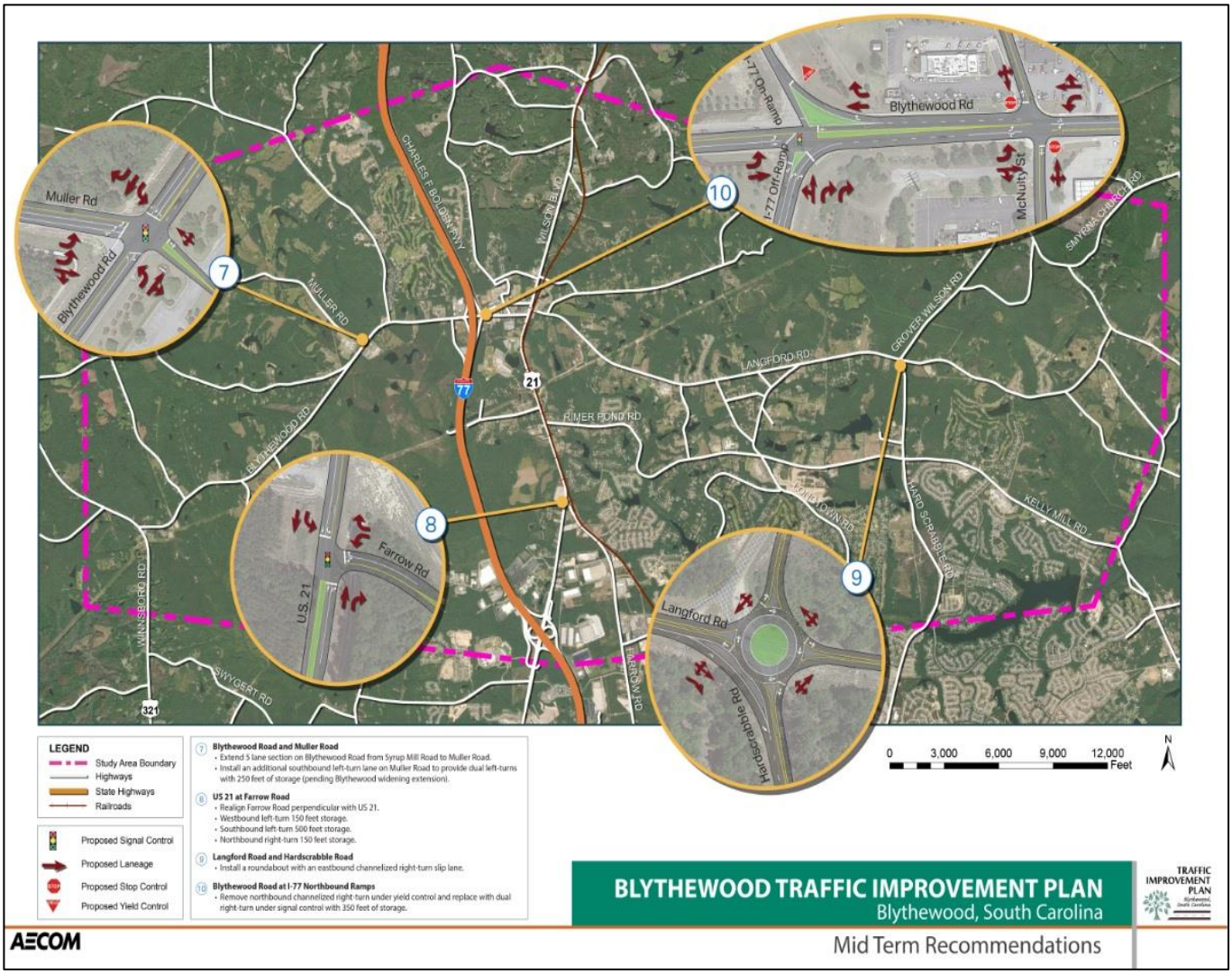


Figure 6.3 Mid-Term Recommendations Map

6.3 Long-Term Project Recommendations

These projects require extensive engineering study as well as permit approvals. Significant right-of-way acquisition, funding arrangement and negotiations among several agencies are also necessary to ensure these projects are implementable. As a result, projects of this nature can take anyway from ten to twenty years before fully operational. The following projects are recommended for this category with the Blythewood Road to US 21 being the most significant improvement of all the projects. Due to magnitude of this project a separate description is provided. A long-term recommendation map is shown in **Figure 6.4** on the following page.

11. US 21 at Rimer Pond Road
    - Install an additional westbound left-turn along Rimer Pond Road with 200 feet of storage to provide dual left-turn lane (pending widening of US 21)

12. US 21 at Farrow Road
    - Realign Farrow Road perpendicular with US 21

13. Rimer Pond Road at Longtown Road
    - Install an additional northbound left-turn lane along Longtown Road with 500 feet of storage to provide dual left-turns (pending widening of Rimer Pond Road)
    - Install additional westbound left-turn along Rimer Pond Road with 250 feet of storage to provide dual left-turns. This would require widening Longtown Road to the south to receive the dual left-turn lanes ending at the Blythewood School driveway

14. Blythewood Road to US 21. (see expanded description and concept (Section 6.4))
    - Install Creech Road Connector (two lane road) from Blythewood Road to US 21

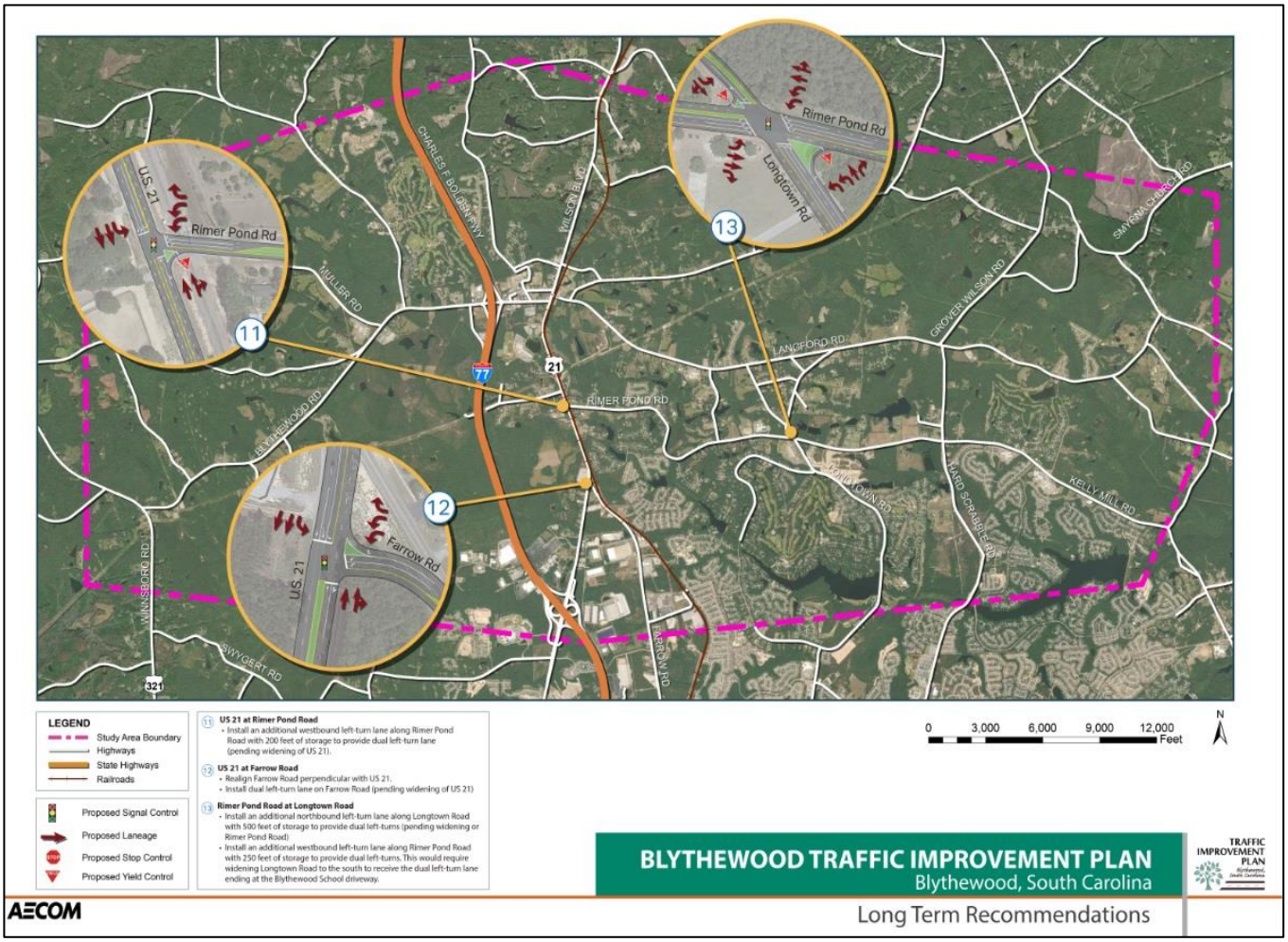


Figure 6.4 Long-Term Recommendations Map

6.4 Blythewood Road to US 21 to Langford Road

More Detailed Description of Recommendation #14

The improvement of this project will begin at the On- and Off- ramps on the eastside of I-77 and Blythewood Road to just east of Sandfield Road along Langford Road. The length is less than a mile. The right-of-way for this section of project is yet to be determined, however, acquisition of adjacent properties is necessary to accommodate the potential improvements to this section of Blythewood Road. A roundabout is planned at the intersection of McNulty Street, Creech Road and Blythewood Road. Roadway treatment is also planned at the next signalized intersection of Boney Road and Blythewood Road with a dedicated left turn lane and two travel lanes for both eastbound and westbound traffic.

Significant changes are planned at the Blythewood Road and US 21 intersection. Langford Road would be redesigned from Sandfield Road to join Blythewood Road at the intersection of US 21/Main Street. Samuel Bookhart Lane would be redesigned as well to be extended to a new intersection at the proposed Langford Lane. Private properties that had their access from the old Langford Road would now have new access from the proposed Samuel Bookhart Lane. The old Langford Road intersection at US 21 would be closed. The elevation at the new intersection of Blythewood Road, Langford Road and US 21/Main Street would be lowered to be at the same elevation as the existing railroad track located along US 21/Main Street. Safety railroad crossing arms would be located at Langford Road before the Blythewood Road US 21/Main Street intersection. Langford Road at the intersection would have five lanes with two lanes going southbound on US 21/Main Street, two lanes to Blythewood Road and one lane going eastbound on Langford Road. The outer lane of the westbound lanes would have right turn lane going northbound on US 21/Main Street. The eastbound lane would be separated by a narrow median from the westbound lanes.

At the signalized Blythewood Road and Langford Road intersection, US 21/Main Street would have four lanes on the north side and five lanes on the south side of this road. On the north side, the travel lanes consist of a northbound lane, a left turn lane going eastbound on Langford lane, and two southbound lanes with the outer lane accommodating a right turn lane as well. A detailed map of the Blythewood Road to US 21 Improvement Project recommendations is shown in **Figure 6.5** on the following page.

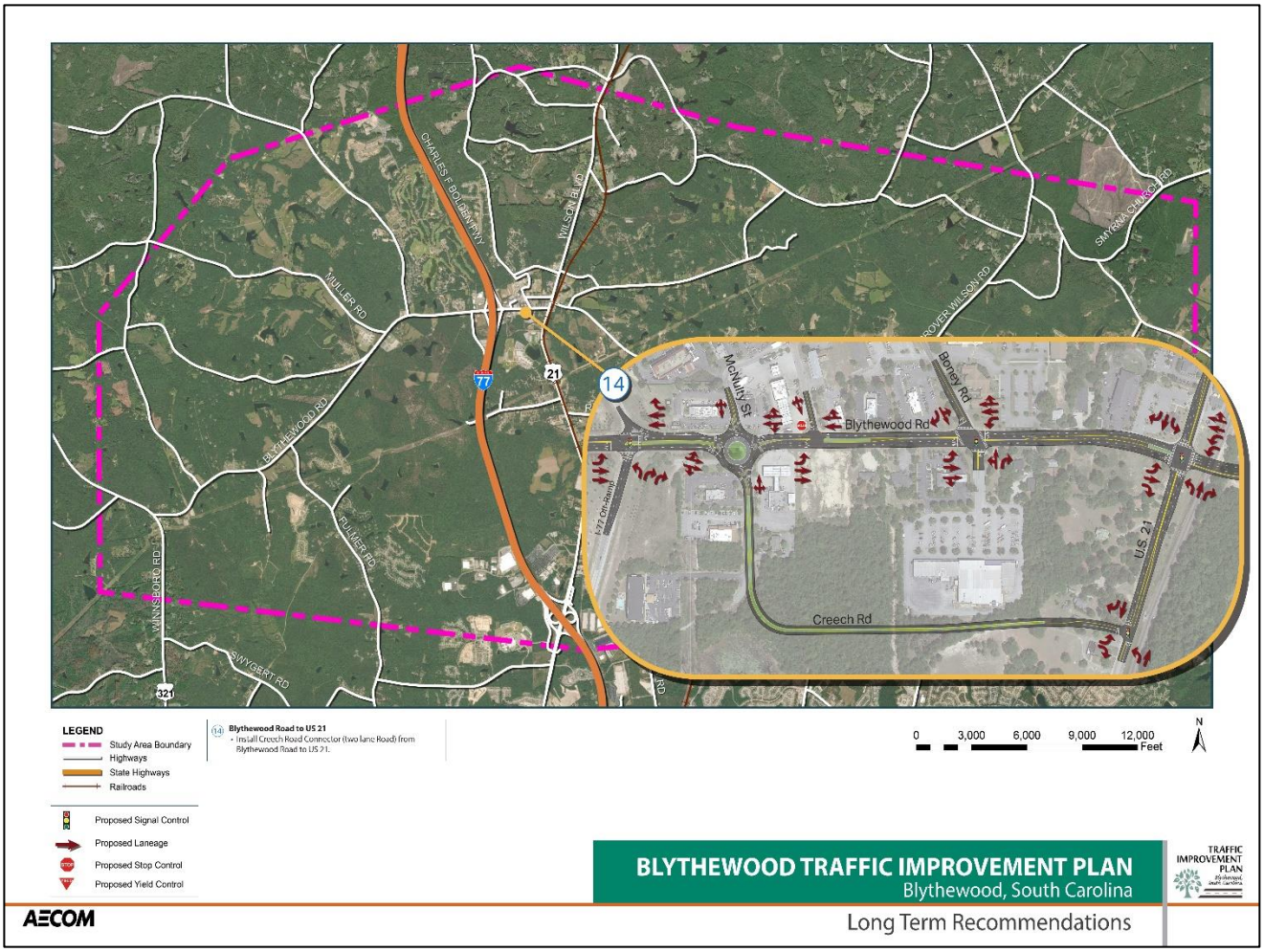


Figure 6.5 Blythewood Road to US 21 Improvement Project Recommendation Map

6.5 Typical Roadway Section

The proposed roadway section of Blythewood Road includes a sidewalk, two westbound travel lane, a center median, two eastbound travel lane and then a sidewalk. The sidewalk, a minimum of 5 feet wide, is from the back of curb and the travel lane width is at least 11 feet wide. The center median width varies but would be wide enough to accommodate plantings in certain sections. In areas where the median plantings are not possible, these areas could be either raised concrete or painted. A typical section is illustrated below in **Figure 6.6**.

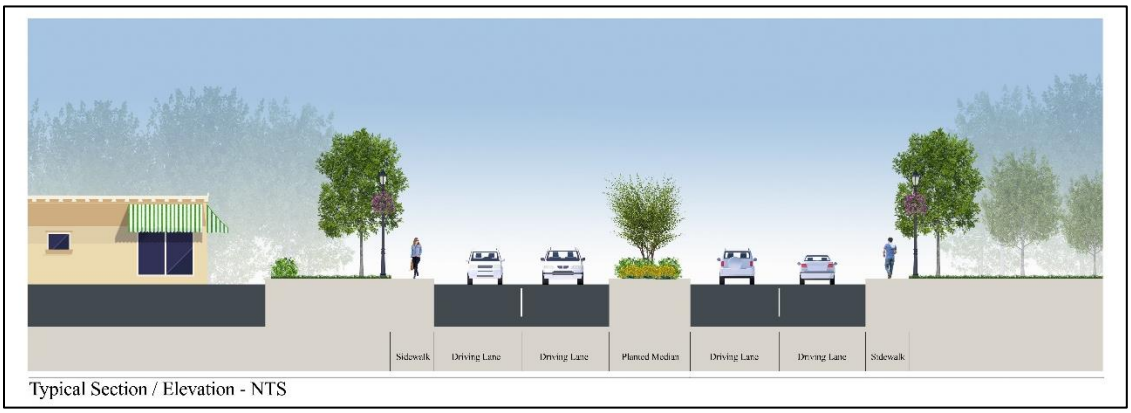


Figure 6.6 Typical Section

6.6 Landscape Recommendations

This section of Blythewood Road is envisioned to be a walkable street with right-in right-out access to commercial establishment located directly along Blythewood Road. Landscape treatment would include median plantings which consist of large trees and low shrubs with perennials, and large maturing street trees along the sidewalks on both sides of the road. Pedestrian-level lighting with banners and flower baskets are could also be planned for the project. At the signalized intersection of Blythewood Road, US 21/Main Street and Langford Road in addition to the plantings, other improvement would include a low retaining wall adjacent to the sidewalks since this area has been lowered to accommodate the new intersection and the railroad track.

The images (**Figures 6.7 – 6.10**) on the pages that follow depict the potential improvements associated with recommendation #14.

Figure 6.7 Area Improvement Plan

Figure 6.8 Looking East along Blythewood Road to proposed roundabout

Figure 6.9 Aerial views of the proposed roundabout at McNulty/Creech

Figure 6.10 Looking West at the proposed intersection of US 21/Main St. and Blythewood Road.

6.7 Richland Penny Projects

In addition to this project, there were several transportation projects adjacent to Blythewood Road that were done by other consultants. The McNulty Road extension and the Creech extension are both Richland Penny Projects. There is also a proposed roundabout at the intersection of Community Road and Blythewood Road. Additionally, Blythewood Road will be widened to 5 lanes from I-77 to Syrup Mill Road. These projects are at various planning and design phases. The project team from this study has been in close coordination with the Richland Penny staff throughout the study sharing traffic counts with each other, proposed recommendations and cost estimates.

Chapter 7. Performance Measures

Performance measures gauge how a transportation system is operating. They inform decision-making and assign responsibility for a more efficient and effective program implementation. Under MAP-21 and the FAST Act, Metropolitan Planning Organizations (MPO) such as the Columbia Area Transportation Study (COATS) are required to set performance targets consistent with the established national performance measures. So far, SCDOT and COATS have adopted the performance measures for Safety and Asset Management. All of the recommended projects that flow out of this planning study will help COATS achieve their Safety and Asset Management goals. Each project was developed with these performance measures in mind.

Chapter 8. Purpose and Need Statements

To better streamline projects as they move from the planning phase into project development, the project team has written a Purpose and Need Statement for each of the recommendations in this report. Once a project gets funding and programmed, project managers can easily read the intent of the recommended improvement by understanding the Purpose and Need of each improvement. If federal funds are used to deliver the projects, these purpose and need statements will feed into a National Environmental Policy Act (NEPA) document that will be prepared for each project. The tables below and on the following page illustrate the purpose and need statements for each recommendation.

Number	Short Term Recommendation	Purpose and Need
1	US 321 & Blythewood Rd.	The purpose of this project is to increase capacity of the roadway due to the projected increase in future traffic volumes.
2	US 21 & RImer Pond Rd.	The purpose of the project is to improve operational efficiency to accommodate the projected future traffic volumes.
3	US 21 & Farrow Rd.	The purpose of the project is to improve operational efficiency to accommodate the projected future traffic volumes.
4	Langford Rd. & Trading Post Rd.	The purpose of the project is to improve operational efficiency and add capacity to accommodate the projected future traffic volumes.
5	Rimer Pond Rd. & Longtown Rd.	The purpose of the project is to improve operational efficiency and add capacity to accommodate the projected future traffic volumes.
6	US 21 & Community Rd.	The purpose of this project is to increase capacity of the roadway due to the projected increase in future traffic volumes.

Table 8.1 Purpose and Need – Short-Term Recommendation

Number	Mid- Term Recommendation	Purpose and Need
7	Blythewood Rd. & Muller Rd.	The purpose of this project is to increase capacity of the roadway due to the projected increase in future traffic volumes.
8	US 21 at Farrow Road	The purpose of the project is to improve operational efficiency to accommodate the projected future traffic volumes.
9	Langford Road at Hardscrabble Road	The purpose of this project is to reduce congestion of the roadway due to the projected increase in future traffic volumes.
10	Blythewood Rd. & I-77 Ramps	The purpose of the project is to improve operational efficiency to accommodate the projected future traffic volumes.

Table 8.2 Purpose and Need – Mid-Term Recommendation

Number	Long-Term Recommendation	Purpose and Need
11	US 21 & RImer Pond Rd.	The purpose of this project is to increase capacity of the roadway due to the projected increase in future traffic volumes.
12	US 21 & Farrow Rd.	The purpose of the project is to improve operational efficiency to accommodate the projected future traffic volumes.
13	Rimer Pond Rd. & Longtown Rd.	The purpose of this project is to increase capacity of the roadway due to the projected increase in future traffic volumes.
14	Blythewood Rd./US 21/ Langford Road	The purpose of this project is to reduce congestion and improve connectivity of the roadway due to the projected increase in future traffic volumes.

Table 8.3 Purpose and Need – Long-Term Recommendation

Chapter 9. Cost of Recommended Improvements

Like all governmental entities, Central Midlands COG and the Town of Blythewood are fiscally constrained in their ability to make needed infrastructure improvements. The list of needs goes beyond available funding sources. In order to better prioritize the recommended improvements, the project team developed planning level cost estimates for each of the recommended improvements found in **Chapter 6**.

In South Carolina, most cost estimates are prepared using the proprietary Bid Express software. Every project that is let by SCDOT utilizes the Bid Express software and is constantly updated based on most recent bid items. AECOM subscribes to the Bid Express software and has access to recent bid items. For the purposes of the Town of Blythewood Traffic Improvement Plan, AECOM's team developed cost estimates based only on bid items from South Carolina and only on bids from the past 12 months. **Tables 9.1**, **9.2** and **9.3** which appear on the pages that follow provide planning level cost information for the respective short-term, mid-term and long-term recommendations from **Chapter 6**. It is important to note that the planning level cost estimates shown in these tables include total costs (ROW, CEI, Construction, Design, etc.) and are calculated in 2019 dollars.

#	Recommendation	Total Cost	Notes
1	US 321 & Blythewood Rd.	$1,980,000	Includes: install NB RT turn lane on US 321 with 350ft storage; install SB LT turn lane on US 321 with 200ft storage; Install WB RT turn lane on Blythewood Road with 150ft storage; Install signal when warranted.
2	US 21 & RImer Pond Rd.	$274,000	Includes: Install NB RT turn lane along US 21 with 100ft storage; Install WB LT turn lane with 230ft storage; Install SB LT turn lane with 225ft storage.
3	US 21 & Farrow Rd.	$1,911,000	Includes: Install WB LT turn lane along Farrow Road with 150ft storage; Install SB LF turn lane along US 21 with 300ft storage; Install NB Channelized RT turn lane and a signal when warranted.
4	Langford Rd. & Trading Post Rd.	$1,926,000	Includes: Install EB RT turn lane along Langford Road with 200ft storage; Install WB LT turn lane along Langford Road with 150ft storage; Install NB RT turn lane along Trading Post Road with 100ft storage; install signal when warranted.
5	Rimer Pond Rd. & Longtown Rd.	$1,680,000	Includes: Install NB RT turn lane along Longtown Road with 300ft storage; Install an EB RT turn lane along Rimer Pond Road with 325ft storage.
6	US 21 & Community Rd.	$50,000	Install a Restricted Crossing U-Turn (RCUT) configuration. Allows left turns into Community Road from US 21 and U-turns at Turkey Farm Road.
	Total Cost of Short-Term Recommendations	$7,821,000	

Table 9.1 Cost of Short-Term Recommendations

#	Recommendation	Total Cost	Notes
7	Blythewood Rd. & Muller Rd.	$11,160,000	Extend 5 lane section on Blythewood Road from Syrup Mill to Muller Road. Install an additional SB LT turn lane on Muller Road to provide dual-lefts with 250ft storage.
8	US 21 at Farrow Road	$2,790,000	Realign Farrow Road perpendicular with US 21. Install WB LT turn lane with 150ft storage. Install SB LT turn lane with 500ft storage. Install NB RT turn lane with 150ft storage.
9	Langford Road at Hardscrabble Road	$1,500,000	Install roundabout with an EB channelized RT turn lane onto Hardscrabble Road.
10	Blythewood Rd. & I-77 Ramps	$930,000	Remove NB channelized RT turn lane under yield control and replace with dual RT turn lanes under signal control with 350ft storage.
	Total Cost of Mid-Term Recommendations	$16,380,000	

Table 9.2 Cost of Mid-Term Recommendations

#	Recommendation	Total Cost	Notes
11	US 21 & Rimer Pond Rd.	$18,800,000	Includes: Install additional WB LT turn lane along Rimer Pond Road with 200ft storage to provide dual LT turn lanes. Includes the widening of US 21 to 5 lanes from Blythewood road to Rimer Pond Road (1 mile)
12	US 21 & Farrow Rd.	$16,400,000	Includes re-align Farrow Road Perpendicular with US 21. Install dual left turn lanes on Farrow Road. Includes widening US 21 to 5 lanes from Rimer Pond Road to Farrow Road (0.8 miles)
13	Rimer Pond Rd. & Longtown Rd.	$49,600,000	Includes: Widening Rimer Pond Road from 2 lanes to 5 lanes from US 21 to Longtown Road (2.7 miles). Install an additional NB LT turn lane along Longtown Road with 500ft storage to provide dual left turns. Install an additional WB LT turn lane along Rimer Pond Road with 250ft storage to provide dual left turns.
14	Blythewood Rd./US 21/ Langford Road	$26,000,000	Includes: Remove 1600lf of US 21 to lower intersection. New 5 lane section of US 21 for 1600lf. Widen existing 3 lane section of Blythewood Road from I-77 to US 21 to 5 lanes. New 3 lane section of US 21 to Langford Road. New dual roundabout with lighting at Creech Road. New signals along the corridor. Widen existing I-77 overpass to 5 lanes with 10' shoulders and sidewalk. New Railroad crossing along Langford as well as the closing of 3 crossings.
	Total Cost of Long-Term Recommendations	$110,800,000	

Table 9.3 Cost of Long-Term Recommendations

9.1 Funding Options

Although no one has a crystal ball for what funding levels may look like in the future, the project team has identified a menu of funding options that could be utilized for improvements in Blythewood. For sake of discussion, we have broken these various funding mechanisms into 4 categories: local funding options; state funding options; federal funding options; and private investment.

Local Funding Options

Depending on voting results and county council approval, revenues from local sales tax options, if continued, could potentially be a major contributor. Impact fees, Tax Increment Financing and Municipal Improvement Districts are all possible funding options at the local level. The Richland Penny program has already begun funding of some needed projects in the Blythewood area and there's the potential for more funding in the future.

State Funding Options

An obvious option would be the COATS (Columbia Area Transportation Study) Guideshares allocated by SCDOT to the COATS region on an annual basis. Additionally, Richland County Transportation Committee (CTC) C-funds can be used at the discretion of the CTC. Other counties have benefited by using C-Funds as matching funds to obtain various grants, such as the SCDOT Transportation Alternatives Program and transit grants. These grants are available for multiple purposes, but mostly for pedestrian accommodations and beautification. In addition, the SCDOT has Safety Funds that can be used on qualifying intersections and corridors based on ADT and collision history. There is also funding at SCDOT for upgrading traffic signals and installing new traffic signals where needed, as well as improving traffic signal timing on coordinated traffic signal systems. Additionally, the SCDOT administers the Safe Routes to Schools program that allows for bicycle and pedestrian improvements in and around schools. A final funding option at the state level would be to apply for funding from the State Infrastructure Bank (SIB). Recent lawsuits have been cleared and now the SIB has approximately $728M in available funding to loan to local partners (as of May 2019).

Federal Funding Options

At the federal level, there are several funding options that could assist in Blythewood. Most of these funding sources are also administered by the SCDOT. However, BUILD grants are part of President Trump's Infrastructure plan and include annual discretionary allocations for projects across the country. Transportation Infrastructure Finance and Innovation Act (TIFIA) loans are another funding source that was carried forward during the FAST Act. The most recent project in South Carolina that utilized a TIFIA loan was the Cooper River Bridge in Charleston. Included in the federal category are also Federal Transit funds.

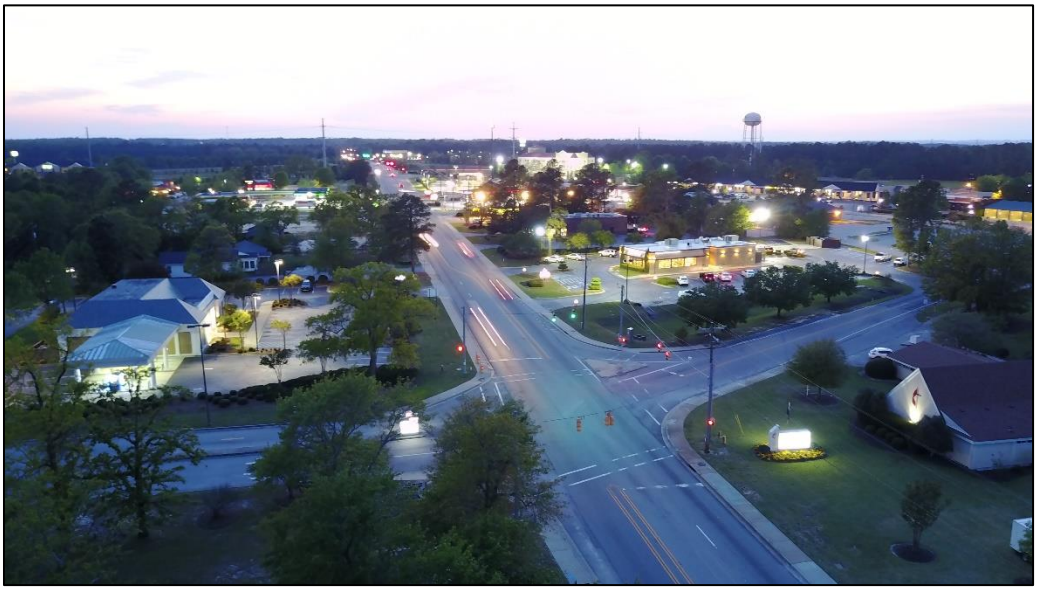
Private Investment

Public Private partnerships are increasing in popularity around the country and basically involve a private entity building a road or making improvements to a corridor in exchange for the rights to collect tolls on that corridor for a specified period of time. While a public private partnership for a project in Blythewood may be a stretch, there's tremendous innovation taking place across the country and smaller projects are now being funded with public private partnerships.

Chapter 10. Summary

It's been said that "Failing to plan is planning to fail." Blythewood and northeastern Richland County will continue to experience impressive growth well into the 2040 design year studied in this effort. The purpose of this study was to take a holistic look at known and anticipated growth patterns and analyze their effects on land use and traffic in the Blythewood area. Not working in a box, the project team engaged in a robust public and stakeholder involvement effort to get a pulse on the types of development and growth that will come to Blythewood. Based on the inputs to this study, the short- term, mid-term, and long-term recommendations shown in this report will help accommodate future growth and allow the principal roads in the Blythewood area to continue to operate at acceptable levels out to 2040. The plan will also help alleviate known safety concerns and high crash intersections in Blythewood which is of paramount importance.

The challenge moving forward will be for elected officials, the Central Midlands COG, and SCDOT to program the necessary funding to make the recommended improvements. Each year that needed improvements are delayed will result in cost inflation above what is shown in this document. Because of this study, elected officials will now have a prioritized list of improvements to begin implementing. The implementation of this study will allow for the most needed projects to occur in priority order. By having a detailed action plan, officials can make the most efficient use of limited public funds.



The Future of Blythewood is Bright

List of Appendices

Appendix A - Traffic Data

Appendix B - Public Outreach Data

Appendix C - Resource Agency Data

Appendix D – Photo Log

Appendix E – Environmental Data

Appendix A - Traffic Data

Crash Summary

US 321 (WINNSBORO RD) & S- 2200 (BLYTHEWOOD RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 5,700

Functional Class = Rural -- Minor Arterial

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	3
PDO Crashes	8
Total Crashes	**11**

Crashes by Manner Of Collision

Rear End	2	
Angle	0	
Sideswipe	1	
Head On	0	
Run Off Road	~~8~~	5
Animal	0	
Bicycle	0	
Pedestrian	0	
Other	0	
Total Crashes	~~**11**~~	**7**

Special Contributing Factors

Night	7
Day	4
Wet	2
Dry	9

Crash Summary

US 321 (WINNSBORO RD) & S- 2200 (BLYTHEWOOD RD)

RICHLAND COUNTY

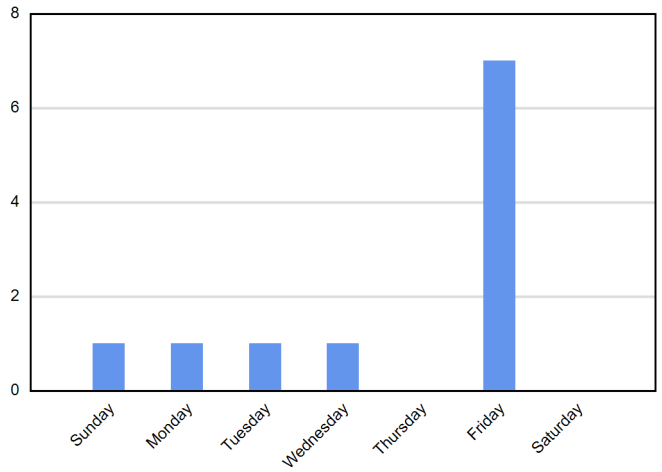
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 5,700

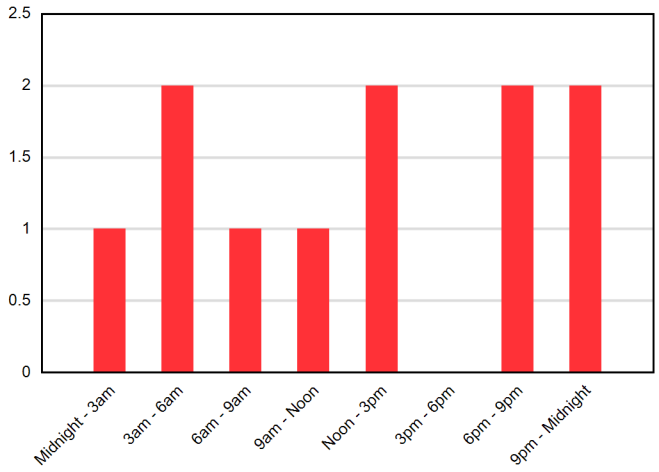
Functional Class = Rural -- Minor Arterial

Year	2015	2016	2017	2018	Total
Rear End	1	1	0	0	2
Angle	0	0	0	0	0
Sideswipe	0	1	0	0	1
Head On	0	0	0	0	0
Run Off Road	2	1	4	1	8
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	3	3	4	1	11

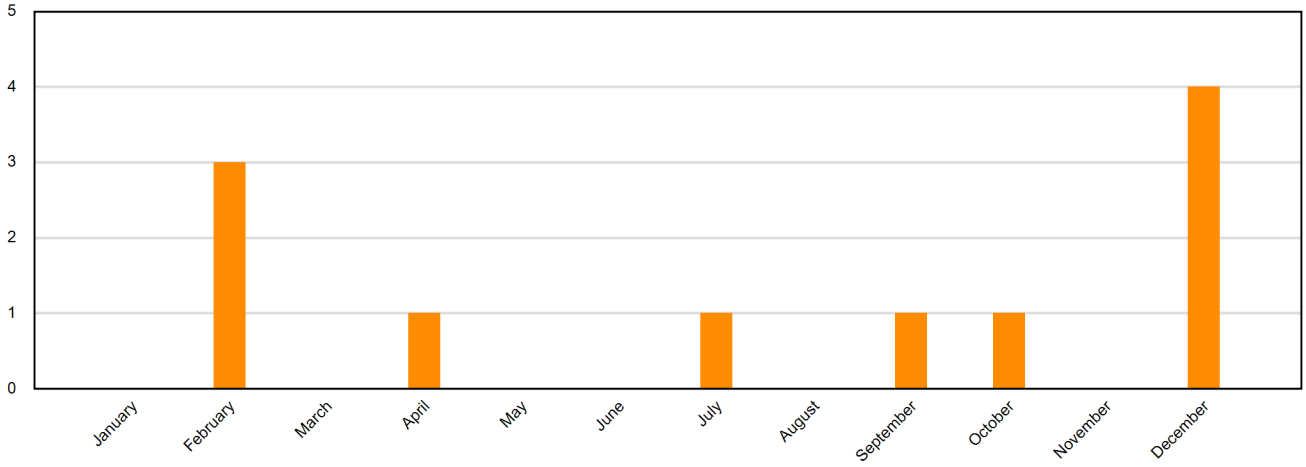
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

RICHLAND US 321 (MP 15.460) & RICHLAND S- 2200 (MP 0)

Total Crashes: 11 Light: 4 Dark: 7 Dry: 9 Wet: 2 Fatalities: 0 Injuries: 3 PDO: 8

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15512145	02/06/2015	S-	2200		BLYTHEWOOD RD	0.013	0	INJ0	DARK	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
~~2~~	~~15518359~~	~~02/20/2015~~	~~US~~	~~321~~		~~WINNSBORO RD~~	~~15.322~~	~~17~~	~~INJ1~~	~~DAY~~	~~DRY~~	~~NO COLLISION W/MV~~	~~MEDICAL RELATED~~	~~DITCH~~
~~3~~	~~15655210~~	~~12/18/2015~~	~~US~~	~~321~~		~~WINNSBORO RD~~	~~15.319~~	~~17~~	~~INJ1~~	~~DAY~~	~~DRY~~	~~NO COLLISION W/MV~~	~~MEDICAL RELATED~~	~~DITCH~~
4	16549931	04/29/2016	US	321		WINNSBORO RD	15.455	0	INJ0	DARK	DRY	NO COLLISION W/MV	UNDER THE INFLUENCE	MAIL BOX
5	16628982	09/12/2016	US	321		WINNSBORO RD	15.408	5	INJ0	DAY	DRY	SIDESWIPE OPP	WRONG SIDE OR WRONG WAY	MOTOR VEHICLE (IN TRANSPORT)
6	16674439	12/18/2016	S-	2200		BLYTHEWOOD RD	0.002	0	INJ1	DARK	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
7	17598448	07/04/2017	US	321		WINNSBORO RD	15.456	0	INJ0	DARK	DRY	NO COLLISION W/MV	UNDER THE INFLUENCE	EMBANKMENT
~~8~~	~~17647709~~	~~10/06/2017~~	~~S-~~	~~2200~~		~~BLYTHEWOOD RD~~	~~0.313~~	~~80~~	~~INJ0~~	~~DARK~~	~~DRY~~	~~NO COLLISION W/MV~~	~~DRIVING TOO FAST FOR CONDITIONS~~	~~TREE~~
9	17676911	12/08/2017	US	321		WINNSBORO RD	15.455	0	INJ0	DARK	WET	NO COLLISION W/MV	MADE AN IMPROPER TURN	DITCH
10	17678840	12/20/2017	US	321		WINNSBORO RD	15.434	3	INJ0	DAY	WET	NO COLLISION W/MV	DRIVING TOO FAST FOR CONDITIONS	MAIL BOX
11	18536202	02/23/2018	US	321		WINNSBORO RD	15.465	1	INJ0	DARK	DRY	NO COLLISION W/MV	DRIVING TOO FAST FOR CONDITIONS	DITCH

Crash Summary

S- 1352 (FULMER RD) & S- 2200 (BLYTHEWOOD RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 4,450

Functional Class = Rural -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	0
PDO Crashes	3
Total Crashes	**3**

Crashes by Manner Of Collision

Rear End	2
Angle	0
Sideswipe	0
Head On	0
Run Off Road	1
Animal	0
Bicycle	0
Pedestrian	0
Other	0
Total Crashes	**3**

Special Contributing Factors

Night	0
Day	3
Wet	0
Dry	3

Crash Summary

S- 1352 (FULMER RD) & S- 2200 (BLYTHEWOOD RD)

RICHLAND COUNTY

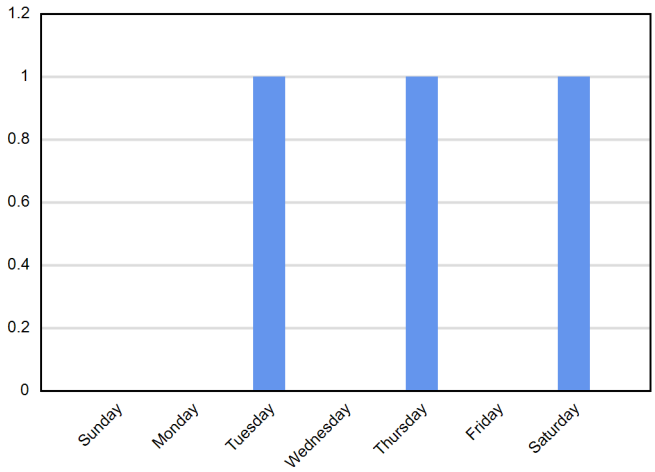
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 4,450

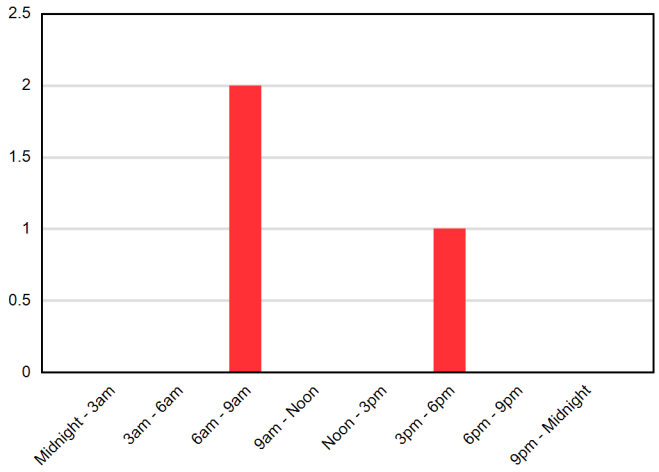
Functional Class = Rural -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	0	1	1	0	2
Angle	0	0	0	0	0
Sideswipe	0	0	0	0	0
Head On	0	0	0	0	0
Run Off Road	1	0	0	0	1
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	1	1	1	0	3

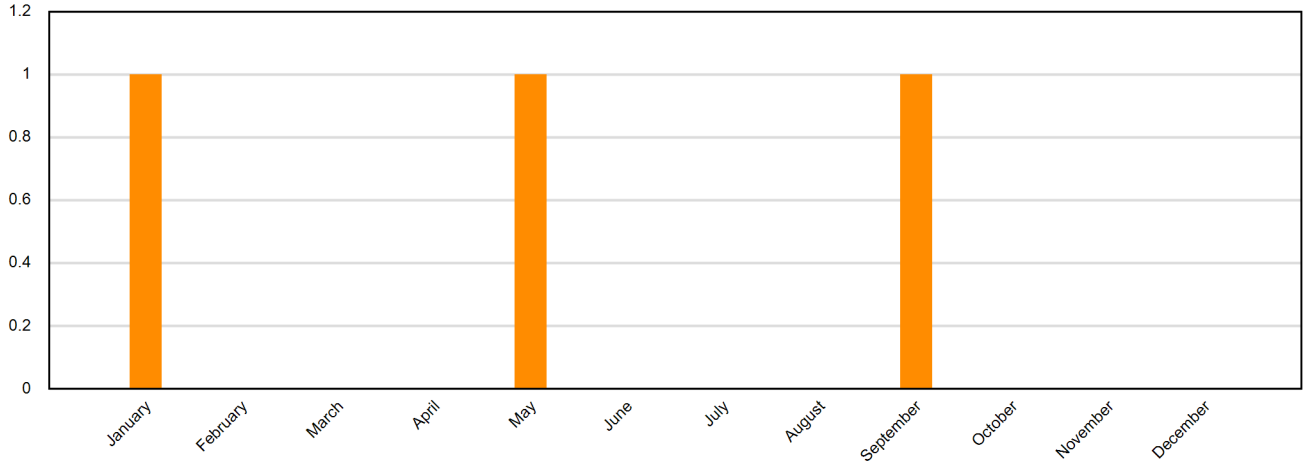
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

RICHLAND S- 1352 (MP 0) & RICHLAND S- 2200 (MP 1.65)

Total Crashes: 3 Light: 3 Dark: 0 Dry: 3 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 3

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15605712	09/12/2015	S-	1352		FULMER RD	0.127	13	INJ0	DAY	DRY	NO COLLISION W/MV	RAN OFF ROAD	DITCH
2	16503773	01/05/2016	S-	2200		BLYTHEWOOD RD	1.556	9	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
3	17584665	05/18/2017	S-	2200		BLYTHEWOOD RD	1.655	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)

Crash Summary

S- 59 (BLYTHEWOOD RD) & S- 2200 (BLYTHEWOOD RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 6,925

Functional Class = Urban -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	1
PDO Crashes	2
Total Crashes	**3**

Crashes by Manner Of Collision

Rear End	2
Angle	1
Sideswipe	0
Head On	0
Run Off Road	0
Animal	0
Bicycle	0
Pedestrian	0
Other	0
Total Crashes	**3**

Special Contributing Factors

Night	0
Day	3
Wet	1
Dry	2

Crash Summary

S- 59 (BLYTHEWOOD RD) & S- 2200 (BLYTHEWOOD RD)

RICHLAND COUNTY

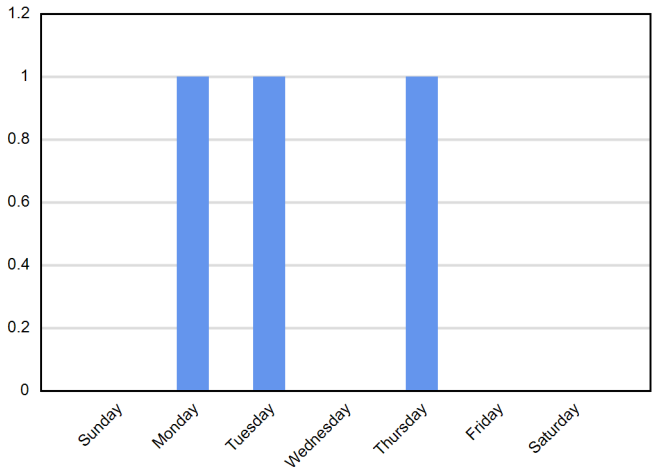
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 6,925

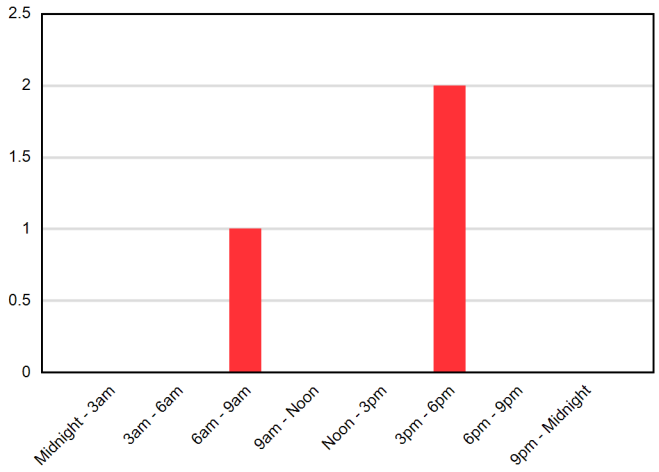
Functional Class = Urban -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	0	0	1	1	2
Angle	0	1	0	0	1
Sideswipe	0	0	0	0	0
Head On	0	0	0	0	0
Run Off Road	0	0	0	0	0
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	0	1	1	1	3

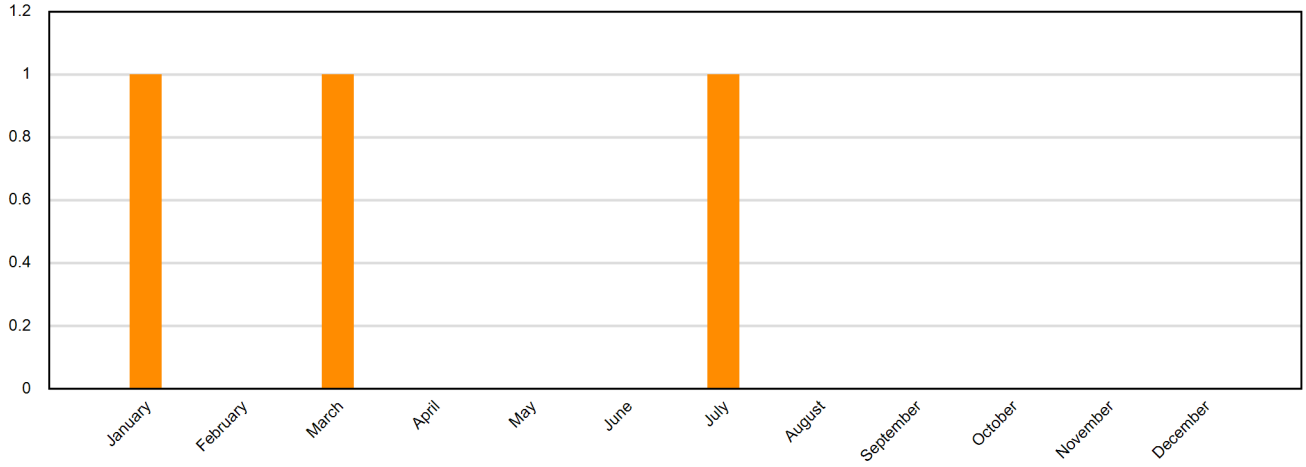
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

RICHLAND S- 59 (MP 1.71) & RICHLAND S- 2200 (MP 3.11)

Total Crashes: 3 Light: 3 Dark: 0 Dry: 2 Wet: 1 Fatalities: 0 Injuries: 1 PDO: 2

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	16596312	07/11/2016	S-	2200		BLYTHEWOOD RD	3.107	1	INJ0	DAY	DRY	ANGLE	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
2	17542636	03/30/2017	S-	2200		BLYTHEWOOD RD	3.072	4	INJ0	DAY	WET	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
3	18514032	01/23/2018	S-	59		MULLER RD	1.78	7	INJ1	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)

Crash Summary
I-77 SOUTH & S-59
Richland County
01-01-2015 to 03-31-2018 3.25 Years

AADT = 12,650

Crash Rate = 1.066

Severity Index = 1.066

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	0
PDO Crashes	16
Total Crashes	**16**

Crashes By Manner of Collision

Rear End	12
Angle	1
Sideswipe	3
Head On	0
Run Off Road	0
Other	0
Total Crashes	**16**

Special Contributing Factors

Animal	0
Bicycle	0
Pedestrian	0

Crash Summary
I-77 NORTH & S-59
Richland County
01-01-2015 to 03-31-2018 3.25 Years

AADT = 23,100

Crash Rate = 1.861

Severity Index = 2.299

Crashes by Injury Class

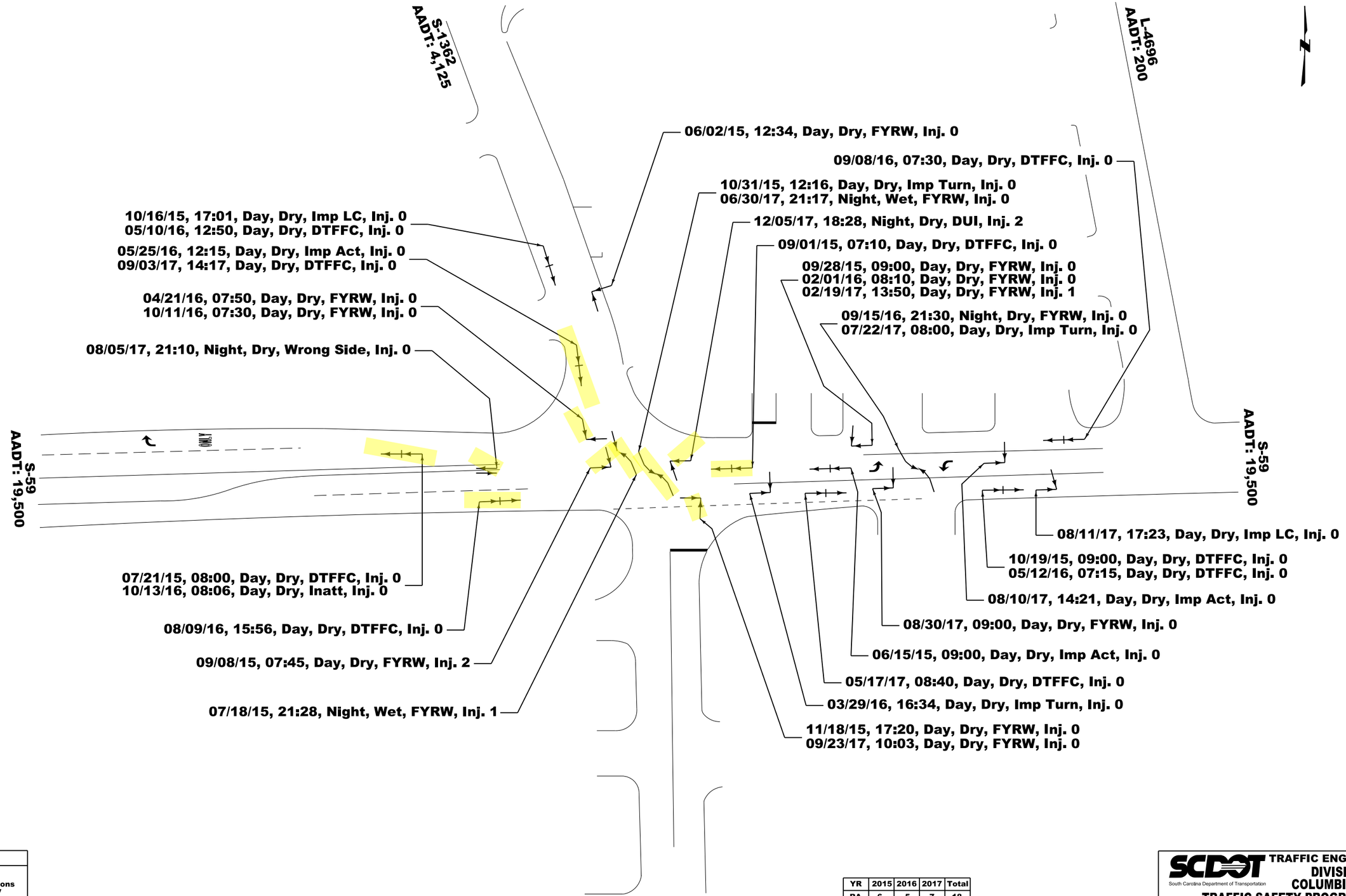
Fatality Crashes	0
Injury Crashes	6
PDO Crashes	45
Total Crashes	**51**

Crashes By Manner of Collision

Rear End	48
Angle	2
Sideswipe	0
Head On	0
Run Off Road	1
Other	0
Total Crashes	**51**

Special Contributing Factors

Animal	0
Bicycle	0
Pedestrian	0



LEGEND

DSS - Disregarded Sign or Signal
Inatt - Inattention
DTFFC - Driving Too Fast for Conditions
FYRW - Failure to Yield Right of Way
ROR - Ran off Road
FTC - Followed Too Closely
AOV - Aggressive Operation of Vehicle
SAO - Swerving to Avoid Object
DUI - Under the Influence
Imp LC - Improper Lane Change

RA = Right Angle
RE = Rear End
SS = Side Swipe
HO = Head On
OC = Out of Control
HA = Hit Animal
OTH = Other

YR	2015	2016	2017	Total
RA	6	5	7	18
RE	5	6	3	14
SS	0	0	1	1
HO	0	0	0	0
OC	0	0	0	0
HA	0	0	0	0
OTH	0	0	0	0
Total	11	11	11	33

Night - 5
Day - 28

Wet - 2
Dry - 31

Total = 33
AADT = 23,625
Years = 3.0
01/01/15 - 12/31/17
CR = 1.093
SI = 1.358

PDO - 29
Inj. 1 - 2
Inj. 2 - 2
Inj. 3 - 0
Fatal - 0

SCDOT
South Carolina Department of Transportation

TRAFFIC ENGINEERING
DIVISION
COLUMBIA,S.C.
TRAFFIC SAFETY PROGRAM

SUBJECT TITLE: Collision Diagram

SPECIFIC LOCATION: S-59 (MPT 0.3 - 0.4)

CITY	COUNTY
Blythewood	Richland

DRAWN BY	DATE	SCALE	PAGE
JCB	06/18/18	None	1 of 1

Crash Summary

S- 59 (BLYTHEWOOD RD) & S- 1367 (BONEY RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 20,000

Functional Class = Urban -- Major Collector

Crashes by Injury Class

Fatality Crashes	0	
Injury Crashes	3	
PDO Crashes	~~15~~	**13**
Total Crashes	**18**	

Crashes by Manner Of Collision

Rear End	~~13~~	**11**
Angle	4	
Sideswipe	1	
Head On	0	
Run Off Road	0	
Animal	0	
Bicycle	0	
Pedestrian	0	
Other	0	
Total Crashes	**18**	

Special Contributing Factors

Night	2
Day	16
Wet	4
Dry	14

Crash Summary

S- 59 (BLYTHEWOOD RD) & S- 1367 (BONEY RD)

RICHLAND COUNTY

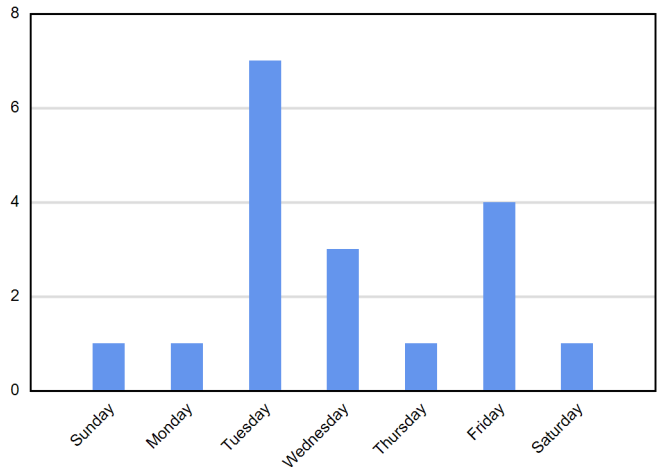
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 20,000

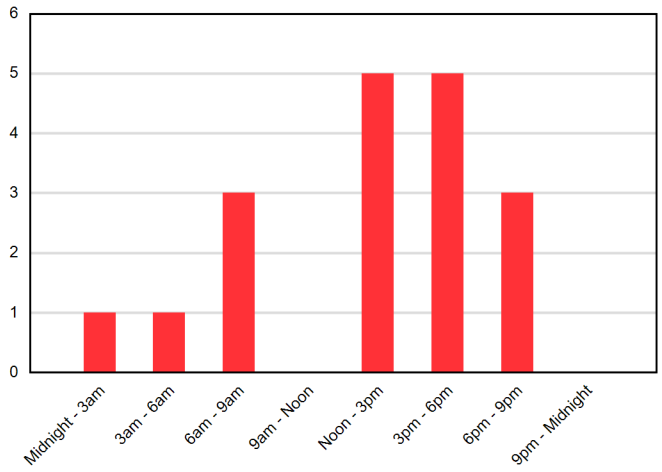
Functional Class = Urban -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	2	8	3	0	13
Angle	0	1	3	0	4
Sideswipe	0	0	1	0	1
Head On	0	0	0	0	0
Run Off Road	0	0	0	0	0
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	2	9	7	0	18

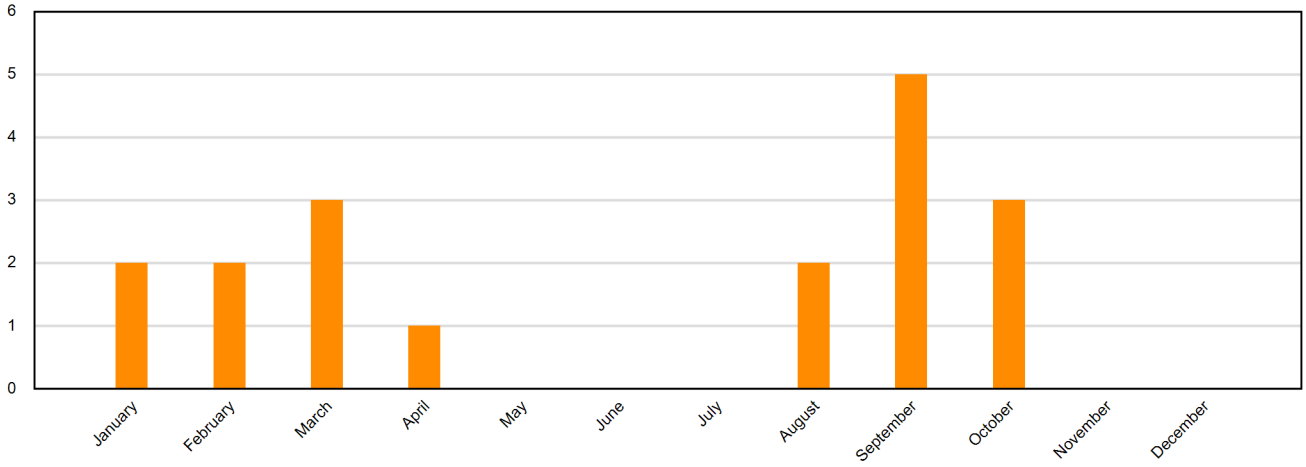
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

RICHLAND S- 59 (MP 0.17) & RICHLAND S- 1367 (MP 0)

Total Crashes: 18 Light: 16 Dark: 2 Dry: 14 Wet: 4 Fatalities: 0 Injuries: 3 PDO: 15

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15519779	02/24/2015	S-	1367		BONEY RD	0.01	1	INJ0	DAY	WET	REAR END	DISTRACTED/INATT.	MOTOR VEHICLE (STOPPED)
2	15605164	09/30/2015	S-	59		BLYTHEWOOD RD	0.187	2	INJ0	DAY	DRY	REAR END	UNDER THE INFLUENCE	MOTOR VEHICLE (STOPPED)
3	16515413	02/08/2016	S-	59		BLYTHEWOOD RD	0.148	2	INJ0	DAY	WET	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
4	16529429	03/11/2016	S-	59		BLYTHEWOOD RD	0.212	4	INJ1	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
5	16533922	03/15/2016	S-	59		BLYTHEWOOD RD	0.128	4	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
6	16539513	04/12/2016	S-	59		BLYTHEWOOD RD	0.175	1	INJ0	DAY	WET	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
7	16618953	08/26/2016	S-	59		BLYTHEWOOD RD	0.168	0	INJ1	DARK	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
8	~~16619231~~	~~09/08/2016~~	~~S-~~	~~59~~		~~BLYTHEWOOD RD~~	~~0.31~~	~~5~~	~~INJ0~~	~~DAY~~	~~DRY~~	~~REAR END~~	~~DRIVING TOO FAST FOR CONDITIONS~~	~~MOTOR VEHICLE~~ (STOPPED)
9	~~16631891~~	~~09/28/2016~~	~~S-~~	~~59~~		~~BLYTHEWOOD RD~~	~~0.415~~	~~50~~	~~INJ0~~	~~DAY~~	~~WET~~	~~REAR END~~	~~DRIVING TOO FAST FOR CONDITIONS~~	~~MOTOR VEHICLE (IN TRANSPORT~~)
10	16636228	10/26/2016	S-	59		BLYTHEWOOD RD	0.163	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
11	16640001	10/30/2016	S-	59		BLYTHEWOOD RD	0.2	3	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
12	17509136	01/14/2017	S-	59		BLYTHEWOOD RD	0.167	0	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
13	17516017	01/31/2017	S-	59		BLYTHEWOOD RD	0.17	0	INJ0	DAY	DRY	ANGLE	DISREGARDED SIGNS, SIGNALS, ETC	MOTOR VEHICLE (IN TRANSPORT)
14	17534374	03/10/2017	S-	59		BLYTHEWOOD RD	0.1	8	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
15	17619374	08/29/2017	S-	59		BLYTHEWOOD RD	0.228	6	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
16	17627452	09/26/2017	S-	59		BLYTHEWOOD RD	0.178	1	INJ1	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
17	17637398	09/08/2017	S-	59		BLYTHEWOOD RD	0.225	6	INJ0	DAY	DRY	SIDESWIPE SAME	OTHER IMP. ACT	MOTOR VEHICLE (IN TRANSPORT)
18	17643391	10/10/2017	S-	59		BLYTHEWOOD RD	0.167	0	INJ0	DUSK	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)

Crash Summary

US 21 (MAIN ST) & S- 59 (BLYTHEWOOD RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 18,200

Functional Class = Urban -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	6
PDO Crashes	20
Total Crashes	**26**

Crashes by Manner Of Collision

Rear End	10
Angle	9
Sideswipe	2
Head On	0
Run Off Road	5
Animal	0
Bicycle	0
Pedestrian	0
Other	0
Total Crashes	**26**

Special Contributing Factors

Night	4
Day	22
Wet	4
Dry	22

Crash Summary

US 21 (MAIN ST) & S- 59 (BLYTHEWOOD RD)

RICHLAND COUNTY

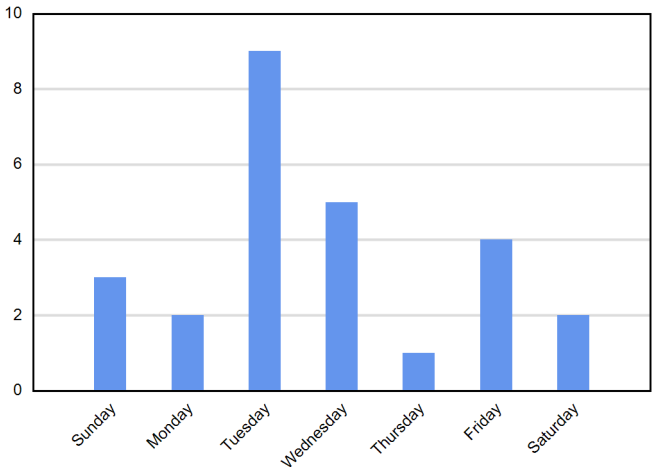
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 18,200

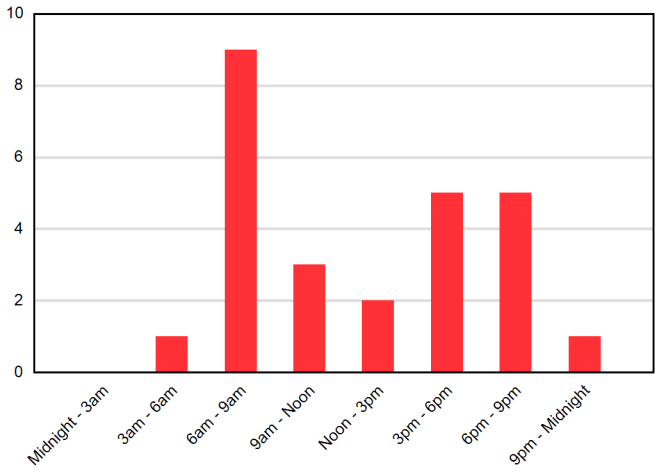
Functional Class = Urban -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	3	5	2	0	10
Angle	1	3	4	1	9
Sideswipe	1	1	0	0	2
Head On	0	0	0	0	0
Run Off Road	2	2	1	0	5
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	7	11	7	1	26

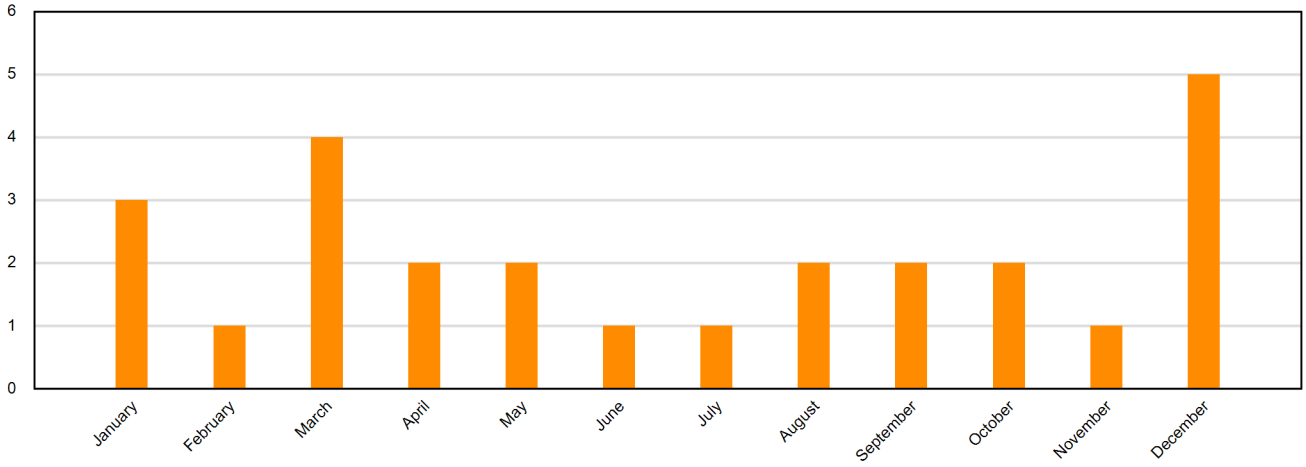
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

RICHLAND US 21 (MP 18.5) & Blythewood Rd S- 59 (MP 0)

Total Crashes: 26 Light: 22 Dark: 4 Dry: 22 Wet: 4 Fatalities: 0 Injuries: 6 PDO: 20

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15505317	01/13/2015	US	21		WILSON BLVD	18.197	47	INJ0	DAY	WET	NO COLLISION W/MV	IMPROPER LANE USAGE/CHANGE	CURB
2	15523336	03/04/2015	US	21		MAIN ST	18.501	0	INJ2	DARK	DRY	ANGLE	DISREGARDED SIGNS, SIGNALS, ETC	MOTOR VEHICLE (IN TRANSPORT)
3	15528626	03/25/2015	US	21		MAIN ST	18.511	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
4	15531937	04/05/2015	US	21		WILSON BLVD	18.256	29	INJ2	DAY	DRY	NO COLLISION W/MV	MEDICAL RELATED	CURB
5	15595195	09/05/2015	S-	59		BLYTHEWOOD RD	0.006	1	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
6	15629788	10/28/2015	US	21		MAIN ST	18.476	2	INJ1	DUSK	WET	SIDESWIPE SAME	IMPROPER LANE USAGE/CHANGE	MOTOR VEHICLE (IN TRANSPORT)
7	15637220	12/01/2015	US	21		MAIN ST	18.49	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
8	16536226	03/06/2016	S-	59		BLYTHEWOOD RD	0.002	2	INJ3	DAY	DRY	NO COLLISION W/MV	UNDER THE INFLUENCE	EMBANKMENT
9	16547548	04/22/2016	S-	59		BLYTHEWOOD RD	0.002	0	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
10	16552365	05/09/2016	US	21		MAIN ST	18.325	17	INJ1	DAY	DRY	REAR END	FOLLOWED TOO CLOSELY	MOTOR VEHICLE (STOPPED)
11	16577940	06/12/2016	US	21		MAIN ST	18.504	3	INJ0	DARK	DRY	NO COLLISION W/MV	DRIVING TOO FAST FOR CONDITIONS	EMBANKMENT
12	16610033	08/16/2016	US	21		WILSON BLVD	17.988	25	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
13	16610118	08/25/2016	US	21		WILSON BLVD	18.131	76	INJ0	DAY	DRY	SIDESWIPE SAME	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
14	16619143	09/03/2016	US	21		MAIN ST	18.495	0	INJ0	DAY	DRY	ANGLE	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
15	16668971	12/05/2016	US	21		WILSON BLVD	18.077	50	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
16	16669029	12/09/2016	US	21		MAIN ST	18.551	1	INJ0	DAY	DRY	ANGLE	DISREGARDED SIGNS, SIGNALS, ETC	MOTOR VEHICLE (IN TRANSPORT)
17	16669401	12/28/2016	S-	59		BLYTHEWOOD RD	0.021	2	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
18	16675952	12/27/2016	US	21		MAIN ST	18.512	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
19	17502717	01/03/2017	US	21		MAIN ST	18.504	0	INJ0	DAY	WET	ANGLE	DISREGARDED SIGNS, SIGNALS, ETC	MOTOR VEHICLE (IN TRANSPORT)
20	17525131	02/24/2017	S-	59		BLYTHEWOOD RD	0.008	1	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
21	17531870	03/07/2017	US	21		WILSON BLVD	18.228	32	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
22	17567808	05/23/2017	US	21		WILSON BLVD	18.206	46	INJ0	DAY	WET	ANGLE	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
23	17596531	07/04/2017	US	21		MAIN ST	18.505	0	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
24	17643460	10/18/2017	S-	59		BLYTHEWOOD RD	0.003	1	INJ1	DARK	DRY	NO COLLISION W/MV	DRIVING TOO FAST FOR CONDITIONS	CURB
25	17658452	11/03/2017	US	21		MAIN ST	18.369	13	INJ0	DAY	DRY	ANGLE	IMPROPER LANE USAGE/CHANGE	MOTOR VEHICLE (IN TRANSPORT)
26	18538278	01/30/2018	US	21		WILSON BLVD	18.133	72	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)

Crash Summary

US 21 (MAIN ST) & S- 1143 (OAKHURST RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 4,042

Functional Class = Urban -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	2
PDO Crashes	6
Total Crashes	**8**

Crashes by Manner Of Collision

Rear End	3
Angle	2
Sideswipe	0
Head On	1
Run Off Road	0
Animal	0
Bicycle	0
Pedestrian	0
Other	2
Total Crashes	**8**

Special Contributing Factors

Night	2
Day	6
Wet	1
Dry	7

Intersection Crashes

RICHLAND US 21 (MP 18.80) & Oakhurst Rd S- 1143 (.490)

Total Crashes: 4 Light: 2 Dark: 2 Dry: 3 Wet: 1 Fatalities: 0 Injuries: 1 PDO: 3

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15575746	07/21/2015	US	21		MAIN ST	18.752	8	INJ0	DAY	DRY	BACKED INTO	OTHER IMP. ACT	MOTOR VEHICLE (IN TRANSPORT)
2	16562551	05/26/2016	S-	1143		OAKHURST RD	0.488	0	INJ0	DARK	DRY	ANGLE	MADE AN IMPROPER TURN	MOTOR VEHICLE (STOPPED)
~~3~~	~~17569489~~	~~05/25/2017~~	~~S-~~	~~1143~~		~~OAKHURST RD~~	~~0.254~~	~~25~~	~~INJ0~~	~~DARK~~	~~WET~~	~~NO COLLISION W/MV~~	~~OTHER~~	~~OTHER NONCOLLISION~~
4	17613983	08/01/2017	US	21		MAIN ST	18.875	0	INJ1	DAY	DRY	HEAD ON	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)

RICHLAND US 21 (MP 18.90) & McLean Rd S- 1143 (MP .51)

Total Crashes: 4 Light: 4 Dark: 0 Dry: 4 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 3

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15651291	12/15/2015	US	21		MAIN ST	18.957	5	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
2	16671871	12/07/2016	US	21		MAIN ST	18.939	3	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
3	17545044	03/17/2017	US	21		MAIN ST	18.956	20	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
4	17683461	12/19/2017	US	21		MAIN ST	18.962	2	INJ1	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)

Add these to intersec-
tion #9

Crash Summary

US 21 (MAIN ST) & S- 1362 (MCNULTY ST)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 5,388

Functional Class = Urban -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	0
PDO Crashes	6
Total Crashes	**6**

Crashes by Manner Of Collision

Rear End	3
Angle	1
Sideswipe	2
Head On	0
Run Off Road	0
Animal	0
Bicycle	0
Pedestrian	0
Other	0
Total Crashes	**6**

Special Contributing Factors

Night	2
Day	4
Wet	1
Dry	5

Crash Summary

US 21 (MAIN ST) & S- 1362 (MCNULTY ST)

RICHLAND COUNTY

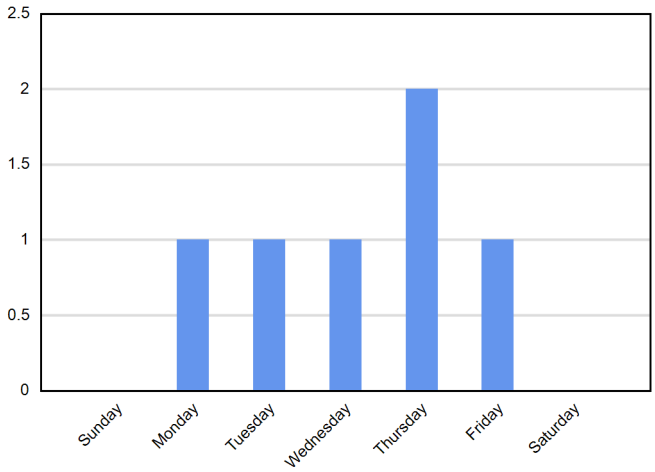
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 5,388

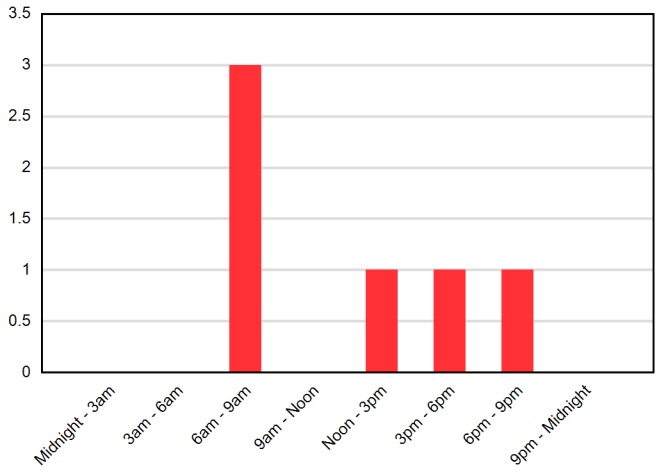
Functional Class = Urban -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	0	2	1	0	3
Angle	0	0	1	0	1
Sideswipe	1	0	1	0	2
Head On	0	0	0	0	0
Run Off Road	0	0	0	0	0
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	1	2	3	0	6

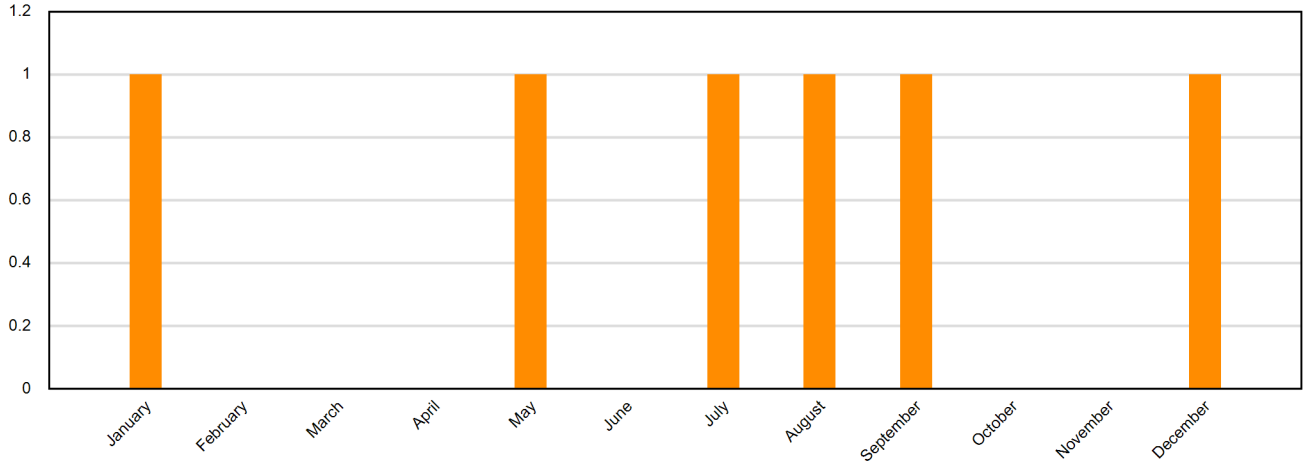
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

RICHLAND US 21 (MP 18.61) & McNulty S- 1362 (MP 0)

Total Crashes: 6 Light: 4 Dark: 2 Dry: 5 Wet: 1 Fatalities: 0 Injuries: 0 PDO: 6

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15651296	12/15/2015	S-	1362		MCNULTY ST	0.051	5	INJ0	DAY	DRY	SIDESWIPE SAME	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
2	16558764	05/25/2016	US	21		MAIN ST	18.583	2	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
3	16598337	07/29/2016	US	21		MAIN ST	18.723	2	INJ0	DARK	WET	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
4	17506652	01/05/2017	S-	1362		MCNULTY ST	0	1	INJ0	DARK	DRY	SIDESWIPE OPP	MADE AN IMPROPER TURN	MOTOR VEHICLE (STOPPED)
5	17617775	08/10/2017	US	21		MAIN ST	18.673	7	INJ0	DAY	DRY	ANGLE	MADE AN IMPROPER TURN	MOTOR VEHICLE (IN TRANSPORT)
6	17642584	09/25/2017	US	21		MAIN ST	18.622	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)

Crash Summary

US 21 (MAIN ST) & S- 54 (LANGFORD RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 7,050

Functional Class = Urban -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	2
PDO Crashes	13
Total Crashes	**15**

Crashes by Manner Of Collision

Rear End	9
Angle	3
Sideswipe	1
Head On	0
Run Off Road	2
Animal	0
Bicycle	0
Pedestrian	0
Other	0
Total Crashes	**15**

Special Contributing Factors

Night	2
Day	13
Wet	2
Dry	13

Crash Summary

US 21 (MAIN ST) & S- 54 (LANGFORD RD)

RICHLAND COUNTY

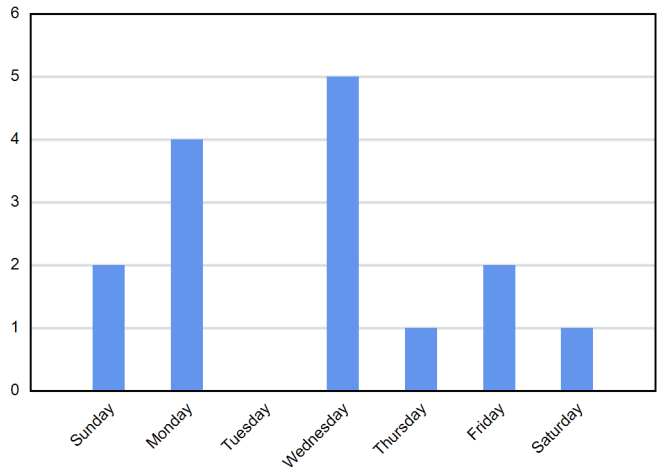
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 7,050

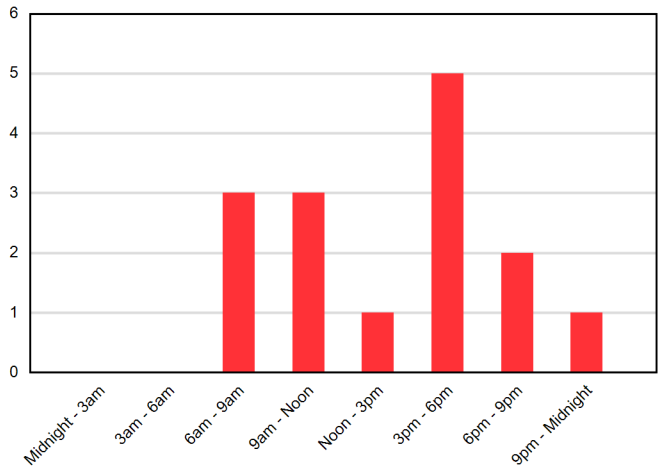
Functional Class = Urban -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	4	2	1	2	9
Angle	0	1	1	1	3
Sideswipe	0	0	1	0	1
Head On	0	0	0	0	0
Run Off Road	1	0	1	0	2
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	5	3	4	3	15

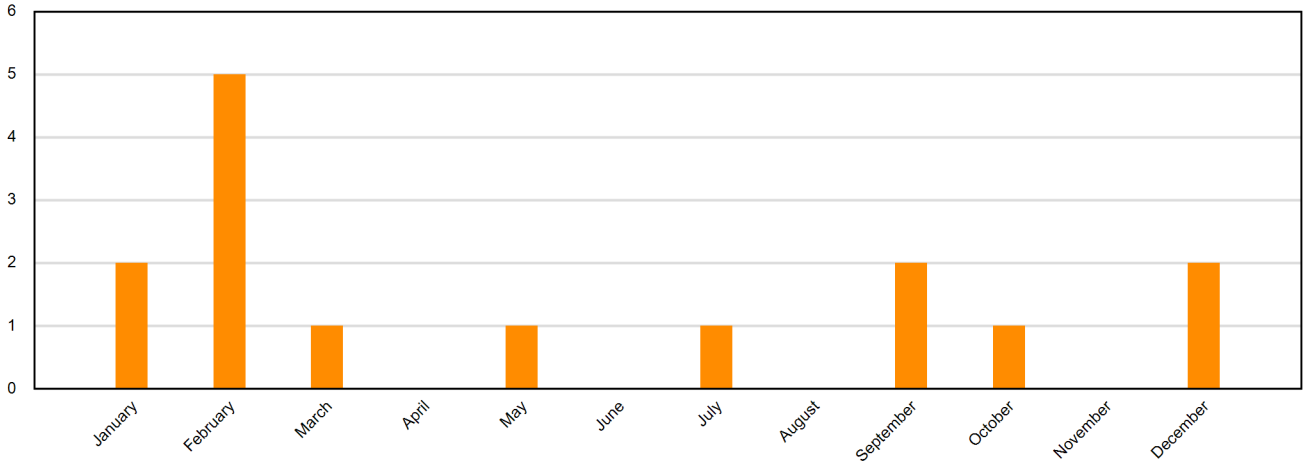
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

RICHLAND US 21 (MP 18.56) & Langford Rd S- 54 (MP 0)

Total Crashes: 15 Light: 13 Dark: 2 Dry: 13 Wet: 2 Fatalities: 0 Injuries: 2 PDO: 13

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15507022	01/19/2015	S-	54		LANGFORD RD	0.003	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
2	15573829	07/22/2015	S-	54		LANGFORD RD	0.005	1	INJ2	DARK	DRY	NO COLLISION W/MV	UNDER THE INFLUENCE	OTHER
3	15605163	09/30/2015	US	21		MAIN ST	18.533	3	INJ0	DAY	DRY	REAR END	UNDER THE INFLUENCE	MOTOR VEHICLE (IN TRANSPORT)
4	15605697	09/12/2015	US	21		MAIN ST	18.572	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (PARKED)
5	15637062	12/02/2015	S-	54		LANGFORD RD	0.039	4	INJ0	DAY	WET	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
6	16522265	02/22/2016	US	21		MAIN ST	18.557	0	INJ0	DARK	WET	ANGLE	DISREGARDED SIGNS, SIGNALS, ETC	MOTOR VEHICLE (IN TRANSPORT)
7	16561310	05/30/2016	S-	54		LANGFORD RD	0.056	5	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
8	16631172	10/02/2016	US	21		MAIN ST	18.551	1	INJ1	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
9	17513467	02/10/2017	US	21		MAIN ST	18.576	2	INJ0	DAY	DRY	SIDESWIPE SAME	MADE AN IMPROPER TURN	MOTOR VEHICLE (IN TRANSPORT)
10	17516023	02/05/2017	US	21		MAIN ST	18.528	3	INJ0	DAY	DRY	NO COLLISION W/MV	DRIVING TOO FAST FOR CONDITIONS	DITCH
11	17545118	03/22/2017	US	21		MAIN ST	18.538	2	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
12	17686492	12/18/2017	US	21		MAIN ST	18.533	3	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
13	18509867	01/11/2018	S-	54		LANGFORD RD	0.027	3	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
14	18532402	02/02/2018	US	21		MAIN ST	18.502	6	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
15	18534018	02/14/2018	S-	54		LANGFORD RD	0.015	1	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)

Crash Summary

US 21 (WILSON BLVD) & S- 1041 (RIMER POND RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 15,600

Functional Class = Urban -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	3
PDO Crashes	20
Total Crashes	**23**

Crashes by Manner Of Collision

Rear End	15
Angle	5
Sideswipe	1
Head On	0
Run Off Road	2
Animal	0
Bicycle	0
Pedestrian	0
Other	0
Total Crashes	**23**

Special Contributing Factors

Night	5
Day	18
Wet	3
Dry	20

Crash Summary

US 21 (WILSON BLVD) & S- 1041 (RIMER POND RD)

RICHLAND COUNTY

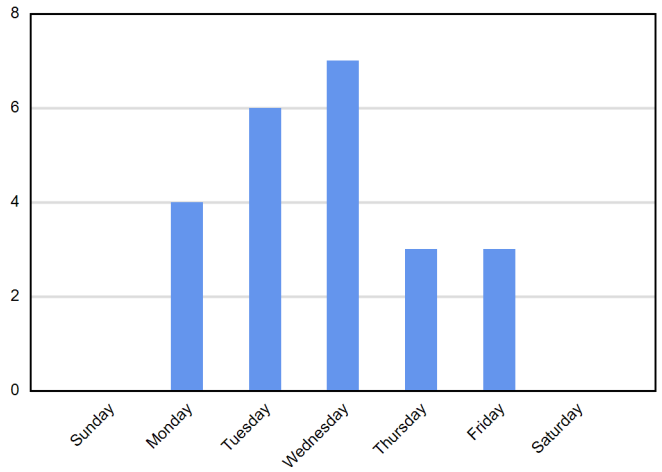
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 15,600

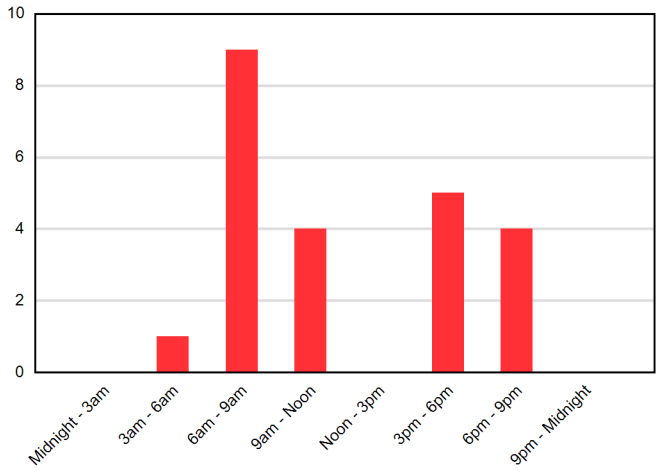
Functional Class = Urban -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	7	2	5	1	15
Angle	0	3	1	1	5
Sideswipe	0	1	0	0	1
Head On	0	0	0	0	0
Run Off Road	2	0	0	0	2
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	9	6	6	2	23

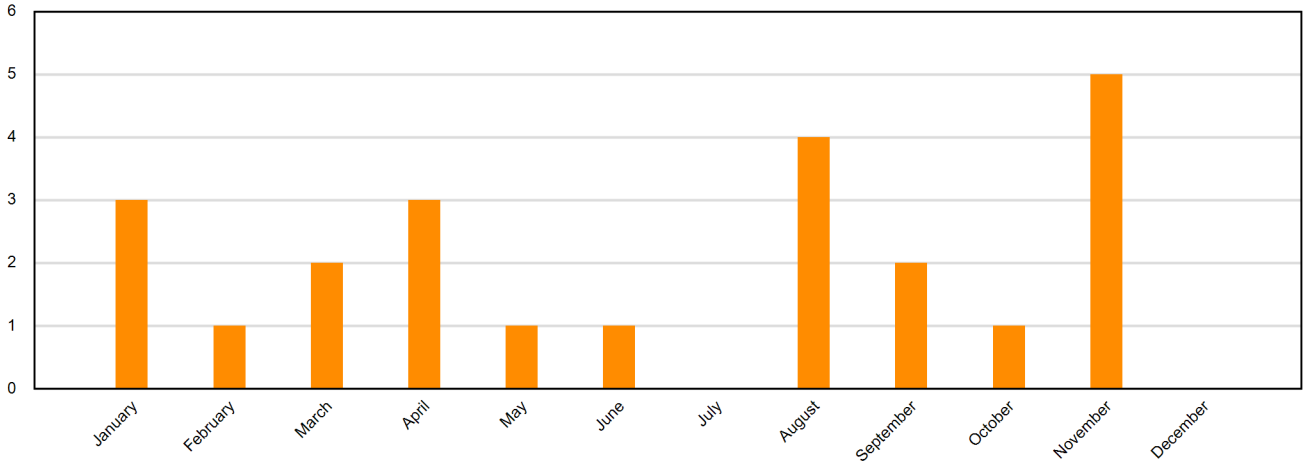
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

RICHLAND US 21 (MP 17.43) & Rimer Pond Rd S- 1041 (MP 6.525)

Total Crashes: 23 Light: 18 Dark: 5 Dry: 20 Wet: 3 Fatalities: 0 Injuries: 3 PDO: 20

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15519820	03/03/2015	US	21		WILSON BLVD	17.404	3	INJ0	DAY	WET	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
2	15521371	03/04/2015	S-	1041		RIMER POND RD	6.472	6	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
3	15531553	04/02/2015	US	21		WILSON BLVD	17.427	1	INJ0	DAY	DRY	NO COLLISION W/MV	DRIVING TOO FAST FOR CONDITIONS	OTHER (POST, POLE, SUPPORT, ETC)
4	15537769	04/15/2015	US	21		WILSON BLVD	17.52	9	INJ0	DAY	WET	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
5	15543651	04/28/2015	S-	1041		RIMER POND RD	6.409	12	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
6	15581098	08/05/2015	US	21		WILSON BLVD	17.426	0	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
7	15589871	08/19/2015	US	21		WILSON BLVD	17.332	18	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
8	15590649	08/31/2015	S-	1041		RIMER POND RD	6.428	10	INJ0	DARK	DRY	NO COLLISION W/MV	ANIMAL IN ROAD	DITCH
9	15626003	11/10/2015	S-	1041		RIMER POND RD	6.522	0	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
10	16522819	02/24/2016	US	21		WILSON BLVD	17.43	0	INJ0	DUSK	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
11	16580954	06/17/2016	US	21		WILSON BLVD	17.437	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
12	16632158	09/26/2016	US	21		WILSON BLVD	17.489	3	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
13	16647882	11/01/2016	US	21		WILSON BLVD	17.441	1	INJ0	DARK	DRY	SIDESWIPE SAME	IMPROPER LANE USAGE/CHANGE	MOTOR VEHICLE (IN TRANSPORT)
14	16653136	11/01/2016	US	21		WILSON BLVD	17.437	1	INJ1	DARK	DRY	ANGLE	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
15	16664326	11/18/2016	US	21		WILSON BLVD	17.393	4	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
16	17513142	01/20/2017	US	21		WILSON BLVD	17.351	8	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
17	17555109	05/01/2017	US	21		WILSON BLVD	17.43	1	INJ1	DAY	DRY	ANGLE	BRAKES	MOTOR VEHICLE (IN TRANSPORT)
18	17618257	08/23/2017	US	21		WILSON BLVD	17.453	2	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
19	17635642	09/13/2017	US	21		WILSON BLVD	17.454	2	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
20	17643436	10/16/2017	US	21		WILSON BLVD	17.393	4	INJ1	DAY	WET	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
21	17670777	11/30/2017	US	21		WILSON BLVD	17.435	1	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
22	18509882	01/11/2018	US	21		WILSON BLVD	17.428	1	INJ0	DARK	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
23	18533024	01/30/2018	US	21		WILSON BLVD	17.425	0	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)

Crash Summary

US 21 (WILSON BLVD) & SC 555 (FARROW RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 18,100

Functional Class = Urban -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	3
PDO Crashes	21
Total Crashes	**24**

Crashes by Manner Of Collision

Rear End	16
Angle	4
Sideswipe	0
Head On	1
Run Off Road	2
Animal	1
Bicycle	0
Pedestrian	0
Other	0
Total Crashes	**24**

Special Contributing Factors

Night	3
Day	21
Wet	4
Dry	20

Crash Summary

US 21 (WILSON BLVD) & SC 555 (FARROW RD)

RICHLAND COUNTY

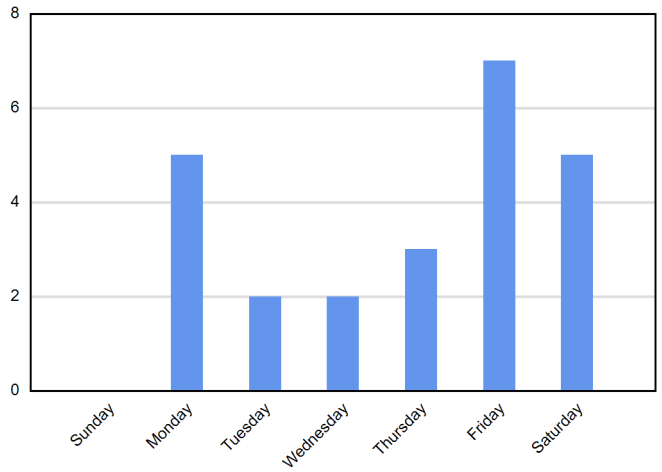
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 18,100

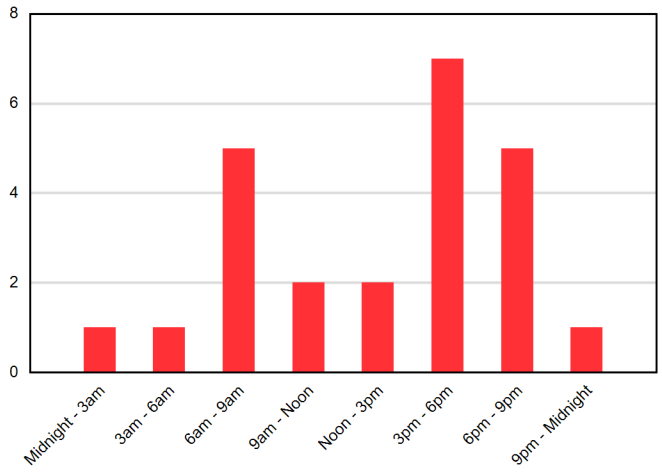
Functional Class = Urban -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	8	5	2	1	16
Angle	2	1	1	0	4
Sideswipe	0	0	0	0	0
Head On	0	1	0	0	1
Run Off Road	0	0	1	1	2
Animal	0	1	0	0	1
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	10	8	4	2	24

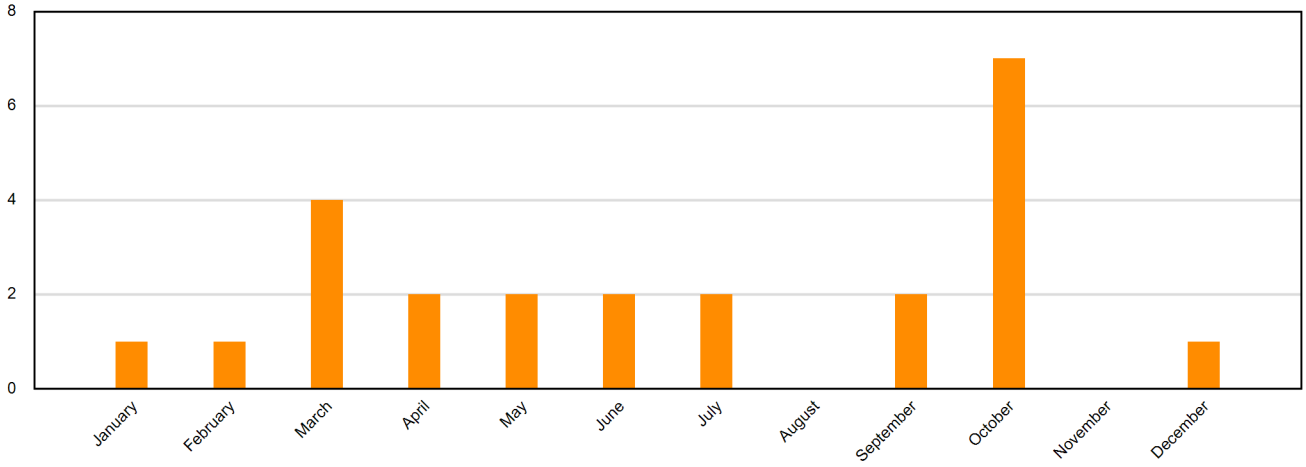
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

RICHLAND US 21 (MP 16.67) & SC 555 Farrow Road (MP 14.9)

Total Crashes: 24 Light: 21 Dark: 3 Dry: 20 Wet: 4 Fatalities: 0 Injuries: 3 PDO: 21

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15524482	03/13/2015	US	21		WILSON BLVD	16.686	2	INJ0	DAY	WET	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
2	15527104	03/17/2015	SC	555		FARROW RD	14.892	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
3	~~15536595~~	~~04/16/2015~~	~~US~~	~~21~~		~~WILSON BLVD~~	~~16.851~~	~~22~~	~~INJ0~~	~~DAY~~	~~WET~~	~~REAR END~~	~~DRIVING TOO FAST FOR CONDITIONS~~	~~MOTOR VEHICLE (IN TRANSPORT)~~
4	15548474	05/11/2015	SC	555		FARROW RD	14.889	1	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
5	~~15560802~~	~~05/30/2015~~	~~US~~	~~21~~		~~WILSON BLVD~~	~~16.43~~	~~73~~	~~INJ0~~	~~DAY~~	~~DRY~~	~~ANGLE~~	~~FAIL TO YIELD R.O.W.~~	~~MOTOR VEHICLE (IN TRANSPORT)~~
6	15561706	06/19/2015	SC	555		FARROW RD	14.895	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
7	15573356	06/27/2015	US	21		WILSON BLVD	16.674	0	INJ1	DAY	WET	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
8	15605729	09/11/2015	SC	555		FARROW RD	14.896	1	INJ0	DAY	DRY	REAR END	IMPROPER LANE USAGE/CHANGE	MOTOR VEHICLE (STOPPED)
9	15611003	10/14/2015	SC	555		FARROW RD	14.896	1	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
10	15648847	12/12/2015	SC	555		FARROW RD	14.893	1	INJ0	DARK	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
11	16534832	03/26/2016	US	21		WILSON BLVD	16.675	0	INJ1	DAY	DRY	ANGLE	MEDICAL RELATED	MOTOR VEHICLE (IN TRANSPORT)
12	16552316	04/11/2016	US	21		WILSON BLVD	16.682	1	INJ2	DAY	DRY	HEAD ON	WRONG SIDE OR WRONG WAY	MOTOR VEHICLE (IN TRANSPORT)
13	16598318	07/26/2016	SC	555		FARROW RD	14.815	9	INJ0	DARK	DRY	NO COLLISION W/MV	ANIMAL IN ROAD	ANIMAL (DEER ONLY)
14	16632950	10/21/2016	SC	555		FARROW RD	14.882	2	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
15	16635775	10/14/2016	US	21		WILSON BLVD	16.679	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
16	16635791	10/19/2016	SC	555		FARROW RD	14.89	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
17	16636201	10/21/2016	SC	555		FARROW RD	14.891	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
18	16639975	10/31/2016	SC	555		FARROW RD	14.9	0	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
19	17544772	02/27/2017	SC	555		FARROW RD	14.897	1	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
20	17592590	07/13/2017	SC	555		FARROW RD	14.892	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
21	17627084	09/22/2017	SC	555		FARROW RD	14.9	1	INJ0	DARK	DRY	ANGLE	MADE AN IMPROPER TURN	MOTOR VEHICLE (IN TRANSPORT)
22	17662652	10/16/2017	SC	555		FARROW RD	14.896	1	INJ0	DAY	WET	NO COLLISION W/MV	DRIVING TOO FAST FOR CONDITIONS	HIGHWAY TRAFFIC SIGN POST
23	~~18509707~~	~~01/06/2018~~	~~US~~	~~21~~		~~WILSON BLVD~~	~~16.832~~	~~29~~	~~INJ0~~	~~DAY~~	~~DRY~~	~~NO COLLISION W/MV~~	~~DRIVING TOO FAST FOR CONDITIONS~~	~~HIGHWAY TRAFFIC SIGN~~ POST
24	18545611	03/22/2018	SC	555		FARROW RD	14.896	0	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)

Crash Summary

US 21 (WILSON BLVD) & S- 2885 (UNNAMED ST) & S- 2886 (UNNAMED ST)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 11,982

Functional Class = Urban -- Minor Arterial

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	7
PDO Crashes	11
Total Crashes	**18**

Crashes by Manner Of Collision

Rear End	5
Angle	10
Sideswipe	1
Head On	0
Run Off Road	1
Animal	0
Bicycle	0
Pedestrian	0
Other	1
Total Crashes	**18**

Special Contributing Factors

Night	4
Day	14
Wet	1
Dry	17

Crash Summary

US 21 (WILSON BLVD) & S- 2885 (UNNAMED ST) & S- 2886 (UNNAMED ST)

RICHLAND COUNTY

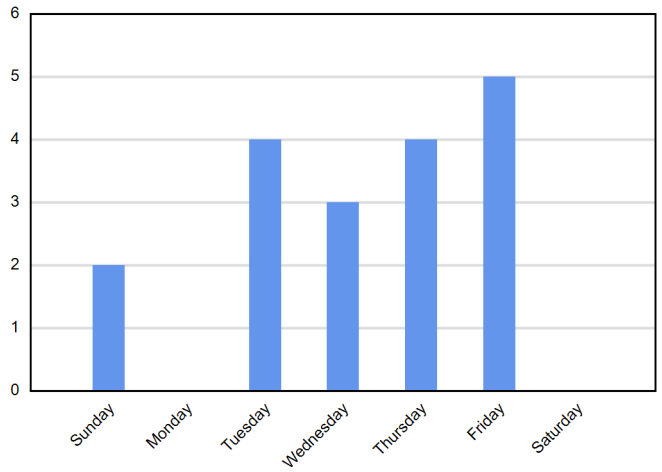
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 11,982

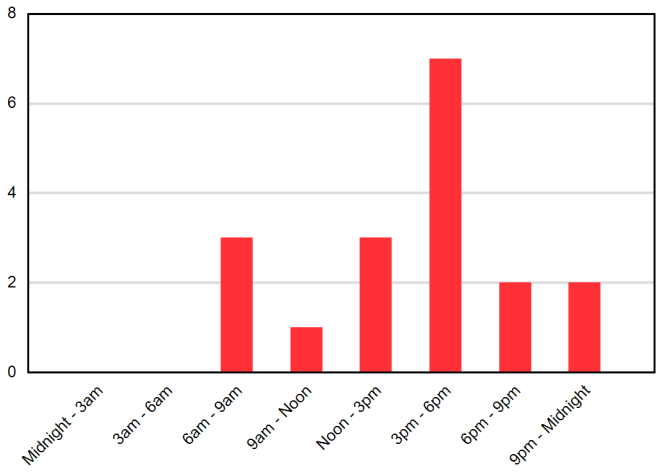
Functional Class = Urban -- Minor Arterial

Year	2015	2016	2017	2018	Total
Rear End	1	1	2	1	5
Angle	2	3	4	1	10
Sideswipe	0	1	0	0	1
Head On	0	0	0	0	0
Run Off Road	0	0	1	0	1
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	1	0	0	0	1
	4	5	7	2	18

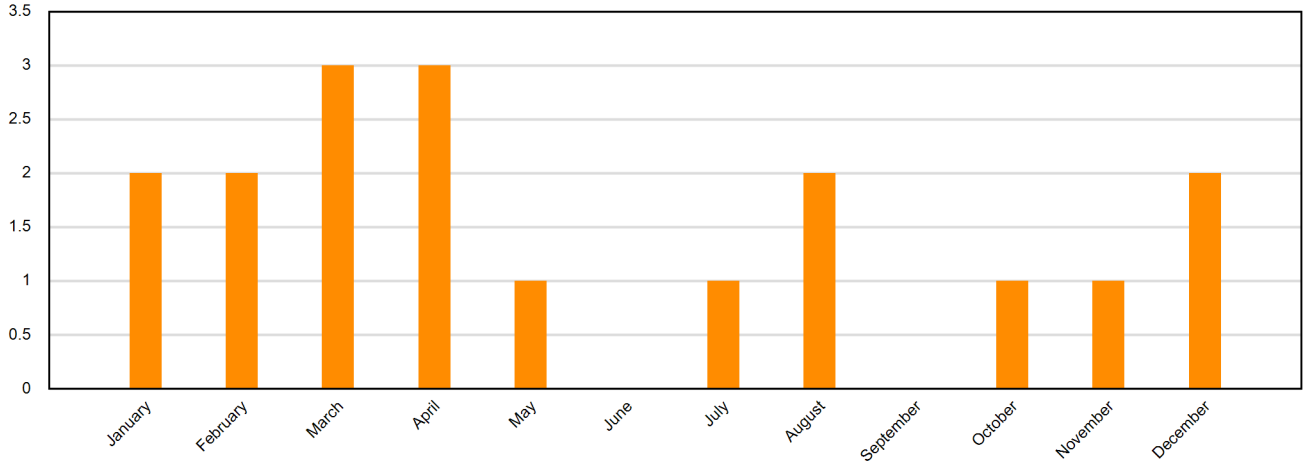
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

RICHLAND US 21 (MP 15.04) & Community Rd S- 2885 (MP 0.014) & RICHLAND S- 2886 (MP 0.09)

Total Crashes: 18 Light: 14 Dark: 4 Dry: 17 Wet: 1 Fatalities: 0 Injuries: 7 PDO: 11

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15524447	03/12/2015	S-	2885		COMMUNITY RD	0.026	1	INJ0	DAY	DRY	BACKED INTO	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
2	15537757	04/15/2015	S-	2885		COMMUNITY RD	0.028	1	INJ1	DAY	WET	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
3	15543708	04/30/2015	US	21		WILSON BLVD	15.043	0	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
4	15589975	08/25/2015	US	21		WILSON BLVD	15.06	1	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (STOPPED)
5	16528998	03/09/2016	US	21		WILSON BLVD	15.051	1	INJ1	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
6	16536239	03/18/2016	US	21		WILSON BLVD	15.043	2	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
7	~~16544220~~	~~04/19/2016~~	~~S-~~	~~2885~~		~~COMMUNITY RD~~	~~0.138~~	~~22~~	~~INJ1~~	~~DAY~~	~~DRY~~	~~ANGLE~~	~~FAIL TO YIELD R.O.W.~~	~~MOTOR VEHICLE (IN TRANSPORT)~~
8	16563234	05/25/2016	US	21		WILSON BLVD	15.106	7	INJ0	DAY	DRY	SIDESWIPE SAME	MADE AN IMPROPER TURN	MOTOR VEHICLE (IN TRANSPORT)
9	16605400	08/04/2016	S-	2885		COMMUNITY RD	0.023	1	INJ1	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
10	~~17509249~~	~~01/27/2017~~	~~S-~~	~~2885~~		~~COMMUNITY RD~~	~~0.141~~	~~23~~	~~INJ0~~	~~DARK~~	~~DRY~~	~~ANGLE~~	~~MADE AN IMPROPER TURN~~	~~MOTOR VEHICLE (IN TRANSPORT)~~
11	17513456	02/07/2017	S-	2885		COMMUNITY RD	0.028	1	INJ0	DAY	DRY	REAR END	OTHER IMP. ACT	MOTOR VEHICLE (STOPPED)
12	17598926	07/30/2017	S-	2885		COMMUNITY RD	0.017	1	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
13	17647686	10/05/2017	US	21		WILSON BLVD	15.082	4	INJ0	DARK	DRY	ANGLE	IMPROPER LANE USAGE/CHANGE	MOTOR VEHICLE (IN TRANSPORT)
14	~~17659370~~	~~11/12/2017~~	~~S-~~	~~2885~~		~~COMMUNITY RD~~	~~0.657~~	~~437~~	~~INJ0~~	~~DARK~~	~~DRY~~	~~NO COLLISION W/MV~~	~~DRIVING TOO FAST FOR CONDITIONS~~	~~TREE~~
15	17683427	12/15/2017	US	21		WILSON BLVD	15.042	0	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
16	17683484	12/22/2017	US	21		WILSON BLVD	15.04	0	INJ2	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
17	18514232	01/23/2018	S-	2885		COMMUNITY RD	0.015	0	INJ1	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
18	~~18536690~~	~~02/23/2018~~	~~S-~~	~~2885~~		~~COMMUNITY RD~~	~~0.129~~	~~32~~	~~INJ1~~	~~DARK~~	~~DRY~~	~~ANGLE~~	~~FAIL TO YIELD R.O.W.~~	~~MOTOR VEHICLE (IN TRANSPORT)~~

Crash Summary

S- 54 (LANGFORD RD) & S- 220 (SANDFIELD RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 7,300

Functional Class = Rural -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	2
PDO Crashes	4
Total Crashes	**6**

Crashes by Manner Of Collision

Rear End	3
Angle	2
Sideswipe	0
Head On	0
Run Off Road	1
Animal	0
Bicycle	0
Pedestrian	0
Other	0
Total Crashes	**6**

Special Contributing Factors

Night	1
Day	5
Wet	0
Dry	6

Crash Summary

S- 54 (LANGFORD RD) & S- 220 (SANDFIELD RD)

RICHLAND COUNTY

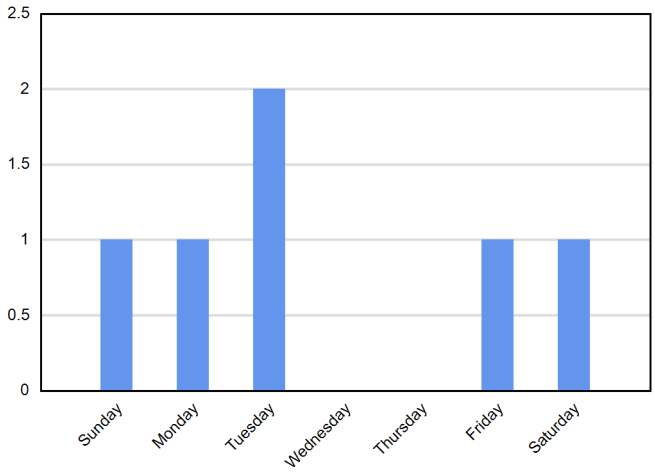
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 7,300

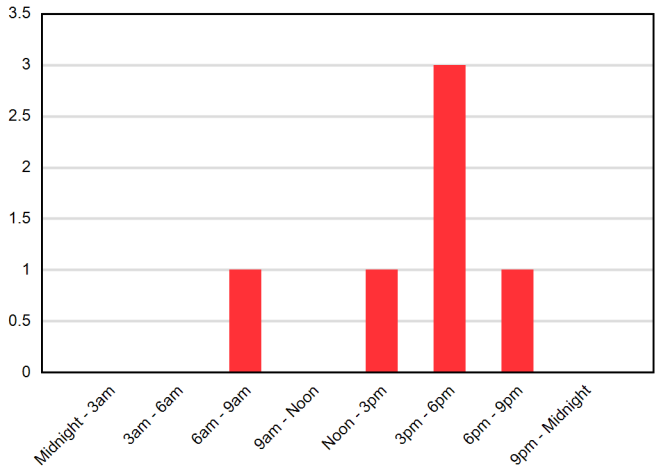
Functional Class = Rural -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	1	0	2	0	3
Angle	1	0	0	1	2
Sideswipe	0	0	0	0	0
Head On	0	0	0	0	0
Run Off Road	1	0	0	0	1
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	3	0	2	1	6

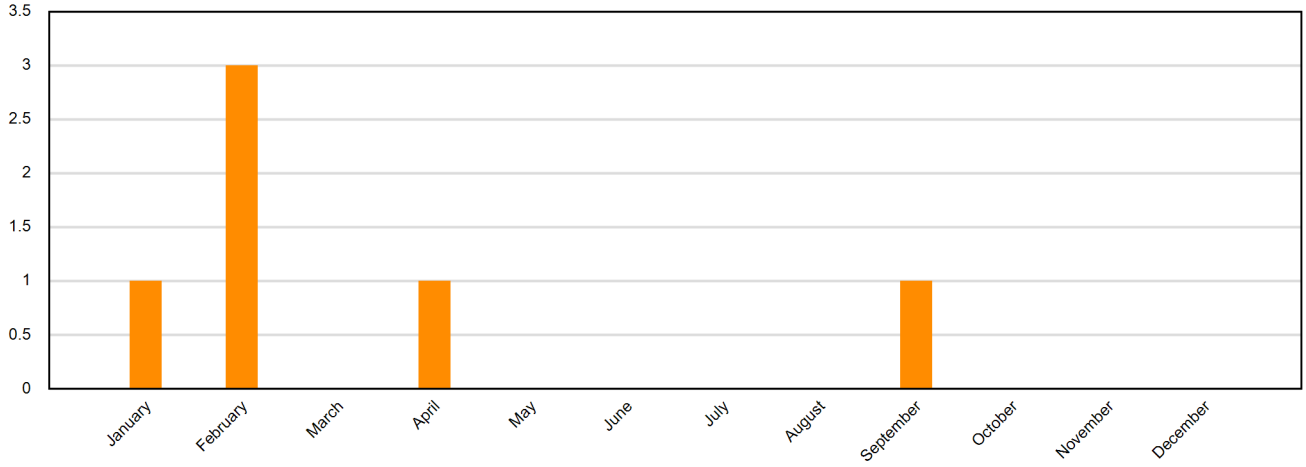
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

Langford Rd S- 54 (MP 0.18) & Sandfield S- 220 (MP 0)

Total Crashes: 6 Light: 5 Dark: 1 Dry: 6 Wet: 0 Fatalities: 0 Injuries: 2 PDO: 4

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15511119	01/30/2015	S-	54		LANGFORD RD	0.166	1	INJ1	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
2	~~15513910~~	~~02/08/2015~~	~~S-~~	~~54~~		~~LANGFORD RD~~	~~0.065~~	~~17~~	~~INJ0~~	~~DAY~~	~~DRY~~	~~ANGLE~~	~~FAIL TO YIELD R.O.W.~~	~~MOTOR VEHICLE (IN TRANSPORT)~~
3	~~15518406~~	~~02/21/2015~~	~~S-~~	~~220~~		~~SANDFIELD RD~~	~~0.585~~	~~40~~	~~INJ0~~	~~DUSK~~	~~DRY~~	~~NO COLLISION W/MV~~	~~DRIVING TOO FAST FOR CONDITIONS~~	~~FENCE~~
4	~~17544917~~	~~04/18/2017~~	~~S-~~	~~54~~		~~LANGFORD RD~~	~~0.444~~	~~73~~	~~INJ0~~	~~DAY~~	~~DRY~~	~~REAR END~~	~~DRIVING TOO FAST FOR CONDITIONS~~	~~MOTOR VEHICLE (IN TRANSPORT)~~
5	17638205	09/18/2017	S-	54		LANGFORD RD	0.158	2	INJ1	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
6	18535440	02/06/2018	S-	54		LANGFORD RD	0.183	0	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)

Crash Summary

S- 54 (LANGFORD RD) & S- 1899 (TRADING POST RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 8,065

Functional Class = Rural -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	0
PDO Crashes	3
Total Crashes	**3**

Crashes by Manner Of Collision

Rear End	0
Angle	2
Sideswipe	1
Head On	0
Run Off Road	0
Animal	0
Bicycle	0
Pedestrian	0
Other	0
Total Crashes	**3**

Special Contributing Factors

Night	0
Day	3
Wet	0
Dry	3

Crash Summary

S- 54 (LANGFORD RD) & S- 1899 (TRADING POST RD)

RICHLAND COUNTY

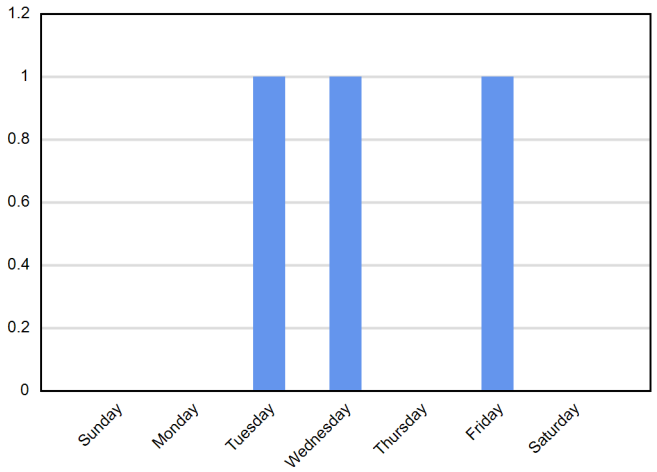
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 8,065

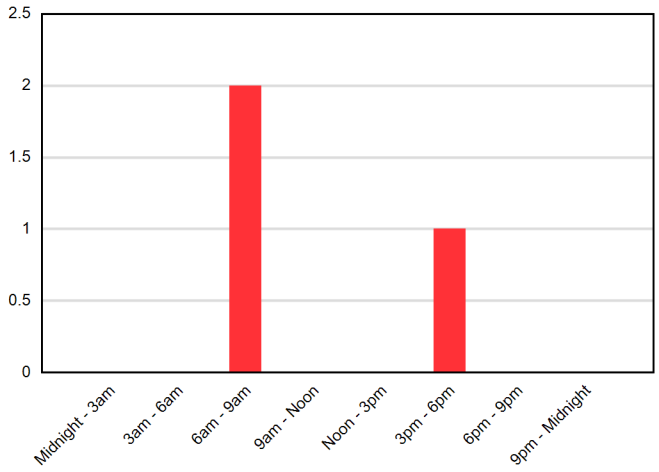
Functional Class = Rural -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	0	0	0	0	0
Angle	1	0	1	0	2
Sideswipe	0	1	0	0	1
Head On	0	0	0	0	0
Run Off Road	0	0	0	0	0
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	1	1	1	0	3

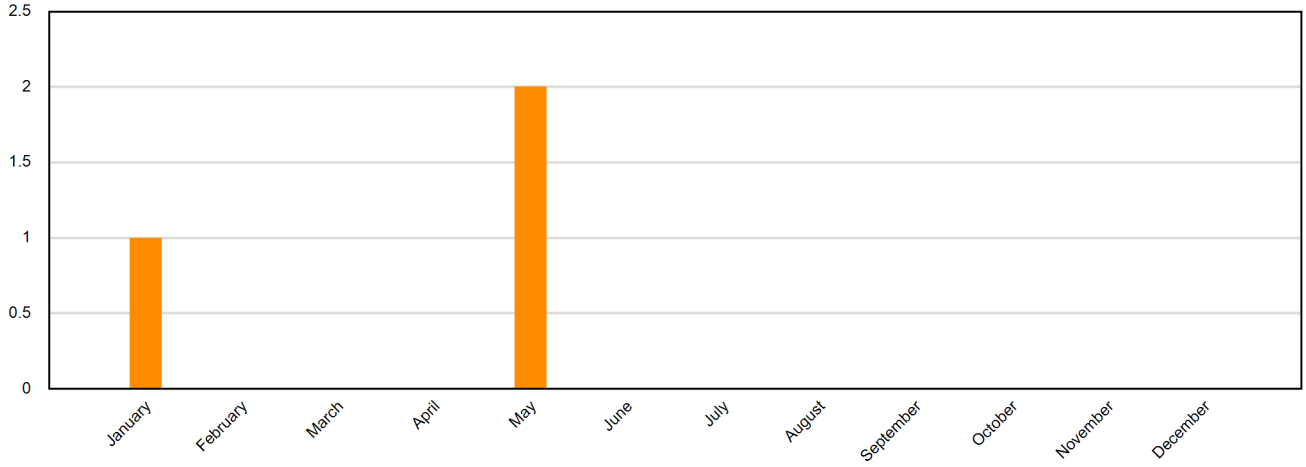
Day of the Week



Time of Day



Month of the Year

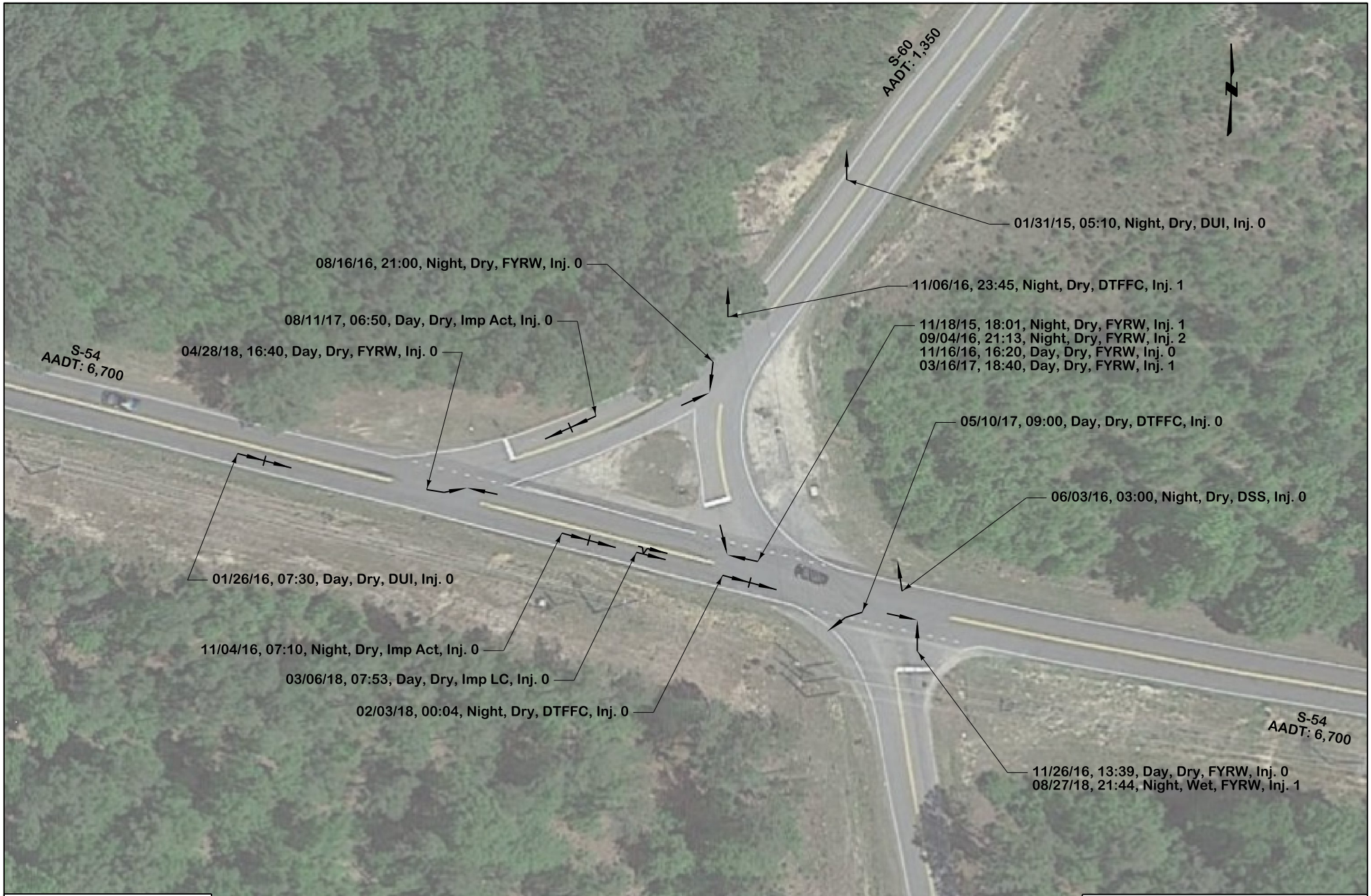


Intersection Crashes

Langford S- 54 (MP 2.05) & Trading Post S- 1899 (MP 0.71)

Total Crashes: 3 Light: 3 Dark: 0 Dry: 3 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 3

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15560711	05/26/2015	S-	54		LANGFORD RD	2.047	0	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
2	16503770	01/01/2016	S-	54		LANGFORD RD	2.045	1	INJ0	DAY	DRY	SIDESWIPE SAME	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (IN TRANSPORT)
3	17567627	05/03/2017	S-	54		LANGFORD RD	2.261	17	INJ0	DAY	DRY	ANGLE	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)



LEGEND

DSS - Disregarded Sign or Signal
Inatt - Inattention
DTFFC - Driving Too Fast for Conditions
FYRW - Failure to Yield Right of Way
ROR - Ran off Road
FTC - Followed Too Closely
AOV - Aggressive Operation of Vehicle
SAO - Swerving to Avoid Object
DUI - Under the Influence
Imp LC - Improper Lane Change

RA = Right Angle
RE = Rear End
SS = Side Swipe
HO = Head On
OC = Out of Control
HA = Hit Animal
OTH = Other

YR	2015	2016	2017	2018	Total
RA	1	4	1	2	8
RE	0	2	1	1	4
SS	0	0	0	1	1
HO	0	0	0	0	0
OC	1	2	1	0	4
HA	0	0	0	0	0
OTH	0	0	0	0	0
Total	2	8	3	4	17

Night - 8
Day - 9

Wet - 1
Dry - 16

Total = 17
AADT = 10,475
Years = 3.5
01/01/15 - 06/30/18
CR = 1.27
SI = 2.018

PDO - 12
Inj. 1 - 4
Inj. 2 - 1
Inj. 3 - 0
Fatal - 0

SCDOT
South Carolina Department of Transportation

TRAFFIC ENGINEERING DIVISION
COLUMBIA,S.C.
TRAFFIC SAFETY PROGRAM

SUBJECT TITLE	Collision Diagram		
SPECIFIC LOCATION	S-54 & S-60 & S-83		
CITY	Blythewood	COUNTY	Richland
DRAWN BY	DATE	SCALE	PAGE
JCB	11/08/18	None	1 of 1

Crash Summary

S- 1051 (ROUND TOP CHURCH RD) & S- 1899 (TRADING POST RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 5,165

Functional Class = Rural -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	0
PDO Crashes	1
Total Crashes	**1**

Crashes by Manner Of Collision

Rear End	0
Angle	1
Sideswipe	0
Head On	0
Run Off Road	0
Animal	0
Bicycle	0
Pedestrian	0
Other	0
Total Crashes	**1**

Special Contributing Factors

Night	0
Day	1
Wet	0
Dry	1

Crash Summary

S- 1051 (ROUND TOP CHURCH RD) & S- 1899 (TRADING POST RD)

RICHLAND COUNTY

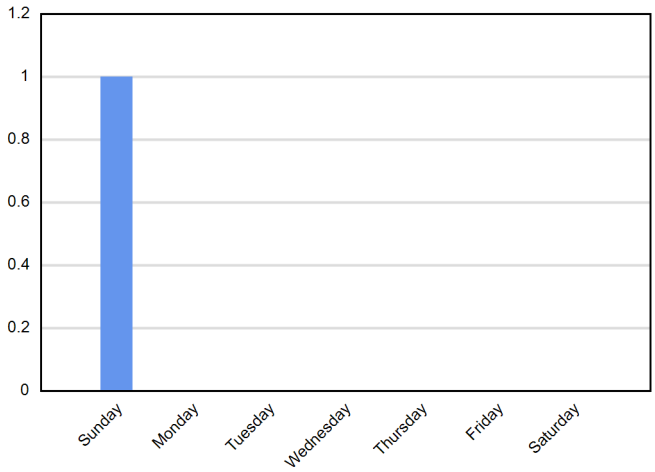
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 5,165

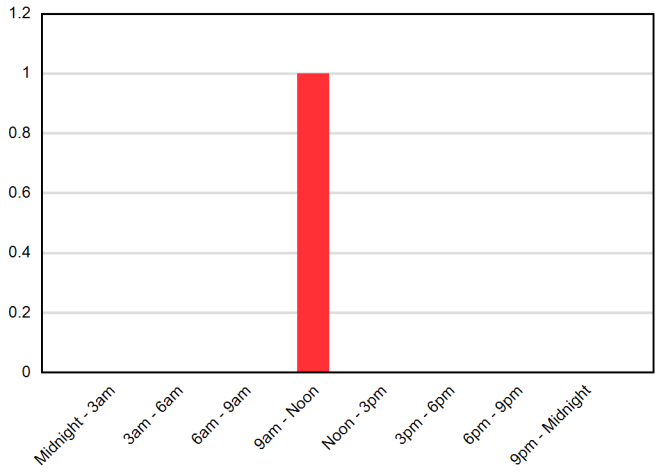
Functional Class = Rural -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	0	0	0	0	0
Angle	1	0	0	0	1
Sideswipe	0	0	0	0	0
Head On	0	0	0	0	0
Run Off Road	0	0	0	0	0
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	0	0	0	0	0
	1	0	0	0	1

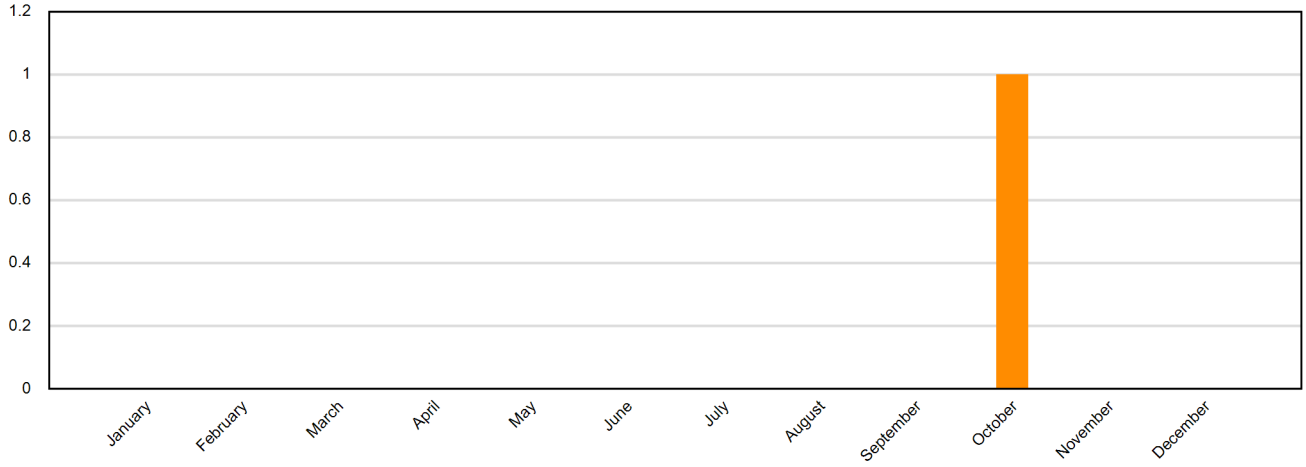
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

Round Top Church Rd S- 1051 (MP 5.44) & Trading Post S- 1899 (MP 0)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 1

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	15615299	10/11/2015	S-	1899		TRADING POST RD	0.012	1	INJ0	DAY	DRY	ANGLE	MADE AN IMPROPER TURN	MOTOR VEHICLE (STOPPED)

Crash Summary

S- 1041 (RIMER POND RD) & S- 1051 (ROUND TOP CHURCH RD)

RICHLAND COUNTY

01/01/2015 - 03/31/2018 (3.2 years)

AADT = 8,600

Functional Class = Urban -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	4
PDO Crashes	8
Total Crashes	**12**

Crashes by Manner Of Collision

Rear End	3
Angle	4
Sideswipe	2
Head On	0
Run Off Road	2
Animal	0
Bicycle	0
Pedestrian	0
Other	1
Total Crashes	**12**

Special Contributing Factors

Night	3
Day	9
Wet	2
Dry	10

Crash Summary

S- 1041 (RIMER POND RD) & S- 1051 (ROUND TOP CHURCH RD)

RICHLAND COUNTY

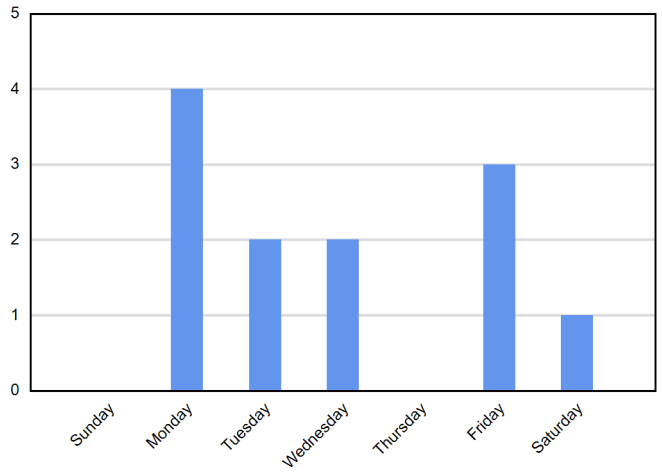
01/01/2015 - 03/31/2018 (3.2 years)

AADT = 8,600

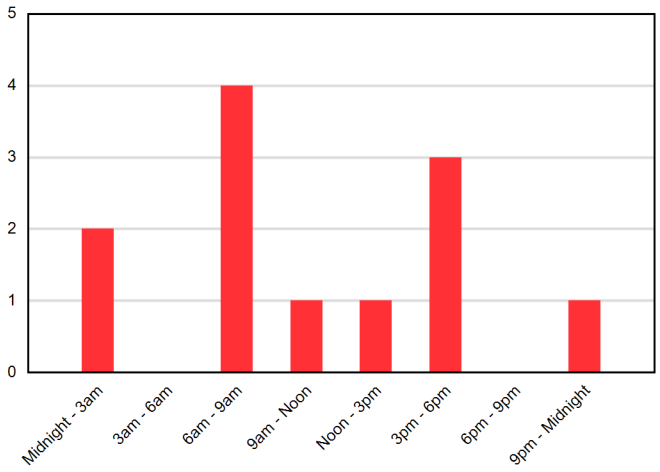
Functional Class = Urban -- Major Collector

Year	2015	2016	2017	2018	Total
Rear End	1	2	0	0	3
Angle	1	0	2	1	4
Sideswipe	0	0	2	0	2
Head On	0	0	0	0	0
Run Off Road	1	0	1	0	2
Animal	0	0	0	0	0
Bicycle	0	0	0	0	0
Pedestrian	0	0	0	0	0
Other	1	0	0	0	1
	4	2	5	1	12

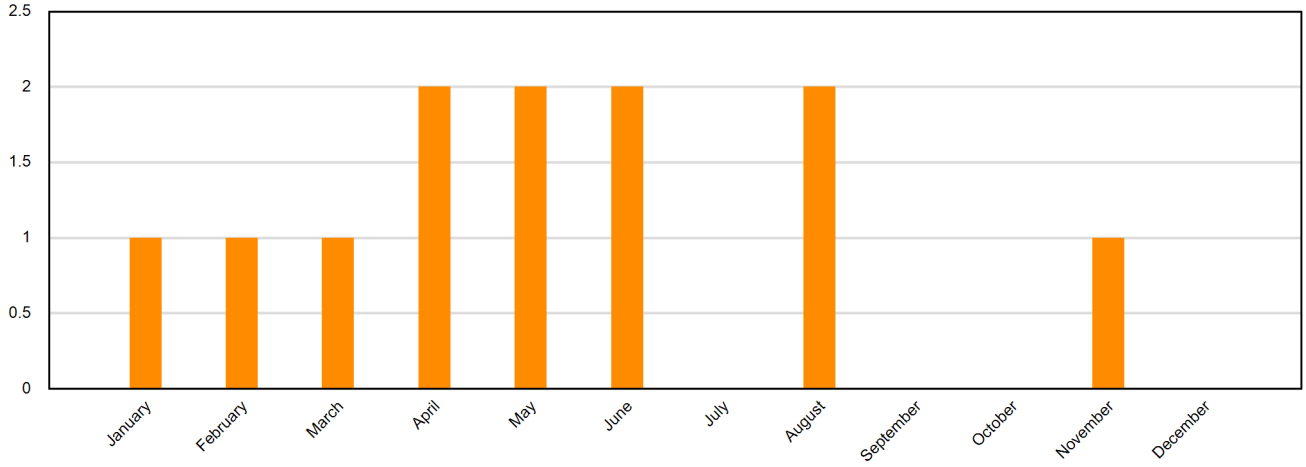
Day of the Week



Time of Day



Month of the Year



Intersection Crashes

Rimer Pond Rd S- 1041 (MP 3.88) & Round Top Church/Longtown Rd S- 1051 (MP 5.29)

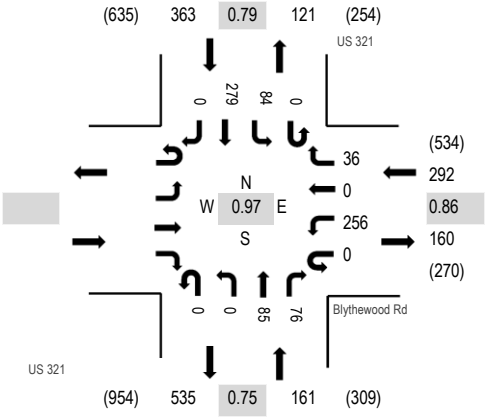
Total Crashes: 12 Light: 9 Dark: 3 Dry: 10 Wet: 2 Fatalities: 0 Injuries: 4 PDO: 8

OBS	CrashNo	Date	RT	RN	RA	St Name	MPT	BDO	INJ	Light	SRFC	MAC	Probable Cause	FHE
1	~~15534420~~	~~04/06/2015~~	~~S-~~	~~1041~~		~~RIMER POND RD~~	~~4.242~~	~~32~~	~~INJ0~~	~~DAY~~	~~DRY~~	~~NO COLLISION W/MV~~	~~IMPROPER LANE USAGE/CHANGE~~	~~MAIL BOX~~
2	15541946	04/24/2015	S-	1041		RIMER POND RD	3.939	5	INJ0	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
3	15560283	05/15/2015	S-	1051		ROUND TOP CHURCH RD	5.294	0	INJ0	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)
4	~~15560892~~	~~06/03/2015~~	~~S-~~	~~1041~~		~~RIMER POND RD~~	~~4.268~~	~~34~~	~~INJ0~~	~~DAY~~	~~DRY~~	~~BACKED INTO~~	~~OTHER IMP. ACT~~	~~MOTOR VEHICLE~~ (IN TRANSPORT)
5	~~16593171~~	~~06/28/2016~~	~~S-~~	~~1041~~		~~RIMER POND RD~~	~~4.197~~	~~28~~	~~INJ1~~	~~DAY~~	~~DRY~~	~~REAR END~~	~~DRIVING TOO FAST FOR CONDITIONS~~	~~MOTOR VEHICLE~~ (IN TRANSPORT)
6	16618884	08/22/2016	S-	1041		RIMER POND RD	3.989	9	INJ1	DAY	DRY	REAR END	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHICLE (STOPPED)
7	~~17506714~~	~~01/16/2017~~	~~S-~~	~~1041~~		~~RIMER POND RD~~	~~4.463~~	~~152~~	~~INJ0~~	~~DARK~~	~~DRY~~	~~NO COLLISION W/MV~~	~~ANIMAL IN ROAD~~	~~TREE~~
8	17535754	03/10/2017	S-	1041		RIMER POND RD	3.907	2	INJ0	DAY	DRY	SIDESWIPE SAME	IMPROPER LANE USAGE/CHANGE	MOTOR VEHICLE (IN TRANSPORT)
9	17553000	05/01/2017	S-	1051		ROUND TOP CHURCH RD	5.35	6	INJ1	DAY	WET	ANGLE	RUT, HOLES, BUMPS	OTHER MOVABLE OBJECT
10	17618130	08/19/2017	S-	1051		LONGTOWN RD E	5.254	4	INJ0	DARK	DRY	SIDESWIPE OPP	IMPROPER LANE USAGE/CHANGE	MOTOR VEHICLE (IN TRANSPORT)
11	17676097	11/21/2017	S-	1041		RIMER POND RD	3.836	6	INJ0	DARK	WET	ANGLE	DISREGARDED SIGNS, SIGNALS, ETC	MOTOR VEHICLE (IN TRANSPORT)
12	18516786	02/14/2018	S-	1041		RIMER POND RD	3.974	8	INJ1	DAY	DRY	ANGLE	FAIL TO YIELD R.O.W.	MOTOR VEHICLE (IN TRANSPORT)

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

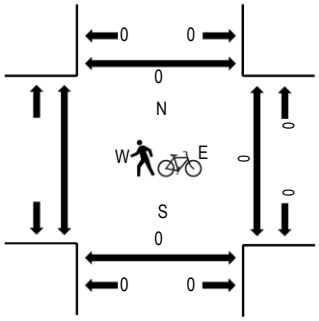
Location: 2 US 321 & Blythewood Rd AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Blythewood Rd Westbound U-Turn	Blythewood Rd Westbound Left	Blythewood Rd Westbound Thru	Blythewood Rd Westbound Right	US 321 Northbound U-Turn	US 321 Northbound Left	US 321 Northbound Thru	US 321 Northbound Right	US 321 Southbound U-Turn	US 321 Southbound Left	US 321 Southbound Thru	US 321 Southbound Right	Total	Rolling Hour	Pedestrain Crossings West	Pedestrain Crossings East	Pedestrain Crossings South	Pedestrain Crossings North
7:00 AM					0	34	0	13	0	0	40	18	0	20	54	0	179	794		0	0	0
7:15 AM					0	60	0	5	0	0	26	24	0	15	70	0	200	816		0	0	0
7:30 AM					0	75	0	10	0	0	16	17	0	16	71	0	205	799		0	0	0
7:45 AM					0	52	0	9	0	0	21	13	0	32	83	0	210	746		0	0	0
8:00 AM					0	69	0	12	0	0	22	22	0	21	55	0	201	684		0	0	0
8:15 AM					0	58	0	9	0	0	25	16	0	12	63	0	183			0	0	0
8:30 AM					0	64	0	7	0	0	19	5	0	8	49	0	152			0	0	0
8:45 AM					0	51	0	6	0	0	14	11	0	20	46	0	148			0	0	0

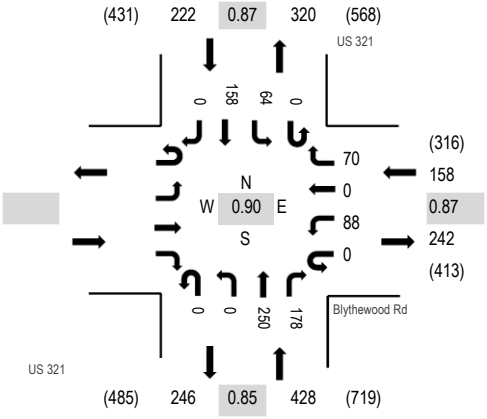
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound U-Turn	Westbound Left	Westbound Thru	Westbound Right	Northbound U-Turn	Northbound Left	Northbound Thru	Northbound Right	Southbound U-Turn	Southbound Left	Southbound Thru	Southbound Right	Total
Articulated Trucks					0	5	0	0	0	0	0	0	0	0	2	0	7
Lights					0	241	0	36	0	0	81	70	0	81	267	0	776
Mediums					0	10	0	0	0	0	4	6	0	3	10	0	33
Total					0	256	0	36	0	0	85	76	0	84	279	0	816

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

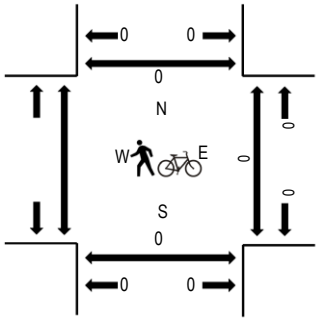
Location: 2 US 321 & Blythewood Rd PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Blythewood Rd Westbound U-Turn	Blythewood Rd Westbound Left	Blythewood Rd Westbound Thru	Blythewood Rd Westbound Right	US 321 Northbound U-Turn	US 321 Northbound Left	US 321 Northbound Thru	US 321 Northbound Right	US 321 Southbound U-Turn	US 321 Southbound Left	US 321 Southbound Thru	US 321 Southbound Right	Total	Rolling Hour	Pedestrain Crossings West	Pedestrain Crossings East	Pedestrain Crossings South	Pedestrain Crossings North
4:00 PM					0	18	0	16	0	0	40	26	0	16	28	0	144	658		0	0	0
4:15 PM					0	26	0	11	0	0	45	19	0	14	39	0	154	693		0	0	0
4:30 PM					0	33	0	17	0	0	46	29	0	23	41	0	189	761		0	0	0
4:45 PM					0	24	0	13	0	0	60	26	0	18	30	0	171	797		0	0	0
5:00 PM					0	26	0	21	0	0	46	37	0	21	28	0	179	808		0	0	0
5:15 PM					0	20	0	20	0	0	72	45	0	17	48	0	222			0	0	0
5:30 PM					0	32	0	15	0	0	76	50	0	10	42	0	225			0	0	0
5:45 PM					0	10	0	14	0	0	56	46	0	16	40	0	182			0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound U-Turn	Westbound Left	Westbound Thru	Westbound Right	Northbound U-Turn	Northbound Left	Northbound Thru	Northbound Right	Southbound U-Turn	Southbound Left	Southbound Thru	Southbound Right	Total
Articulated Trucks					0	1	0	0	0	0	1	0	0	0	5	0	7
Lights					0	84	0	68	0	0	247	178	0	63	150	0	790
Mediums					0	3	0	2	0	0	2	0	0	1	3	0	11
Total					0	88	0	70	0	0	250	178	0	64	158	0	808

All Traffic Data Services Inc.
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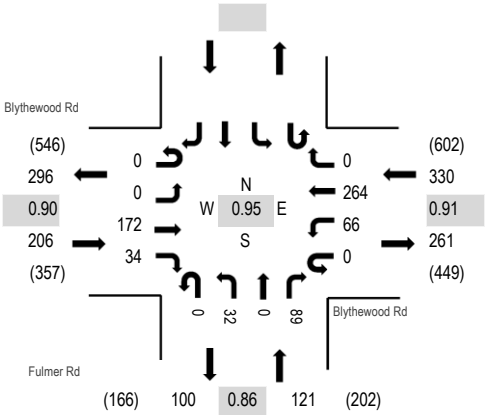
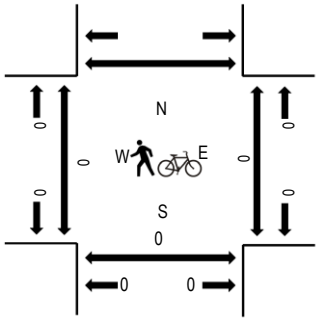
Location: 1 Fulmer Rd & Blythewood Rd AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Blythewood Rd Eastbound				Blythewood Rd Westbound				Fulmer Rd Northbound				Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	44	7	0	11	40	0	0	6	0	37					145	640	0	0	0	
7:15 AM	0	0	36	5	0	23	62	0	0	6	0	31					163	657	0	0	0	
7:30 AM	0	0	47	10	0	6	60	0	0	13	0	23					159	626	0	0	0	
7:45 AM	0	0	49	7	0	22	63	0	0	8	0	24					173	587	0	0	0	
8:00 AM	0	0	40	12	0	15	79	0	0	5	0	11					162	521	0	0	0	
8:15 AM	0	0	28	9	0	13	69	0	0	5	0	8					132		0	0	0	
8:30 AM	0	0	25	4	0	10	71	0	0	2	0	8					120		0	0	0	
8:45 AM	0	0	28	6	0	6	52	0	0	5	0	10					107		0	0	0	

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	4	0	0	0	0	0					4
Lights	0	0	162	34	0	64	248	0	0	31	0	89					628
Mediums	0	0	10	0	0	2	12	0	0	1	0	0					25
Total	0	0	172	34	0	66	264	0	0	32	0	89					657

All Traffic Data Services Inc.
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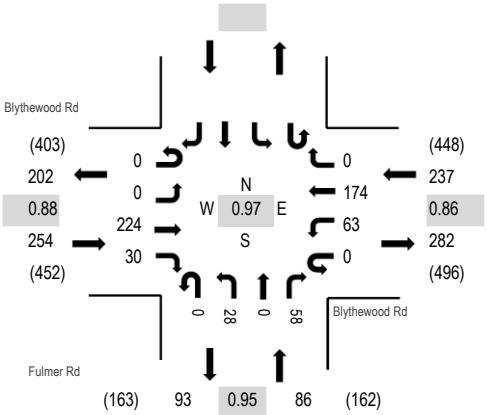
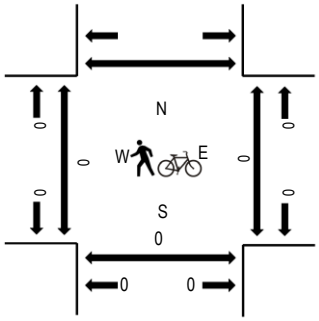
Location: 1 Fulmer Rd & Blythewood Rd PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Blythewood Rd Eastbound				Blythewood Rd Westbound				Fulmer Rd Northbound				Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	44	5	0	7	32	0	0	11	0	9					108	485	0	0	0	
4:15 PM	0	0	36	3	0	11	41	0	0	7	0	5					103	524	0	0	0	
4:30 PM	0	0	49	8	0	16	55	0	0	7	0	13					148	562	0	0	0	
4:45 PM	0	0	46	7	0	13	36	0	0	12	0	12					126	563	0	0	0	
5:00 PM	0	0	45	7	0	13	58	0	0	7	0	17					147	577	0	0	0	
5:15 PM	0	0	60	7	0	15	36	0	0	8	0	15					141		0	0	0	
5:30 PM	0	0	56	7	0	16	52	0	0	5	0	13					149		0	0	0	
5:45 PM	0	0	63	9	0	19	28	0	0	8	0	13					140		0	0	0	

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	1	0	0	0	0	1					2
Lights	0	0	221	29	0	63	167	0	0	28	0	56					564
Mediums	0	0	3	1	0	0	6	0	0	0	0	1					11
Total	0	0	224	30	0	63	174	0	0	28	0	58					577

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : Blythewood Rd @ Muller Rd
Site Code : 01262016
Start Date : 4/21/2016
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

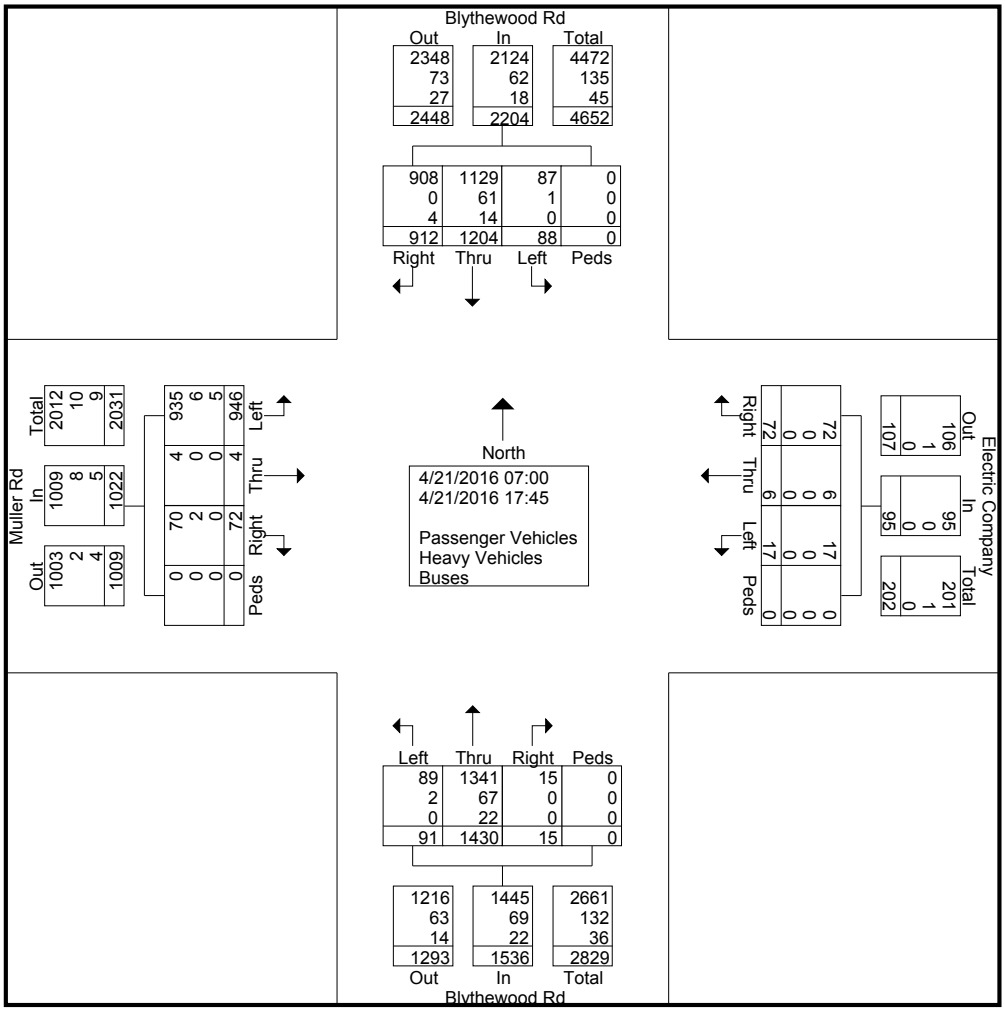
	Blythewood Rd Southbound				Electric Company Westbound				Blythewood Rd Northbound				Muller Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	1	38	93	0	0	0	0	0	16	69	0	0	90	0	13	0	320
07:15	9	64	93	0	1	0	0	0	17	91	1	0	129	2	14	0	421
07:30	6	35	49	0	0	0	2	0	2	79	2	0	69	2	4	0	250
07:45	10	51	56	0	0	1	1	0	4	82	2	0	67	0	6	0	280
Total	26	188	291	0	1	1	3	0	39	321	5	0	355	4	37	0	1271
08:00	3	53	42	0	2	0	3	0	4	60	1	0	66	0	2	0	236
08:15	1	35	12	0	0	0	1	0	3	56	0	0	14	0	1	0	123
08:30	3	33	15	0	0	0	1	0	0	30	0	0	27	0	0	0	109
08:45	4	37	12	0	2	0	4	0	1	52	1	0	16	0	0	0	129
Total	11	158	81	0	4	0	9	0	8	198	2	0	123	0	3	0	597
14:00	3	41	26	0	1	0	6	0	5	29	0	0	21	0	0	0	132
14:15	1	30	46	0	0	0	0	0	4	56	1	0	20	0	2	0	160
14:30	3	42	48	0	0	1	3	0	4	53	0	0	63	0	4	0	221
14:45	3	39	52	0	0	0	2	0	4	51	0	0	95	0	7	0	253
Total	10	152	172	0	1	1	11	0	17	189	1	0	199	0	13	0	766
15:00	7	47	32	0	4	0	3	0	3	44	1	0	53	0	3	0	197
15:15	4	55	26	0	0	0	3	0	0	39	0	0	18	0	2	0	147
15:30	3	53	23	0	0	0	0	0	2	39	0	0	27	0	5	0	152
15:45	0	56	25	0	0	0	4	0	2	67	0	0	19	0	5	0	178
Total	14	211	106	0	4	0	10	0	7	189	1	0	117	0	15	0	674
16:00	7	54	18	0	1	0	6	0	0	55	4	0	16	0	0	0	161
16:15	6	66	24	0	2	0	2	0	3	56	0	0	15	0	1	0	175
16:30	6	72	20	0	1	1	9	0	1	65	1	0	19	0	1	0	196
16:45	4	51	27	0	1	0	7	0	1	66	1	0	19	0	1	0	178
Total	23	243	89	0	5	1	24	0	5	242	6	0	69	0	3	0	710
17:00	2	66	42	0	0	1	14	0	3	5	0	0	15	0	0	0	148
17:15	0	54	28	0	0	1	1	0	2	100	0	0	22	0	0	0	208
17:30	2	57	40	0	1	0	0	0	4	97	0	0	28	0	1	0	230
17:45	0	75	63	0	1	1	0	0	6	89	0	0	18	0	0	0	253
Total	4	252	173	0	2	3	15	0	15	291	0	0	83	0	1	0	839
Grand Total	88	1204	912	0	17	6	72	0	91	1430	15	0	946	4	72	0	4857
Apprch %	4	54.6	41.4	0	17.9	6.3	75.8	0	5.9	93.1	1	0	92.6	0.4	7	0	
Total %	1.8	24.8	18.8	0	0.4	0.1	1.5	0	1.9	29.4	0.3	0	19.5	0.1	1.5	0	
Passenger Vehicles	87	1129	908	0	17	6	72	0	89	1341	15	0	935	4	70	0	4673
% Passenger Vehicles	98.9	93.8	99.6	0	100	100	100	0	97.8	93.8	100	0	98.8	100	97.2	0	96.2
Heavy Vehicles	1	61	0	0	0	0	0	0	2	67	0	0	6	0	2	0	139
% Heavy Vehicles	1.1	5.1	0	0	0	0	0	0	2.2	4.7	0	0	0.6	0	2.8	0	2.9
Buses	0	14	4	0	0	0	0	0	0	22	0	0	5	0	0	0	45
% Buses	0	1.2	0.4	0	0	0	0	0	0	1.5	0	0	0.5	0	0	0	0.9

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name : Blythewood Rd @ Muller Rd
Site Code : 01262016
Start Date : 4/21/2016
Page No : 2



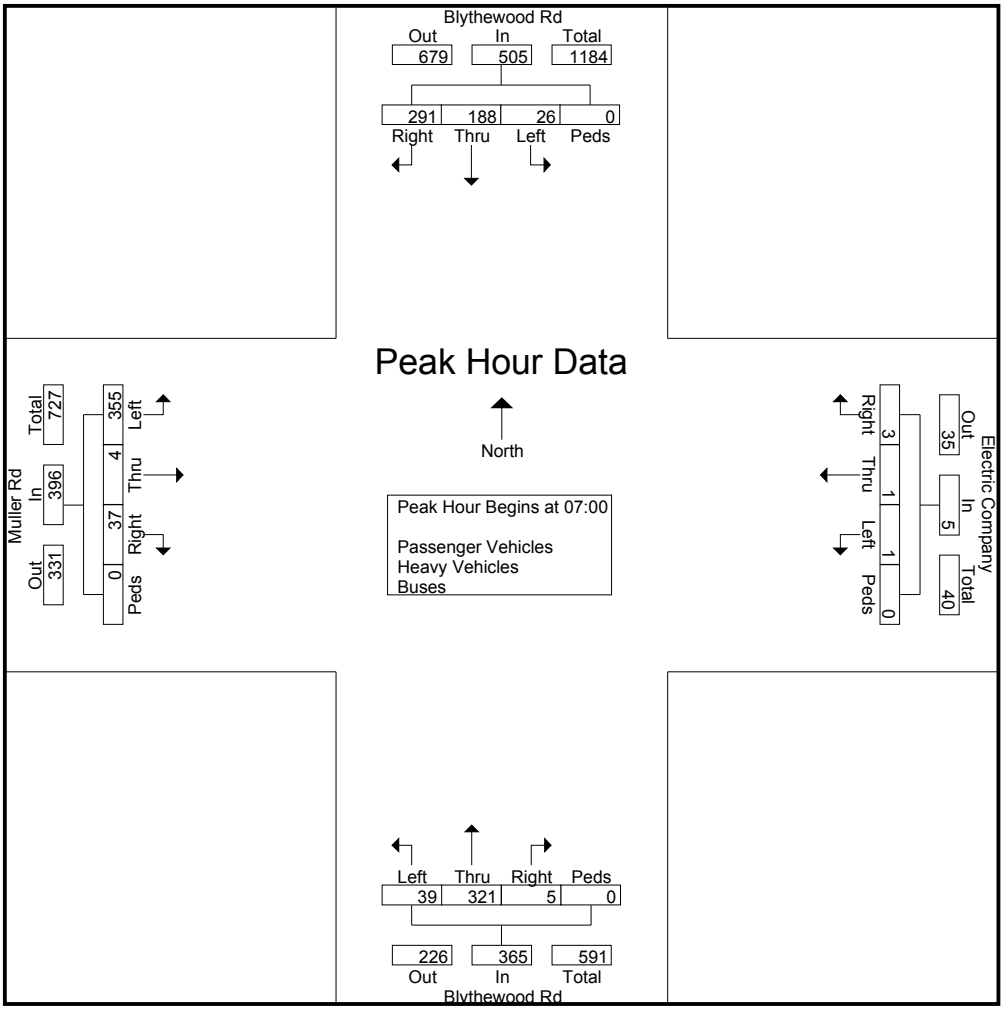
SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name : Blythewood Rd @ Muller Rd
Site Code : 01262016
Start Date : 4/21/2016
Page No : 3

	Blythewood Rd Southbound					Electric Company Westbound					Blythewood Rd Northbound					Muller Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	1	38	**93**	0	132	0	0	0	0	0	16	69	0	0	85	90	0	13	0	103	320
07:15	9	**64**	93	0	**166**	**1**	0	0	0	1	**17**	**91**	1	0	**109**	**129**	**2**	**14**	0	**145**	**421**
07:30	6	35	49	0	90	0	0	**2**	0	**2**	2	79	**2**	0	83	69	2	4	0	75	250
07:45	**10**	51	56	0	117	0	**1**	1	0	2	4	82	2	0	88	67	0	6	0	73	280
Total Volume	26	188	291	0	505	1	1	3	0	5	39	321	5	0	365	355	4	37	0	396	1271
% App. Total	5.1	37.2	57.6	0		20	20	60	0		10.7	87.9	1.4	0		89.6	1	9.3	0		
PHF	.650	.734	.782	.000	.761	.250	.250	.375	.000	.625	.574	.882	.625	.000	.837	.688	.500	.661	.000	.683	.755



SHORT COUNTS, LLC

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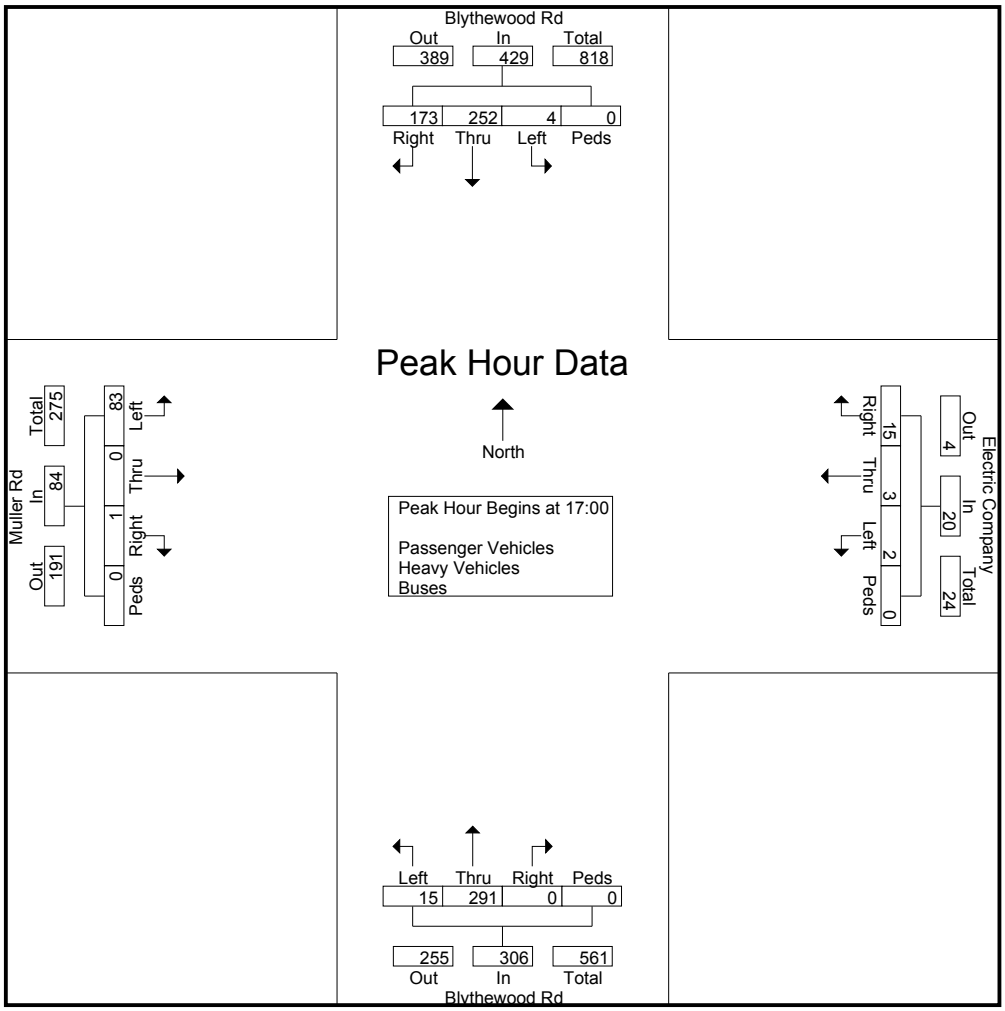
Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name : Blythewood Rd @ Muller Rd
Site Code : 01262016
Start Date : 4/21/2016
Page No : 4

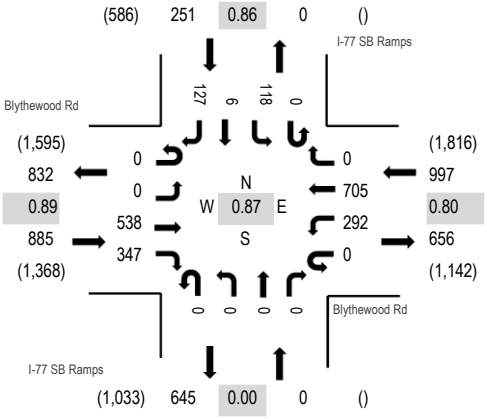
	Blythewood Rd Southbound					Electric Company Westbound					Blythewood Rd Northbound					Muller Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 14:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	**2**	66	42	0	110	0	**1**	**14**	0	**15**	3	5	0	0	8	15	0	0	0	15	148
17:15	0	54	28	0	82	0	1	1	0	2	2	**100**	0	0	**102**	22	0	0	0	22	208
17:30	2	57	40	0	99	**1**	0	0	0	1	4	97	0	0	101	**28**	0	**1**	0	**29**	230
17:45	0	**75**	**63**	0	**138**	1	1	0	0	2	**6**	89	0	0	95	18	0	0	0	18	**253**
Total Volume	4	252	173	0	429	2	3	15	0	20	15	291	0	0	306	83	0	1	0	84	839
% App. Total	0.9	58.7	40.3	0		10	15	75	0		4.9	95.1	0	0		98.8	0	1.2	0		
PHF	.500	.840	.687	.000	.777	.500	.750	.268	.000	.333	.625	.728	.000	.000	.750	.741	.000	.250	.000	.724	.829



All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

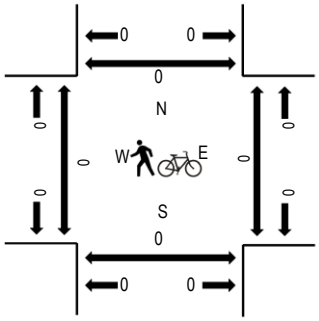
Location: 12 I-77 SB Ramps & Blythewood Rd AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Blythewood Rd Eastbound				Blythewood Rd Westbound				I-77 SB Ramps Northbound				I-77 SB Ramps Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	106	84	0	82	195	0	0	0	0	0	0	28	0	16	511	2,133	0	0	0	0
7:15 AM	0	0	144	104	0	96	215	0	0	0	0	0	0	21	1	30	611	2,125	0	0	0	0
7:30 AM	0	0	131	78	0	71	150	0	0	0	0	0	0	32	1	40	503	1,948	0	0	0	0
7:45 AM	0	0	157	81	0	43	145	0	0	0	0	0	0	37	4	41	508	1,826	0	0	0	0
8:00 AM	0	0	97	53	0	48	201	0	0	0	0	0	0	50	0	54	503	1,637	0	0	0	0
8:15 AM	0	0	86	37	0	68	147	0	0	0	0	0	0	51	0	45	434		0	0	0	0
8:30 AM	0	0	71	41	0	61	133	0	0	0	0	0	0	34	0	41	381		0	0	1	0
8:45 AM	0	0	71	27	0	52	109	0	0	0	0	0	0	26	1	33	319		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	2	0	0	4	0	0	0	0	0	0	0	5	0	4	15
Lights	0	0	522	343	0	286	694	0	0	0	0	0	0	110	6	111	2,072
Mediums	0	0	14	4	0	2	11	0	0	0	0	0	0	3	0	12	46
Total	0	0	538	347	0	292	705	0	0	0	0	0	0	118	6	127	2,133

All Traffic Data Services Inc.
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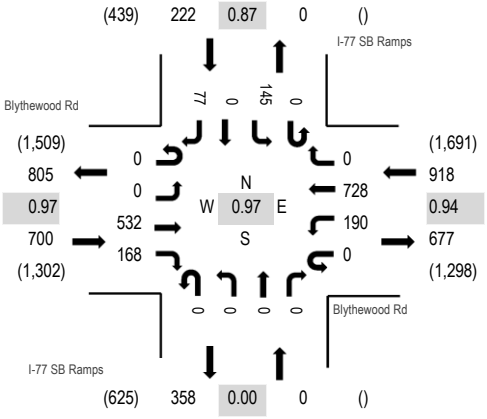
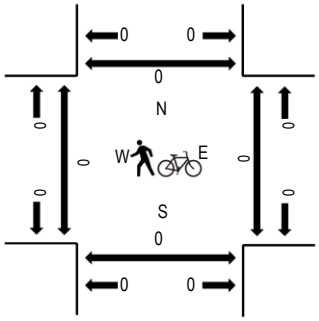
Location: 12 I-77 SB Ramps & Blythewood Rd PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Blythewood Rd Eastbound				Blythewood Rd Westbound				I-77 SB Ramps Northbound				I-77 SB Ramps Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	90	30	0	33	135	0	0	0	0	0	0	30	0	28	346	1,616	0	0	0	0
4:15 PM	0	0	115	24	0	39	162	0	0	0	0	0	0	32	1	17	390	1,713	0	0	0	0
4:30 PM	0	0	134	25	0	39	158	0	0	0	0	0	0	41	1	23	421	1,798	0	0	0	0
4:45 PM	0	0	137	33	0	61	183	0	0	0	0	0	0	27	0	18	459	1,840	0	0	0	0
5:00 PM	0	0	129	41	0	51	171	0	0	0	0	0	0	32	0	19	443	1,816	0	0	0	0
5:15 PM	0	0	141	38	0	44	187	0	0	0	0	0	0	49	0	16	475		0	0	0	0
5:30 PM	0	0	125	56	0	34	187	0	0	0	0	0	0	37	0	24	463		0	0	0	0
5:45 PM	0	0	141	43	0	32	175	0	0	0	0	0	0	38	0	6	435		0	0	0	0

Peak Rolling Hour Flow Rates

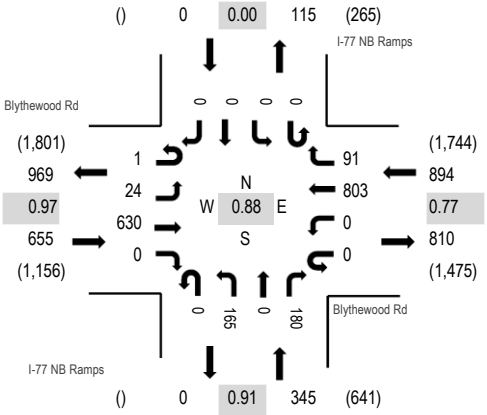
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	1	5
Lights	0	0	521	164	0	187	718	0	0	0	0	0	0	143	0	73	1,806
Mediums	0	0	8	3	0	3	10	0	0	0	0	0	0	2	0	3	29
Total	0	0	532	168	0	190	728	0	0	0	0	0	0	145	0	77	1,840

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

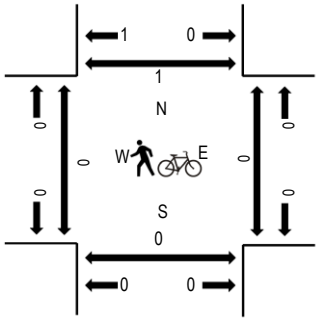
Location: 11 I-77 NB Ramps & Blythewood Rd AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Blythewood Rd Eastbound				Blythewood Rd Westbound				I-77 NB Ramps Northbound				I-77 NB Ramps Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	5	123	0	0	0	244	23	0	30	0	32	0	0	0	0	457	1,863	0	0	0	0
7:15 AM	0	4	162	0	0	0	276	19	0	36	0	42	0	0	0	0	539	1,894	0	0	0	1
7:30 AM	0	9	154	0	0	0	186	16	0	40	0	45	0	0	0	0	450	1,804	0	0	0	0
7:45 AM	0	5	163	0	0	0	132	18	0	47	0	52	0	0	0	0	417	1,768	0	0	0	0
8:00 AM	1	6	151	0	0	0	209	38	0	42	0	41	0	0	0	0	488	1,678	0	0	0	0
8:15 AM	0	3	147	0	1	0	180	23	0	30	0	65	0	0	0	0	449		0	0	0	0
8:30 AM	0	11	108	0	1	0	172	46	0	25	0	51	0	0	0	0	414		0	0	0	0
8:45 AM	0	6	98	0	1	0	126	33	0	25	0	38	0	0	0	0	327		0	0	0	0

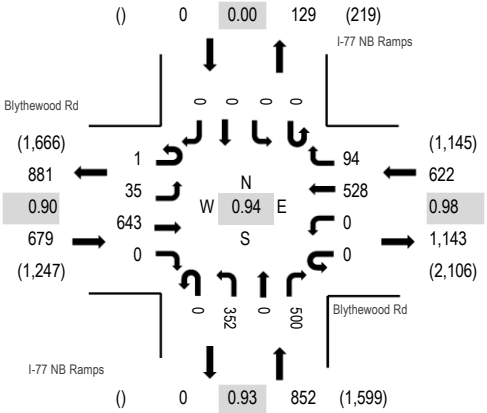
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	4	0	0	0	4	1	0	0	0	2	0	0	0	0	11
Lights	1	22	613	0	0	0	781	89	0	160	0	170	0	0	0	0	1,836
Mediums	0	2	13	0	0	0	18	1	0	5	0	8	0	0	0	0	47
Total	1	24	630	0	0	0	803	91	0	165	0	180	0	0	0	0	1,894

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

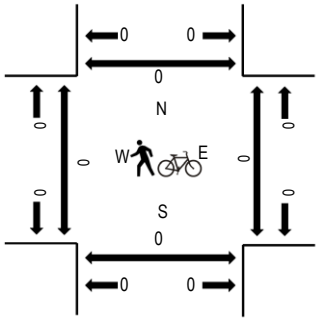
Location: 11 I-77 NB Ramps & Blythewood Rd PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Blythewood Rd Eastbound				Blythewood Rd Westbound				I-77 NB Ramps Northbound				I-77 NB Ramps Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	7	106	0	0	0	84	19	0	92	0	104	0	0	0	0	412	1,838	0	0	0	0
4:15 PM	0	7	127	0	0	0	108	14	0	84	0	103	0	0	0	0	443	1,945	0	0	0	0
4:30 PM	0	8	151	0	0	0	126	12	0	68	0	106	0	0	0	0	471	2,077	0	0	0	0
4:45 PM	0	6	156	0	0	0	143	17	0	80	0	110	0	0	0	0	512	2,138	0	1	0	0
5:00 PM	0	12	148	0	0	0	129	23	0	89	0	118	0	0	0	0	519	2,153	0	0	0	0
5:15 PM	0	7	181	0	0	0	142	17	0	89	0	139	0	0	0	0	575		0	0	0	0
5:30 PM	1	7	152	0	0	0	128	31	0	88	0	125	0	0	0	0	532		0	0	0	0
5:45 PM	0	9	162	0	0	0	129	23	0	86	0	118	0	0	0	0	527		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	2	0	0	0	1	2	0	5	0	1	0	0	0	0	11
Lights	1	35	638	0	0	0	523	92	0	347	0	498	0	0	0	0	2,134
Mediums	0	0	3	0	0	0	4	0	0	0	0	1	0	0	0	0	8
Total	1	35	643	0	0	0	528	94	0	352	0	500	0	0	0	0	2,153

Civil Engineering Consulting Services Inc.

2000 Park Street Suite 201
Columbia, SC, 29206

Groups Printed- Passenger Cars - Heavy Vehicles

	McNulty Street Soutbound					Blythewood Road Westbound					Creech Street Northbound					Blythewood Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	1	0	23	0	24	7	244	7	0	258	6	0	12	0	18	15	142	18	0	175	475
07:15 AM	2	0	31	0	33	2	246	7	0	255	9	0	8	0	17	20	178	17	0	215	520
07:30 AM	2	0	33	0	35	11	206	8	0	225	5	0	5	0	10	27	143	24	0	194	464
07:45 AM	1	1	46	0	48	6	240	10	0	256	9	0	17	0	26	26	153	16	0	195	525
Total	6	1	133	0	140	26	936	32	0	994	29	0	42	0	71	88	616	75	0	779	1984
08:00 AM	0	0	38	0	38	12	206	12	0	230	15	0	10	0	25	25	105	24	0	154	447
08:15 AM	1	0	33	0	34	3	159	7	0	169	14	0	5	0	19	32	89	16	0	137	359
08:30 AM	4	2	33	0	39	7	117	11	0	135	6	1	8	0	15	23	74	19	0	116	305
08:45 AM	2	3	23	0	28	11	121	14	0	146	12	1	7	0	20	22	92	19	0	133	327
Total	7	5	127	0	139	33	603	44	0	680	47	2	30	0	79	102	360	78	0	540	1438
*** BREAK ***																					
04:00 PM	1	0	22	0	23	6	109	6	0	121	12	0	9	0	21	32	164	13	0	209	374
04:15 PM	2	0	23	0	25	5	129	8	0	142	11	0	6	0	17	27	186	25	0	238	422
04:30 PM	2	0	31	0	33	3	148	8	0	159	10	2	8	0	20	35	201	25	0	261	473
04:45 PM	0	0	29	0	29	11	138	10	0	159	5	1	5	0	11	31	177	17	0	225	424
Total	5	0	105	0	110	25	524	32	0	581	38	3	28	0	69	125	728	80	0	933	1693
05:00 PM	3	0	36	0	39	6	125	7	0	138	4	0	7	0	11	38	231	16	0	285	473
05:15 PM	2	0	18	0	20	9	142	4	0	155	7	1	8	0	16	25	237	20	0	282	473
05:30 PM	0	0	26	0	26	7	150	9	0	166	3	0	8	0	11	31	210	15	0	256	459
05:45 PM	2	1	22	0	25	11	129	10	0	150	6	2	10	1	19	31	185	27	0	243	437
Total	7	1	102	0	110	33	546	30	0	609	20	3	33	1	57	125	863	78	0	1066	1842
Grand Total	25	7	467	0	499	117	2609	138	0	2864	134	8	133	1	276	440	2567	311	0	3318	6957
Apprch %	5	1.4	93.6	0		4.1	91.1	4.8	0		48.6	2.9	48.2	0.4		13.3	77.4	9.4	0		
Total %	0.4	0.1	6.7	0	7.2	1.7	37.5	2	0	41.2	1.9	0.1	1.9	0	4	6.3	36.9	4.5	0	47.7	
Passenger Cars	25	7	453	0	485	117	2574	138	0	2829	132	8	131	1	272	431	2527	308	0	3266	6852
% Passenger Cars	100	100	97	0	97.2	100	98.7	100	0	98.8	98.5	100	98.5	100	98.6	98	98.4	99	0	98.4	98.5
Heavy Vehicles	0	0	14	0	14	0	35	0	0	35	2	0	2	0	4	9	40	3	0	52	105
% Heavy Vehicles	0	0	3	0	2.8	0	1.3	0	0	1.2	1.5	0	1.5	0	1.4	2	1.6	1	0	1.6	1.5

Civil Engineering Consulting Services Inc.

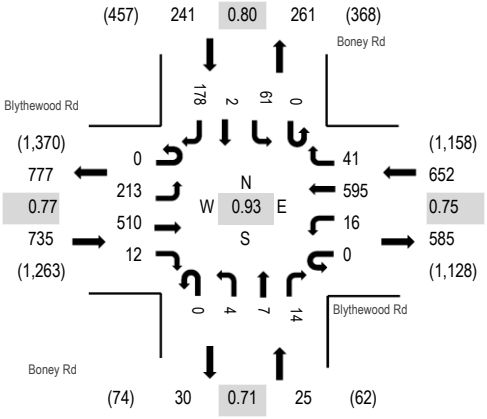
2000 Park Street Suite 201
Columbia, SC, 29206

	McNulty Street Soutbound					Blythewood Road Westbound					Creech Street Northbound					Blythewood Road Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	1	0	23	0	24	7	244	7	0	**258**	6	0	12	0	18	15	142	18	0	175	475
07:15 AM	**2**	0	31	0	33	2	**246**	7	0	255	**9**	0	8	0	17	20	**178**	17	0	**215**	520
07:30 AM	2	0	33	0	35	**11**	206	8	0	225	5	0	5	0	10	**27**	143	**24**	0	194	464
07:45 AM	1	**1**	**46**	0	**48**	6	240	**10**	0	256	9	0	**17**	0	**26**	26	153	16	0	195	**525**
Total Volume	6	1	133	0	140	26	936	32	0	994	29	0	42	0	71	88	616	75	0	779	1984
% App. Total	4.3	0.7	95	0		2.6	94.2	3.2	0		40.8	0	59.2	0		11.3	79.1	9.6	0		
PHF	.750	.250	.723	.000	.729	.591	.951	.800	.000	.963	.806	.000	.618	.000	.683	.815	.865	.781	.000	.906	.945
Passenger Cars	6	1	129	0	136	26	926	32	0	984	29	0	41	0	70	86	608	74	0	768	1958
% Passenger Cars	100	100	97.0	0	97.1	100	98.9	100	0	99.0	100	0	97.6	0	98.6	97.7	98.7	98.7	0	98.6	98.7
Heavy Vehicles	0	0	4	0	4	0	10	0	0	10	0	0	1	0	1	2	8	1	0	11	26
% Heavy Vehicles	0	0	3.0	0	2.9	0	1.1	0	0	1.0	0	0	2.4	0	1.4	2.3	1.3	1.3	0	1.4	1.3
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	2	0	31	0	33	3	**148**	8	0	**159**	**10**	**2**	**8**	0	**20**	35	201	**25**	0	261	**473**
04:45 PM	0	0	29	0	29	**11**	138	**10**	0	159	5	1	5	0	11	31	177	17	0	225	424
05:00 PM	**3**	0	**36**	0	**39**	6	125	7	0	138	4	0	7	0	11	**38**	231	16	0	**285**	473
05:15 PM	2	0	18	0	20	9	142	4	0	155	7	1	8	0	16	25	**237**	20	0	282	473
Total Volume	7	0	114	0	121	29	553	29	0	611	26	4	28	0	58	129	846	78	0	1053	1843
% App. Total	5.8	0	94.2	0		4.7	90.5	4.7	0		44.8	6.9	48.3	0		12.3	80.3	7.4	0		
PHF	.583	.000	.792	.000	.776	.659	.934	.725	.000	.961	.650	.500	.875	.000	.725	.849	.892	.780	.000	.924	.974
Passenger Cars	7	0	113	0	120	29	551	29	0	609	25	4	28	0	57	128	836	78	0	1042	1828
% Passenger Cars	100	0	99.1	0	99.2	100	99.6	100	0	99.7	96.2	100	100	0	98.3	99.2	98.8	100	0	99.0	99.2
Heavy Vehicles	0	0	1	0	1	0	2	0	0	2	1	0	0	0	1	1	10	0	0	11	15
% Heavy Vehicles	0	0	0.9	0	0.8	0	0.4	0	0	0.3	3.8	0	0	0	1.7	0.8	1.2	0	0	1.0	0.8

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

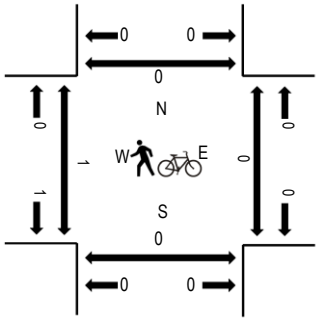
Location: 7 Boney Rd & Blythewood Rd AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Blythewood Rd Eastbound				Blythewood Rd Westbound				Boney Rd Northbound				Boney Rd Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	36	95	3	0	5	189	5	0	1	1	2	0	5	0	35	377	1,653	0	0	0	0
7:15 AM	0	55	119	2	0	3	200	15	0	0	2	2	0	8	0	37	443	1,638	0	0	0	0
7:30 AM	0	52	129	1	0	4	133	12	0	2	1	4	0	21	2	71	432	1,525	0	0	0	0
7:45 AM	0	70	167	6	0	4	73	9	0	1	3	6	0	27	0	35	401	1,429	1	0	0	0
8:00 AM	0	28	121	3	0	5	121	10	0	2	0	5	0	29	0	38	362	1,287	0	0	0	0
8:15 AM	0	11	110	6	0	5	97	9	0	8	0	5	0	38	0	41	330		0	0	0	0
8:30 AM	0	12	120	3	0	6	137	8	0	2	0	4	0	10	0	34	336		1	0	0	0
8:45 AM	0	22	87	5	0	11	91	6	0	5	1	5	0	9	0	17	259		0	0	0	0

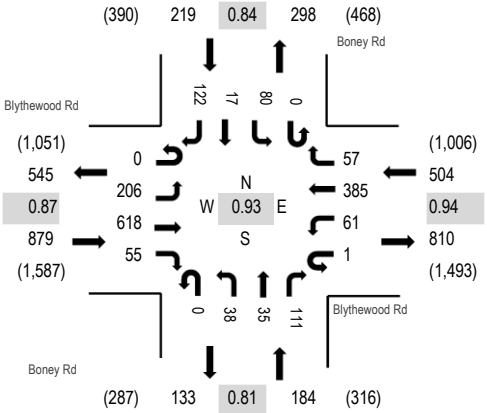
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	4	1	0	1	1	0	0	0	1	0	0	0	0	1	10
Lights	0	207	498	11	0	15	589	41	0	4	6	14	0	61	2	174	1,622
Mediums	0	5	8	0	0	0	5	0	0	0	0	0	0	0	0	3	21
Total	0	213	510	12	0	16	595	41	0	4	7	14	0	61	2	178	1,653

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

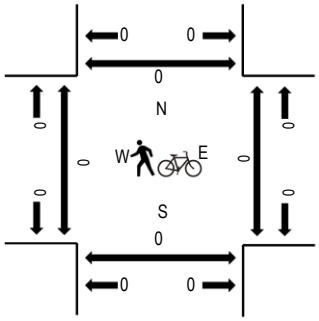
Location: 7 Boney Rd & Blythewood Rd PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Blythewood Rd Eastbound				Blythewood Rd Westbound				Boney Rd Northbound				Boney Rd Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	20	109	20	0	16	91	8	0	8	3	15	0	8	5	20	323	1,520	0	0	0	0
4:15 PM	0	22	126	11	0	30	102	10	0	18	5	21	0	16	7	23	391	1,627	0	0	0	0
4:30 PM	0	27	145	10	0	19	84	7	0	14	4	16	0	22	8	19	375	1,718	0	0	0	0
4:45 PM	0	30	151	19	1	15	84	7	0	13	8	36	0	15	8	44	431	1,786	0	0	0	0
5:00 PM	0	58	134	12	0	20	94	15	0	7	8	28	0	22	2	30	430	1,779	0	0	0	0
5:15 PM	0	62	181	15	0	13	99	14	0	8	10	26	0	23	4	27	482		0	0	0	0
5:30 PM	0	56	152	9	0	13	108	21	0	10	9	21	0	20	3	21	443		0	0	0	0
5:45 PM	0	40	168	10	0	15	98	22	0	6	2	20	0	17	3	23	424		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Lights	0	205	607	55	1	61	382	57	0	37	35	111	0	80	17	120	1,768
Mediums	0	1	7	0	0	0	3	0	0	1	0	0	0	0	0	2	14
Total	0	206	618	55	1	61	385	57	0	38	35	111	0	80	17	122	1,786

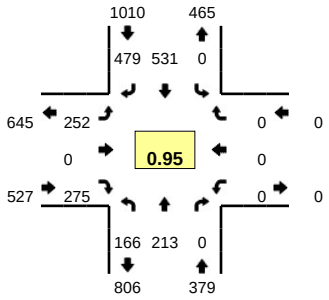
Type of peak hour being reported: Intersection Peak

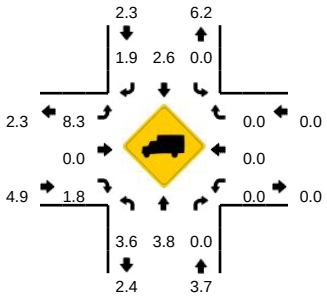
Method for determining peak hour: Total Entering Volume

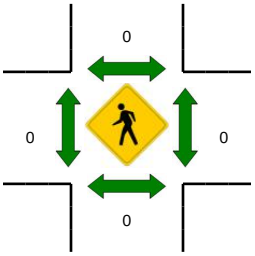
LOCATION: Wilson Rd -- Blythewood Rd (1)
CITY/STATE: Blythewood, SC

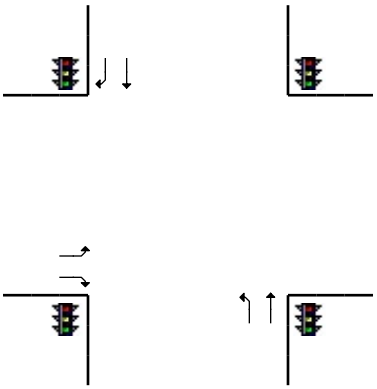
QC JOB #: 14725001
DATE: Thu, May 31 2018

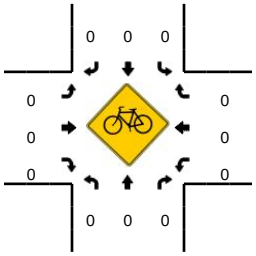
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

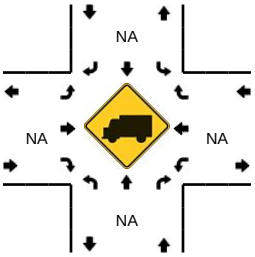


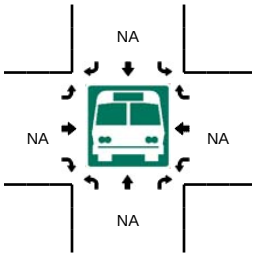












15-Min Count Period Beginning At	Wilson Rd (Northbound)				Wilson Rd (Southbound)				Blythewood Rd (Eastbound)				Blythewood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	60	23	0	0	0	62	155	0	42	0	27	0	0	0	0	0	369	
7:15 AM	54	49	0	0	0	79	126	0	60	0	49	0	0	0	0	0	417	
7:30 AM	37	54	0	0	0	121	136	0	61	0	61	0	0	0	0	0	470	
7:45 AM	45	78	0	0	0	140	105	0	69	0	65	0	0	0	0	0	502	1758
8:00 AM	46	40	0	0	0	129	128	0	68	0	82	0	0	0	0	0	493	1882
8:15 AM	38	41	0	0	0	141	110	0	54	0	67	0	0	0	0	0	451	1916
8:30 AM	27	51	0	0	0	62	90	0	56	0	34	0	0	0	0	0	320	1766
8:45 AM	33	27	0	0	0	35	93	0	45	0	34	0	0	0	0	0	267	1531

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	180	312	0	0	0	560	420	0	276	0	260	0	0	0	0	0	2008
Heavy Trucks	8	16	0		0	8	4		28	0	12		0	0	0		76
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 6/7/2018 12:20 PM

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

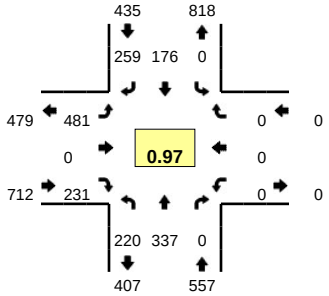
LOCATION: Wilson Rd -- Blythewood Rd

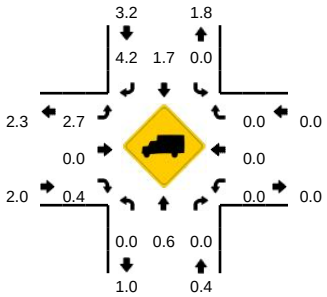
CITY/STATE: Blythewood, SC

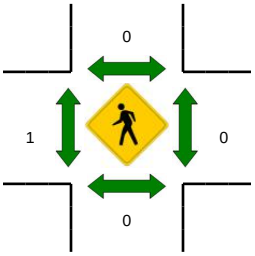
QC JOB #: 14725002

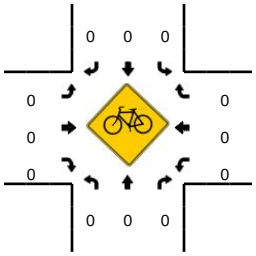
DATE: Thu, May 31 2018

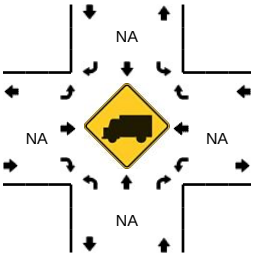
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

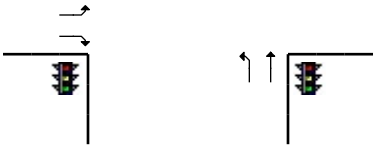


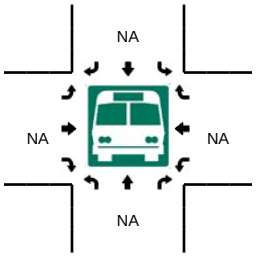












15-Min Count Period Beginning At	Wilson Rd (Northbound)				Wilson Rd (Southbound)				Blythewood Rd (Eastbound)				Blythewood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	89	116	0	0	0	39	70	0	95	0	58	0	0	0	0	0	467	
4:15 PM	70	94	0	0	0	42	43	0	75	0	56	0	0	0	0	0	380	
4:30 PM	62	70	0	0	0	39	54	0	109	0	44	0	0	0	0	0	378	
4:45 PM	61	59	0	0	0	39	58	0	125	0	51	0	0	0	0	0	393	1618
5:00 PM	70	83	0	0	0	34	74	0	99	0	55	0	0	0	0	0	415	1566
5:15 PM	54	70	0	0	0	45	63	0	138	0	64	0	0	0	0	0	434	1620
5:30 PM	47	89	0	0	0	52	67	0	116	0	70	0	0	0	0	0	441	1683
5:45 PM	49	95	0	0	0	45	55	0	128	0	42	0	0	0	0	0	414	1704

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	188	356	0	0	0	208	268	0	464	0	280	0	0	0	0	0	1764
Heavy Trucks	0	4	0		0	0	8		12	0	0		0	0	0		24
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

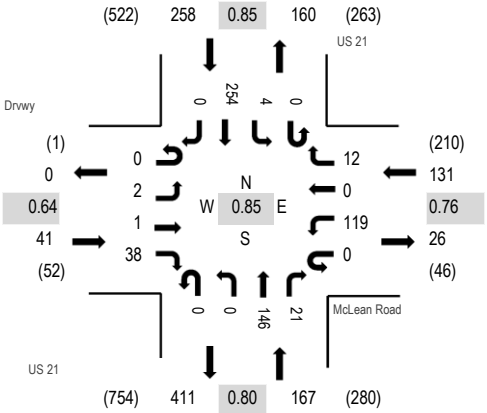
Report generated on 6/7/2018 12:20 PM

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

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

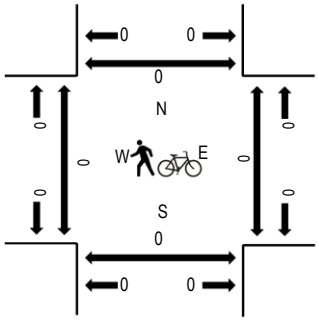
Location: 15 US 21 & McLean Road AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Drvwy Eastbound				McLean Road Westbound				US 21 Northbound				US 21 Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	0	1	0	24	1	2	0	0	16	2	0	1	60	0	107	559	0	0	0	0
7:15 AM	0	0	1	1	0	23	0	0	0	0	28	2	0	2	73	0	130	572	0	0	0	0
7:30 AM	0	0	0	11	0	40	0	3	0	0	34	7	0	0	81	0	176	597	0	0	0	0
7:45 AM	0	0	0	11	0	19	0	4	0	0	47	5	0	2	58	0	146	563	0	0	0	0
8:00 AM	0	0	0	3	0	24	0	3	0	0	32	5	0	2	51	0	120	505	0	0	0	0
8:15 AM	0	2	1	13	0	36	0	2	0	0	33	4	0	0	64	0	155		0	0	0	0
8:30 AM	0	0	1	6	0	16	0	1	0	0	27	3	0	1	87	0	142		0	0	0	0
8:45 AM	0	0	0	1	0	11	0	1	0	0	28	7	0	0	40	0	88		0	0	0	0

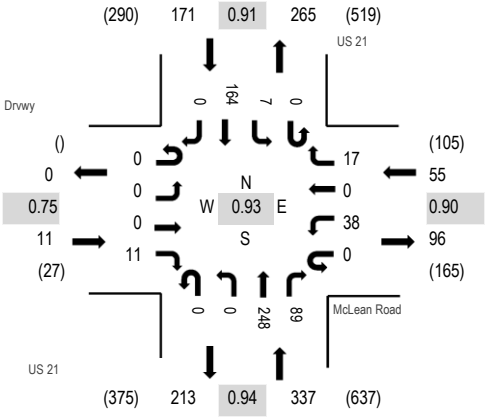
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6
Lights	0	2	1	38	0	119	0	12	0	0	144	20	0	4	241	0	581
Mediums	0	0	0	0	0	0	0	0	0	0	2	1	0	0	7	0	10
Total	0	2	1	38	0	119	0	12	0	0	146	21	0	4	254	0	597

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

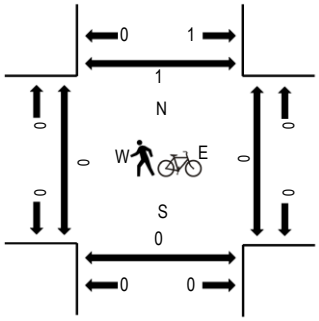
Location: 15 US 21 & McLean Road PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Drvwy Eastbound				McLean Road Westbound				US 21 Northbound				US 21 Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	0	3	0	8	0	3	0	0	50	14	0	1	30	0	109	490	0	0	0	0
4:15 PM	0	0	0	5	0	8	0	4	0	0	61	12	0	2	31	0	123	535	0	0	0	0
4:30 PM	0	0	0	3	0	14	0	3	0	0	60	19	0	2	28	0	129	559	0	0	0	0
4:45 PM	0	0	0	1	0	7	0	7	0	0	56	14	0	1	43	0	129	574	0	0	0	0
5:00 PM	0	0	0	3	0	10	0	3	0	0	68	24	0	2	44	0	154	569	0	0	0	1
5:15 PM	0	0	0	3	0	13	0	4	0	0	62	31	0	0	34	0	147		0	0	0	0
5:30 PM	0	0	0	4	0	8	0	3	0	0	62	20	0	4	43	0	144		0	0	0	0
5:45 PM	0	0	0	5	0	3	0	7	0	0	66	18	0	1	24	0	124		0	0	0	0

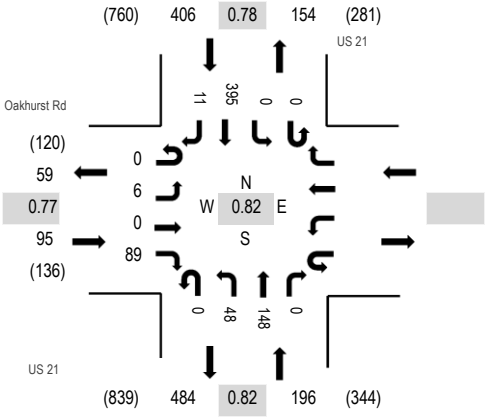
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	5
Lights	0	0	0	11	0	38	0	17	0	0	238	89	0	7	160	0	560
Mediums	0	0	0	0	0	0	0	0	0	0	7	0	0	0	2	0	9
Total	0	0	0	11	0	38	0	17	0	0	248	89	0	7	164	0	574

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

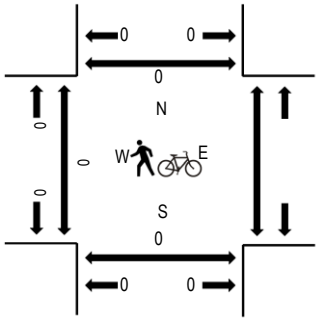
Location: 8 US 21 & Oakhurst Rd AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Oakhurst Rd Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	US 21 Northbound U-Turn	Left	Thru	Right	US 21 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	0	0	0	11					0	8	19	0	0	0	77	1	116	663	0		0	0
7:15 AM	0	0	0	19					0	10	27	0	0	0	105	1	162	697	0		0	0
7:30 AM	0	1	0	23					0	17	41	0	0	0	127	4	213	697	0		0	0
7:45 AM	0	3	0	28					0	12	48	0	0	0	80	1	172	639	0		0	0
8:00 AM	0	2	0	19					0	9	32	0	0	0	83	5	150	577	0		0	0
8:15 AM	1	2	0	13					0	4	32	0	0	0	92	18	162		0		0	0
8:30 AM	0	1	0	4					0	7	33	0	0	0	94	16	155		1		0	0
8:45 AM	0	0	0	9					0	5	40	0	0	0	55	1	110		0		0	0

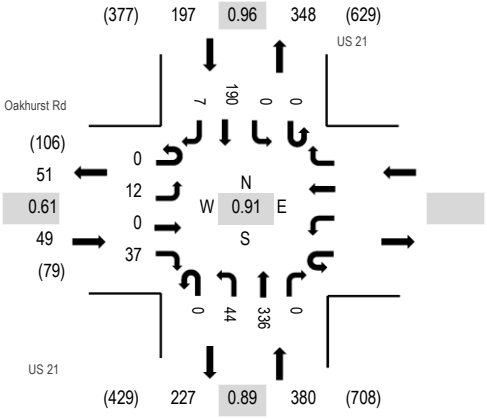
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0					0	0	0	0	0	0	2	0	2
Lights	0	6	0	87					0	45	145	0	0	0	384	11	678
Mediums	0	0	0	2					0	3	3	0	0	0	9	0	17
Total	0	6	0	89					0	48	148	0	0	0	395	11	697

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

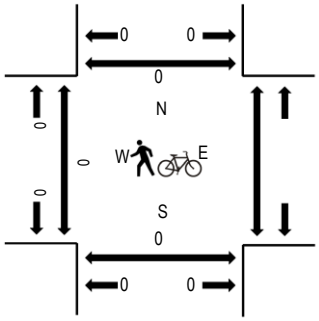
Location: 8 US 21 & Oakhurst Rd PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Oakhurst Rd Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	US 21 Northbound U-Turn	Left	Thru	Right	US 21 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
4:00 PM	0	0	0	3					0	18	67	0	0	0	37	1	126	538	0		0	0
4:15 PM	0	0	0	9					0	12	71	0	0	0	41	1	134	584	0		0	0
4:30 PM	0	0	0	11					0	12	72	0	0	0	44	3	142	604	0		0	0
4:45 PM	0	2	0	5					0	7	69	0	0	0	52	1	136	620	0		0	0
5:00 PM	0	3	0	6					0	13	94	0	0	0	52	4	172	626	0		0	0
5:15 PM	0	3	0	8					0	4	88	0	0	0	50	1	154		0		0	0
5:30 PM	0	1	0	8					0	14	79	0	0	0	56	0	158		0		0	0
5:45 PM	0	5	0	15					0	13	75	0	0	0	32	2	142		0		0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0					0	0	1	0	0	0	1	0	2
Lights	0	12	0	36					0	43	330	0	0	0	187	7	615
Mediums	0	0	0	1					0	1	5	0	0	0	2	0	9
Total	0	12	0	37					0	44	336	0	0	0	190	7	626

Civil Engineering Consulting Services

200 Park Street Suite 201

Columbia, SC, 29206

INTERSECTION VOLUME SUMMARY

	Northbound - US 21				Southbound - US 21				Eastbound - Mcnutly St				Westbound				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	21	41	0	62	0	99	14	0	2	0	2	4	0	0	0	0	66	0
7:15 - 7:30	**18**	**34**	**0**	**52**	**0**	**110**	**13**	**0**	**7**	**0**	**7**	**14**	**0**	**0**	**0**	**0**	66	0
7:30 - 7:45	**19**	**42**	**0**	**61**	**0**	**114**	**13**	**0**	**4**	**0**	**7**	**11**	**0**	**0**	**0**	**0**	72	0
7:45 - 8:00	**17**	**57**	**0**	**74**	**0**	**96**	**11**	**0**	**7**	**0**	**8**	**15**	**0**	**0**	**0**	**0**	89	0
8:00 - 8:15	**12**	**38**	**0**	**50**	**0**	**88**	**14**	**0**	**8**	**0**	**17**	**25**	**0**	**0**	**0**	**0**	75	0
8:15 - 8:30	14	39	0	53	0	56	8	0	4	0	8	12	0	0	0	0	65	0
8:30 - 8:45	5	36	0	41	0	38	5	0	2	0	9	11	0	0	0	0	52	0
8:45 - 9:00	9	38	0	47	0	44	7	0	2	0	4	6	0	0	0	0	53	0
16:00 - 16:15	8	53	0	61	0	32	4	0	5	0	15	20	0	0	0	0	81	0
16:15 - 16:30	5	49	0	54	0	32	0	0	5	0	14	19	0	0	0	0	73	0
16:30 - 16:45	12	69	0	81	0	36	8	0	7	0	13	20	0	0	0	0	101	0
16:45 - 17:00	10	73	0	83	0	44	1	0	8	0	10	18	0	0	0	0	101	0
17:00 - 17:15	**12**	**70**	**0**	**82**	**0**	**50**	**3**	**0**	**6**	**0**	**8**	**14**	**0**	**0**	**0**	**0**	96	0
17:15 - 17:30	**25**	**61**	**0**	**86**	**0**	**42**	**5**	**0**	**9**	**0**	**26**	**35**	**0**	**0**	**0**	**0**	121	0
17:30 - 17:45	**8**	**60**	**0**	**68**	**0**	**36**	**3**	**0**	**12**	**0**	**11**	**23**	**0**	**0**	**0**	**0**	91	0
17:45 18:00	**13**	**83**	**0**	**96**	**0**	**45**	**2**	**0**	**17**	**0**	**12**	**29**	**0**	**0**	**0**	**0**	125	0
TOTAL	208	843	0	1051	0	0	0	0	105	0	171	276	0	0	0	0	1327	0

Peak Hour Volumes Shown in Bold

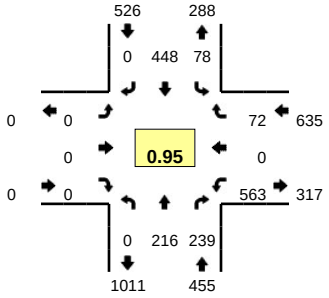
Type of peak hour being reported: Intersection Peak

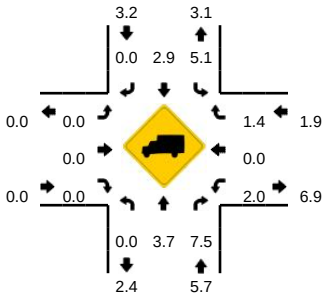
Method for determining peak hour: Total Entering Volume

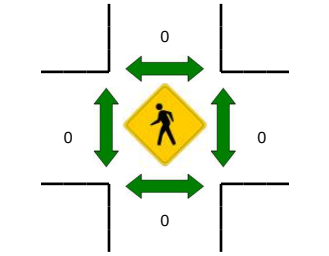
LOCATION: Wilson Rd -- Langford Rd
CITY/STATE: Blythewood, SC

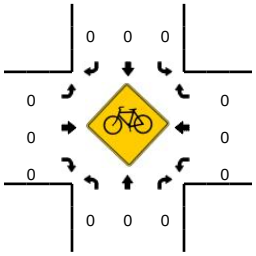
QC JOB #: 14725003
DATE: Thu, May 31 2018

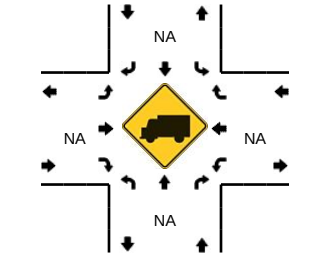
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

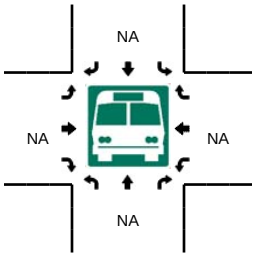












15-Min Count Period Beginning At	Wilson Rd (Northbound)				Wilson Rd (Southbound)				Langford Rd (Eastbound)				Langford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	26	33	0	19	81	0	0	0	0	0	0	134	0	13	0	306	
7:15 AM	0	41	66	0	14	76	0	0	0	0	0	0	126	0	23	0	346	
7:30 AM	0	50	60	0	26	133	0	0	0	0	0	0	130	0	16	0	415	
7:45 AM	0	73	67	0	16	116	0	0	0	0	0	0	131	0	21	0	424	1491
8:00 AM	0	52	59	0	27	103	0	0	0	0	0	0	148	0	19	0	408	1593
8:15 AM	0	41	53	0	9	96	0	0	0	0	0	0	154	0	16	0	369	1616
8:30 AM	0	47	57	0	16	85	0	0	0	0	0	0	64	0	10	0	279	1480
8:45 AM	0	29	41	1	13	59	0	0	0	0	0	0	67	0	15	0	225	1281

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	292	268	0	64	464	0	0	0	0	0	0	524	0	84	0	1696
Heavy Trucks	0	8	32		0	4	0		0	0	0		8	0	4		56
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 6/7/2018 12:20 PM

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

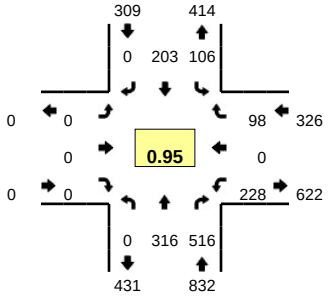
Type of peak hour being reported: Intersection Peak

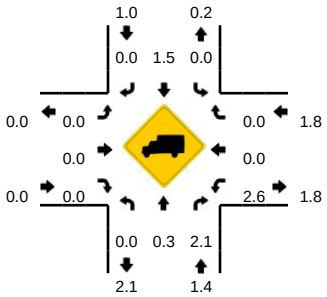
Method for determining peak hour: Total Entering Volume

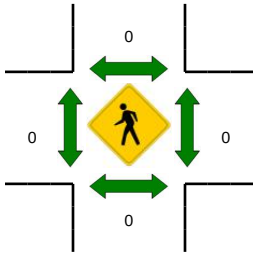
LOCATION: Wilson Rd -- Langford Rd
CITY/STATE: Blythewood, SC

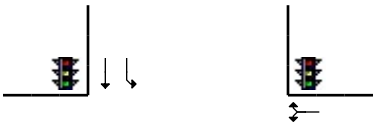
QC JOB #: 14725004
DATE: Thu, May 31 2018

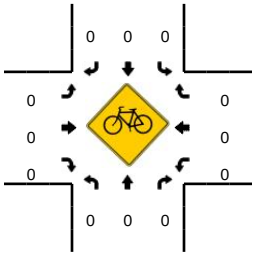
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

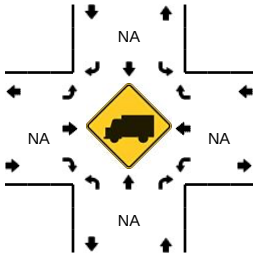


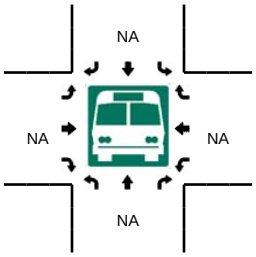












15-Min Count Period Beginning At	Wilson Rd (Northbound)				Wilson Rd (Southbound)				Langford Rd (Eastbound)				Langford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	94	128	0	14	60	0	0	0	0	0	0	55	0	17	0	368	
4:15 PM	0	72	101	0	17	46	0	0	0	0	0	0	37	0	11	0	284	
4:30 PM	0	74	116	0	31	58	0	0	0	0	0	0	44	0	18	0	341	
4:45 PM	0	68	122	0	12	56	0	0	0	0	0	0	42	0	22	0	322	1315
5:00 PM	0	84	98	0	26	40	0	0	0	0	0	0	68	0	28	0	344	1291
5:15 PM	0	82	130	0	22	53	0	0	0	0	0	0	57	0	24	0	368	1375
5:30 PM	0	72	140	0	30	64	0	0	0	0	0	0	54	0	27	0	387	1421
5:45 PM	0	78	148	0	28	46	0	0	0	0	0	0	49	0	19	0	368	1467

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	288	560	0	120	256	0	0	0	0	0	0	216	0	108	0	1548
Heavy Trucks	0	0	8		0	0	0		0	0	0		4	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 6/7/2018 12:20 PM

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

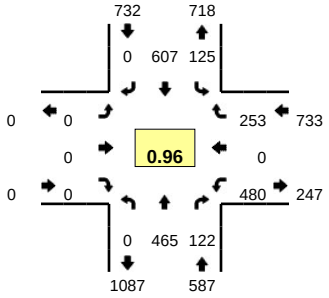
Type of peak hour being reported: Intersection Peak

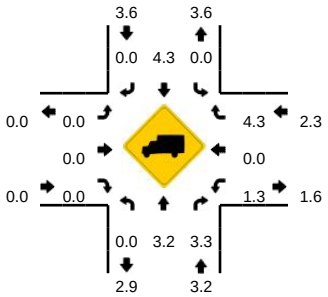
Method for determining peak hour: Total Entering Volume

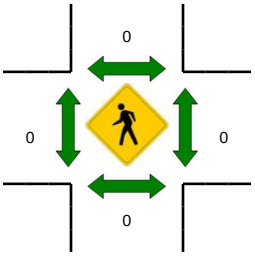
LOCATION: Wilson Rd -- Rimer Pond Rd
CITY/STATE: Blythewood, SC

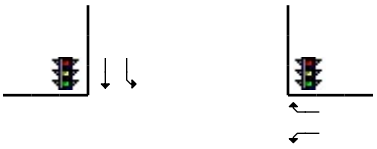
QC JOB #: 14725007
DATE: Thu, May 31 2018

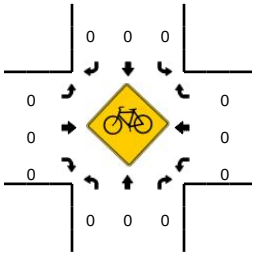
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

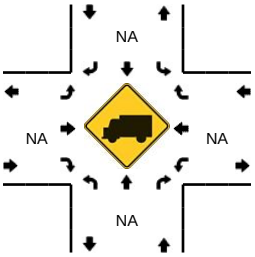


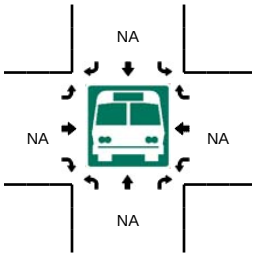












15-Min Count Period Beginning At	Wilson Rd (Northbound)				Wilson Rd (Southbound)				Rimer Pond Rd (Eastbound)				Rimer Pond Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	56	58	0	15	68	0	0	0	0	0	0	117	0	47	0	361	
7:15 AM	0	72	43	0	24	114	0	0	0	0	0	0	155	0	41	0	449	
7:30 AM	0	108	37	0	19	165	0	0	0	0	0	0	138	0	25	0	492	
7:45 AM	0	120	35	0	22	167	0	0	0	0	0	0	120	0	48	0	512	1814
8:00 AM	0	126	22	0	31	150	0	0	0	0	0	0	121	0	82	0	532	1985
8:15 AM	0	111	28	0	53	125	0	0	0	0	0	0	101	0	98	0	516	2052
8:30 AM	0	65	19	0	38	101	0	0	0	0	0	0	63	0	49	0	335	1895
8:45 AM	0	43	16	0	16	72	0	0	0	0	0	0	44	0	21	0	212	1595

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	504	88	0	124	600	0	0	0	0	0	0	484	0	328	0	2128
Heavy Trucks	0	12	4		0	20	0		0	0	0		12	0	4		52
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 6/7/2018 12:20 PM

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

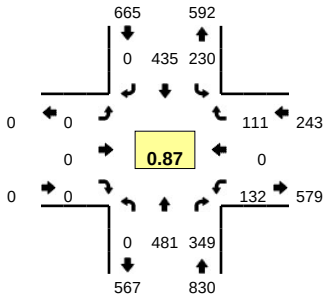
Type of peak hour being reported: Intersection Peak

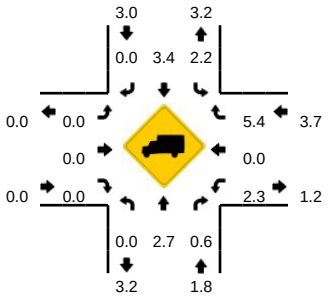
Method for determining peak hour: Total Entering Volume

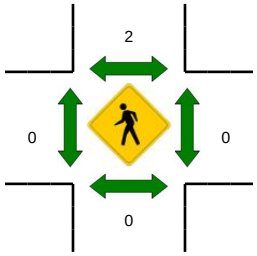
LOCATION: Wilson Rd -- Rimer Pond Rd
CITY/STATE: Blythewood, SC

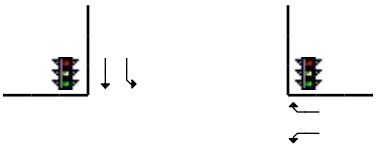
QC JOB #: 14725008
DATE: Thu, May 31 2018

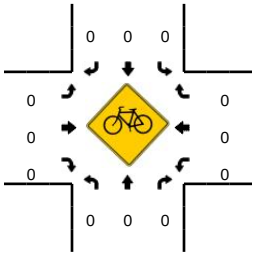
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

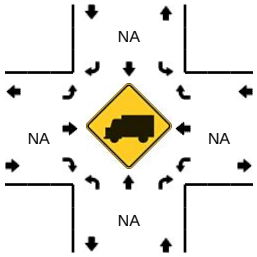


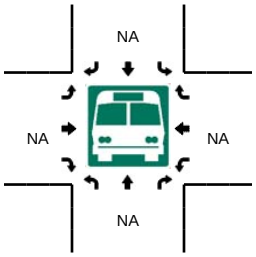












15-Min Count Period Beginning At	Wilson Rd (Northbound)				Wilson Rd (Southbound)				Rimer Pond Rd (Eastbound)				Rimer Pond Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	111	69	0	89	155	0	0	0	0	0	0	38	0	39	0	501	
4:15 PM	0	132	68	0	73	130	0	0	0	0	0	0	31	0	27	0	461	
4:30 PM	0	123	99	0	33	69	0	0	0	0	0	0	37	0	23	0	384	
4:45 PM	0	115	113	0	35	81	0	0	0	0	0	0	26	0	22	0	392	1738
5:00 PM	0	137	121	0	32	67	0	0	0	0	0	0	32	0	34	0	423	1660
5:15 PM	0	124	117	0	50	62	0	0	0	0	0	0	26	0	37	0	416	1615
5:30 PM	0	151	108	0	31	86	0	0	0	0	0	0	18	0	31	0	425	1656
5:45 PM	0	156	102	0	26	74	0	0	0	0	0	0	33	0	31	0	422	1686

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	444	276	0	356	620	0	0	0	0	0	0	152	0	156	0	2004
Heavy Trucks	0	20	0		4	24	0		0	0	0		4	0	16		68
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

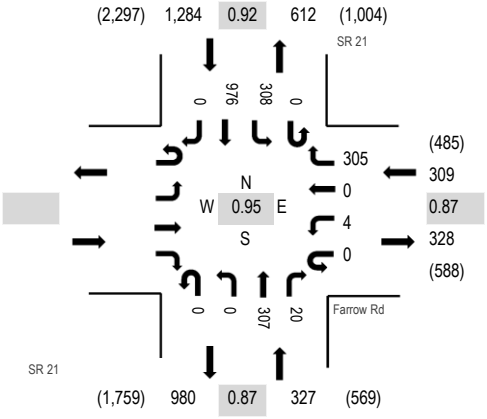
Report generated on 6/7/2018 12:20 PM

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

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

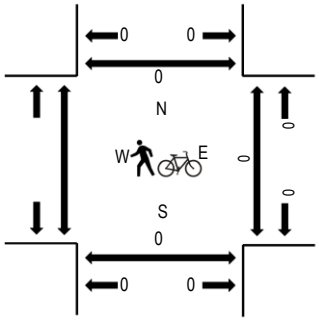
Location: 3 SR 21 & Farrow Rd AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Farrow Rd Westbound U-Turn	Farrow Rd Westbound Left	Farrow Rd Westbound Thru	Farrow Rd Westbound Right	SR 21 Northbound U-Turn	SR 21 Northbound Left	SR 21 Northbound Thru	SR 21 Northbound Right	SR 21 Southbound U-Turn	SR 21 Southbound Left	SR 21 Southbound Thru	SR 21 Southbound Right	Total	Rolling Hour	Pedestrain Crossings West	Pedestrain Crossings East	Pedestrain Crossings South	Pedestrain Crossings North
7:00 AM					0	0	0	50	0	0	70	6	0	40	195	0	361	1,746		0	0	0
7:15 AM					0	2	0	48	0	0	73	2	0	48	242	0	415	1,889		0	0	0
7:30 AM					0	0	0	62	0	0	87	8	0	66	247	0	470	1,920		0	0	0
7:45 AM					0	3	0	67	0	0	96	4	0	80	250	0	500	1,834		0	0	0
8:00 AM					0	1	0	88	0	0	64	3	0	74	274	0	504	1,605		0	0	0
8:15 AM					0	0	0	88	0	0	60	5	0	88	205	0	446			0	0	0
8:30 AM					0	3	0	36	0	0	38	7	0	90	210	0	384			0	0	0
8:45 AM					0	1	0	36	0	0	41	5	0	62	126	0	271			0	0	0

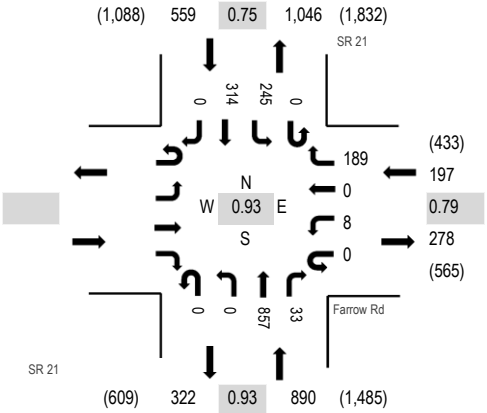
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound U-Turn	Westbound Left	Westbound Thru	Westbound Right	Northbound U-Turn	Northbound Left	Northbound Thru	Northbound Right	Southbound U-Turn	Southbound Left	Southbound Thru	Southbound Right	Total
Articulated Trucks					0	0	0	0	0	0	0	0	0	1	5	0	6
Lights					0	4	0	295	0	0	301	20	0	294	965	0	1,879
Mediums					0	0	0	10	0	0	6	0	0	13	6	0	35
Total					0	4	0	305	0	0	307	20	0	308	976	0	1,920

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

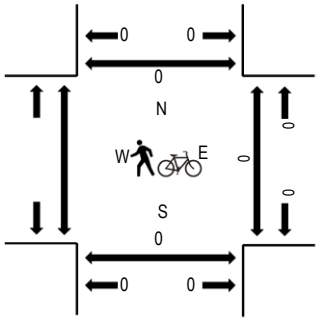
Location: 3 SR 21 & Farrow Rd PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Farrow Rd Westbound U-Turn	Farrow Rd Westbound Left	Farrow Rd Westbound Thru	Farrow Rd Westbound Right	SR 21 Northbound U-Turn	SR 21 Northbound Left	SR 21 Northbound Thru	SR 21 Northbound Right	SR 21 Southbound U-Turn	SR 21 Southbound Left	SR 21 Southbound Thru	SR 21 Southbound Right	Total	Rolling Hour	Pedestrain Crossings West	Pedestrain Crossings East	Pedestrain Crossings South	Pedestrain Crossings North
4:00 PM					0	3	0	58	0	0	121	6	0	94	93	0	375	1,393		0	0	0
4:15 PM					0	1	0	65	0	0	129	10	0	54	65	0	324	1,423		0	0	0
4:30 PM					0	1	0	37	0	0	151	9	0	48	52	0	298	1,542		0	0	0
4:45 PM					0	3	0	41	0	0	189	9	0	72	82	0	396	1,646		0	0	0
5:00 PM					0	0	0	44	0	0	229	5	0	52	75	0	405	1,613		0	0	0
5:15 PM					0	1	0	53	0	0	231	7	0	65	86	0	443			0	0	0
5:30 PM					0	4	0	51	0	0	208	12	0	56	71	0	402			0	0	0
5:45 PM					0	1	0	70	0	0	155	14	0	52	71	0	363			0	0	0

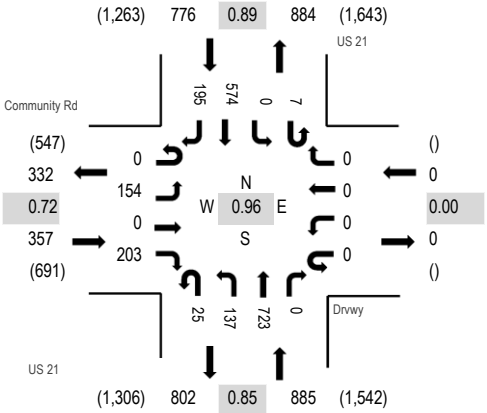
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound U-Turn	Westbound Left	Westbound Thru	Westbound Right	Northbound U-Turn	Northbound Left	Northbound Thru	Northbound Right	Southbound U-Turn	Southbound Left	Southbound Thru	Southbound Right	Total
Articulated Trucks					0	0	0	0	0	0	1	0	0	1	1	0	3
Lights					0	8	0	188	0	0	853	33	0	242	309	0	1,633
Mediums					0	0	0	1	0	0	3	0	0	2	4	0	10
Total					0	8	0	189	0	0	857	33	0	245	314	0	1,646

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

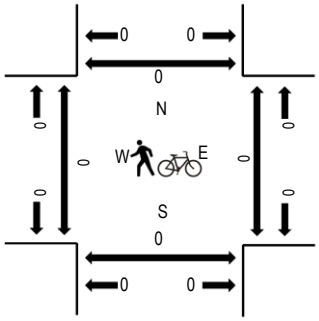
Location: 10 US 21 & Drvwy AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Community Rd Eastbound				Drvwy Westbound				US 21 Northbound				US 21 Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	18	0	18	0	0	0	0	0	30	163	0	0	0	102	29	360	1,836	0	0	0	0
7:15 AM	0	39	0	31	0	0	0	0	0	35	181	0	6	0	109	44	445	1,987	0	0	0	0
7:30 AM	0	40	0	47	0	0	0	0	0	40	219	0	1	0	125	51	523	2,018	0	0	0	0
7:45 AM	0	46	0	51	0	0	0	0	0	36	176	0	4	0	134	61	508	1,891	0	0	0	0
8:00 AM	0	39	0	56	0	0	0	0	2	28	167	0	2	0	172	45	511	1,660	0	0	0	0
8:15 AM	0	29	0	49	0	0	0	0	23	33	161	0	0	0	143	38	476		0	0	0	0
8:30 AM	0	76	0	69	0	0	0	0	1	19	129	0	2	0	72	28	396		0	0	0	0
8:45 AM	0	61	0	22	0	0	0	0	0	16	83	0	1	0	80	14	277		0	0	0	0

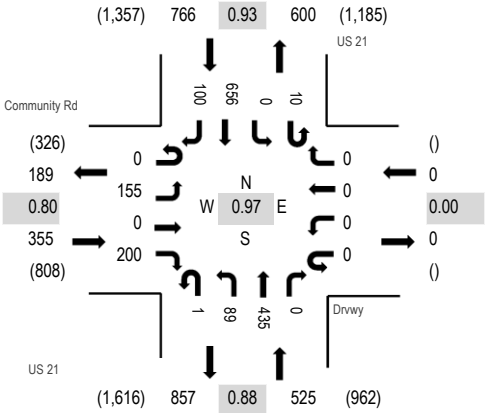
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	7	0	0	0	0	0	0	0	1	0	0	0	0	1	2	11
Lights	0	139	0	185	0	0	0	0	25	117	708	0	7	0	566	185	1,932
Mediums	0	8	0	18	0	0	0	0	0	19	15	0	0	0	7	8	75
Total	0	154	0	203	0	0	0	0	25	137	723	0	7	0	574	195	2,018

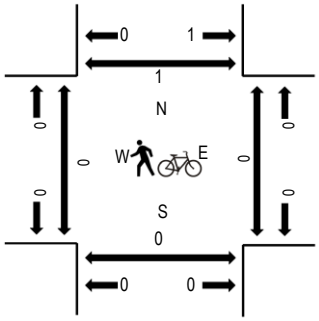
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 10 US 21 & Drvwy PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Community Rd Eastbound				Drvwy Westbound				US 21 Northbound				US 21 Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	62	0	56	0	0	0	0	0	25	108	0	4	0	116	19	390	1,481	0	1	1	0
4:15 PM	0	64	0	77	0	0	0	0	0	20	79	0	2	0	125	17	384	1,502	0	0	0	0
4:30 PM	0	50	0	59	0	0	0	0	0	23	72	0	4	0	139	13	360	1,542	0	0	0	0
4:45 PM	0	36	0	49	0	0	0	0	0	9	101	0	3	0	138	11	347	1,601	0	0	0	0
5:00 PM	0	46	0	60	0	0	0	0	1	21	99	0	2	0	162	20	411	1,646	0	0	0	1
5:15 PM	0	41	0	55	0	0	0	0	0	22	100	0	4	0	173	29	424		0	0	0	0
5:30 PM	0	40	0	40	0	0	0	0	0	22	127	0	3	0	159	28	419		0	0	0	0
5:45 PM	0	28	0	45	0	0	0	0	0	24	109	0	1	0	162	23	392		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	8	0	1	0	0	0	0	0	1	8	0	0	0	1	4	23
Lights	0	145	0	199	0	0	0	0	1	87	423	0	10	0	649	92	1,606
Mediums	0	2	0	0	0	0	0	0	0	1	4	0	0	0	6	4	17
Total	0	155	0	200	0	0	0	0	1	89	435	0	10	0	656	100	1,646

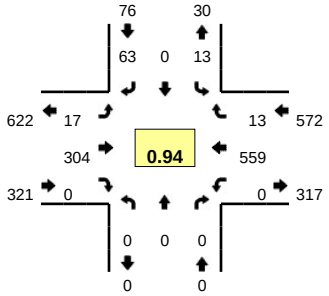
Type of peak hour being reported: Intersection Peak

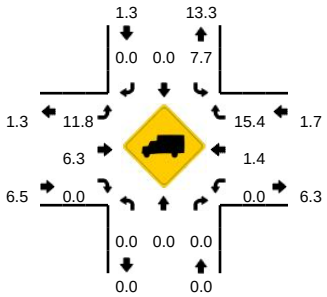
Method for determining peak hour: Total Entering Volume

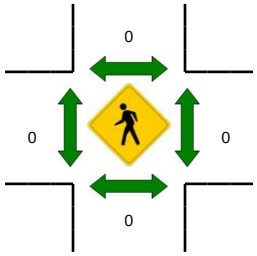
LOCATION: Sandfield Rd -- Langford Rd
CITY/STATE: Blythewood, SC

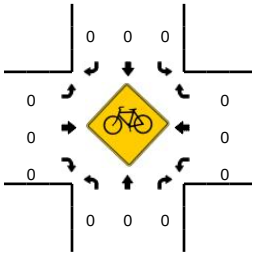
QC JOB #: 14725005
DATE: Thu, May 31 2018

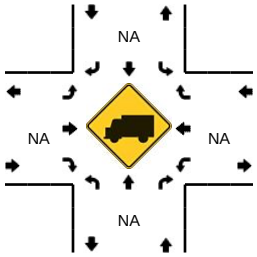
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

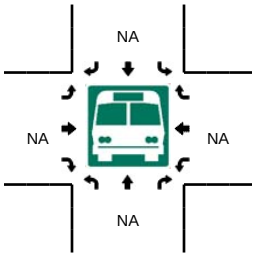












15-Min Count Period Beginning At	Sandfield Rd (Northbound)				Sandfield Rd (Southbound)				Langford Rd (Eastbound)				Langford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	1	0	28	0	2	55	0	0	0	127	0	0	213	
7:15 AM	0	0	0	0	2	0	15	0	2	81	0	0	0	126	0	0	226	
7:30 AM	0	0	0	0	9	0	12	0	5	78	0	0	0	154	1	0	259	
7:45 AM	0	0	0	0	1	0	14	0	4	74	0	0	0	135	6	0	234	932
8:00 AM	0	0	0	0	1	0	22	0	6	71	0	0	0	144	6	0	250	969
8:15 AM	0	0	0	0	2	0	21	0	6	54	0	0	0	139	1	0	223	966
8:30 AM	0	0	0	0	2	0	12	0	9	60	0	0	0	58	2	1	144	851
8:45 AM	0	0	0	0	0	0	16	0	5	45	0	0	0	63	0	0	129	746

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	36	0	48	0	20	312	0	0	0	616	4	0	1036
Heavy Trucks	0	0	0		0	0	0		4	12	0		0	16	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 6/7/2018 12:20 PM

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

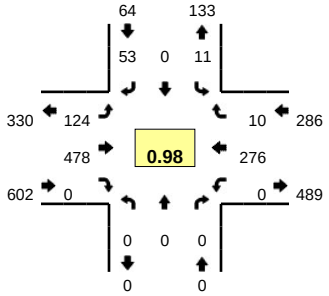
Type of peak hour being reported: Intersection Peak

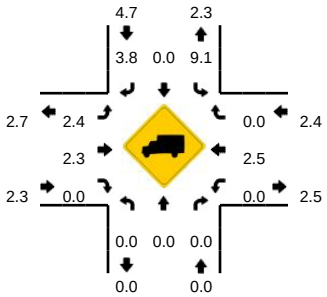
Method for determining peak hour: Total Entering Volume

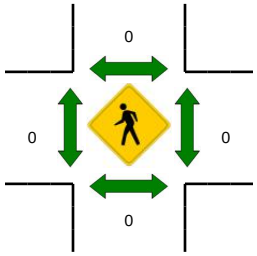
LOCATION: Sandfield Rd -- Langford Rd
CITY/STATE: Blythewood, SC

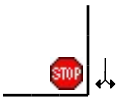
QC JOB #: 14725006
DATE: Thu, May 31 2018

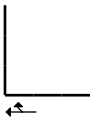
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

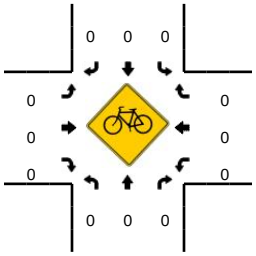


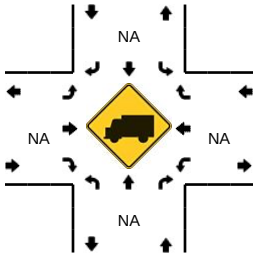


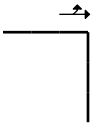


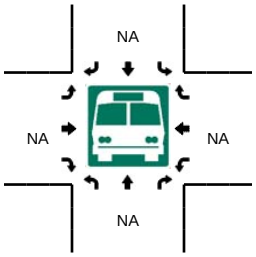












15-Min Count Period Beginning At	Sandfield Rd (Northbound)				Sandfield Rd (Southbound)				Langford Rd (Eastbound)				Langford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	7	0	23	119	0	0	0	53	2	0	204	
4:15 PM	0	0	0	0	1	0	12	0	17	99	0	0	0	42	2	0	173	
4:30 PM	0	0	0	0	2	0	11	0	26	122	0	0	0	44	3	0	208	
4:45 PM	0	0	0	0	2	0	12	0	19	112	0	0	0	53	0	0	198	783
5:00 PM	0	0	0	0	1	0	17	0	33	101	0	0	0	80	2	0	234	813
5:15 PM	0	0	0	0	3	0	8	0	31	118	0	0	0	74	2	0	236	876
5:30 PM	0	0	0	0	2	0	11	0	26	133	0	1	0	63	3	0	239	907
5:45 PM	0	0	0	0	5	0	17	0	33	126	0	0	0	59	3	0	243	952

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	20	0	68	0	132	504	0	0	0	236	12	0	972
Heavy Trucks	0	0	0		0	0	4		4	12	0		0	0	0		20
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 6/7/2018 12:20 PM

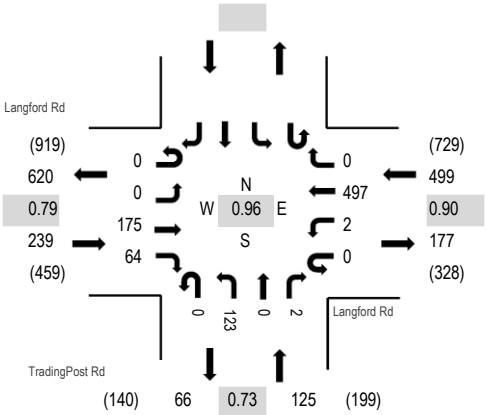
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

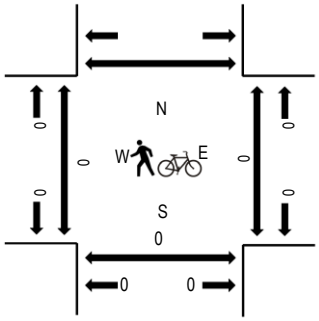
Location: 17 TradingPost Rd & Langford Rd AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Langford Rd Eastbound				Langford Rd Westbound				TradingPost Rd Northbound				Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	41	18	0	0	122	0	0	43	0	0					224	863	0	0	0	
7:15 AM	0	0	44	10	0	0	128	0	0	22	0	0					204	821	0	0	0	
7:30 AM	0	0	34	10	0	1	137	0	0	32	0	0					214	769	0	0	0	
7:45 AM	0	0	56	26	0	1	110	0	0	26	0	2					221	663	0	0	0	
8:00 AM	0	0	47	19	0	2	86	0	0	27	0	1					182	524	0	0	0	
8:15 AM	0	0	36	16	0	0	76	0	0	22	0	2					152		0	0	0	
8:30 AM	0	0	35	25	0	0	40	0	0	8	0	0					108		0	0	0	
8:45 AM	0	0	30	12	0	0	26	0	0	14	0	0					82		0	0	0	

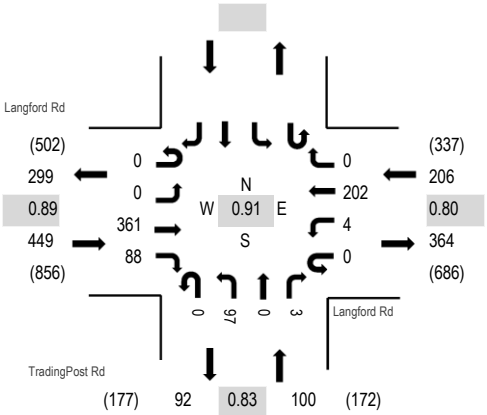
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	1	0	0	0	0	0					1
Lights	0	0	170	56	0	2	487	0	0	120	0	2					837
Mediums	0	0	5	8	0	0	9	0	0	3	0	0					25
Total	0	0	175	64	0	2	497	0	0	123	0	2					863

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

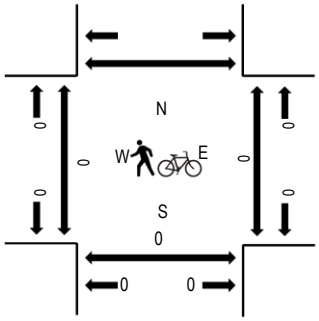
Location: 17 TradingPost Rd & Langford Rd PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Langford Rd Eastbound				Langford Rd Westbound				TradingPost Rd Northbound				Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	87	22	0	0	32	0	0	17	0	0					158	610	0	0	0	
4:15 PM	0	0	64	27	0	0	36	0	0	18	0	0					145	615	0	0	0	
4:30 PM	0	0	84	23	0	0	30	0	0	18	0	0					155	677	0	0	0	
4:45 PM	0	0	87	13	0	0	33	0	0	19	0	0					152	709	0	0	0	
5:00 PM	0	0	81	18	0	0	46	0	0	17	0	1					163	755	0	0	0	
5:15 PM	0	0	94	32	0	1	51	0	0	28	0	1					207		0	0	0	
5:30 PM	0	0	101	19	0	0	44	0	0	23	0	0					187		0	0	0	
5:45 PM	0	0	85	19	0	3	61	0	0	29	0	1					198		0	0	0	

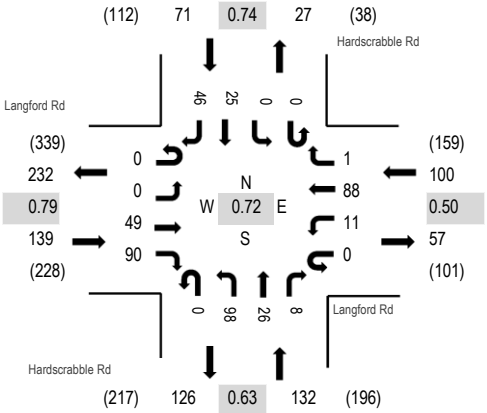
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0					0
Lights	0	0	360	88	0	4	200	0	0	96	0	3					751
Mediums	0	0	1	0	0	0	2	0	0	1	0	0					4
Total	0	0	361	88	0	4	202	0	0	97	0	3					755

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

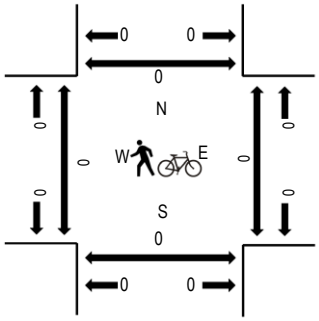
Location: 5 Hardscrabble Rd & Langford Rd AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Langford Rd Eastbound				Langford Rd Westbound				Hardscrabble Rd Northbound				Hardscrabble Rd Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	14	30	0	8	42	0	0	37	5	0	0	0	5	13	154	442	0	0	0	0
7:15 AM	0	0	12	23	0	1	22	0	0	40	7	5	0	0	6	14	130	362	0	0	0	0
7:30 AM	0	0	12	19	0	0	9	0	0	14	7	1	0	0	11	13	86	279	0	0	0	0
7:45 AM	0	0	11	18	0	2	15	1	0	7	7	2	0	0	3	6	72	255	0	0	0	0
8:00 AM	0	0	15	20	0	5	8	0	0	12	4	0	0	0	5	5	74	253	0	0	0	0
8:15 AM	0	0	6	8	0	1	11	0	0	9	2	2	0	0	4	4	47		0	0	0	0
8:30 AM	0	0	4	13	0	4	10	0	0	11	3	4	0	0	5	8	62		0	0	0	0
8:45 AM	0	0	10	13	0	7	13	0	0	12	2	3	0	0	6	4	70		0	0	0	0

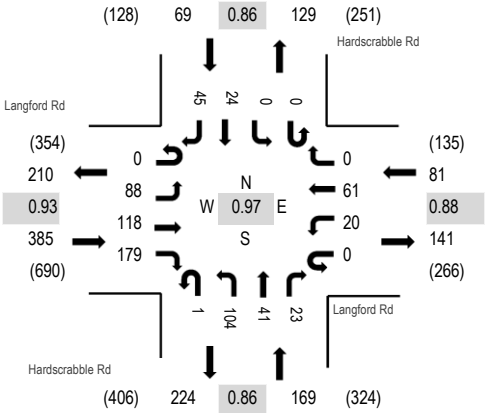
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	3
Lights	0	0	48	81	0	10	87	1	0	96	26	7	0	0	24	45	425
Mediums	0	0	0	8	0	1	1	0	0	1	0	1	0	0	1	1	14
Total	0	0	49	90	0	11	88	1	0	98	26	8	0	0	25	46	442

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

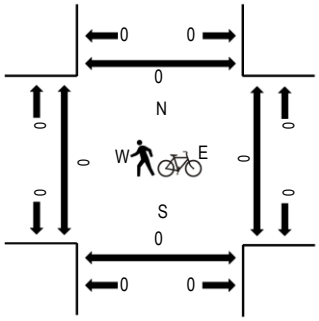
Location: 5 Hardscrabble Rd & Langford Rd PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Langford Rd Eastbound				Langford Rd Westbound				Hardscrabble Rd Northbound				Hardscrabble Rd Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	21	28	41	0	6	10	1	0	27	11	12	0	1	6	5	169	701	0	0	0	0
4:15 PM	0	19	38	40	0	7	15	0	0	22	11	5	0	0	5	12	174	704	0	0	0	0
4:30 PM	0	25	29	49	0	7	14	0	0	25	9	8	0	0	4	12	182	680	0	0	0	0
4:45 PM	0	22	21	49	0	3	12	0	0	36	14	3	0	0	6	10	176	621	0	0	0	0
5:00 PM	0	22	30	41	0	3	20	0	1	21	7	7	0	0	9	11	172	576	0	0	0	0
5:15 PM	0	12	28	35	0	3	12	0	0	26	11	6	0	0	5	12	150		0	0	0	0
5:30 PM	0	22	21	30	0	3	7	0	0	12	10	6	0	0	8	4	123		0	0	0	0
5:45 PM	1	18	17	31	0	0	11	1	0	13	15	6	0	0	14	4	131		0	0	0	0

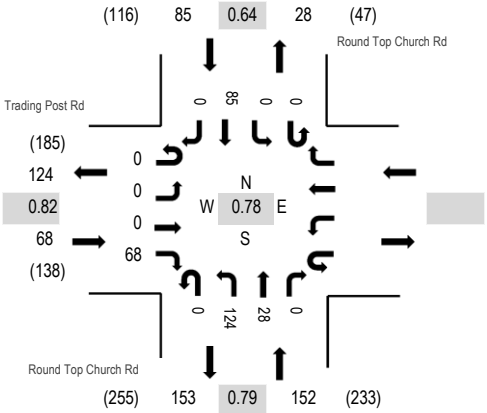
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	88	117	179	0	20	61	0	1	103	40	23	0	0	23	45	700
Mediums	0	0	1	0	0	0	0	0	0	1	1	0	0	0	1	0	4
Total	0	88	118	179	0	20	61	0	1	104	41	23	0	0	24	45	704

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

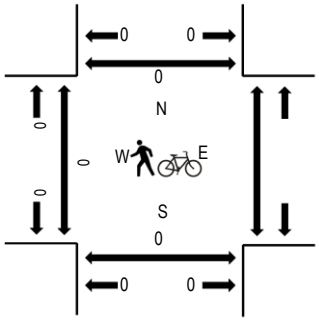
Location: 4 Round Top Church Rd & Trading Post Rd AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Trading Post Rd Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound U-Turn	Westbound Left	Westbound Thru	Westbound Right	Round Top Church Rd Northbound U-Turn	Northbound Left	Northbound Thru	Northbound Right	Round Top Church Rd Southbound U-Turn	Southbound Left	Southbound Thru	Southbound Right	Total	Rolling Hour	Pedestrain Crossings West	East	South	North
7:00 AM	0	0	0	17					0	38	10	0	0	0	33	0	98	305	0		0	0
7:15 AM	0	0	0	13					0	29	4	0	0	0	28	0	74	260	0		0	0
7:30 AM	0	0	0	12					0	24	7	0	0	0	16	0	59	238	0		0	0
7:45 AM	0	0	0	26					0	33	7	0	0	0	8	0	74	219	0		0	0
8:00 AM	0	0	0	20					0	21	5	0	0	0	7	0	53	182	0		0	0
8:15 AM	0	0	0	13					0	20	5	0	0	0	14	0	52		0		0	0
8:30 AM	0	0	0	26					1	6	3	0	0	0	4	0	40		0		0	0
8:45 AM	0	0	0	11					0	14	6	0	0	0	6	0	37		0		0	0

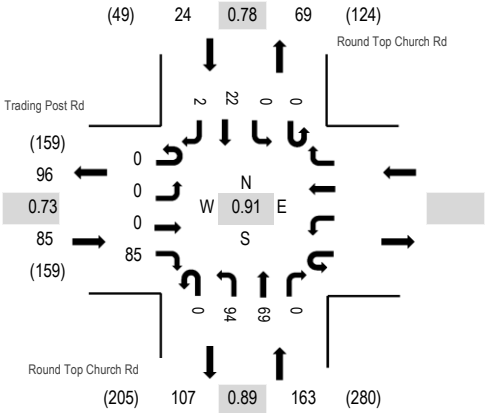
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound U-Turn	Westbound Left	Westbound Thru	Westbound Right	Northbound U-Turn	Northbound Left	Northbound Thru	Northbound Right	Southbound U-Turn	Southbound Left	Southbound Thru	Southbound Right	Total
Articulated Trucks	0	0	0	0					0	0	0	0	0	0	0	0	0
Lights	0	0	0	61					0	118	26	0	0	0	84	0	289
Mediums	0	0	0	7					0	6	2	0	0	0	1	0	16
Total	0	0	0	68					0	124	28	0	0	0	85	0	305

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

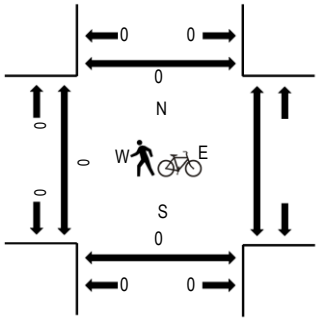
Location: 4 Round Top Church Rd & Trading Post Rd PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Trading Post Rd Eastbound				Westbound				Round Top Church Rd Northbound				Round Top Church Rd Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	0	18					0	14	13	0	0	0	5	0	50	216	0		0	0
4:15 PM	0	0	0	26					0	14	16	0	0	0	8	0	64	226	0		0	0
4:30 PM	0	0	0	20					0	13	11	0	0	0	8	0	52	230	0		0	0
4:45 PM	0	1	0	9					0	22	14	0	0	0	4	0	50	247	0		0	0
5:00 PM	0	0	0	18					0	19	18	0	0	0	5	0	60	272	0		0	0
5:15 PM	0	0	0	29					0	22	13	0	0	0	4	0	68		0		0	0
5:30 PM	0	0	0	16					0	25	20	0	0	0	8	0	69		0		0	0
5:45 PM	0	0	0	22					0	28	18	0	0	0	5	2	75		0		0	0

Peak Rolling Hour Flow Rates

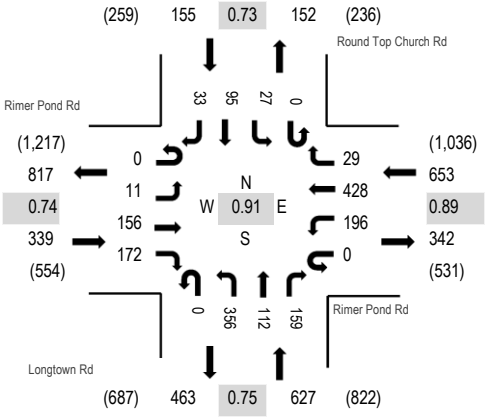
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0					0	0	0	0	0	0	0	0	0
Lights	0	0	0	85					0	93	67	0	0	0	21	2	268
Mediums	0	0	0	0					0	1	2	0	0	0	1	0	4
Total	0	0	0	85					0	94	69	0	0	0	22	2	272

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

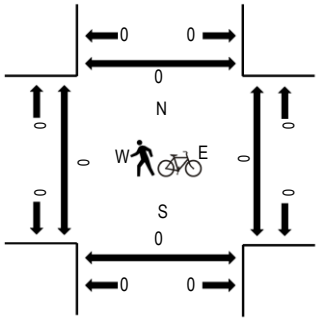
Location: 9 Longtown Rd & Rimer Pond Rd AM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Rimer Pond Rd Eastbound				Rimer Pond Rd Westbound				Longtown Rd Northbound				Round Top Church Rd Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	2	43	35	0	63	87	8	0	78	39	47	0	11	30	12	455	1,774	0	0	0	0
7:15 AM	0	0	27	24	0	70	105	9	0	120	25	65	0	5	24	15	489	1,675	0	0	0	0
7:30 AM	0	6	49	59	0	30	122	2	0	63	25	28	0	5	18	3	410	1,416	0	0	0	0
7:45 AM	0	3	37	54	0	33	114	10	0	95	23	19	0	6	23	3	420	1,188	0	0	0	0
8:00 AM	0	4	32	44	0	31	121	7	0	53	18	15	0	5	22	4	356	897	0	0	0	0
8:15 AM	0	4	30	6	0	12	95	5	0	25	16	8	0	5	20	4	230		0	0	0	0
8:30 AM	0	0	40	21	0	10	50	2	0	11	7	13	0	7	19	2	182		0	0	0	0
8:45 AM	0	1	18	15	0	15	27	8	0	7	12	10	0	6	9	1	129		0	0	0	0

Peak Rolling Hour Flow Rates

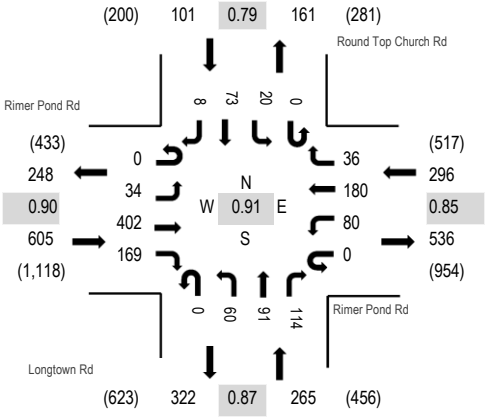
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	9	151	168	0	193	427	28	0	351	108	157	0	24	89	33	1,738
Mediums	0	2	5	4	0	3	1	1	0	5	4	2	0	3	6	0	36
Total	0	11	156	172	0	196	428	29	0	356	112	159	0	27	95	33	1,774

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

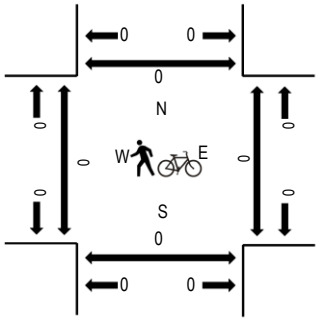
Location: 9 Longtown Rd & Rimer Pond Rd PM
Date and Start Time: Tuesday, October 02, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Rimer Pond Rd Eastbound				Rimer Pond Rd Westbound				Longtown Rd Northbound				Round Top Church Rd Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	6	93	69	0	11	39	3	0	14	18	13	0	5	17	3	291	1,024	0	0	0	0
4:15 PM	0	5	56	21	0	15	25	9	0	14	20	17	0	9	21	1	213	1,028	0	0	0	0
4:30 PM	0	4	83	34	0	19	27	9	0	13	10	20	0	7	16	2	244	1,165	0	0	0	0
4:45 PM	0	8	91	43	0	24	28	12	0	17	16	19	0	5	11	2	276	1,249	0	0	0	0
5:00 PM	0	5	87	43	0	19	40	9	0	17	22	32	0	4	15	2	295	1,267	0	0	0	0
5:15 PM	0	7	119	48	0	22	37	9	0	19	21	36	0	10	22	0	350		0	0	0	0
5:30 PM	0	12	111	49	0	20	49	4	0	13	25	24	0	2	15	4	328		0	0	0	0
5:45 PM	0	10	85	29	0	19	54	14	0	11	23	22	0	4	21	2	294		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Lights	0	33	402	169	0	77	177	35	0	58	91	114	0	20	72	7	1,255
Mediums	0	1	0	0	0	3	2	1	0	2	0	0	0	0	1	1	11
Total	0	34	402	169	0	80	180	36	0	60	91	114	0	20	73	8	1,267

Intersection	
Int Delay, s/veh	20.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	256	36	85	76	84	279
Future Vol, veh/h	256	36	85	76	84	279
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	86	86	75	75	79	79
Heavy Vehicles, %	6	0	5	8	4	4
Mvmt Flow	298	42	113	101	106	353

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	730	164	0	0	215	0
Stage 1	164	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Critical Hdwy	6.46	6.2	-	-	4.14	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.236	-
Pot Cap-1 Maneuver	384	886	-	-	1343	-
Stage 1	856	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	346	886	-	-	1343	-
Mov Cap-2 Maneuver	346	-	-	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	505	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	59.9	0	1.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	374	1343	-
HCM Lane V/C Ratio	-	-	0.908	0.079	-
HCM Control Delay (s)	-	-	59.9	7.9	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	9.3	0.3	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	172	34	66	264	32	89
Future Vol, veh/h	172	34	66	264	32	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	91	91	86	86
Heavy Vehicles, %	6	0	3	6	3	0
Mvmt Flow	191	38	73	290	37	103

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	229	0	645	210
Stage 1	-	-	-	-	210	-
Stage 2	-	-	-	-	435	-
Critical Hdwy	-	-	4.13	-	6.43	6.2
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.3
Pot Cap-1 Maneuver	-	-	1333	-	435	835
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1333	-	407	835
Mov Cap-2 Maneuver	-	-	-	-	407	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	608	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	653	-	-	1333	-
HCM Lane V/C Ratio	0.215	-	-	0.054	-
HCM Control Delay (s)	12	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	341	5	28	199	309	1	1	3	377	4	39
Future Volume (veh/h)	41	341	5	28	199	309	1	1	3	377	4	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1811	1900	1900	1864	1900	1900	1900	1900	1881	1850	1900
Adj Flow Rate, veh/h	49	406	6	37	262	407	2	2	5	554	6	57
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.76	0.76	0.76	0.63	0.63	0.63	0.68	0.68	0.68
Percent Heavy Veh, %	2	5	5	5	5	5	0	0	0	1	0	0
Cap, veh/h	210	921	14	52	266	396	151	159	348	601	59	558
Arrive On Green	0.05	0.52	0.52	0.42	0.42	0.42	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1774	1780	26	59	637	947	310	410	899	1417	152	1443
Grp Volume(v), veh/h	49	0	412	706	0	0	9	0	0	554	0	63
Grp Sat Flow(s),veh/h/ln	1774	0	1806	1643	0	0	1618	0	0	1417	0	1595
Q Serve(g_s), s	2.0	0.0	19.8	40.2	0.0	0.0	0.0	0.0	0.0	53.3	0.0	3.5
Cycle Q Clear(g_c), s	2.0	0.0	19.8	58.0	0.0	0.0	0.4	0.0	0.0	53.7	0.0	3.5
Prop In Lane	1.00		0.01	0.05		0.58	0.22		0.56	1.00		0.90
Lane Grp Cap(c), veh/h	210	0	934	714	0	0	658	0	0	601	0	617
V/C Ratio(X)	0.23	0.00	0.44	0.99	0.00	0.00	0.01	0.00	0.00	0.92	0.00	0.10
Avail Cap(c_a), veh/h	225	0	950	714	0	0	658	0	0	601	0	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	21.0	40.9	0.0	0.0	26.2	0.0	0.0	42.7	0.0	27.2
Incr Delay (d2), s/veh	0.6	0.0	0.3	30.8	0.0	0.0	0.0	0.0	0.0	19.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	9.9	33.0	0.0	0.0	0.2	0.0	0.0	24.4	0.0	1.6
LnGrp Delay(d),s/veh	19.8	0.0	21.3	71.7	0.0	0.0	26.2	0.0	0.0	62.5	0.0	27.2
LnGrp LOS	B		C	E			C			E		C
Approach Vol, veh/h		461			706			9			617	
Approach Delay, s/veh		21.1			71.7			26.2			58.9	
Approach LOS		C			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		78.8		60.0	13.8	65.0		60.0
Change Period (Y+Rc), s		7.0		6.3	7.0	7.0		6.3
Max Green Setting (Gmax), s		73.0		53.7	8.0	58.0		53.7
Max Q Clear Time (g_c+I1), s		21.8		55.7	4.0	60.0		2.4
Green Ext Time (p_c), s		35.8		0.0	0.0	0.0		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	54.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	538	347	292	705	0	0	0	0	118	6	127
Future Volume (veh/h)	0	538	347	292	705	0	0	0	0	118	6	127
Number	5	2	12	1	6	16				7	4	14
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	0	1845	1881	1863	1863	0				1900	1781	1681
Adj Flow Rate, veh/h	0	604	0	365	881	0				137	7	0
Adj No. of Lanes	0	1	1	1	1	0				0	1	1
Peak Hour Factor	0.89	0.89	0.89	0.80	0.80	0.80				0.86	0.86	0.86
Percent Heavy Veh, %	0	3	1	2	2	0				13	0	13
Cap, veh/h	0	1205	1044	620	1485	0				167	9	147
Arrive On Green	0.00	0.65	0.00	0.09	0.80	0.00				0.10	0.10	0.00
Sat Flow, veh/h	0	1845	1599	1774	1863	0				1618	83	1429
Grp Volume(v), veh/h	0	604	0	365	881	0				144	0	0
Grp Sat Flow(s),veh/h/ln	0	1845	1599	1774	1863	0				1700	0	1429
Q Serve(g_s), s	0.0	20.3	0.0	7.3	21.9	0.0				10.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	20.3	0.0	7.3	21.9	0.0				10.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				0.95		1.00
Lane Grp Cap(c), veh/h	0	1205	1044	620	1485	0				175	0	147
V/C Ratio(X)	0.00	0.50	0.00	0.59	0.59	0.00				0.82	0.00	0.00
Avail Cap(c_a), veh/h	0	1205	1044	941	1485	0				340	0	286
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.58	0.58	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	10.7	0.0	8.0	4.7	0.0				52.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.5	0.0	0.5	1.0	0.0				9.2	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	0.0	10.7	0.0	4.0	11.4	0.0				5.1	0.0	0.0
LnGrp Delay(d),s/veh	0.0	12.2	0.0	8.5	5.7	0.0				61.9	0.0	0.0
LnGrp LOS		B		A	A					E		
Approach Vol, veh/h		604			1246						144	
Approach Delay, s/veh		12.2			6.5						61.9	
Approach LOS		B			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	17.3	84.4		18.4		101.6		
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		
Max Green Setting (Gmax), s	33.0	45.0		24.0		84.0		
Max Q Clear Time (g_c+I1), s	11.3	22.3		12.0		23.9		
Green Ext Time (p_c), s	1.9	19.5		0.5		43.1		

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	630	0	0	803	91	165	0	180	0	0	0
Future Volume (veh/h)	24	630	0	0	803	91	165	0	180	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1759	1845	0	0	1845	1863	1900	1845	1792			
Adj Flow Rate, veh/h	25	649	0	0	1043	0	181	0	0			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.97	0.97	0.97	0.77	0.77	0.77	0.91	0.91	0.91			
Percent Heavy Veh, %	8	3	0	0	3	2	6	0	6			
Cap, veh/h	455	1432	0	0	1432	1229	217	0	188			
Arrive On Green	0.78	0.78	0.00	0.00	1.00	0.00	0.12	0.00	0.00			
Sat Flow, veh/h	509	1845	0	0	1845	1583	1757	0	1524			
Grp Volume(v), veh/h	25	649	0	0	1043	0	181	0	0			
Grp Sat Flow(s),veh/h/ln	509	1845	0	0	1845	1583	1757	0	1524			
Q Serve(g_s), s	1.4	14.6	0.0	0.0	0.0	0.0	12.1	0.0	0.0			
Cycle Q Clear(g_c), s	1.4	14.6	0.0	0.0	0.0	0.0	12.1	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	455	1432	0	0	1432	1229	217	0	188			
V/C Ratio(X)	0.05	0.45	0.00	0.00	0.73	0.00	0.83	0.00	0.00			
Avail Cap(c_a), veh/h	455	1432	0	0	1432	1229	425	0	368			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.76	0.76	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	3.2	4.6	0.0	0.0	0.0	0.0	51.4	0.0	0.0			
Incr Delay (d2), s/veh	0.2	0.8	0.0	0.0	3.3	0.0	8.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.2	7.5	0.0	0.0	1.3	0.0	6.4	0.0	0.0			
LnGrp Delay(d),s/veh	3.3	5.4	0.0	0.0	3.3	0.0	59.5	0.0	0.0			
LnGrp LOS	A	A			A		E					
Approach Vol, veh/h		674			1043			181				
Approach Delay, s/veh		5.3			3.3			59.5				
Approach LOS		A			A			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		99.2				99.2		20.8
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		79.0				79.0		29.0
Max Q Clear Time (g_c+I1), s		16.6				2.0		14.1
Green Ext Time (p_c), s		23.0				24.2		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	66.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	88	616	75	26	936	32	29	0	42	6	1	133
Future Vol, veh/h	88	616	75	26	936	32	29	0	42	6	1	133
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	150	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	96	96	96	68	68	68	73	73	73
Heavy Vehicles, %	2	1	1	0	1	0	0	0	2	0	0	3
Mvmt Flow	97	677	82	27	975	33	43	0	62	8	1	182

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1008	0	0	759	0	0	2050	1975	718	1988	1999	992
Stage 1	-	-	-	-	-	-	912	912	-	1046	1046	-
Stage 2	-	-	-	-	-	-	1138	1063	-	942	953	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.22	7.1	6.5	6.23
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	2.218	-	-	2.2	-	-	3.5	4	3.318	3.5	4	3.327
Pot Cap-1 Maneuver	687	-	-	862	-	-	~ 42	63	429	46	61	297
Stage 1	-	-	-	-	-	-	331	355	-	278	308	-
Stage 2	-	-	-	-	-	-	247	302	-	318	340	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	687	-	-	862	-	-	~ 14	52	429	34	51	297
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 14	52	-	34	51	-
Stage 1	-	-	-	-	-	-	284	305	-	239	298	-
Stage 2	-	-	-	-	-	-	92	293	-	234	292	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.2	$ 1227.4	80.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	33	687	-	-	862	-	-	217
HCM Lane V/C Ratio	3.164	0.141	-	-	0.031	-	-	0.884
HCM Control Delay (s)	$ 1227.4	11.1	-	-	9.3	-	-	80.8
HCM Lane LOS	F	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	12.1	0.5	-	-	0.1	-	-	7

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	510	12	16	595	41	4	7	14	61	2	178
Future Volume (veh/h)	213	510	12	16	595	41	4	7	14	61	2	178
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1845	1860	1900	1792	1882	1900	1900	1747	1900	1900	1900	1863
Adj Flow Rate, veh/h	277	662	16	21	793	55	6	10	20	76	2	0
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.77	0.77	0.77	0.75	0.75	0.75	0.71	0.71	0.71	0.80	0.80	0.80
Percent Heavy Veh, %	3	2	2	6	1	1	14	14	0	0	0	2
Cap, veh/h	666	1468	35	363	724	50	77	102	132	160	3	129
Arrive On Green	0.69	1.00	1.00	0.42	0.42	0.42	0.08	0.08	0.08	0.08	0.08	0.00
Sat Flow, veh/h	1757	1809	44	730	1740	121	433	1256	1615	1232	32	1583
Grp Volume(v), veh/h	277	0	678	21	0	848	16	0	20	78	0	0
Grp Sat Flow(s),veh/h/ln	1757	0	1852	730	0	1861	1689	0	1615	1264	0	1583
Q Serve(g_s), s	2.6	0.0	0.0	2.1	0.0	49.9	0.0	0.0	1.4	6.5	0.0	0.0
Cycle Q Clear(g_c), s	2.6	0.0	0.0	2.1	0.0	49.9	1.0	0.0	1.4	7.5	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.06	0.37		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	666	0	1504	363	0	774	179	0	132	162	0	129
V/C Ratio(X)	0.42	0.00	0.45	0.06	0.00	1.10	0.09	0.00	0.15	0.48	0.00	0.00
Avail Cap(c_a), veh/h	666	0	1504	363	0	774	471	0	435	427	0	426
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.72	0.00	0.72	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.3	0.0	0.0	21.1	0.0	35.1	51.1	0.0	51.2	54.6	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.0	0.2	0.0	57.4	0.2	0.0	0.5	3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.4	0.4	0.0	37.9	0.5	0.0	0.6	2.7	0.0	0.0
LnGrp Delay(d),s/veh	12.7	0.0	1.0	21.3	0.0	92.4	51.3	0.0	51.8	57.7	0.0	0.0
LnGrp LOS	B		A	C		F	D		D	E		
Approach Vol, veh/h		955			869			36			78	
Approach Delay, s/veh		4.4			90.7			51.6			57.7	
Approach LOS		A			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		103.5		16.5	47.5	56.0		16.5
Change Period (Y+Rc), s		6.1		* 6.7	6.1	6.1		* 6.7
Max Green Setting (Gmax), s		74.9		* 32	18.9	49.9		* 32
Max Q Clear Time (g_c+I1), s		2.0		9.5	4.6	51.9		3.4
Green Ext Time (p_c), s		19.5		0.5	8.8	0.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	252	275	166	213	531	479
Future Volume (vph)	252	275	166	213	531	479
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.7	5.7	6.4	5.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1671	1583	1736	1827	1845	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1671	1583	1736	1827	1845	1583
Peak-hour factor, PHF	0.88	0.88	0.77	0.77	0.98	0.98
Adj. Flow (vph)	286	312	216	277	542	489
RTOR Reduction (vph)	0	63	0	0	0	6
Lane Group Flow (vph)	286	250	216	277	542	483
Heavy Vehicles (%)	8%	2%	4%	4%	3%	2%
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	4 1	1	1 2	2	4
Permitted Phases						2
Actuated Green, G (s)	43.0	60.7	12.0	65.4	47.0	90.0
Effective Green, g (s)	43.0	55.0	12.0	59.0	47.0	90.0
Actuated g/C Ratio	0.36	0.46	0.10	0.49	0.39	0.75
Clearance Time (s)	5.9		5.7		6.4	5.9
Vehicle Extension (s)	3.0		3.0		4.0	3.0
Lane Grp Cap (vph)	598	725	173	898	722	1265
v/s Ratio Prot	c0.17	0.16	c0.12	0.15	c0.29	0.14
v/s Ratio Perm						0.17
v/c Ratio	0.48	0.34	1.25	0.31	0.75	0.38
Uniform Delay, d1	29.8	20.9	54.0	18.3	31.5	5.3
Progression Factor	1.19	1.42	1.00	1.00	0.87	0.66
Incremental Delay, d2	0.6	0.3	150.7	0.2	4.7	0.1
Delay (s)	36.1	29.8	204.7	18.5	32.1	3.6
Level of Service	D	C	F	B	C	A
Approach Delay (s)	32.8			100.0	18.6	
Approach LOS	C			F	B	

Intersection Summary			
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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	2	1	38	119	0	12	0	146	21	4	254	0
Future Vol, veh/h	2	1	38	119	0	12	0	146	21	4	254	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	64	64	64	76	76	76	80	80	80	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	1	5	0	5	0
Mvmt Flow	3	2	59	157	0	16	0	183	26	5	299	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	512	517	299	535	504	196	-	0	0	209	0	0
Stage 1	308	308	-	196	196	-	-	-	-	-	-	-
Stage 2	204	209	-	339	308	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	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	-	-
Pot Cap-1 Maneuver	476	465	745	459	473	850	0	-	-	1374	-	0
Stage 1	706	664	-	810	742	-	0	-	-	-	-	0
Stage 2	803	733	-	680	664	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	466	463	745	420	471	850	-	-	-	1374	-	-
Mov Cap-2 Maneuver	466	463	-	420	471	-	-	-	-	-	-	-
Stage 1	706	661	-	810	742	-	-	-	-	-	-	-
Stage 2	788	733	-	622	661	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	18.4	0	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	714	440	1374	-
HCM Lane V/C Ratio	-	-	0.09	0.392	0.003	-
HCM Control Delay (s)	-	-	10.5	18.4	7.6	0
HCM Lane LOS	-	-	B	C	A	A
HCM 95th %tile Q(veh)	-	-	0.3	1.8	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	89	48	148	395	11
Future Vol, veh/h	6	89	48	148	395	11
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	77	77	82	82	78	78
Heavy Vehicles, %	0	2	6	2	3	0
Mvmt Flow	8	116	59	180	506	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	811	513	521	0	-	0
Stage 1	513	-	-	-	-	-
Stage 2	298	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.16	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.254	-	-	-
Pot Cap-1 Maneuver	352	561	1025	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	329	561	1025	-	-	-
Mov Cap-2 Maneuver	329	-	-	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	709	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1025	-	537	-	-
HCM Lane V/C Ratio	0.057	-	0.23	-	-
HCM Control Delay (s)	8.7	0	13.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	39	66	171	408	51
Future Vol, veh/h	26	39	66	171	408	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	80	80	90	90
Heavy Vehicles, %	2	2	2	4	4	2
Mvmt Flow	40	60	83	214	453	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	861	482	510	0	-	0
Stage 1	482	-	-	-	-	-
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	326	584	1055	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	300	584	1055	-	-	-
Mov Cap-2 Maneuver	300	-	-	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	638	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.1	2.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1055	-	424	-	-
HCM Lane V/C Ratio	0.078	-	0.236	-	-
HCM Control Delay (s)	8.7	-	16.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.9	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	563	72	216	239	78	448
Future Volume (vph)	563	72	216	239	78	448
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9		6.4		6.4	6.4
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.98		0.93		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1758		1664		1719	1845
Flt Permitted	0.96		1.00		0.27	1.00
Satd. Flow (perm)	1758		1664		491	1845
Peak-hour factor, PHF	0.93	0.93	0.81	0.81	0.83	0.83
Adj. Flow (vph)	605	77	267	295	94	540
RTOR Reduction (vph)	4	0	32	0	0	0
Lane Group Flow (vph)	678	0	530	0	94	540
Heavy Vehicles (%)	2%	1%	4%	8%	5%	3%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		6			6
Permitted Phases					6	
Actuated Green, G (s)	51.5		56.2		56.2	56.2
Effective Green, g (s)	51.5		56.2		56.2	56.2
Actuated g/C Ratio	0.43		0.47		0.47	0.47
Clearance Time (s)	5.9		6.4		6.4	6.4
Vehicle Extension (s)	4.0		4.0		4.0	4.0
Lane Grp Cap (vph)	754		779		229	864
v/s Ratio Prot	c0.39		c0.32			0.29
v/s Ratio Perm					0.19	
v/c Ratio	0.90		0.68		0.41	0.62
Uniform Delay, d1	31.8		24.9		21.0	24.0
Progression Factor	1.00		1.16		1.00	1.00
Incremental Delay, d2	13.8		2.6		1.6	1.6
Delay (s)	45.6		31.6		22.6	25.6
Level of Service	D		C		C	C
Approach Delay (s)	45.6		31.6			25.1
Approach LOS	D		C			C

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	480	253	465	122	125	607
Future Volume (veh/h)	480	253	465	122	125	607
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1827	1845	1900	1900	1827
Adj Flow Rate, veh/h	533	281	489	0	129	626
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.90	0.90	0.95	0.95	0.97	0.97
Percent Heavy Veh, %	1	4	3	3	0	4
Cap, veh/h	573	601	678	0	334	943
Arrive On Green	0.32	0.32	0.37	0.00	0.07	0.52
Sat Flow, veh/h	1792	1553	1845	0	1810	1827
Grp Volume(v), veh/h	533	281	489	0	129	626
Grp Sat Flow(s),veh/h/ln	1792	1553	1845	0	1810	1827
Q Serve(g_s), s	24.6	11.6	19.5	0.0	3.6	21.6
Cycle Q Clear(g_c), s	24.6	11.6	19.5	0.0	3.6	21.6
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	573	601	678	0	334	943
V/C Ratio(X)	0.93	0.47	0.72	0.00	0.39	0.66
Avail Cap(c_a), veh/h	586	612	712	0	382	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	19.6	23.3	0.0	16.7	15.2
Incr Delay (d2), s/veh	21.3	0.6	3.4	0.0	0.7	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	10.8	10.6	0.0	1.8	11.2
LnGrp Delay(d),s/veh	49.4	20.2	26.7	0.0	17.4	16.7
LnGrp LOS	D	C	C		B	B
Approach Vol, veh/h	814		489			755
Approach Delay, s/veh	39.3		26.7			16.8
Approach LOS	D		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		51.2		34.4	12.7	38.5		
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		
Max Green Setting (Gmax), s		48.0		28.0	8.0	33.0		
Max Q Clear Time (g_c+I1), s		23.6		26.6	5.6	21.5		
Green Ext Time (p_c), s		19.4		0.7	0.1	9.9		

Intersection Summary	
HCM 2010 Ctrl Delay	28.1
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	7.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	305	307	20	308	976
Future Vol, veh/h	4	305	307	20	308	976
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	87	87	87	87	92	92
Heavy Vehicles, %	0	3	2	0	5	1
Mvmt Flow	5	351	353	23	335	1061

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2094	364	0	0	376	0
Stage 1	364	-	-	-	-	-
Stage 2	1730	-	-	-	-	-
Critical Hdwy	6.4	6.23	-	-	4.15	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	-	-	2.245	-
Pot Cap-1 Maneuver	58	679	-	-	1166	-
Stage 1	707	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	17	679	-	-	1166	-
Mov Cap-2 Maneuver	17	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	48	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.7	0	2.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	451	1166	-
HCM Lane V/C Ratio	-	-	0.788	0.287	-
HCM Control Delay (s)	-	-	36.7	9.3	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	7	1.2	-

Intersection	
Int Delay, s/veh	100.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	154	0	203	0	0	0	25	137	723	0	7	0	574	195
Future Vol, veh/h	154	0	203	0	0	0	25	137	723	0	7	0	574	195
Conflicting Peds, #/hr	0	0	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	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	225	-	-	-	-	-	-	250	-	-	-	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	85	85	85	85	89	89	89	89
Heavy Vehicles, %	10	0	9	2	2	2	0	15	2	0	0	0	1	5
Mvmt Flow	214	0	282	0	0	0	29	161	851	0	8	0	645	219

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1576	2002	432	1570	2112	425	630	864	0	0	621	851	0	0
Stage 1	770	770	-	1232	1232	-	-	-	-	-	-	-	-	-
Stage 2	806	1232	-	338	880	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.7	6.5	7.08	7.54	6.54	6.94	6.4	4.4	-	-	6.4	4.1	-	-
Critical Hdwy Stg 1	6.7	5.5	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.7	5.5	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.6	4	3.39	3.52	4.02	3.32	2.5	2.35	-	-	2.5	2.2	-	-
Pot Cap-1 Maneuver	~ 68	60	553	75	50	578	580	697	-	-	588	796	-	-
Stage 1	342	413	-	188	248	-	-	-	-	-	-	-	-	-
Stage 2	325	252	-	650	363	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	~ 68	60	553	37	50	578	612	612	-	-	588	588	-	-
Mov Cap-2 Maneuver	~ 68	60	-	37	50	-	-	-	-	-	-	-	-	-
Stage 1	342	413	-	188	248	-	-	-	-	-	-	-	-	-
Stage 2	325	252	-	319	363	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 482.9	0	2.5	0.1
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	612	-	-	68	553	-	588	-	-
HCM Lane V/C Ratio	0.311	-	-	3.145	0.51	-	0.013	-	-
HCM Control Delay (s)	13.5	-	-	$ -1095.6	18.1	0	11.2	-	-
HCM Lane LOS	B	-	-	F	C	A	B	-	-
HCM 95th %tile Q(veh)	1.3	-	-	21.9	2.9	-	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	304	559	13	13	63
Future Vol, veh/h	17	304	559	13	13	63
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	97	97	92	92	83	83
Heavy Vehicles, %	12	6	1	15	8	0
Mvmt Flow	18	313	608	14	16	76

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	622	0	-	0	963	615
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	348	-
Critical Hdwy	4.22	-	-	-	6.48	6.2
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	2.308	-	-	-	3.572	3.3
Pot Cap-1 Maneuver	912	-	-	-	276	495
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	912	-	-	-	269	495
Mov Cap-2 Maneuver	-	-	-	-	269	-
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	685	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	912	-	-	-	433
HCM Lane V/C Ratio	0.019	-	-	-	0.211
HCM Control Delay (s)	9	0	-	-	15.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Int Delay, s/veh	4.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	175	64	2	497	123	2
Future Vol, veh/h	175	64	2	497	123	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	79	79	90	90	73	73
Heavy Vehicles, %	3	13	0	2	2	0
Mvmt Flow	222	81	2	552	168	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	303	0	819	262
Stage 1	-	-	-	-	262	-
Stage 2	-	-	-	-	557	-
Critical Hdwy	-	-	4.1	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.2	-	3.518	3.3
Pot Cap-1 Maneuver	-	-	1269	-	345	782
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	574	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1269	-	344	782
Mov Cap-2 Maneuver	-	-	-	-	344	-
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	573	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	25.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	347	-	-	1269	-
HCM Lane V/C Ratio	0.493	-	-	0.002	-
HCM Control Delay (s)	25.1	-	-	7.8	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	2.6	-	-	0	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	49	90	11	88	1	98	26	8	0	25	46
Future Vol, veh/h	0	49	90	11	88	1	98	26	8	0	25	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	50	50	50	63	63	63	74	74	74
Heavy Vehicles, %	0	2	10	9	1	0	2	0	13	0	4	2
Mvmt Flow	0	62	114	22	176	2	156	41	13	0	34	62

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	178	0	0	176	0	0	357	341	119	367	397	177
Stage 1	-	-	-	-	-	-	119	119	-	221	221	-
Stage 2	-	-	-	-	-	-	238	222	-	146	176	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.12	6.5	6.33	7.1	6.54	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.5	-	6.1	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.5	-	6.1	5.54	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.518	4	3.417	3.5	4.036	3.318
Pot Cap-1 Maneuver	1410	-	-	1359	-	-	598	584	904	593	537	866
Stage 1	-	-	-	-	-	-	885	801	-	786	717	-
Stage 2	-	-	-	-	-	-	765	723	-	861	750	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1410	-	-	1359	-	-	521	573	904	545	527	866
Mov Cap-2 Maneuver	-	-	-	-	-	-	521	573	-	545	527	-
Stage 1	-	-	-	-	-	-	885	801	-	786	704	-
Stage 2	-	-	-	-	-	-	664	710	-	805	750	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	15.7	7.9
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	545	1410	-	-	1359	-	-	1337
HCM Lane V/C Ratio	0.384	-	-	-	0.016	-	-	0.072
HCM Control Delay (s)	15.7	0	-	-	7.7	0	-	7.9
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	1.8	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	68	124	28	85	0
Future Vol, veh/h	0	68	124	28	85	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	82	82	79	79	64	64
Heavy Vehicles, %	0	10	5	7	1	0
Mvmt Flow	0	83	157	35	133	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	482	133	133	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	349	-	-	-	-	-
Critical Hdwy	6.4	6.3	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.245	-	-	-
Pot Cap-1 Maneuver	547	895	1433	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	486	895	1433	-	-	-
Mov Cap-2 Maneuver	486	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	638	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	6.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1433	-	895	-	-
HCM Lane V/C Ratio	0.11	-	0.093	-	-
HCM Control Delay (s)	7.8	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.4	-	0.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	156	172	196	428	29	356	112	159	27	95	33
Future Volume (veh/h)	11	156	172	196	428	29	356	112	159	27	95	33
Number	3	8	18	7	4	14	1	6	16	5	2	12
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	1610	1854	1900	1863	1896	1900	1881	1858	1900	1712	1819	1900
Adj Flow Rate, veh/h	15	211	232	220	481	33	475	149	0	37	130	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.89	0.89	0.89	0.75	0.75	0.75	0.73	0.73	0.73
Percent Heavy Veh, %	18	3	3	2	0	0	1	4	4	11	6	6
Cap, veh/h	218	314	346	261	682	47	601	818	0	541	801	0
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.44	0.44	0.00	0.44	0.44	0.00
Sat Flow, veh/h	763	808	889	943	1755	120	1267	1858	0	1134	1819	0
Grp Volume(v), veh/h	15	0	443	220	0	514	475	149	0	37	130	0
Grp Sat Flow(s),veh/h/ln	763	0	1697	943	0	1875	1267	1858	0	1134	1819	0
Q Serve(g_s), s	1.2	0.0	15.9	12.8	0.0	17.0	26.7	3.6	0.0	1.5	3.2	0.0
Cycle Q Clear(g_c), s	18.3	0.0	15.9	28.7	0.0	17.0	29.8	3.6	0.0	5.1	3.2	0.0
Prop In Lane	1.00		0.52	1.00		0.06	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	218	0	660	261	0	729	601	818	0	541	801	0
V/C Ratio(X)	0.07	0.00	0.67	0.84	0.00	0.70	0.79	0.18	0.00	0.07	0.16	0.00
Avail Cap(c_a), veh/h	218	0	660	261	0	729	622	849	0	560	831	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.7	0.0	18.7	32.2	0.0	19.0	21.4	12.6	0.0	14.1	12.4	0.0
Incr Delay (d2), s/veh	0.1	0.0	2.7	21.6	0.0	3.1	6.6	0.1	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	7.9	6.0	0.0	9.3	10.3	1.8	0.0	0.5	1.6	0.0
LnGrp Delay(d),s/veh	26.8	0.0	21.3	53.8	0.0	22.1	28.1	12.7	0.0	14.2	12.5	0.0
LnGrp LOS	C		C	D		C	C	B		B	B	
Approach Vol, veh/h		458			734			624			167	
Approach Delay, s/veh		21.5			31.6			24.4			12.9	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		38.8		35.0		38.8		35.0
Change Period (Y+Rc), s		6.3		6.3		6.3		6.3
Max Green Setting (Gmax), s		33.7		28.7		33.7		28.7
Max Q Clear Time (g_c+I1), s		7.1		30.7		31.8		20.3
Green Ext Time (p_c), s		3.0		0.0		0.7		3.3

Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C

Summary of All Intervals

Run Number	1	2	3		Avg
Start Time	7:30	7:30	7:30	7:30	7:30
End Time	8:40	8:40	8:40	8:40	8:40
Total Time (min)	70	70	70	70	70
Time Recorded (min)	70	70	70	70	70
# of Intervals	2	2	2	2	2
# of Recorded Intervals	2	2	2	2	2
Volume counts from "VOLUME.CSV" data file(s)					
Volume date = 10/26/2018					
Vehs Entered	15778	15882	16039	15960	15912
Vehs Exited	15287	15217	15460	15318	15319
Starting Vehs	0	0	0	0	0
Ending Vehs	491	665	579	642	576
Travel Distance (mi)	11978	12002	12133	12150	12066
Travel Time (hr)	712.8	739.2	642.8	718.3	703.3
Total Delay (hr)	387.4	413.9	313.0	388.3	375.7
Total Stops	16513	16463	16763	17217	16736
Fuel Used (gal)	499.6	505.3	488.3	504.3	499.4

Interval #0 Information Seeding

Start Time	7:30
End Time	7:40
Total Time (min)	10

Volumes adjusted by Growth Factors.

Run Number	1	2	3		Avg
Vehs Entered	2325	2251	2361	2310	2311
Vehs Exited	1816	1839	1876	1842	1843
Starting Vehs	0	0	0	0	0
Ending Vehs	509	412	485	468	450
Travel Distance (mi)	1507	1420	1434	1426	1447
Travel Time (hr)	60.3	56.9	57.1	58.7	58.2
Total Delay (hr)	19.3	18.5	18.1	19.9	18.9
Total Stops	2013	1850	1839	1838	1879
Fuel Used (gal)	55.6	53.1	54.0	53.8	54.1

Interval #1 Information Recording

Start Time	7:40
End Time	8:40
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3		Avg
Vehs Entered	13453	13631	13678	13650	13602
Vehs Exited	13471	13378	13584	13476	13472
Starting Vehs	509	412	485	468	450
Ending Vehs	491	665	579	642	576
Travel Distance (mi)	10471	10582	10698	10723	10619
Travel Time (hr)	652.5	682.3	585.7	659.5	645.0
Total Delay (hr)	368.2	395.4	294.8	368.3	356.7
Total Stops	14500	14613	14924	15379	14843
Fuel Used (gal)	444.0	452.2	434.3	450.5	445.3

Intersection: 1: US 321 & Blythewood Rd

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	185	5	68
Average Queue (ft)	67	0	13
95th Queue (ft)	137	3	43
Link Distance (ft)	1197	1603	1311
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Fulmer Rd & Blythewood Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	45	63
Average Queue (ft)	9	26
95th Queue (ft)	34	45
Link Distance (ft)	1362	660
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Blythewood Rd & Muller Rd

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	LTR	L	TR
Maximum Queue (ft)	52	198	383	37	331	130
Average Queue (ft)	16	71	145	4	181	19
95th Queue (ft)	41	151	302	21	299	75
Link Distance (ft)		1498	1428	163		1256
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200				250	
Storage Blk Time (%)		0			3	
Queuing Penalty (veh)		0			1	

Intersection: 4: I-77 SB On-Ramp/I-77 SB Off-Ramp & Blythewood Rd

Movement	EB	EB	WB	WB	SB	SB
Directions Served	T	R	L	T	LT	R
Maximum Queue (ft)	321	290	146	258	246	124
Average Queue (ft)	129	17	69	101	107	13
95th Queue (ft)	264	129	126	197	190	65
Link Distance (ft)	329			849	669	
Upstream Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				
Storage Bay Dist (ft)		250	300			300
Storage Blk Time (%)	2	1		0	0	
Queuing Penalty (veh)	5	3		0	0	

Intersection: 5: I-77 NB Off-Ramp/I-77 NB On-Ramp & Blythewood Rd

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	T	LT	R
Maximum Queue (ft)	54	245	245	244	193
Average Queue (ft)	14	93	112	120	14
95th Queue (ft)	42	186	209	204	98
Link Distance (ft)		849	448		793
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	275			350	
Storage Blk Time (%)		0			0
Queuing Penalty (veh)		0			0

Intersection: 6: Creech Rd/McNulty St & Blythewood Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	103	3	35	42	121	186
Average Queue (ft)	32	0	9	1	48	62
95th Queue (ft)	66	2	30	22	97	131
Link Distance (ft)		448		965	290	218
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)	150		25			
Storage Blk Time (%)	0		2	0		
Queuing Penalty (veh)	0		20	0		

Intersection: 7: Boney Rd & Blythewood Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	LT	R
Maximum Queue (ft)	178	150	26	338	54	36	528	175
Average Queue (ft)	60	30	5	58	14	9	116	36
95th Queue (ft)	122	102	20	188	39	28	310	149
Link Distance (ft)		965		839	321	321	536	
Upstream Blk Time (%)							1	
Queuing Penalty (veh)							2	
Storage Bay Dist (ft)	175		175					75
Storage Blk Time (%)	0	0		1			40	0
Queuing Penalty (veh)	1	0		0			71	0

Intersection: 8: US 21 & Blythewood Rd

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	249	242	323	521	336	275
Average Queue (ft)	116	95	164	151	300	227
95th Queue (ft)	216	192	308	401	395	373
Link Distance (ft)		839		1814	313	
Upstream Blk Time (%)					14	
Queuing Penalty (veh)					143	
Storage Bay Dist (ft)	175		225			175
Storage Blk Time (%)	4	1	17	0	35	0
Queuing Penalty (veh)	11	3	36	1	166	1

Intersection: 9: US 21 & McLean Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	TR	LT
Maximum Queue (ft)	71	73	21	13
Average Queue (ft)	27	39	1	1
95th Queue (ft)	56	63	9	9
Link Distance (ft)	72	464	65	408
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: US 21 & Oakhurst Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	80	79	16
Average Queue (ft)	36	19	1
95th Queue (ft)	63	55	8
Link Distance (ft)	2480	1213	65
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: US 21 & McNulty St

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	72	65	284
Average Queue (ft)	32	23	76
95th Queue (ft)	63	55	206
Link Distance (ft)	1336		1213
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		75	
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 12: US 21 & Langford Rd

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	932	323	100	226
Average Queue (ft)	701	215	65	196
95th Queue (ft)	1147	338	118	248
Link Distance (ft)	916	313		206
Upstream Blk Time (%)	18	1		12
Queuing Penalty (veh)	114	6		55
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			24	50
Queuing Penalty (veh)			105	39

Intersection: 13: US 21 & Rimer Pond Rd

Movement	WB	WB	NB	B39	SB	SB
Directions Served	L	R	TR	T	L	T
Maximum Queue (ft)	299	667	776	444	122	292
Average Queue (ft)	222	172	446	90	52	154
95th Queue (ft)	330	507	893	420	93	256
Link Distance (ft)		873	692	3185		2805
Upstream Blk Time (%)		0	20			
Queuing Penalty (veh)		0	124			
Storage Bay Dist (ft)	200				225	
Storage Blk Time (%)	21	0				1
Queuing Penalty (veh)	52	0				2

Intersection: 14: US 21 & Farrow Rd

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	359	6	1436
Average Queue (ft)	204	0	517
95th Queue (ft)	487	5	1193
Link Distance (ft)	398	2480	3185
Upstream Blk Time (%)	39		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: US 21 & Community Rd

Movement	EB	EB	NB	SB	SB	SB
Directions Served	L	TR	UL	UL	T	TR
Maximum Queue (ft)	325	498	138	25	14	53
Average Queue (ft)	303	410	56	3	0	5
95th Queue (ft)	404	639	110	17	5	27
Link Distance (ft)		440			1007	1007
Upstream Blk Time (%)		74				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)	225		250	225		
Storage Blk Time (%)	90	1				
Queuing Penalty (veh)	183	1				

Intersection: 16: Langford Rd & Sandfield Rd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	68	823	338
Average Queue (ft)	7	252	131
95th Queue (ft)	36	843	379
Link Distance (ft)	916	1025	416
Upstream Blk Time (%)		4	11
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: Trading Post Rd & Langford Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	12	99
Average Queue (ft)	0	40
95th Queue (ft)	5	78
Link Distance (ft)	1336	2950
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 18: Hardscrabble Rd/Grover Wilson Rd & Langford Rd

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	26	77	42
Average Queue (ft)	1	34	11
95th Queue (ft)	10	58	31
Link Distance (ft)	367	403	441
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: Round Top Church Rd & Trading Post Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	63	68
Average Queue (ft)	18	9
95th Queue (ft)	40	36
Link Distance (ft)	658	758
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Longtown Rd E/Round Top Church Rd & Rimer Pond Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	42	152	224	346	310	116	62	89
Average Queue (ft)	5	53	91	112	133	47	10	33
95th Queue (ft)	22	119	201	258	228	96	37	68
Link Distance (ft)		927		792		657		758
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	325		250		500		150	
Storage Blk Time (%)			3	0				
Queuing Penalty (veh)			13	1				

Intersection: 21: Hardscrabble Rd & Rimer Pond Rd/Kelly Mill Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	155	301	265	101
Average Queue (ft)	74	132	120	49
95th Queue (ft)	124	262	216	83
Link Distance (ft)	474	577	422	403
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	70	250	178	64	158
Future Vol, veh/h	88	70	250	178	64	158
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	87	87	85	85	87	87
Heavy Vehicles, %	5	3	1	0	2	5
Mvmt Flow	101	80	294	209	74	182

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	728	399	0	0	504	0
Stage 1	399	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Critical Hdwy	6.45	6.23	-	-	4.12	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.327	-	-	2.218	-
Pot Cap-1 Maneuver	386	649	-	-	1061	-
Stage 1	671	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	356	649	-	-	1061	-
Mov Cap-2 Maneuver	356	-	-	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	666	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.6	0	2.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	445	1061	-
HCM Lane V/C Ratio	-	-	0.408	0.069	-
HCM Control Delay (s)	-	-	18.6	8.6	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2	0.2	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	224	30	63	174	28	58
Future Vol, veh/h	224	30	63	174	28	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	86	86	95	95
Heavy Vehicles, %	1	3	0	4	0	3
Mvmt Flow	255	34	73	202	29	61

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	289	0	621	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	349	-
Critical Hdwy	-	-	4.1	-	6.4	6.23
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.327
Pot Cap-1 Maneuver	-	-	1284	-	454	764
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	719	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1284	-	425	764
Mov Cap-2 Maneuver	-	-	-	-	425	-
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	673	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	606	-	-	1284	-
HCM Lane V/C Ratio	0.149	-	-	0.057	-
HCM Control Delay (s)	12	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	309	0	4	267	184	2	3	16	88	0	1
Future Volume (veh/h)	16	309	0	4	267	184	2	3	16	88	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1810	1900	1900	1846	1900	1900	1900	1900	1881	1845	1900
Adj Flow Rate, veh/h	21	412	0	5	342	236	6	9	48	122	0	1
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.33	0.33	0.33	0.72	0.72	0.72
Percent Heavy Veh, %	2	5	5	5	5	5	0	0	0	1	0	0
Cap, veh/h	516	1199	0	63	515	352	75	36	143	290	0	178
Arrive On Green	0.04	0.66	0.00	0.51	0.51	0.51	0.11	0.11	0.11	0.11	0.00	0.11
Sat Flow, veh/h	1774	1810	0	3	1020	696	74	319	1260	1354	0	1568
Grp Volume(v), veh/h	21	412	0	583	0	0	63	0	0	122	0	1
Grp Sat Flow(s),veh/h/ln	1774	1810	0	1720	0	0	1654	0	0	1354	0	1568
Q Serve(g_s), s	0.3	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	0.3	5.9	0.0	15.0	0.0	0.0	2.1	0.0	0.0	4.5	0.0	0.0
Prop In Lane	1.00		0.00	0.01		0.40	0.10		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	516	1199	0	930	0	0	254	0	0	290	0	178
V/C Ratio(X)	0.04	0.34	0.00	0.63	0.00	0.00	0.25	0.00	0.00	0.42	0.00	0.01
Avail Cap(c_a), veh/h	685	1371	0	930	0	0	665	0	0	631	0	573
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	1.00	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	5.3	4.4	0.0	11.0	0.0	0.0	24.2	0.0	0.0	25.2	0.0	23.3
Incr Delay (d2), s/veh	0.0	0.2	0.0	1.3	0.0	0.0	0.5	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	0.0	7.3	0.0	0.0	1.0	0.0	0.0	2.0	0.0	0.0
LnGrp Delay(d),s/veh	5.4	4.6	0.0	12.3	0.0	0.0	24.7	0.0	0.0	26.1	0.0	23.4
LnGrp LOS	A	A		B			C			C		C
Approach Vol, veh/h		433			583			63			123	
Approach Delay, s/veh		4.6			12.3			24.7			26.1	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		46.3		13.0	9.3	37.0		13.0
Change Period (Y+Rc), s		7.0		6.3	7.0	7.0		6.3
Max Green Setting (Gmax), s		45.0		21.7	8.0	30.0		21.7
Max Q Clear Time (g_c+I1), s		7.9		6.5	2.3	17.0		4.1
Green Ext Time (p_c), s		24.8		0.6	0.0	10.5		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	532	168	190	728	0	0	0	0	145	0	77
Future Volume (veh/h)	0	532	168	190	728	0	0	0	0	145	0	77
Number	5	2	12	1	6	16				7	4	14
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	0	1863	1863	1863	1881	0				1900	1881	1810
Adj Flow Rate, veh/h	0	548	0	202	774	0				167	0	0
Adj No. of Lanes	0	1	1	1	1	0				0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94				0.87	0.87	0.87
Percent Heavy Veh, %	0	2	2	2	1	0				5	0	5
Cap, veh/h	0	1088	925	573	1378	0				218	0	187
Arrive On Green	0.00	0.58	0.00	0.08	0.73	0.00				0.12	0.00	0.00
Sat Flow, veh/h	0	1863	1583	1774	1881	0				1792	0	1538
Grp Volume(v), veh/h	0	548	0	202	774	0				167	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1774	1881	0				1792	0	1538
Q Serve(g_s), s	0.0	14.3	0.0	3.3	15.4	0.0				7.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	14.3	0.0	3.3	15.4	0.0				7.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1088	925	573	1378	0				218	0	187
V/C Ratio(X)	0.00	0.50	0.00	0.35	0.56	0.00				0.77	0.00	0.00
Avail Cap(c_a), veh/h	0	1357	1154	1085	2193	0				653	0	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	10.1	0.0	6.7	5.0	0.0				35.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.4	0.5	0.0				5.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.5	0.0	1.6	7.9	0.0				4.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	10.6	0.0	7.1	5.5	0.0				40.5	0.0	0.0
LnGrp LOS		B		A	A					D		
Approach Vol, veh/h		548			976						167	
Approach Delay, s/veh		10.6			5.9						40.5	
Approach LOS		B			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	13.2	54.1		16.0		66.3		
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		
Max Green Setting (Gmax), s	30.0	60.0		30.0		96.0		
Max Q Clear Time (g_c+I1), s	5.3	16.3		9.4		17.4		
Green Ext Time (p_c), s	0.9	29.9		0.8		42.9		

Intersection Summary	
HCM 2010 Ctrl Delay	10.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	643	0	0	528	94	352	0	500	0	0	0
Future Volume (veh/h)	35	643	0	0	528	94	352	0	500	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	1881	0	0	1881	1863	1900	1881	1881			
Adj Flow Rate, veh/h	39	714	0	0	539	0	378	0	0			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.90	0.90	0.90	0.98	0.98	0.98	0.93	0.93	0.30			
Percent Heavy Veh, %	0	1	0	0	1	2	1	0	1			
Cap, veh/h	498	1176	0	0	1176	990	432	0	386			
Arrive On Green	0.63	0.63	0.00	0.00	0.63	0.00	0.24	0.00	0.00			
Sat Flow, veh/h	880	1881	0	0	1881	1583	1792	0	1599			
Grp Volume(v), veh/h	39	714	0	0	539	0	378	0	0			
Grp Sat Flow(s),veh/h/ln	880	1881	0	0	1881	1583	1792	0	1599			
Q Serve(g_s), s	2.2	20.6	0.0	0.0	13.5	0.0	18.3	0.0	0.0			
Cycle Q Clear(g_c), s	15.7	20.6	0.0	0.0	13.5	0.0	18.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	498	1176	0	0	1176	990	432	0	386			
V/C Ratio(X)	0.08	0.61	0.00	0.00	0.46	0.00	0.87	0.00	0.00			
Avail Cap(c_a), veh/h	498	1176	0	0	1176	990	577	0	515			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.69	0.69	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	13.0	10.2	0.0	0.0	8.9	0.0	32.8	0.0	0.0			
Incr Delay (d2), s/veh	0.2	1.6	0.0	0.0	1.3	0.0	11.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.6	11.0	0.0	0.0	7.3	0.0	10.4	0.0	0.0			
LnGrp Delay(d),s/veh	13.2	11.8	0.0	0.0	10.1	0.0	43.9	0.0	0.0			
LnGrp LOS	B	B			B		D					
Approach Vol, veh/h		753			539			378				
Approach Delay, s/veh		11.9			10.1			43.9				
Approach LOS		B			B			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		62.3				62.3		27.7
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		49.0				49.0		29.0
Max Q Clear Time (g_c+I1), s		22.6				15.5		20.3
Green Ext Time (p_c), s		9.9				10.7		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.6
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	18

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	129	846	78	29	553	29	26	4	28	7	0	114
Future Vol, veh/h	129	846	78	29	553	29	26	4	28	7	0	114
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	150	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	96	96	96	73	73	73	78	78	78
Heavy Vehicles, %	1	1	0	0	0	0	4	0	0	0	0	1
Mvmt Flow	139	910	84	30	576	30	36	5	38	9	0	146

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	606	0	0	994	0	0	1954	1896	952	1903	1923	591
Stage 1	-	-	-	-	-	-	1229	1229	-	652	652	-
Stage 2	-	-	-	-	-	-	725	667	-	1251	1271	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.14	6.5	6.2	7.1	6.5	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.2	-	-	3.536	4	3.3	3.5	4	3.309
Pot Cap-1 Maneuver	977	-	-	704	-	-	48	70	317	53	68	509
Stage 1	-	-	-	-	-	-	216	252	-	460	467	-
Stage 2	-	-	-	-	-	-	413	460	-	213	241	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	977	-	-	704	-	-	~ 30	57	317	37	56	509
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 30	57	-	37	56	-
Stage 1	-	-	-	-	-	-	185	216	-	395	447	-
Stage 2	-	-	-	-	-	-	282	440	-	157	207	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.5	$ 374.7	30.3
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	57	977	-	-	704	-	-	293
HCM Lane V/C Ratio	1.394	0.142	-	-	0.043	-	-	0.529
HCM Control Delay (s)	$ 374.7	9.3	-	-	10.3	-	-	30.3
HCM Lane LOS	F	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	7	0.5	-	-	0.1	-	-	2.9

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	618	55	61	385	57	38	35	111	80	17	122
Future Volume (veh/h)	206	618	55	61	385	57	38	35	111	80	17	122
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1881	1866	1900	1900	1884	1900	1900	1871	1900	1900	1900	1863
Adj Flow Rate, veh/h	237	710	63	65	410	61	47	43	137	95	20	0
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.94	0.94	0.94	0.81	0.81	0.81	0.84	0.84	0.84
Percent Heavy Veh, %	1	2	2	0	1	1	0	0	0	0	0	2
Cap, veh/h	471	1049	93	224	676	101	213	167	269	243	41	264
Arrive On Green	0.10	0.62	0.62	0.42	0.42	0.42	0.17	0.17	0.17	0.17	0.17	0.00
Sat Flow, veh/h	1792	1689	150	708	1603	238	730	1000	1615	800	248	1583
Grp Volume(v), veh/h	237	0	773	65	0	471	90	0	137	115	0	0
Grp Sat Flow(s),veh/h/ln	1792	0	1839	708	0	1842	1729	0	1615	1048	0	1583
Q Serve(g_s), s	0.0	0.0	16.6	5.2	0.0	12.0	0.0	0.0	4.7	4.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	16.6	21.8	0.0	12.0	2.6	0.0	4.7	7.0	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.13	0.52		1.00	0.83		1.00
Lane Grp Cap(c), veh/h	471	0	1142	224	0	777	379	0	269	284	0	264
V/C Ratio(X)	0.50	0.00	0.68	0.29	0.00	0.61	0.24	0.00	0.51	0.41	0.00	0.00
Avail Cap(c_a), veh/h	483	0	1196	240	0	819	588	0	482	456	0	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.3	0.0	7.5	24.1	0.0	13.5	22.0	0.0	22.9	24.5	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	1.7	1.0	0.0	1.5	0.3	0.0	1.5	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	8.7	1.1	0.0	6.3	1.3	0.0	2.2	1.9	0.0	0.0
LnGrp Delay(d),s/veh	21.1	0.0	9.1	25.2	0.0	15.0	22.3	0.0	24.3	25.9	0.0	0.0
LnGrp LOS	C		A	C		B	C		C	C		
Approach Vol, veh/h		1010			536			227			115	
Approach Delay, s/veh		11.9			16.2			23.5			25.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		43.5		16.8	12.0	31.5		16.8
Change Period (Y+Rc), s		6.1		* 6.7	6.1	6.1		* 6.7
Max Green Setting (Gmax), s		39.2		* 18	6.3	26.8		* 18
Max Q Clear Time (g_c+I1), s		18.6		9.0	2.0	23.8		6.7
Green Ext Time (p_c), s		12.8		1.1	3.4	1.7		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	481	231	220	337	176	259
Future Volume (vph)	481	231	220	337	176	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.7	5.7	6.4	5.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1752	1615	1805	1881	1863	1553
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1752	1615	1805	1881	1863	1553
Peak-hour factor, PHF	0.88	0.88	0.91	0.91	0.91	0.91
Adj. Flow (vph)	547	262	242	370	193	285
RTOR Reduction (vph)	0	127	0	0	0	54
Lane Group Flow (vph)	547	136	242	370	193	231
Heavy Vehicles (%)	3%	0%	0%	1%	2%	4%
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	4 1	1	1 2	2	4
Permitted Phases						2
Actuated Green, G (s)	27.0	45.0	12.3	37.5	18.8	45.8
Effective Green, g (s)	27.0	39.3	12.3	31.1	18.8	45.8
Actuated g/C Ratio	0.35	0.52	0.16	0.41	0.25	0.60
Clearance Time (s)	5.9		5.7		6.4	5.9
Vehicle Extension (s)	3.0		3.0		4.0	3.0
Lane Grp Cap (vph)	621	834	291	768	460	1055
v/s Ratio Prot	c0.31	0.08	c0.13	c0.20	0.10	0.08
v/s Ratio Perm						0.07
v/c Ratio	0.88	0.16	0.83	0.48	0.42	0.22
Uniform Delay, d1	23.0	9.7	30.9	16.6	24.1	6.9
Progression Factor	1.00	1.00	1.00	1.00	0.67	0.16
Incremental Delay, d2	13.8	0.1	18.0	0.5	0.7	0.1
Delay (s)	36.8	9.8	48.9	17.0	16.8	1.2
Level of Service	D	A	D	B	B	A
Approach Delay (s)	28.0			29.6	7.5	
Approach LOS	C			C	A	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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	11	38	0	17	0	248	89	7	164	0
Future Vol, veh/h	0	0	11	38	0	17	0	248	89	7	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	75	75	75	90	90	90	94	94	94	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	4	0	0	2	0
Mvmt Flow	0	0	15	42	0	19	0	264	95	8	180	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	517	555	180	514	507	311	-	0	0	359	0	0
Stage 1	196	196	-	311	311	-	-	-	-	-	-	-
Stage 2	321	359	-	203	196	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	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	-	-
Pot Cap-1 Maneuver	472	443	868	474	471	734	0	-	-	1211	-	0
Stage 1	810	742	-	704	662	-	0	-	-	-	-	0
Stage 2	695	631	-	804	742	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	457	440	868	464	468	734	-	-	-	1211	-	-
Mov Cap-2 Maneuver	457	440	-	464	468	-	-	-	-	-	-	-
Stage 1	810	737	-	704	662	-	-	-	-	-	-	-
Stage 2	677	631	-	785	737	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	12.8	0	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	868	524	1211	-
HCM Lane V/C Ratio	-	-	0.017	0.117	0.006	-
HCM Control Delay (s)	-	-	9.2	12.8	8	0
HCM Lane LOS	-	-	A	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.4	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	37	44	336	190	7
Future Vol, veh/h	12	37	44	336	190	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	61	61	89	89	96	96
Heavy Vehicles, %	0	3	2	2	2	0
Mvmt Flow	20	61	49	378	198	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	678	202	205	0	-	0
Stage 1	202	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.218	-	-	-
Pot Cap-1 Maneuver	421	836	1366	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	402	836	1366	-	-	-
Mov Cap-2 Maneuver	402	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	601	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1366	-	661	-	-
HCM Lane V/C Ratio	0.036	-	0.122	-	-
HCM Control Delay (s)	7.7	0	11.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	57	58	274	173	13
Future Vol, veh/h	44	57	58	274	173	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	86	86	87	87
Heavy Vehicles, %	1	1	1	2	2	1
Mvmt Flow	61	79	67	319	199	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	659	206	214	0	-	0
Stage 1	206	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	430	837	1362	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	409	837	1362	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	610	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1362	-	575	-	-
HCM Lane V/C Ratio	0.05	-	0.244	-	-
HCM Control Delay (s)	7.8	-	13.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	228	98	316	516	106	203
Future Volume (vph)	228	98	316	516	106	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9		6.4		6.4	6.4
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.96		0.92		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1725		1719		1805	1863
Flt Permitted	0.97		1.00		0.13	1.00
Satd. Flow (perm)	1725		1719		238	1863
Peak-hour factor, PHF	0.85	0.85	0.92	0.92	0.82	0.82
Adj. Flow (vph)	268	115	343	561	129	248
RTOR Reduction (vph)	19	0	79	0	0	0
Lane Group Flow (vph)	364	0	825	0	129	248
Heavy Vehicles (%)	3%	0%	0%	2%	0%	2%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		6			6
Permitted Phases					6	
Actuated Green, G (s)	20.6		43.2		43.2	43.2
Effective Green, g (s)	20.6		43.2		43.2	43.2
Actuated g/C Ratio	0.27		0.57		0.57	0.57
Clearance Time (s)	5.9		6.4		6.4	6.4
Vehicle Extension (s)	4.0		4.0		4.0	4.0
Lane Grp Cap (vph)	466		975		135	1057
v/s Ratio Prot	c0.21		0.48			0.13
v/s Ratio Perm					c0.54	
v/c Ratio	0.78		0.85		0.96	0.23
Uniform Delay, d1	25.7		13.7		15.5	8.2
Progression Factor	1.00		1.65		1.00	1.00
Incremental Delay, d2	8.8		5.5		63.7	0.2
Delay (s)	34.4		28.1		79.2	8.4
Level of Service	C		C		E	A
Approach Delay (s)	34.4		28.1			32.6
Approach LOS	C		C			C

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	132	111	481	349	230	435
Future Volume (veh/h)	132	111	481	349	230	435
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1860	1900	1863	1845
Adj Flow Rate, veh/h	169	142	529	0	338	640
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.78	0.78	0.91	0.91	0.68	0.68
Percent Heavy Veh, %	2	5	3	3	2	3
Cap, veh/h	223	372	944	0	564	1305
Arrive On Green	0.13	0.13	0.51	0.00	0.12	0.71
Sat Flow, veh/h	1774	1538	1860	0	1774	1845
Grp Volume(v), veh/h	169	142	529	0	338	640
Grp Sat Flow(s),veh/h/ln	1774	1538	1860	0	1774	1845
Q Serve(g_s), s	7.7	6.5	16.4	0.0	7.0	13.0
Cycle Q Clear(g_c), s	7.7	6.5	16.4	0.0	7.0	13.0
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	223	372	944	0	564	1305
V/C Ratio(X)	0.76	0.38	0.56	0.00	0.60	0.49
Avail Cap(c_a), veh/h	317	454	1086	0	675	1561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	26.6	14.2	0.0	9.7	5.5
Incr Delay (d2), s/veh	6.4	0.6	0.5	0.0	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	5.8	8.5	0.0	3.4	6.7
LnGrp Delay(d),s/veh	41.8	27.2	14.7	0.0	10.8	5.8
LnGrp LOS	D	C	B		B	A
Approach Vol, veh/h	311		529			978
Approach Delay, s/veh	35.2		14.7			7.5
Approach LOS	D		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		66.4		17.5	16.8	49.6		
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		
Max Green Setting (Gmax), s		71.0		15.0	15.0	49.0		
Max Q Clear Time (g_c+I1), s		15.0		9.7	9.0	18.4		
Green Ext Time (p_c), s		38.5		0.8	0.8	24.2		

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	20.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	189	857	33	245	314
Future Vol, veh/h	8	189	857	33	245	314
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	79	79	93	93	75	75
Heavy Vehicles, %	0	1	1	0	1	2
Mvmt Flow	10	239	922	35	327	419

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2011	939	0	0	957	0
Stage 1	939	-	-	-	-	-
Stage 2	1072	-	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	66	321	-	-	723	-
Stage 1	384	-	-	-	-	-
Stage 2	332	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	27	321	-	-	723	-
Mov Cap-2 Maneuver	27	-	-	-	-	-
Stage 1	384	-	-	-	-	-
Stage 2	136	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	141.7	0	6.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	223	723	-
HCM Lane V/C Ratio	-	-	1.118	0.452	-
HCM Control Delay (s)	-	-	141.7	14	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	11.5	2.4	-

Intersection	
Int Delay, s/veh	36.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	155	0	200	0	0	0	1	89	435	0	10	0	656	100
Future Vol, veh/h	155	0	200	0	0	0	1	89	435	0	10	0	656	100
Conflicting Peds, #/hr	0	0	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	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	225	-	-	-	-	-	-	250	-	-	-	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	88	88	88	88	93	93	93	93
Heavy Vehicles, %	7	0	1	0	0	0	0	2	3	0	0	0	1	8
Mvmt Flow	194	0	250	0	0	0	1	101	494	0	11	0	705	108

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1233	1480	406	1073	1533	247	593	813	0	0	361	494	0	0
Stage 1	781	781	-	699	699	-	-	-	-	-	-	-	-	-
Stage 2	452	699	-	374	834	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.64	6.5	6.92	7.5	6.5	6.9	6.4	4.14	-	-	6.4	4.1	-	-
Critical Hdwy Stg 1	6.64	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.64	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.57	4	3.31	3.5	4	3.3	2.5	2.22	-	-	2.5	2.2	-	-
Pot Cap-1 Maneuver	~ 128	127	597	177	118	759	612	810	-	-	857	1080	-	-
Stage 1	343	408	-	401	445	-	-	-	-	-	-	-	-	-
Stage 2	544	445	-	624	386	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	~ 128	127	597	103	118	759	801	801	-	-	857	857	-	-
Mov Cap-2 Maneuver	~ 128	127	-	103	118	-	-	-	-	-	-	-	-	-
Stage 1	343	408	-	401	445	-	-	-	-	-	-	-	-	-
Stage 2	544	445	-	363	386	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	152.3	0	1.7	0.1
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	801	-	-	128	597	-	857	-	-
HCM Lane V/C Ratio	0.128	-	-	1.514	0.419	-	0.013	-	-
HCM Control Delay (s)	10.2	-	-	$ 329	15.3	0	9.3	-	-
HCM Lane LOS	B	-	-	F	C	A	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	13.6	2.1	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	124	478	276	10	11	53
Future Vol, veh/h	124	478	276	10	11	53
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	95	95	87	87	73	73
Heavy Vehicles, %	2	2	3	0	9	4
Mvmt Flow	131	503	317	11	15	73

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	329	0	-	0	1087	323
Stage 1	-	-	-	-	323	-
Stage 2	-	-	-	-	764	-
Critical Hdwy	4.12	-	-	-	6.49	6.24
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	2.218	-	-	-	3.581	3.336
Pot Cap-1 Maneuver	1231	-	-	-	232	713
Stage 1	-	-	-	-	718	-
Stage 2	-	-	-	-	448	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1231	-	-	-	198	713
Mov Cap-2 Maneuver	-	-	-	-	198	-
Stage 1	-	-	-	-	718	-
Stage 2	-	-	-	-	382	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1231	-	-	-	493
HCM Lane V/C Ratio	0.106	-	-	-	0.178
HCM Control Delay (s)	8.3	0	-	-	13.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.6

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	361	88	4	202	97	3
Future Vol, veh/h	361	88	4	202	97	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	89	80	80	83	83
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	406	99	5	253	117	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	504	0	718	455
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	263	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1071	-	397	609
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	783	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1071	-	395	609
Mov Cap-2 Maneuver	-	-	-	-	395	-
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	779	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	17.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	399	-	-	1071	-
HCM Lane V/C Ratio	0.302	-	-	0.005	-
HCM Control Delay (s)	17.9	-	-	8.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	88	118	179	20	61	0	104	41	23	0	24	45
Future Vol, veh/h	88	118	179	20	61	0	104	41	23	0	24	45
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	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	88	88	88	86	86	86	86	86	86
Heavy Vehicles, %	0	1	0	0	0	0	1	2	0	0	4	0
Mvmt Flow	95	127	192	23	69	0	121	48	27	0	28	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	319	0	0	541	527	223	565	624	69
Stage 1	-	-	-	-	-	-	412	412	-	115	115	-
Stage 2	-	-	-	-	-	-	129	115	-	450	509	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.11	6.52	6.2	7.1	6.54	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.52	-	6.1	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.52	-	6.1	5.54	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.509	4.018	3.3	3.5	4.036	3.3
Pot Cap-1 Maneuver	1545	-	-	1252	-	-	453	456	822	439	399	1000
Stage 1	-	-	-	-	-	-	619	594	-	895	797	-
Stage 2	-	-	-	-	-	-	877	800	-	592	535	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1545	-	-	1252	-	-	375	413	822	360	361	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-	375	413	-	360	361	-
Stage 1	-	-	-	-	-	-	571	548	-	826	782	-
Stage 2	-	-	-	-	-	-	786	785	-	483	494	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	2	21.2	8.8
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	415	1545	-	-	1252	-	-	1038
HCM Lane V/C Ratio	0.471	0.061	-	-	0.018	-	-	0.077
HCM Control Delay (s)	21.2	7.5	0	-	7.9	0	-	8.8
HCM Lane LOS	C	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	2.5	0.2	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	85	94	69	22	2
Future Vol, veh/h	0	85	94	69	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	89	89	78	78
Heavy Vehicles, %	0	0	1	3	5	0
Mvmt Flow	0	116	106	78	28	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	318	29	31	0	-	0
Stage 1	29	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	679	1052	1588	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	631	1052	1588	-	-	-
Mov Cap-2 Maneuver	631	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	711	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	4.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1588	-	1052	-	-
HCM Lane V/C Ratio	0.067	-	0.111	-	-
HCM Control Delay (s)	7.4	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	402	169	80	180	36	60	91	114	20	73	8
Future Volume (veh/h)	34	402	169	80	180	36	60	91	114	20	73	8
Number	3	8	18	7	4	14	1	6	16	5	2	12
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	1845	1900	1900	1827	1860	1900	1845	1900	1900	1900	1860	1900
Adj Flow Rate, veh/h	38	447	188	94	212	42	69	105	0	25	92	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.85	0.85	0.85	0.87	0.87	0.87	0.79	0.79	0.79
Percent Heavy Veh, %	3	0	0	4	2	2	3	0	0	0	1	1
Cap, veh/h	657	639	269	369	758	150	347	316	0	343	309	0
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.17	0.17	0.00	0.17	0.17	0.00
Sat Flow, veh/h	1110	1271	535	774	1508	299	1286	1900	0	1309	1860	0
Grp Volume(v), veh/h	38	0	635	94	0	254	69	105	0	25	92	0
Grp Sat Flow(s),veh/h/ln	1110	0	1806	774	0	1807	1286	1900	0	1309	1860	0
Q Serve(g_s), s	0.8	0.0	10.3	4.0	0.0	3.1	1.9	1.9	0.0	0.7	1.7	0.0
Cycle Q Clear(g_c), s	3.9	0.0	10.3	14.3	0.0	3.1	3.5	1.9	0.0	2.5	1.7	0.0
Prop In Lane	1.00		0.30	1.00		0.17	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	657	0	907	369	0	908	347	316	0	343	309	0
V/C Ratio(X)	0.06	0.00	0.70	0.25	0.00	0.28	0.20	0.33	0.00	0.07	0.30	0.00
Avail Cap(c_a), veh/h	820	0	1173	483	0	1173	901	1134	0	907	1110	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.6	0.0	7.3	12.7	0.0	5.5	15.5	14.0	0.0	15.1	13.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.3	0.4	0.0	0.2	0.3	0.6	0.0	0.1	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	5.3	0.9	0.0	1.5	0.7	1.0	0.0	0.2	0.9	0.0
LnGrp Delay(d),s/veh	6.6	0.0	8.5	13.1	0.0	5.6	15.7	14.6	0.0	15.2	14.4	0.0
LnGrp LOS	A		A	B		A	B	B		B	B	
Approach Vol, veh/h		673			348			174			117	
Approach Delay, s/veh		8.4			7.7			15.1			14.6	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		12.6		25.4		12.6		25.4
Change Period (Y+Rc), s		6.3		6.3		6.3		6.3
Max Green Setting (Gmax), s		22.7		24.7		22.7		24.7
Max Q Clear Time (g_c+I1), s		4.5		16.3		5.5		12.3
Green Ext Time (p_c), s		0.8		2.8		0.8		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Summary of All Intervals

Run Number	1	2	3		Avg
Start Time	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60
# of Intervals	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1
Vehs Entered	12092	12264	12162	12166	12172
Vehs Exited	11858	11981	12063	12002	11972
Starting Vehs	337	318	404	373	334
Ending Vehs	571	601	503	537	527
Travel Distance (mi)	8551	8592	8558	8560	8565
Travel Time (hr)	425.0	481.8	534.8	426.0	466.9
Total Delay (hr)	186.5	243.0	297.0	187.8	228.6
Total Stops	12817	12842	12869	12997	12875
Fuel Used (gal)	338.6	352.1	361.8	340.3	348.2

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3		Avg
Vehs Entered	12092	12264	12162	12166	12172
Vehs Exited	11858	11981	12063	12002	11972
Starting Vehs	337	318	404	373	334
Ending Vehs	571	601	503	537	527
Travel Distance (mi)	8551	8592	8558	8560	8565
Travel Time (hr)	425.0	481.8	534.8	426.0	466.9
Total Delay (hr)	186.5	243.0	297.0	187.8	228.6
Total Stops	12817	12842	12869	12997	12875
Fuel Used (gal)	338.6	352.1	361.8	340.3	348.2

Intersection: 1: US 321 & Blythewood Rd

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	91	18	82
Average Queue (ft)	27	3	26
95th Queue (ft)	69	15	63
Link Distance (ft)	468	559	380
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Fulmer Rd & Blythewood Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	36	64
Average Queue (ft)	8	25
95th Queue (ft)	30	46
Link Distance (ft)	722	660
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Blythewood Rd & Muller Rd

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	LTR	L	TR
Maximum Queue (ft)	25	75	180	43	116	15
Average Queue (ft)	5	21	63	15	35	1
95th Queue (ft)	18	54	126	43	82	7
Link Distance (ft)		788	1428	163		615
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200				250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: I-77 SB On-Ramp/I-77 SB Off-Ramp & Blythewood Rd

Movement	EB	EB	WB	WB	SB	SB
Directions Served	T	R	L	T	LT	R
Maximum Queue (ft)	287	161	130	264	157	61
Average Queue (ft)	142	5	60	113	76	2
95th Queue (ft)	258	73	108	205	132	24
Link Distance (ft)	329			849	669	
Upstream Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				
Storage Bay Dist (ft)		250	300			300
Storage Blk Time (%)	1			0		
Queuing Penalty (veh)	2			0		

Intersection: 5: I-77 NB Off-Ramp/I-77 NB On-Ramp & Blythewood Rd

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	T	LT	R
Maximum Queue (ft)	143	382	304	341	325
Average Queue (ft)	24	156	127	177	150
95th Queue (ft)	86	301	260	282	305
Link Distance (ft)		849	446		793
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	275			350	
Storage Blk Time (%)		2		1	0
Queuing Penalty (veh)		1		4	1

Intersection: 6: Creech Rd/McNulty St & Blythewood Rd

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	TR	LTR	LTR
Maximum Queue (ft)	82	42	4	128	132
Average Queue (ft)	28	15	0	46	44
95th Queue (ft)	63	38	3	97	90
Link Distance (ft)			965	290	198
Upstream Blk Time (%)					0
Queuing Penalty (veh)					0
Storage Bay Dist (ft)	150	25			
Storage Blk Time (%)		5	0		
Queuing Penalty (veh)		29	0		

Intersection: 7: Boney Rd & Blythewood Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	LT	R
Maximum Queue (ft)	133	257	111	185	86	88	155	44
Average Queue (ft)	63	122	29	78	39	37	64	1
95th Queue (ft)	116	213	74	162	72	67	131	28
Link Distance (ft)		965		839	321	321	536	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	175		175					75
Storage Blk Time (%)	0	2	0	1			11	
Queuing Penalty (veh)	0	5	0	0			14	

Intersection: 8: US 21 & Blythewood Rd

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	275	593	234	209	174	111
Average Queue (ft)	201	134	111	98	74	40
95th Queue (ft)	294	405	184	169	137	86
Link Distance (ft)		839		1814	313	
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		2				
Storage Bay Dist (ft)	175		225			175
Storage Blk Time (%)	20	0	1		0	
Queuing Penalty (veh)	46	1	2		1	

Intersection: 9: US 21 & McLean Rd

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	42	58	36
Average Queue (ft)	9	26	2
95th Queue (ft)	33	50	15
Link Distance (ft)	87	818	408
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: US 21 & Oakhurst Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	61	59	14
Average Queue (ft)	28	8	0
95th Queue (ft)	52	34	9
Link Distance (ft)	2480	1213	65
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: US 21 & McNulty St

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	127	43	118
Average Queue (ft)	49	10	17
95th Queue (ft)	135	35	113
Link Distance (ft)	1336		1213
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		75	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: US 21 & Langford Rd

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	275	318	99	203
Average Queue (ft)	150	254	72	101
95th Queue (ft)	252	350	111	212
Link Distance (ft)	916	313		206
Upstream Blk Time (%)		2		9
Queuing Penalty (veh)		17		20
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			51	12
Queuing Penalty (veh)			104	12

Intersection: 13: US 21 & Rimer Pond Rd

Movement	WB	WB	NB	B39	SB	SB
Directions Served	L	R	TR	T	L	T
Maximum Queue (ft)	168	89	803	2687	149	144
Average Queue (ft)	69	33	734	1322	74	57
95th Queue (ft)	128	71	882	2697	128	118
Link Distance (ft)		873	692	3185		2805
Upstream Blk Time (%)			60	0		
Queuing Penalty (veh)			630	0		
Storage Bay Dist (ft)	200				225	
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Intersection: 14: US 21 & Farrow Rd

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	764	30	1086
Average Queue (ft)	470	3	443
95th Queue (ft)	1054	18	985
Link Distance (ft)	922	1780	3185
Upstream Blk Time (%)	16		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: US 21 & Community Rd

Movement	EB	EB	NB	SB	SB	SB
Directions Served	L	TR	UL	UL	T	TR
Maximum Queue (ft)	325	473	91	25	5	30
Average Queue (ft)	238	249	26	3	0	2
95th Queue (ft)	402	570	61	17	3	14
Link Distance (ft)		440			980	980
Upstream Blk Time (%)		25				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)	225		250	225		
Storage Blk Time (%)	55	0				
Queuing Penalty (veh)	110	0				

Intersection: 16: Langford Rd & Sandfield Rd

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	85	57
Average Queue (ft)	28	21
95th Queue (ft)	71	43
Link Distance (ft)	916	418
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 17: Trading Post Rd & Langford Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	12	71
Average Queue (ft)	1	30
95th Queue (ft)	7	57
Link Distance (ft)	1336	2950
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 18: Hardscrabble Rd/Grover Wilson Rd & Langford Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	46	40	86	42
Average Queue (ft)	7	6	40	12
95th Queue (ft)	29	28	68	32
Link Distance (ft)	576	367	403	441
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 19: Round Top Church Rd & Trading Post Rd

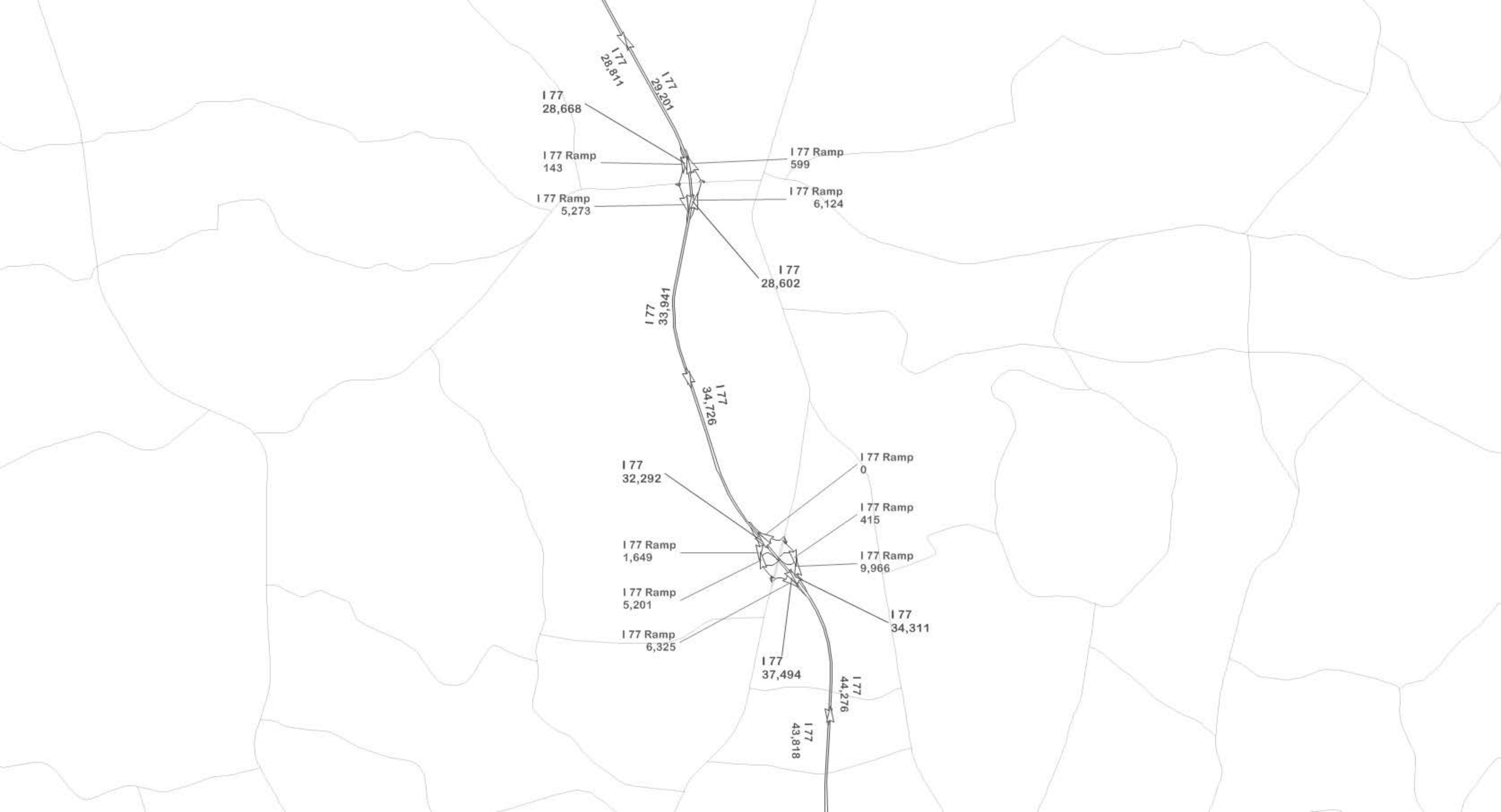
Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	28
Average Queue (ft)	15	2
95th Queue (ft)	24	15
Link Distance (ft)	658	758
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Longtown Rd E/Round Top Church Rd & Rimer Pond Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	39	230	86	80	56	145	31	83
Average Queue (ft)	6	82	30	19	15	48	6	28
95th Queue (ft)	22	171	71	59	40	101	19	61
Link Distance (ft)		927		792		657		758
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	325		250		500		150	
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 21: Hardscrabble Rd & Rimer Pond Rd/Kelly Mill Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	336	164	113	107
Average Queue (ft)	110	75	58	55
95th Queue (ft)	222	130	93	90
Link Distance (ft)	474	577	422	403
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				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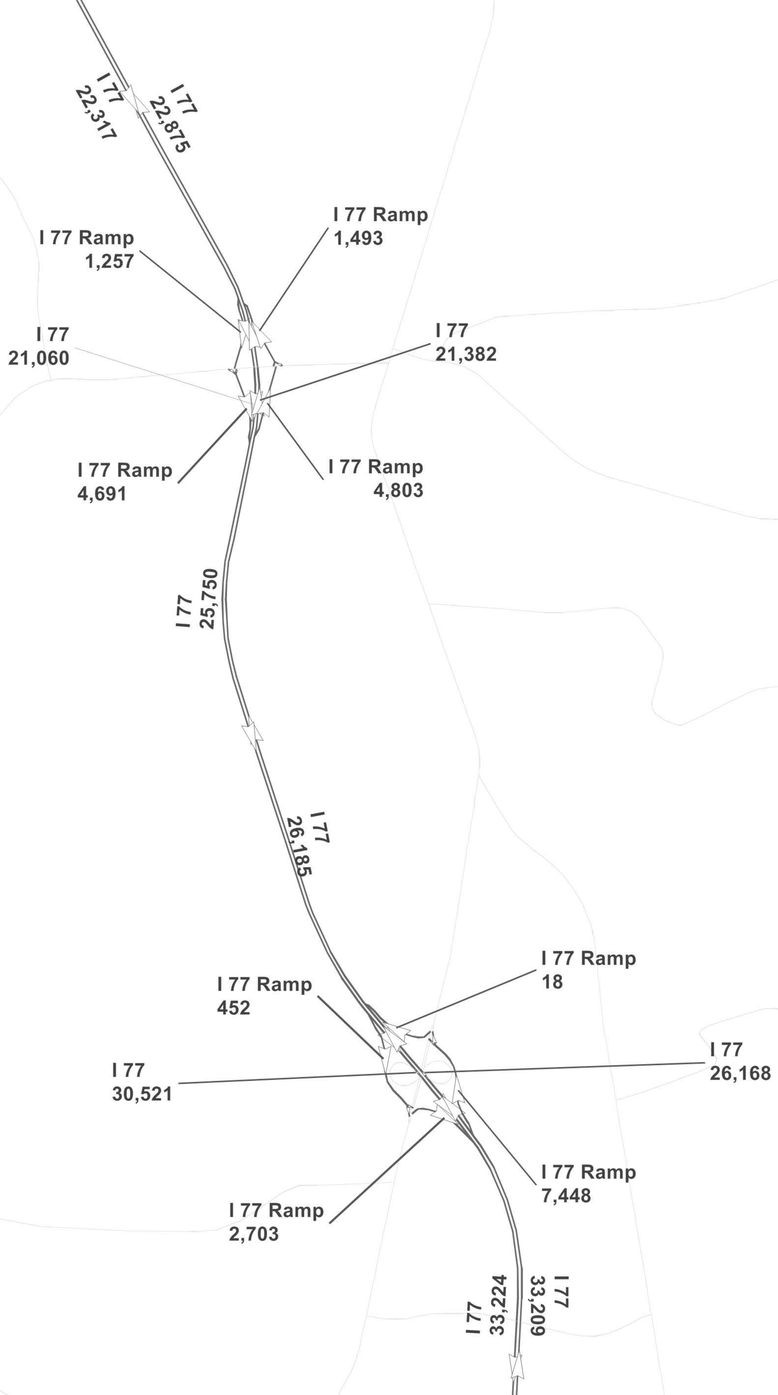
All figures reported are projected, 2045 Average Daily Traffic (ADT).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18
I 77
30,521
I 77
26,168
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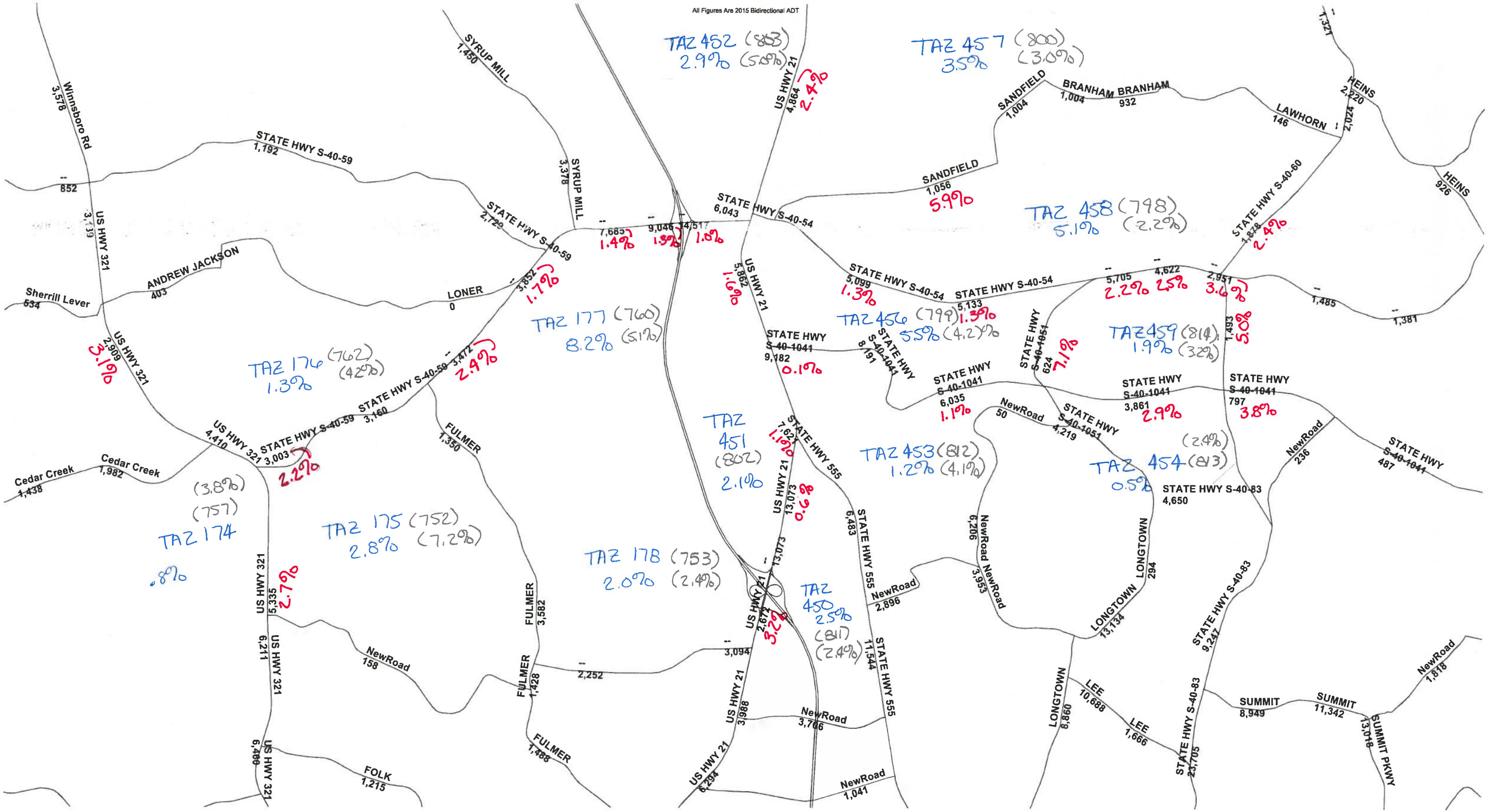
33,209

All Figures Are 2015 Bidirectional ADT

Pop growth Statewide model
pop growth CMCOG model



Intersection of Rimer Pond rd and Longtown Rd E
Round Top Church Rd

20%

Rimer Pond Rd 36% int 20 36%

20%

Longtown Rd E

IN
OUT

Intersection of Rimer Pond rd and Longtown Rd E

Rimer Pond Rd 0.2 int 21 0.2

HarScrabble Rd E

IN
OUT

AM Peak
US 21

25

Rimer Pond Rd 46 int 20 44

25

US 21

PM Peak
US 21

41

74 int 20 92

51

US 21

AM Peak

0

Rimer Pond Rd 30 int 21 30

0

HarScrabble Rd E

PM Peak

61 int 21 49

HarScrabble Rd E

	AM in	AM out	PM in	PM out
Development 8	19	57	64	102
Development 13	108	66	141	153

Assumed 60% to Rimer Pond Rd & 40% to Longtown Rd from Dev. 8& Development 8
And 60% west and 40% East on Rimer Pond Rd and 50% North and 5 Development 13
on Longtown Rd E

AM in	AM out	PM in	PM out
19	57	64	102
108	66	141	153

Intersection Rimer Pond Rd @ HardScrabble Rd

HardScrabble Rd

15%

← ↓ →

Rimer Pond Rd 70% 60% ↑ → ↓ int 21 ↑ ← ↓ 15% 70% 60% 15% Kelly Mill Rd

← ↑ →

15%

HardScrabble Rd

IN

OUT

AM Peak

HardScrabble Rd

2

← ↓ →

Rimer Pond Rd 7 ↑ → ↓ int 21 ↑ ← ↓ 5 21 5 Kelly Mill R 24 ↑ → ↓ int 21 ↑ ← ↓ 3 14 3

← ↑ →

2

HardScrabble Rd

PM Peak

HardScrabble Rd

5

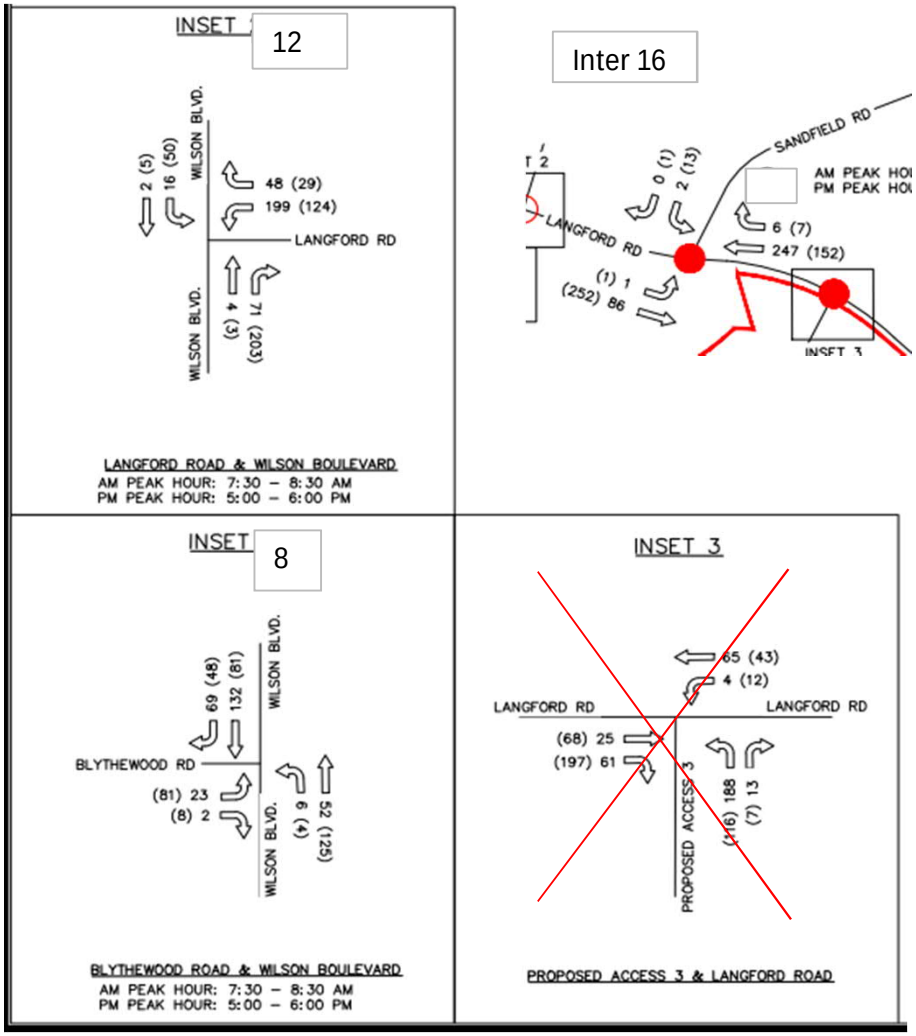
← ↓ →

← ↑ →

5

HardScrabble Rd

	AM in	AM out	PM in	PM out
Development 14	17	50	57	33


INSET
12
WILSON BLVD.
2 (5)
16 (50)
48 (29)
199 (124)
LANGFORD RD
WILSON BLVD.
4 (3)
71 (203)
LANGFORD ROAD & WILSON BOULEVARD
AM PEAK HOUR: 7:30 – 8:30 AM
PM PEAK HOUR: 5:00 – 6:00 PM
Inter 16
SANDFIELD RD
0 (1)
2 (13)
6 (7)
247 (152)
LANGFORD RD
(1) 1
(252) 86
INSET 3
INSET
8
WILSON BLVD.
69 (48)
132 (81)
BLYTHEWOOD RD
(81) 23
(8) 2
WILSON BLVD.
6 (4)
52 (125)
BLYTHEWOOD ROAD & WILSON BOULEVARD
AM PEAK HOUR: 7:30 – 8:30 AM
PM PEAK HOUR: 5:00 – 6:00 PM
INSET 3
65 (43)
4 (12)
LANGFORD RD
LANGFORD RD
(68) 25
(197) 61
PROPOSED ACCESS 3
(116) 188
(7) 13
PROPOSED ACCESS 3 & LANGFORD ROAD

Intersection of US 21 and Community Road

US 21

AM

60 IN

19%

Community Road

int 15

0%

IN 40 13%

10% 38%

20 80 OUT

US 21

PM

80 IN

38%

Community Road

int 15

0%

IN 20 10%

13% 19%

40 60 out

IN

OUT

AM Peak

US 21

32

Community Road 0 0 0 0

int 15

21

47 189

US 21

PM Peak

US 21

206

Community Road

int 15

52

40 61

US 21

	AM in	AM out	PM in	PM out
Development 19	164	492	538	316

Assumed 100% to Turkey Farm Rd -From Dev. 19
And 80% east 20% west on Turkey Farm rd
60% North and 40% South-AM and 40% North and 60% South-AM on US 21-

Intersection of US 21 and Community Road

US 21

			32%							48%			
			←	↓	→					←	↓	→	
	48%	↑				↑		32%	↑				↑
Community Road		→		int 15		←			→		int 15		←
	32%	↓				↓		48%	↓				↓
			←	↑	→					←	↑	→	
			48%							32%			

US 21 US 21

IN

OUT

AM Peak

US 21

PM Peak

US 21

			685								224				
			←	↓	→						←	↓	→		
	210	↑				↑	0		563	↑				↑	0
Community Road		→		int 15		←	0			→		int 15		←	0
	140	↓				↓	0		844	↓				↓	0
			←	↑	→						←	↑	→		
			####								150				

US 21 US 21

	AM in	AM out	PM in	PM out
Development 12	2140	438	467	1,758

Assumed 100% to Cummunity Rd -From Dev. 12

And 80% east 20% west on Turkey Farm rd

60% North and 40% South-AM and 40% North and 60% South-AM on US

Intersection Rimer Pond Rd @ HardScrabble Rd

HardScrabble Rd

15%

← ↓ →

Rimer Pond Rd 70% ↑ → ↓ int 21 ↑ ← ↓ 15% 70% 15% 60% Kelly Mill Rd

← ↑ →

15%

HardScrabble Rd

IN

OUT

AM Peak

HardScrabble Rd

7

← ↓ →

Rimer Pond Rd 34 ↑ → ↓ int 21 ↑ ← ↓ 22 102 22

← ↑ →

7

HardScrabble Rd

PM Peak

US 21

24

← ↓ →

114 ↑ → ↓ int 21 ↑ ← ↓ 14 67 14

← ↑ →

24

US 21

	AM in	AM out	PM in	PM out
Development 10	81	243	271	159

INTERSECTION VOLUME WORKSHEET

Intersection #1
Blythewood Rd at US321

AM Peak Hour

	-			Blythewood Rd			US321			US321		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count				256		36		85	76	84	279	
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**0**	**0**	**256**	**0**	**36**	**0**	**85**	**76**	**84**	**279**	**0**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	0	0	0	140	0	20	0	46	41	46	152	0
2040 Build Peak Hour Volume	**0**	**0**	**0**	**396**	**0**	**56**	**0**	**131**	**117**	**130**	**431**	**0**

PM Peak Hour

	-			Blythewood Rd			US321			US321		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count				88		70		250	178	64	158	
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**0**	**0**	**88**	**0**	**70**	**0**	**250**	**178**	**64**	**158**	**0**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	0	0	0	48	0	38	0	136	97	35	86	0
2040 Build Peak Hour Volume	**0**	**0**	**0**	**136**	**0**	**108**	**0**	**386**	**275**	**99**	**244**	**0**

INTERSECTION VOLUME WORKSHEET

Intersection #2
Blythewood Rd at Fulmer Rd

AM Peak Hour

	Blythewood Rd			Blythewood Rd			Fulmer Rd			-		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count		172	34	66	264		32		89			
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**172**	**34**	**66**	**264**	**0**	**32**	**0**	**89**	**0**	**0**	**0**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	0	94	19	36	144	0	17	0	49	0	0	0
2040 Build Peak Hour Volume	**0**	**266**	**53**	**102**	**408**	**0**	**49**	**0**	**138**	**0**	**0**	**0**

PM Peak Hour

	Blythewood Rd			Blythewood Rd			Fulmer Rd			-		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count		224	30	63	174		28		58			
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**224**	**30**	**63**	**174**	**0**	**28**	**0**	**58**	**0**	**0**	**0**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	0	122	16	34	95	0	15	0	32	0	0	0
2040 Build Peak Hour Volume	**0**	**346**	**46**	**97**	**269**	**0**	**43**	**0**	**90**	**0**	**0**	**0**

INTERSECTION VOLUME WORKSHEET

Intersection #3
Muller Rd at Blythewood Rd

AM Peak Hour

	Blythewood Rd			Blythewood Rd			Electric Company			Muller Rd		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	41	341	5	28	199	309	1	1	3	377	4	39
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**41**	**341**	**5**	**28**	**199**	**309**	**1**	**1**	**3**	**377**	**4**	**39**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	22	186	3	15	109	169	1	1	2	206	2	21
2040 Build Peak Hour Volume	**63**	**527**	**8**	**43**	**308**	**478**	**2**	**2**	**5**	**583**	**6**	**60**

PM Peak Hour(17:00- 18:00)

	Blythewood Rd			Blythewood Rd			Electric Company			Muller Rd		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	16	309	0	4	267	184	2	3	16	88	0	1
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**16**	**309**	**0**	**4**	**267**	**184**	**2**	**3**	**16**	**88**	**0**	**1**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	9	169	0	2	146	100	1	2	9	48	0	1
2040 Build Peak Hour Volume	**25**	**478**	**0**	**6**	**413**	**284**	**3**	**5**	**25**	**136**	**0**	**2**

INTERSECTION VOLUME WORKSHEET

Intersection #4
I-77 SB Ramp at Blythewood Rd

AM Peak Hour

	Blythewood Rd			Blythewood Rd			-			I-77 SB Ramp		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	0	538	347	292	705	0				118	6	127
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**538**	**347**	**292**	**705**	**0**	**0**	**0**	**0**	**118**	**6**	**127**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	0	294	189	159	385	0	0	0	0	64	3	69
2040 Build Peak Hour Volume	**0**	**832**	**536**	**451**	**1,090**	**0**	**0**	**0**	**0**	**182**	**9**	**196**

PM Peak Hour

	Blythewood Rd			Blythewood Rd			-			I-77 SB Ramp		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count		532	168	190	728					145		77
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**532**	**168**	**190**	**728**	**0**	**0**	**0**	**0**	**145**	**0**	**77**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	0	290	92	104	397	0	0	0	0	79	0	42
2040 Build Peak Hour Volume	**0**	**822**	**260**	**294**	**1,125**	**0**	**0**	**0**	**0**	**224**	**0**	**119**

INTERSECTION VOLUME WORKSHEET

Intersection #5
I-77 NB Ramp at Blythewood Rd

AM Peak Hour

	Blythewood Rd			Blythewood Rd			I-77 NB Ramp			-		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	24	630			803	91	165		180			
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**24**	**630**	**0**	**0**	**803**	**91**	**165**	**0**	**180**	**0**	**0**	**0**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	13	344	0	0	438	50	90	0	98	0	0	0
2040 Build Peak Hour Volume	**37**	**974**	**0**	**0**	**1,241**	**141**	**255**	**0**	**278**	**0**	**0**	**0**

PM Peak Hour

	Blythewood Rd			Blythewood Rd			I-77 NB Ramp			-		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	35	643			528	94	352		500			
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**35**	**643**	**0**	**0**	**528**	**94**	**352**	**0**	**500**	**0**	**0**	**0**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	19	351	0	0	288	51	192	0	273	0	0	0
2040 Build Peak Hour Volume	**54**	**994**	**0**	**0**	**816**	**145**	**544**	**0**	**773**	**0**	**0**	**0**

INTERSECTION VOLUME WORKSHEET

Intersection #6
McNulty St at Blythewood Rd

AM Peak Hour

	Blythewood Rd			Blythewood Rd			Creech Rd			McNulty St		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	88	616	75	26	936	32	29	0	42	6	1	133
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**88**	**616**	**75**	**26**	**936**	**32**	**29**	**0**	**42**	**6**	**1**	**133**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	48	336	41	14	511	17	16	0	23	3	1	73
2040 Build Peak Hour Volume	**136**	**952**	**116**	**40**	**1,447**	**49**	**45**	**0**	**65**	**9**	**2**	**206**

PM Peak Hour(16:30-7:30)

	Blythewood Rd			Blythewood Rd			Creech Rd			McNulty St		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	129	846	78	29	553	29	26	4	28	7	0	114
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**129**	**846**	**78**	**29**	**553**	**29**	**26**	**4**	**28**	**7**	**0**	**114**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	70	462	43	16	302	16	14	2	15	4	0	62
2040 Build Peak Hour Volume	**199**	**1,308**	**121**	**45**	**855**	**45**	**40**	**6**	**43**	**11**	**0**	**176**

INTERSECTION VOLUME WORKSHEET

Intersection #7
Boney Rd at Blythewood Rd

AM Peak Hour

	Blythewood Rd			Blythewood Rd			Boney Rd			Boney Rd		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	213	510	12	16	595	41	4	7	14	61	2	178
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**213**	**510**	**12**	**16**	**595**	**41**	**4**	**7**	**14**	**61**	**2**	**178**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	116	278	7	9	325	22	2	4	8	33	1	97
2040 Build Peak Hour Volume	**329**	**788**	**19**	**25**	**920**	**63**	**6**	**11**	**22**	**94**	**3**	**275**

PM Peak Hour

	Blythewood Rd			Blythewood Rd			Boney Rd			Boney Rd		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	206	618	55	61	385	57	38	35	111	80	17	122
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**206**	**618**	**55**	**61**	**385**	**57**	**38**	**35**	**111**	**80**	**17**	**122**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	112	337	30	33	210	31	21	19	61	44	9	67
2040 Build Peak Hour Volume	**318**	**955**	**85**	**94**	**595**	**88**	**59**	**54**	**172**	**124**	**26**	**189**

INTERSECTION VOLUME WORKSHEET

Intersection #8
US 21 (Main St) at Blythewood Rd

AM Peak Hour

		Blythewood Rd			-			US 21 (Main St)			US 21 (Main St)		
		Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018	Raw Traffic Count	252		275	0	0	0	166	213			531	479
	Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018	Peak Hour Volume	**252**	**0**	**275**	**0**	**0**	**0**	**166**	**213**	**0**	**0**	**531**	**479**
	Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Background Growth	138	0	150	0	0	0	91	116	0	0	290	262
2040	Background Peak Hour Volume	**390**	**0**	**425**	**0**	**0**	**0**	**257**	**329**	**0**	**0**	**821**	**741**
	Development 15	**23**		**2**				**6**	**52**			**132**	**69**
2040	total Peak Hour Volume	**413**	**0**	**427**	**0**	**0**	**0**	**263**	**381**	**0**	**0**	**953**	**810**

PM Peak Hour

		Blythewood Rd			-			US 21 (Main St)			US 21 (Main St)		
		Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018	Raw Traffic Count	481		231	0	0		220	337			176	259
	Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018	Peak Hour Volume	**481**	**0**	**231**	**0**	**0**	**0**	**220**	**337**	**0**	**0**	**176**	**259**
	Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Background Growth	263	0	126	0	0	0	120	184	0	0	96	141
2040	Background Peak Hour Volume	**744**	**0**	**357**	**0**	**0**	**0**	**340**	**521**	**0**	**0**	**272**	**400**
	Development 15	**81**		**8**				**4**	**125**			**81**	**48**
2040	Total Peak Hour Volume	**825**	**0**	**365**	**0**	**0**	**0**	**344**	**646**	**0**	**0**	**353**	**448**

INTERSECTION VOLUME WORKSHEET

Intersection #9
McLean Road at US 21

AM Peak Hour

	Drvwy			McLean Road			US 21			US 21		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	2	1	38	119		12		146	21	4	254	
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**2**	**1**	**38**	**119**	**0**	**12**	**0**	**146**	**21**	**4**	**254**	**0**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	1	1	21	65	0	7	0	80	11	2	139	0
2040 Build Peak Hour Volume	**3**	**2**	**59**	**184**	**0**	**19**	**0**	**226**	**32**	**6**	**393**	**0**

PM Peak Hour

	Drvwy			McLean Road			US 21			US 21		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	0	0	11	38	0	17		248	89	7	164	0
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**0**	**11**	**38**	**0**	**17**	**0**	**248**	**89**	**7**	**164**	**0**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	0	0	6	21	0	9	0	135	49	4	90	0
2040 Build Peak Hour Volume	**0**	**0**	**17**	**59**	**0**	**26**	**0**	**383**	**138**	**11**	**254**	**0**

INTERSECTION VOLUME WORKSHEET

Intersection #10
US 21 (Main St.) at Oakhurst Rd

AM Peak Hour

	Oakhurst Rd			-			US 21 (Main St.)			US 21 (Main St.)		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	6		89	0	0		48	148			395	11
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**6**	**0**	**89**	**0**	**0**	**0**	**48**	**148**	**0**	**0**	**395**	**11**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	3	0	49	0	0	0	26	81	0	0	216	6
2040 Build Peak Hour Volume	**9**	**0**	**138**	**0**	**0**	**0**	**74**	**229**	**0**	**0**	**611**	**17**

PM Peak Hour

	Oakhurst Rd			-			US 21 (Main St.)			US 21 (Main St.)		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	12		37				44	336		0	190	7
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**12**	**0**	**37**	**0**	**0**	**0**	**44**	**336**	**0**	**0**	**190**	**7**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	7	0	20	0	0	0	24	183	0	0	104	4
2040 Build Peak Hour Volume	**19**	**0**	**57**	**0**	**0**	**0**	**68**	**519**	**0**	**0**	**294**	**11**

INTERSECTION VOLUME WORKSHEET

Intersection #11
US 21 (Main St.) at McNulty Rd

AM Peak Hour

	McNulty Rd			-			US 21 (Main St.)			US 21 (Main St.)		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	26		39				66	171			408	51
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**26**	**0**	**39**	**0**	**0**	**0**	**66**	**171**	**0**	**0**	**408**	**51**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	14	0	21	0	0	0	36	93	0	0	223	28
2040 Build Peak Hour Volume	**40**	**0**	**60**	**0**	**0**	**0**	**102**	**264**	**0**	**0**	**631**	**79**

PM Peak Hour(17:00-18:00)

	McNulty Rd			-			US 21 (Main St.)			US 21 (Main St.)		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	44		57				58	274			173	13
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**44**	**0**	**57**	**0**	**0**	**0**	**58**	**274**	**0**	**0**	**173**	**13**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	24	0	31	0	0	0	32	150	0	0	94	7
2040 Build Peak Hour Volume	**68**	**0**	**88**	**0**	**0**	**0**	**90**	**424**	**0**	**0**	**267**	**20**

INTERSECTION VOLUME WORKSHEET

Intersection #12
US 21 (Main St) at Langford Rd

AM Peak Hour

		-			Langford Rd			US 21 (Main St)			US 21 (Main St)		
		Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018	Raw Traffic Count				563		72		216	239	78	448	
	Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018	Peak Hour Volume	**0**	**0**	**0**	**563**	**0**	**72**	**0**	**216**	**239**	**78**	**448**	**0**
	Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Background Growth	0	0	0	307	0	39	0	118	130	43	245	0
2040	Background Peak Hour Volume	**0**	**0**	**0**	**870**	**0**	**111**	**0**	**334**	**369**	**121**	**693**	**0**
	Development 15				**199**		**48**		**4**	**71**	**16**	**2**	
2040	Total Peak Hour Volume	**0**	**0**	**0**	**1,069**	**0**	**159**	**0**	**338**	**440**	**137**	**695**	**0**

PM Peak Hour

		-			Langford Rd			US 21 (Main St)			US 21 (Main St)		
		Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018	Raw Traffic Count				228	0	98		316	516	106	203	
	Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018	Peak Hour Volume	**0**	**0**	**0**	**228**	**0**	**98**	**0**	**316**	**516**	**106**	**203**	**0**
	Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Background Growth	0	0	0	124	0	54	0	173	282	58	111	0
2040	Background Peak Hour Volume	**0**	**0**	**0**	**352**	**0**	**152**	**0**	**489**	**798**	**164**	**314**	**0**
	Development 15				**124**		**29**		**3**	**203**	**50**	**5**	
2040	Total Peak Hour Volume	**0**	**0**	**0**	**476**	**0**	**181**	**0**	**492**	**1,001**	**214**	**319**	**0**

INTERSECTION VOLUME WORKSHEET

Intersection #13
Rimer Pond Rd at US 21

AM Peak Hour

		-			Rimer Pond Rd			US 21			US 21		
		Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018	Raw Traffic Count				480		253		465	122	125	607	
	Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018	Peak Hour Volume	**0**	**0**	**0**	**480**	**0**	**253**	**0**	**465**	**122**	**125**	**607**	**0**
	Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Background Growth	0	0	0	262	0	138	0	254	67	68	331	0
2040	Build Peak Hour Volume	**0**	**0**	**0**	**742**	**0**	**391**	**0**	**719**	**189**	**193**	**938**	**0**

PM Peak Hour

		-			Rimer Pond Rd			US 21			US 21		
		Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018	Raw Traffic Count				132		111		481	349	230	435	
	Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018	Peak Hour Volume	**0**	**0**	**0**	**132**	**0**	**111**	**0**	**481**	**349**	**230**	**435**	**0**
	Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Background Growth	0	0	0	72	0	61	0	263	191	126	238	0
2040	Build Peak Hour Volume	**0**	**0**	**0**	**204**	**0**	**172**	**0**	**744**	**540**	**356**	**673**	**0**

INTERSECTION VOLUME WORKSHEET

Intersection #14
Farrow Rd at US21

AM Peak Hour

	-			Farrow Rd			US21			US21		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count				4		305		307	20	308	976	
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**0**	**0**	**4**	**0**	**305**	**0**	**307**	**20**	**308**	**976**	**0**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	0	0	0	2	0	167	0	168	11	168	533	0
2040 Build Peak Hour Volume	**0**	**0**	**0**	**6**	**0**	**472**	**0**	**475**	**31**	**476**	**1,509**	**0**

PM Peak Hour

	-			Farrow Rd			US21			US21		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count				8		189		857	33	245	314	
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**0**	**0**	**8**	**0**	**189**	**0**	**857**	**33**	**245**	**314**	**0**
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Background Growth	0	0	0	4	0	103	0	468	18	134	171	0
2040 Build Peak Hour Volume	**0**	**0**	**0**	**12**	**0**	**292**	**0**	**1,325**	**51**	**379**	**485**	**0**

INTERSECTION VOLUME WORKSHEET

Intersection #15
Community Rd at US 21

AM Peak Hour

		Community Rd					-	US 21				US 21			
		Eastbound			**Westbound**			**Northbound**				**Southbound**			
Description		Left	Through	Right	Left	Through	Right	Uturn	left	Through	Right	Uturn	Left	Through	Right
2018	Raw Traffic Count	154		203				25	137	723	0	7	0	574	195
Adjustment		0	0	0	0	0	0	0	0	0	0	0		0	0
2018	Peak Hour Volume	**154**	**0**	**203**	**0**	**0**	**0**	**25**	**137**	**723**	**0**	**7**	**0**	**574**	**195**
	Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%		3.0%	3.0%
	Background Growth	141	0	186	0	0	0	23	126	662	0	6		526	179
2040	Background Peak Hour Volume	**295**	**0**	**389**	**0**	**0**	**0**	**48**	**263**	**1,385**	**0**	**13**	**0**	**1,100**	**374**
	Development 12	**210**		**140**					**1,027**						**685**
	Development 19			**21**					**47**	**189**				**32**	
2040	Total Peak Hour Volume	505	0	550	0	0	0	48	1337	1574	0	13	0	1132	1059

PM Peak Hour

		Community Rd					-	US 21				US 21			
		Eastbound			**Westbound**			**Northbound**				**Southbound**			
Description		Left	Through	Right	Left	Through	Right	Uturn	Left	Through	Right	Uturn	left	Through	Right
2018	Raw Traffic Count	155		200				1	89	435	0	10	0	656	100
Adjustment		0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	Peak Hour Volume	**155**	**0**	**200**	**0**	**0**	**0**	**1**	**89**	**435**	**0**	**10**	**0**	**656**	**100**
	Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
	Background Growth	142	0	183	0	0	0	1	82	399	0	9	0	601	92
2040	Background Peak Hour Volume	**297**	**0**	**383**	**0**	**0**	**0**	**2**	**171**	**834**	**0**	**19**	**0**	**1,257**	**192**
	Development 12	**563**		**844**					**150**						**224**
	Development 19			**52**					**40**	**61**				**206**	
2040	Total Peak Hour Volume	860	0	1,279	0	0	0	2	361	895	0	19	0	1,463	416

INTERSECTION VOLUME WORKSHEET

Intersection #16
Sandfield Rd at Langford Rd

AM Peak Hour

		Langford Rd			Langford Rd			-			Sandfield Rd		
		Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018	Raw Traffic Count	17	304			559	13				13		63
	Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018	Peak Hour Volume	**17**	**304**	**0**	**0**	**559**	**13**	**0**	**0**	**0**	**13**	**0**	**63**
	Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Background Growth	9	166	0	0	305	7	0	0	0	7	0	34
2040	Background Peak Hour Volume	**26**	**470**	**0**	**0**	**864**	**20**	**0**	**0**	**0**	**20**	**0**	**97**
	Development 15	**1**	**86**			**247**	**6**				**2**		
2040	Total Peak Hour Volume	**27**	**556**	**0**	**0**	**1,111**	**26**	**0**	**0**	**0**	**22**	**0**	**97**

PM Peak Hour

		Langford Rd			Langford Rd			-			Sandfield Rd		
		Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018	Raw Traffic Count	124	478			276	10	0	0	0	11		53
	Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018	Peak Hour Volume	**124**	**478**	**0**	**0**	**276**	**10**	**0**	**0**	**0**	**11**	**0**	**53**
	Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Background Growth	68	261	0	0	151	5	0	0	0	6	0	29
2040	Background Peak Hour Volume	**192**	**739**	**0**	**0**	**427**	**15**	**0**	**0**	**0**	**17**	**0**	**82**
	Development 15	**1**	**252**			**152**	**7**				**13**	**1**	
2040	Total Peak Hour Volume	**193**	**991**	**0**	**0**	**579**	**22**	**0**	**0**	**0**	**30**	**1**	**82**

INTERSECTION VOLUME WORKSHEET

Intersection #17
Langford Rd at Trading Post Rd

AM Peak Hour

	Langford Rd			Langford Rd			Trading Post Rd			-		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count		175	64	2	497		123		2			
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**175**	**64**	**2**	**497**	**0**	**123**	**0**	**2**	**0**	**0**	**0**
Annual Growth Rate	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Background Growth	0	240	88	3	681	0	169	0	3	0	0	0
2040 Build Peak Hour Volume	**0**	**415**	**152**	**5**	**1,178**	**0**	**292**	**0**	**5**	**0**	**0**	**0**

PM Peak Hour

	Langford Rd			Langford Rd			Trading Post Rd			-		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count		361	88	4	202		97		3			
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**361**	**88**	**4**	**202**	**0**	**97**	**0**	**3**	**0**	**0**	**0**
Annual Growth Rate	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Background Growth	0	495	121	5	277	0	133	0	4	0	0	0
2040 Build Peak Hour Volume	**0**	**856**	**209**	**9**	**479**	**0**	**230**	**0**	**7**	**0**	**0**	**0**

INTERSECTION VOLUME WORKSHEET

Intersection #18
Langford Rd at Hard Scrabble Rd

AM Peak Hour

	Langford Rd			Langford Rd			Hard Scrabble Rd			Grover Wilson Rd		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	0	49	90	11	88	1	98	26	8	0	25	46
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**49**	**90**	**11**	**88**	**1**	**98**	**26**	**8**	**0**	**25**	**46**
Annual Growth Rate	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Background Growth	0	67	123	15	121	1	134	36	11	0	34	63
2040 Build Peak Hour Volume	**0**	**116**	**213**	**26**	**209**	**2**	**232**	**62**	**19**	**0**	**59**	**109**

PM Peak Hour

	Langford Rd			Langford Rd			Hard Scrabble Rd			Grover Wilson Rd		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	88	118	179	20	61	0	104	41	23	0	24	45
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**88**	**118**	**179**	**20**	**61**	**0**	**104**	**41**	**23**	**0**	**24**	**45**
Annual Growth Rate	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Background Growth	121	162	245	27	84	0	142	56	32	0	33	62
2040 Build Peak Hour Volume	**209**	**280**	**424**	**47**	**145**	**0**	**246**	**97**	**55**	**0**	**57**	**107**

INTERSECTION VOLUME WORKSHEET

Intersection #19
Trading Post Rd at Round Top Church Rd

AM Peak Hour

	Trading Post Rd			-			Round Top Church Rd			Round Top Church Rd		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	0		68				124	28		0	85	0
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**0**	**68**	**0**	**0**	**0**	**124**	**28**	**0**	**0**	**85**	**0**
Annual Growth Rate	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Background Growth	0	0	93	0	0	0	170	38	0	0	116	0
2040 Build Peak Hour Volume	**0**	**0**	**161**	**0**	**0**	**0**	**294**	**66**	**0**	**0**	**201**	**0**

PM Peak Hour

	Trading Post Rd			-			Round Top Church Rd			Round Top Church Rd		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018 Raw Traffic Count	0		85				94	69			22	2
Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018 Peak Hour Volume	**0**	**0**	**85**	**0**	**0**	**0**	**94**	**69**	**0**	**0**	**22**	**2**
Annual Growth Rate	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Background Growth	0	0	116	0	0	0	129	95	0	0	30	3
2040 Build Peak Hour Volume	**0**	**0**	**201**	**0**	**0**	**0**	**223**	**164**	**0**	**0**	**52**	**5**

INTERSECTION VOLUME WORKSHEET

Intersection #20
Rimer Pond Rd at Longtown Rd

AM Peak Hour

		Rimer Pond Rd			Rimer Pond Rd			Longtown Rd			Round Top Church Rd		
		Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018	Raw Traffic Count	11	156	172	196	428	29	356	112	159	27	95	33
	Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018	Peak Hour Volume	**11**	**156**	**172**	**196**	**428**	**29**	**356**	**112**	**159**	**27**	**95**	**33**
	Annual Growth Rate	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
	Background Growth	15	214	236	269	586	40	488	153	218	37	130	45
2040	Background Peak Hour Volume	**26**	**370**	**408**	**465**	**1,014**	**69**	**844**	**265**	**377**	**64**	**225**	**78**
	Development 8&13		**46**			**44**			**25**			**25**	
2040	Total Peak Hour Volume	**26**	**416**	**408**	**465**	**1,058**	**69**	**844**	**290**	**377**	**64**	**250**	**78**

PM Peak Hour

		Rimer Pond Rd			Rimer Pond Rd			Longtown Rd			Round Top Church Rd		
		Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2018	Raw Traffic Count	34	402	169	80	180	36	60	91	114	20	73	8
	Adjustment	0	0	0	0	0	0	0	0	0	0	0	0
2018	Peak Hour Volume	**34**	**402**	**169**	**80**	**180**	**36**	**60**	**91**	**114**	**20**	**73**	**8**
	Annual Growth Rate	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
	Background Growth	47	551	232	110	247	49	82	125	156	27	100	11
2040	Background Peak Hour Volume	**81**	**953**	**401**	**190**	**427**	**85**	**142**	**216**	**270**	**47**	**173**	**19**
	Development 8&13		**74**			**92**			**51**			**41**	
2040	Total Peak Hour Volume	**81**	**1,027**	**401**	**190**	**519**	**85**	**142**	**267**	**270**	**47**	**214**	**19**

Intersection	
Int Delay, s/veh	170

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	396	56	131	117	130	431
Future Vol, veh/h	396	56	131	117	130	431
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, %	2	2	2	2	2	2
Mvmt Flow	440	62	146	130	144	479

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	979	211	0	0	276	0
Stage 1	211	-	-	-	-	-
Stage 2	768	-	-	-	-	-
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	~ 277	829	-	-	1287	-
Stage 1	824	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 235	829	-	-	1287	-
Mov Cap-2 Maneuver	~ 235	-	-	-	-	-
Stage 1	824	-	-	-	-	-
Stage 2	~ 388	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 471.9	0	1.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	258	1287	-
HCM Lane V/C Ratio	-	-	1.947	0.112	-
HCM Control Delay (s)	-	-	$ 471.9	8.2	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	35.8	0.4	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	266	53	102	408	49	138
Future Vol, veh/h	266	53	102	408	49	138
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, %	2	2	2	2	2	2
Mvmt Flow	296	59	113	453	54	153

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	354	0	1005	325
Stage 1	-	-	-	-	325	-
Stage 2	-	-	-	-	680	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1205	-	268	716
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	503	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1205	-	235	716
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	440	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	18.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	466	-	-	1205	-
HCM Lane V/C Ratio	0.446	-	-	0.094	-
HCM Control Delay (s)	18.8	-	-	8.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.3	-	-	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	527	8	43	308	478	2	2	5	583	6	60
Future Volume (veh/h)	63	527	8	43	308	478	2	2	5	583	6	60
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	70	586	9	48	342	531	2	2	6	648	7	67
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	1003	15	55	277	415	125	132	339	553	54	518
Arrive On Green	0.05	0.55	0.55	0.44	0.44	0.44	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	1830	28	62	623	933	263	371	952	1402	152	1454
Grp Volume(v), veh/h	70	0	595	921	0	0	10	0	0	648	0	74
Grp Sat Flow(s),veh/h/ln	1774	0	1858	1619	0	0	1587	0	0	1402	0	1606
Q Serve(g_s), s	2.8	0.0	29.7	46.6	0.0	0.0	0.0	0.0	0.0	49.2	0.0	4.3
Cycle Q Clear(g_c), s	2.8	0.0	29.7	62.0	0.0	0.0	0.5	0.0	0.0	49.7	0.0	4.3
Prop In Lane	1.00		0.02	0.05		0.58	0.20		0.60	1.00		0.91
Lane Grp Cap(c), veh/h	219	0	1019	747	0	0	596	0	0	553	0	572
V/C Ratio(X)	0.32	0.00	0.58	1.23	0.00	0.00	0.02	0.00	0.00	1.17	0.00	0.13
Avail Cap(c_a), veh/h	226	0	1026	747	0	0	596	0	0	553	0	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	20.9	39.5	0.0	0.0	29.1	0.0	0.0	47.1	0.0	30.3
Incr Delay (d2), s/veh	0.8	0.0	0.8	116.6	0.0	0.0	0.0	0.0	0.0	95.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	15.4	52.8	0.0	0.0	0.3	0.0	0.0	35.9	0.0	1.9
LnGrp Delay(d),s/veh	18.1	0.0	21.8	156.1	0.0	0.0	29.1	0.0	0.0	142.9	0.0	30.4
LnGrp LOS	B		C	F			C			F		C
Approach Vol, veh/h		665			921			10			722	
Approach Delay, s/veh		21.4			156.1			29.1			131.3	
Approach LOS		C			F			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		83.5		56.0	14.5	69.0		56.0
Change Period (Y+Rc), s		7.0		6.3	7.0	7.0		6.3
Max Green Setting (Gmax), s		77.0		49.7	8.0	62.0		49.7
Max Q Clear Time (g_c+I1), s		31.7		51.7	4.8	64.0		2.5
Green Ext Time (p_c), s		41.0		0.0	0.0	0.0		2.8

Intersection Summary	
HCM 2010 Ctrl Delay	109.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	832	536	451	1090	0	0	0	0	182	9	196
Future Volume (veh/h)	0	832	536	451	1090	0	0	0	0	182	9	196
Number	5	2	12	1	6	16				7	4	14
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	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	924	0	501	1211	0				202	10	0
Adj No. of Lanes	0	1	1	1	1	0				0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	834	709	528	1418	0				235	12	219
Arrive On Green	0.00	0.45	0.00	0.26	0.76	0.00				0.14	0.14	0.00
Sat Flow, veh/h	0	1863	1583	1774	1863	0				1694	84	1583
Grp Volume(v), veh/h	0	924	0	501	1211	0				212	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1774	1863	0				1778	0	1583
Q Serve(g_s), s	0.0	53.7	0.0	29.1	53.2	0.0				14.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	53.7	0.0	29.1	53.2	0.0				14.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				0.95		1.00
Lane Grp Cap(c), veh/h	0	834	709	528	1418	0				246	0	219
V/C Ratio(X)	0.00	1.11	0.00	0.95	0.85	0.00				0.86	0.00	0.00
Avail Cap(c_a), veh/h	0	834	709	548	1418	0				356	0	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	33.1	0.0	37.6	9.8	0.0				50.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	65.2	0.0	4.2	0.7	0.0				13.6	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	0.0	42.7	0.0	16.9	27.2	0.0				7.8	0.0	0.0
LnGrp Delay(d),s/veh	0.0	98.4	0.0	41.7	10.4	0.0				64.1	0.0	0.0
LnGrp LOS		F		D	B					E		
Approach Vol, veh/h		924			1712						212	
Approach Delay, s/veh		98.4			19.6						64.1	
Approach LOS		F			B						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	37.7	59.7		22.6		97.4		
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		
Max Green Setting (Gmax), s	33.0	45.0		24.0		84.0		
Max Q Clear Time (g_c+I1), s	31.1	55.7		16.0		55.2		
Green Ext Time (p_c), s	0.5	0.0		0.7		28.1		

Intersection Summary	
HCM 2010 Ctrl Delay	48.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	974	0	0	1241	141	255	0	278	0	0	0
Future Volume (veh/h)	37	974	0	0	1241	141	255	0	278	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	0	0	1863	1863	1900	1863	1863			
Adj Flow Rate, veh/h	41	1082	0	0	1379	0	283	0	0			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	60	1340	0	0	1340	1139	320	0	286			
Arrive On Green	0.72	0.72	0.00	0.00	1.00	0.00	0.18	0.00	0.00			
Sat Flow, veh/h	391	1863	0	0	1863	1583	1774	0	1583			
Grp Volume(v), veh/h	41	1082	0	0	1379	0	283	0	0			
Grp Sat Flow(s),veh/h/ln	391	1863	0	0	1863	1583	1774	0	1583			
Q Serve(g_s), s	0.0	46.6	0.0	0.0	86.4	0.0	18.7	0.0	0.0			
Cycle Q Clear(g_c), s	86.4	46.6	0.0	0.0	86.4	0.0	18.7	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	60	1340	0	0	1340	1139	320	0	286			
V/C Ratio(X)	0.68	0.81	0.00	0.00	1.03	0.00	0.88	0.00	0.00			
Avail Cap(c_a), veh/h	60	1340	0	0	1340	1139	429	0	383			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	60.0	11.3	0.0	0.0	0.0	0.0	48.0	0.0	0.0			
Incr Delay (d2), s/veh	5.6	0.5	0.0	0.0	32.2	0.0	15.5	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4	23.9	0.0	0.0	12.0	0.0	10.5	0.0	0.0			
LnGrp Delay(d),s/veh	65.6	11.8	0.0	0.0	32.2	0.0	63.4	0.0	0.0			
LnGrp LOS	E	B			F		E					
Approach Vol, veh/h		1123			1379			283				
Approach Delay, s/veh		13.7			32.2			63.4				
Approach LOS		B			C			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		92.4				92.4		27.6
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		79.0				79.0		29.0
Max Q Clear Time (g_c+I1), s		88.4				88.4		20.7
Green Ext Time (p_c), s		0.0				0.0		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	156.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	136	952	116	40	1447	49	45	0	65	9	2	206
Future Vol, veh/h	136	952	116	40	1447	49	45	0	65	9	2	206
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	150	-	-	25	-	-	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	151	1058	129	44	1608	54	50	0	72	10	2	229

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1662	0	0	1187	0	0	3263	3175	1122	3185	3213	1635
Stage 1	-	-	-	-	-	-	1424	1424	-	1724	1724	-
Stage 2	-	-	-	-	-	-	1839	1751	-	1461	1489	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	387	-	-	588	-	-	~ 5	10	251	~ 6	10	~ 125
Stage 1	-	-	-	-	-	-	168	202	-	113	144	-
Stage 2	-	-	-	-	-	-	97	139	-	160	187	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	387	-	-	588	-	-	-	6	251	~ 3	6	~ 125
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	6	-	~ 3	6	-
Stage 1	-	-	-	-	-	-	102	123	-	69	133	-
Stage 2	-	-	-	-	-	-	-	129	-	69	114	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0.3		$ 2198.3
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	387	-	-	588	-	-	44
HCM Lane V/C Ratio	-	0.39	-	-	0.076	-	-	5.48
HCM Control Delay (s)	-	20.1	-	-	11.6	-	-	$-2198.3
HCM Lane LOS	-	C	-	-	B	-	-	F
HCM 95th %tile Q(veh)	-	1.8	-	-	0.2	-	-	27.9

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	329	788	19	25	920	63	6	11	22	94	3	275
Future Volume (veh/h)	329	788	19	25	920	63	6	11	22	94	3	275
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	366	876	21	28	1022	70	7	12	24	104	3	0
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	628	1425	34	317	717	49	93	140	169	190	4	169
Arrive On Green	0.43	1.00	1.00	0.42	0.42	0.42	0.11	0.11	0.11	0.11	0.11	0.00
Sat Flow, veh/h	1774	1812	43	618	1724	118	491	1314	1583	1223	35	1583
Grp Volume(v), veh/h	366	0	897	28	0	1092	19	0	24	107	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1855	618	0	1842	1805	0	1583	1258	0	1583
Q Serve(g_s), s	14.0	0.0	0.0	3.3	0.0	49.9	0.0	0.0	1.6	9.1	0.0	0.0
Cycle Q Clear(g_c), s	14.0	0.0	0.0	3.3	0.0	49.9	1.1	0.0	1.6	10.2	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.06	0.37		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	628	0	1459	317	0	766	234	0	169	193	0	169
V/C Ratio(X)	0.58	0.00	0.61	0.09	0.00	1.43	0.08	0.00	0.14	0.55	0.00	0.00
Avail Cap(c_a), veh/h	628	0	1459	317	0	766	504	0	426	417	0	426
HCM Platoon Ratio	1.33	1.33	1.33	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	0.09	0.00	0.09	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.3	0.0	0.0	21.4	0.0	35.1	48.4	0.0	48.6	53.0	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.9	0.0	0.0	192.3	0.1	0.0	0.4	3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	0.0	0.8	0.6	0.0	66.2	0.6	0.0	0.7	3.7	0.0	0.0
LnGrp Delay(d),s/veh	27.7	0.0	1.9	21.5	0.0	227.3	48.5	0.0	49.0	56.5	0.0	0.0
LnGrp LOS	C		A	C		F	D		D	E		
Approach Vol, veh/h		1263			1120			43			107	
Approach Delay, s/veh		9.4			222.2			48.8			56.5	
Approach LOS		A			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		100.5		19.5	44.5	56.0		19.5
Change Period (Y+Rc), s		6.1		* 6.7	6.1	6.1		* 6.7
Max Green Setting (Gmax), s		74.9		* 32	18.9	49.9		* 32
Max Q Clear Time (g_c+I1), s		2.0		12.2	16.0	51.9		3.6
Green Ext Time (p_c), s		33.4		0.7	2.6	0.0		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	106.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	413	427	263	381	953	810
Future Volume (vph)	413	427	263	381	953	810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.7	5.7	6.4	5.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	459	474	292	423	1059	900
RTOR Reduction (vph)	0	6	0	0	0	1
Lane Group Flow (vph)	459	468	292	423	1059	899
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	4 1	1	1 2	2	4
Permitted Phases						2
Actuated Green, G (s)	54.1	69.1	9.3	54.3	38.6	92.7
Effective Green, g (s)	54.1	63.4	9.3	47.9	38.6	92.7
Actuated g/C Ratio	0.45	0.53	0.08	0.40	0.32	0.77
Clearance Time (s)	5.9		5.7		6.4	5.9
Vehicle Extension (s)	3.0		3.0		4.0	3.0
Lane Grp Cap (vph)	797	836	137	743	599	1300
v/s Ratio Prot	0.26	0.30	c0.17	0.23	c0.57	c0.31
v/s Ratio Perm						0.26
v/c Ratio	0.58	0.56	2.13	0.57	1.77	0.69
Uniform Delay, d1	24.4	19.0	55.4	28.0	40.7	6.7
Progression Factor	1.26	1.35	1.00	1.00	0.94	0.67
Incremental Delay, d2	0.8	0.7	532.8	1.0	346.2	0.1
Delay (s)	31.7	26.3	588.1	29.0	384.5	4.6
Level of Service	C	C	F	C	F	A
Approach Delay (s)	29.0			257.4	210.0	
Approach LOS	C			F	F	

Intersection Summary			
HCM 2000 Control Delay	172.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	102.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	10.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	2	59	184	0	19	0	226	32	6	393	0
Future Vol, veh/h	3	2	59	184	0	19	0	226	32	6	393	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	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	2	66	204	0	21	0	251	36	7	437	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	729	737	437	753	719	269	-	0	0	287	0	0
Stage 1	450	450	-	269	269	-	-	-	-	-	-	-
Stage 2	279	287	-	484	450	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	-	-	-	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	-	-
Pot Cap-1 Maneuver	338	346	620	326	354	770	0	-	-	1275	-	0
Stage 1	589	572	-	737	687	-	0	-	-	-	-	0
Stage 2	728	674	-	564	572	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	327	344	620	289	352	770	-	-	-	1275	-	-
Mov Cap-2 Maneuver	327	344	-	289	352	-	-	-	-	-	-	-
Stage 1	589	568	-	737	687	-	-	-	-	-	-	-
Stage 2	708	674	-	499	568	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	43.3	0	0.1
HCM LOS	B	E		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	581	307	1275	-
HCM Lane V/C Ratio	-	-	0.122	0.735	0.005	-
HCM Control Delay (s)	-	-	12.1	43.3	7.8	0
HCM Lane LOS	-	-	B	E	A	A
HCM 95th %tile Q(veh)	-	-	0.4	5.4	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	138	74	229	611	17
Future Vol, veh/h	9	138	74	229	611	17
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, %	2	2	2	2	2	2
Mvmt Flow	10	153	82	254	679	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1107	688	698	0	-	0
Stage 1	688	-	-	-	-	-
Stage 2	419	-	-	-	-	-
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	233	446	898	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	208	446	898	-	-	-
Mov Cap-2 Maneuver	208	-	-	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	594	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.1	2.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	898	-	417	-	-
HCM Lane V/C Ratio	0.092	-	0.392	-	-
HCM Control Delay (s)	9.4	0	19.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	1.8	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	60	102	264	631	79
Future Vol, veh/h	40	60	102	264	631	79
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	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	67	113	293	701	88

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1265	745	789	0	-	0
Stage 1	745	-	-	-	-	-
Stage 2	520	-	-	-	-	-
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	187	414	831	-	-	-
Stage 1	469	-	-	-	-	-
Stage 2	597	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	162	414	831	-	-	-
Mov Cap-2 Maneuver	162	-	-	-	-	-
Stage 1	469	-	-	-	-	-
Stage 2	516	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.6	2.8	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	831	-	255	-	-
HCM Lane V/C Ratio	0.136	-	0.436	-	-
HCM Control Delay (s)	10	-	29.6	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.5	-	2.1	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1069	159	338	440	137	695
Future Volume (vph)	1069	159	338	440	137	695
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9		6.4		6.4	6.4
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.98		0.92		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1754		1721		1770	1863
Flt Permitted	0.96		1.00		0.07	1.00
Satd. Flow (perm)	1754		1721		139	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1188	177	376	489	152	772
RTOR Reduction (vph)	4	0	39	0	0	0
Lane Group Flow (vph)	1361	0	826	0	152	772
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		6			6
Permitted Phases					6	
Actuated Green, G (s)	54.1		53.6		53.6	53.6
Effective Green, g (s)	54.1		53.6		53.6	53.6
Actuated g/C Ratio	0.45		0.45		0.45	0.45
Clearance Time (s)	5.9		6.4		6.4	6.4
Vehicle Extension (s)	4.0		4.0		4.0	4.0
Lane Grp Cap (vph)	790		768		62	832
v/s Ratio Prot	c0.78		0.48			0.41
v/s Ratio Perm					c1.09	
v/c Ratio	1.72		1.08		2.45	0.93
Uniform Delay, d1	33.0		33.2		33.2	31.4
Progression Factor	1.00		1.11		1.00	1.00
Incremental Delay, d2	330.4		52.3		699.0	16.4
Delay (s)	363.3		89.2		732.2	47.8
Level of Service	F		F		F	D
Approach Delay (s)	363.3		89.2			160.4
Approach LOS	F		F			F

Intersection Summary			
HCM 2000 Control Delay	228.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.20		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	141.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	742	391	719	189	193	938
Future Volume (veh/h)	742	391	719	189	193	938
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	824	434	799	0	214	1042
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	627	676	807	0	183	1031
Arrive On Green	0.35	0.35	0.43	0.00	0.07	0.55
Sat Flow, veh/h	1774	1583	1863	0	1774	1863
Grp Volume(v), veh/h	824	434	799	0	214	1042
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	0	1774	1863
Q Serve(g_s), s	53.0	32.5	63.8	0.0	11.0	83.0
Cycle Q Clear(g_c), s	53.0	32.5	63.8	0.0	11.0	83.0
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	627	676	807	0	183	1031
V/C Ratio(X)	1.31	0.64	0.99	0.00	1.17	1.01
Avail Cap(c_a), veh/h	627	676	807	0	183	1031
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	48.5	34.0	42.2	0.0	47.0	33.5
Incr Delay (d2), s/veh	152.7	2.1	29.1	0.0	118.8	30.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	52.5	28.7	39.4	0.0	13.6	51.2
LnGrp Delay(d),s/veh	201.2	36.0	71.2	0.0	165.7	64.3
LnGrp LOS	F	D	E		F	F
Approach Vol, veh/h	1258		799			1256
Approach Delay, s/veh	144.2		71.2			81.5
Approach LOS	F		E			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		90.0		60.0	18.0	72.0		
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		
Max Green Setting (Gmax), s		83.0		53.0	11.0	65.0		
Max Q Clear Time (g_c+I1), s		85.0		55.0	13.0	65.8		
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	102.9
HCM 2010 LOS	F

Intersection	
Int Delay, s/veh	12.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	472	475	31	476	1509
Future Vol, veh/h	6	472	475	31	476	1509
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, %	2	2	2	2	2	2
Mvmt Flow	7	524	528	34	529	1677

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3279	545	0	0	562	0
Stage 1	545	-	-	-	-	-
Stage 2	2734	-	-	-	-	-
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	10	538	-	-	1009	-
Stage 1	581	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	538	-	-	1009	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	63.4	0	3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	538	1009	-
HCM Lane V/C Ratio	-	-	0.987	0.524	-
HCM Control Delay (s)	-	-	63.4	12.4	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	13.7	3.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	505	0	550	0	0	0	48	1337	1574	0	13	0	1132	1059
Future Vol, veh/h	505	0	550	0	0	0	48	1337	1574	0	13	0	1132	1059
Conflicting Peds, #/hr	0	0	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	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	225	-	-	-	-	-	-	250	-	-	-	225	-	-
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	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	561	0	611	0	0	0	53	1486	1749	0	14	0	1258	1177

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	5827	6702	1217	5485	7290	874	1776	2434	0	0	1276	1749	0	0
Stage 1	1875	1875	-	4827	4827	-	-	-	-	-	-	-	-	-
Stage 2	3952	4827	-	658	2463	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	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	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	0	0	~ 173	0	0	293	104	~ 191	-	-	220	355	-	-
Stage 1	~ 74	119	-	1	3	-	-	-	-	-	-	-	-	-
Stage 2	~ 3	3	-	420	59	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	0	0	~ 173	-	0	293	~ -81	~ -81	-	-	220	220	-	-
Mov Cap-2 Maneuver	0	0	-	-	0	-	-	-	-	-	-	-	-	-
Stage 1	~ 74	119	-	1	3	-	-	-	-	-	-	-	-	-
Stage 2	~ 3	3	-	-	59	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		0	1.2	0.1
HCM LOS	-	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	+	-	-	-	173	-	220	-	-
HCM Lane V/C Ratio	-	-	-	-	3.532	-	0.066	-	-
HCM Control Delay (s)	2.6	-	-	$	-1193.7	0	22.5	-	-
HCM Lane LOS	A	-	-	-	F	A	C	-	-
HCM 95th %tile Q(veh)	-	-	-	-	58.7	-	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	556	1111	26	22	97
Future Vol, veh/h	27	556	1111	26	22	97
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, %	2	2	2	2	2	2
Mvmt Flow	30	618	1234	29	24	108

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1263	0	-	0	1927	1249
Stage 1	-	-	-	-	1249	-
Stage 2	-	-	-	-	678	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	550	-	-	-	73	211
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	504	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	550	-	-	-	67	211
Mov Cap-2 Maneuver	-	-	-	-	67	-
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	462	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	101.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	550	-	-	-	151
HCM Lane V/C Ratio	0.055	-	-	-	0.876
HCM Control Delay (s)	11.9	0	-	-	101.7
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	6

Intersection	
Int Delay, s/veh	223.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	415	152	5	1178	293	5
Future Vol, veh/h	415	152	5	1178	293	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, %	2	2	2	2	2	2
Mvmt Flow	461	169	6	1309	324	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	630	0	1866	546
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	1320	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	952	-	~ 80	538
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	~ 250	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	952	-	~ 78	538
Mov Cap-2 Maneuver	-	-	-	-	~ 78	-
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	~ 244	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	$ 1537.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	79	-	-	952	-
HCM Lane V/C Ratio	4.177	-	-	0.006	-
HCM Control Delay (s)	$ 1537.9	-	-	8.8	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	34.9	-	-	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	27.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	116	213	26	209	2	232	62	19	0	59	109
Future Vol, veh/h	0	116	213	26	209	2	232	62	19	0	59	109
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	-	-	Stop
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	129	237	29	232	2	258	69	21	0	66	121

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	234	0	0	366	0	0	571	539	247	583	657	233
Stage 1	-	-	-	-	-	-	247	247	-	291	291	-
Stage 2	-	-	-	-	-	-	324	292	-	292	366	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1333	-	-	1193	-	-	432	449	792	424	385	806
Stage 1	-	-	-	-	-	-	757	702	-	717	672	-
Stage 2	-	-	-	-	-	-	688	671	-	716	623	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1333	-	-	1193	-	-	311	436	792	355	374	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	311	436	-	355	374	-
Stage 1	-	-	-	-	-	-	757	702	-	717	653	-
Stage 2	-	-	-	-	-	-	511	652	-	629	623	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	87.9	9.1
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	343	1333	-	-	1193	-	-	1065
HCM Lane V/C Ratio	1.014	-	-	-	0.024	-	-	0.175
HCM Control Delay (s)	87.9	0	-	-	8.1	0	-	9.1
HCM Lane LOS	F	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	11.7	0	-	-	0.1	-	-	0.6

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	161	294	66	201	0
Future Vol, veh/h	0	161	294	66	201	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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	179	327	73	223	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	950	223	223	0	-	0
Stage 1	223	-	-	-	-	-
Stage 2	727	-	-	-	-	-
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	289	817	1346	-	-	-
Stage 1	814	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	216	817	1346	-	-	-
Mov Cap-2 Maneuver	216	-	-	-	-	-
Stage 1	814	-	-	-	-	-
Stage 2	357	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1346	-	817	-	-
HCM Lane V/C Ratio	0.243	-	0.219	-	-
HCM Control Delay (s)	8.5	0	10.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	1	-	0.8	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	416	408	465	1058	69	844	290	377	64	250	78
Future Volume (veh/h)	26	416	408	465	1058	69	844	290	377	64	250	78
Number	3	8	18	7	4	14	1	6	16	5	2	12
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	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	29	462	453	517	1176	77	938	322	0	71	278	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	131	326	319	131	651	43	447	735	0	413	735	0
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.39	0.39	0.00	0.39	0.39	0.00
Sat Flow, veh/h	441	865	848	608	1730	113	1097	1863	0	1053	1863	0
Grp Volume(v), veh/h	29	0	915	517	0	1253	938	322	0	71	278	0
Grp Sat Flow(s),veh/h/ln	441	0	1713	608	0	1843	1097	1863	0	1053	1863	0
Q Serve(g_s), s	0.0	0.0	20.7	0.0	0.0	20.7	15.9	7.0	0.0	2.9	5.8	0.0
Cycle Q Clear(g_c), s	20.7	0.0	20.7	20.7	0.0	20.7	21.7	7.0	0.0	9.9	5.8	0.0
Prop In Lane	1.00		0.50	1.00		0.06	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	131	0	645	131	0	694	447	735	0	413	735	0
V/C Ratio(X)	0.22	0.00	1.42	3.95	0.00	1.81	2.10	0.44	0.00	0.17	0.38	0.00
Avail Cap(c_a), veh/h	131	0	645	131	0	694	447	735	0	413	735	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.5	0.0	17.2	27.5	0.0	17.2	21.9	12.2	0.0	15.8	11.8	0.0
Incr Delay (d2), s/veh	0.8	0.0	197.6	1345.3	0.0	368.7	501.6	0.4	0.0	0.2	0.3	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	45.1	50.9	0.0	81.4	69.0	3.7	0.0	0.9	3.0	0.0
LnGrp Delay(d),s/veh	28.3	0.0	214.8	1372.8	0.0	385.9	523.5	12.6	0.0	16.0	12.2	0.0
LnGrp LOS	C		F	F		F	F	B		B	B	
Approach Vol, veh/h		944			1770			1260			349	
Approach Delay, s/veh		209.1			674.2			392.9			12.9	
Approach LOS		F			F			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.0		27.0		28.0		27.0
Change Period (Y+Rc), s		6.3		6.3		6.3		6.3
Max Green Setting (Gmax), s		21.7		20.7		21.7		20.7
Max Q Clear Time (g_c+I1), s		11.9		22.7		23.7		22.7
Green Ext Time (p_c), s		5.6		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	437.2
HCM 2010 LOS	F

Summary of All Intervals

Run Number	1	2	3		Avg
Start Time	7:30	7:30	7:30	7:30	7:30
End Time	8:40	8:40	8:40	8:40	8:40
Total Time (min)	70	70	70	70	70
Time Recorded (min)	70	70	70	70	70
# of Intervals	2	2	2	2	2
# of Recorded Intervals	2	2	2	2	2
Volume counts from "VOLUME.CSV" data file(s)					
Volume date = 10/26/2018					
Vehs Entered	21397	21380	21271	21090	21282
Vehs Exited	19964	19863	19843	19673	19837
Starting Vehs	0	0	0	0	0
Ending Vehs	1433	1517	1428	1417	1434
Travel Distance (mi)	14713	14795	14801	14656	14741
Travel Time (hr)	7855.6	7942.6	7997.4	7995.6	7947.8
Total Delay (hr)	7455.0	7539.2	7595.7	7597.3	7546.8
Total Stops	23105	24272	23754	23970	23775
Fuel Used (gal)	2214.8	2235.3	2248.3	2243.8	2235.6

Interval #0 Information Seeding

Start Time	7:30
End Time	7:40
Total Time (min)	10

Volumes adjusted by Growth Factors.

Run Number	1	2	3		Avg
Vehs Entered	3514	3679	3494	3552	3554
Vehs Exited	2519	2664	2493	2498	2544
Starting Vehs	0	0	0	0	0
Ending Vehs	995	1015	1001	1054	1000
Travel Distance (mi)	1896	1995	1913	1900	1926
Travel Time (hr)	197.9	195.7	199.7	201.8	198.8
Total Delay (hr)	146.7	141.3	147.9	150.5	146.6
Total Stops	3060	3190	2944	3128	3070
Fuel Used (gal)	98.8	101.4	99.9	100.4	100.1

Interval #1 Information Recording

Start Time	7:40
End Time	8:40
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3		Avg
Vehs Entered	17883	17701	17777	17538	17720
Vehs Exited	17445	17199	17350	17175	17285
Starting Vehs	995	1015	1001	1054	1000
Ending Vehs	1433	1517	1428	1417	1434
Travel Distance (mi)	12817	12800	12888	12756	12815
Travel Time (hr)	7657.7	7746.8	7797.7	7793.8	7749.0
Total Delay (hr)	7308.3	7397.9	7447.8	7446.8	7400.2
Total Stops	20045	21082	20810	20842	20698
Fuel Used (gal)	2116.0	2133.9	2148.4	2143.4	2135.4

Intersection: 1: US 321 & Blythewood Rd

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	1254	24	142
Average Queue (ft)	836	1	35
95th Queue (ft)	1512	10	91
Link Distance (ft)	1197	1603	1311
Upstream Blk Time (%)	40		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Fulmer Rd & Blythewood Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	19	88	92
Average Queue (ft)	1	26	41
95th Queue (ft)	9	67	74
Link Distance (ft)	1066	1362	660
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blythewood Rd & Muller Rd

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	LTR	L	TR
Maximum Queue (ft)	197	379	1262	42	350	1027
Average Queue (ft)	34	182	657	5	333	575
95th Queue (ft)	110	323	1282	25	409	1110
Link Distance (ft)		1498	1428	163		1256
Upstream Blk Time (%)			1			3
Queuing Penalty (veh)			12			0
Storage Bay Dist (ft)	200				250	
Storage Blk Time (%)		7			50	0
Queuing Penalty (veh)		4			33	0

Intersection: 4: I-77 SB On-Ramp/I-77 SB Off-Ramp & Blythewood Rd

Movement	EB	EB	WB	WB	SB	SB
Directions Served	T	R	L	T	LT	R
Maximum Queue (ft)	353	300	335	368	239	199
Average Queue (ft)	280	47	157	165	134	41
95th Queue (ft)	427	214	273	308	206	137
Link Distance (ft)	329	329		849	669	
Upstream Blk Time (%)	10	0				
Queuing Penalty (veh)	65	1				
Storage Bay Dist (ft)			300			300
Storage Blk Time (%)			0	1		0
Queuing Penalty (veh)			4	4		1

Intersection: 5: I-77 NB Off-Ramp/I-77 NB On-Ramp & Blythewood Rd

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	T	LT	R
Maximum Queue (ft)	148	368	427	330	330
Average Queue (ft)	27	109	205	162	96
95th Queue (ft)	86	267	392	276	257
Link Distance (ft)		849	448		793
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			1		
Storage Bay Dist (ft)	275			350	
Storage Blk Time (%)		1		0	0
Queuing Penalty (veh)		0		1	0

Intersection: 6: Creech Rd/McNulty St & Blythewood Rd

Movement	EB	EB	WB	WB	NB	SB	B67
Directions Served	L	TR	L	TR	LTR	LTR	T
Maximum Queue (ft)	183	236	54	85	316	283	499
Average Queue (ft)	62	19	16	6	252	204	93
95th Queue (ft)	145	141	42	37	398	344	338
Link Distance (ft)		448		965	290	218	783
Upstream Blk Time (%)		0			71	46	
Queuing Penalty (veh)		2			0	59	
Storage Bay Dist (ft)	150		25				
Storage Blk Time (%)	5	0	8	0			
Queuing Penalty (veh)	50	0	124	0			

Intersection: 7: Boney Rd & Blythewood Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	LT	R
Maximum Queue (ft)	255	422	39	299	37	47	567	175
Average Queue (ft)	106	98	7	64	10	13	410	96
95th Queue (ft)	222	335	26	210	32	34	721	237
Link Distance (ft)		965		839	321	321	536	
Upstream Blk Time (%)							35	
Queuing Penalty (veh)							115	
Storage Bay Dist (ft)	175		175					75
Storage Blk Time (%)	2	4		2			70	0
Queuing Penalty (veh)	19	12		1			193	0

Intersection: 8: US 21 & Blythewood Rd

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	275	815	325	1181	332	275
Average Queue (ft)	195	278	299	817	306	231
95th Queue (ft)	326	675	408	1380	371	378
Link Distance (ft)		839		1814	313	
Upstream Blk Time (%)		2			15	
Queuing Penalty (veh)		14			272	
Storage Bay Dist (ft)	175		225			175
Storage Blk Time (%)	27	4	83	11	38	1
Queuing Penalty (veh)	117	17	316	30	304	6

Intersection: 9: US 21 & McLean Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	TR	LT
Maximum Queue (ft)	97	493	33	444
Average Queue (ft)	60	324	2	245
95th Queue (ft)	106	633	15	551
Link Distance (ft)	72	464	65	408
Upstream Blk Time (%)	53	54	0	38
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: US 21 & Oakhurst Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	999	84	81
Average Queue (ft)	393	17	56
95th Queue (ft)	959	59	109
Link Distance (ft)	2480	1213	65
Upstream Blk Time (%)			43
Queuing Penalty (veh)			271
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: US 21 & McNulty St

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	1087	78	33	1230
Average Queue (ft)	595	24	1	1039
95th Queue (ft)	1184	61	19	1621
Link Distance (ft)	1336		206	1213
Upstream Blk Time (%)	1			34
Queuing Penalty (veh)	1			256
Storage Bay Dist (ft)		75		
Storage Blk Time (%)		1		
Queuing Penalty (veh)		3		

Intersection: 12: US 21 & Langford Rd

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	934	327	100	229
Average Queue (ft)	899	290	84	210
95th Queue (ft)	1101	388	126	228
Link Distance (ft)	916	313		206
Upstream Blk Time (%)	45	14		58
Queuing Penalty (veh)	538	112		403
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			59	54
Queuing Penalty (veh)			409	74

Intersection: 13: US 21 & Rimer Pond Rd

Movement	WB	WB	NB	B39	SB	SB
Directions Served	L	R	TR	T	L	T
Maximum Queue (ft)	300	920	753	692	325	1278
Average Queue (ft)	294	845	436	267	169	521
95th Queue (ft)	331	1130	843	1159	377	1123
Link Distance (ft)		873	692	3185		2805
Upstream Blk Time (%)		54	22			
Queuing Penalty (veh)		0	209			
Storage Bay Dist (ft)	200				225	
Storage Blk Time (%)	59	2				30
Queuing Penalty (veh)	232	11				58

Intersection: 14: US 21 & Farrow Rd

Movement	WB	NB	SB	B39
Directions Served	LR	TR	LT	T
Maximum Queue (ft)	414	24	3284	674
Average Queue (ft)	371	1	2528	276
95th Queue (ft)	507	12	4184	767
Link Distance (ft)	398	2480	3185	692
Upstream Blk Time (%)	66		29	0
Queuing Penalty (veh)	0		491	1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: US 21 & Community Rd

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	312	453	350	885	827	6	1019	1022
Average Queue (ft)	310	432	339	871	220	0	60	98
95th Queue (ft)	315	509	350	882	833	3	450	578
Link Distance (ft)		440		865	865		1007	1007
Upstream Blk Time (%)		96		98	20		0	1
Queuing Penalty (veh)		0		0	0		0	0
Storage Bay Dist (ft)	225		250			225		
Storage Blk Time (%)	98		99					
Queuing Penalty (veh)	539		776					

Intersection: 16: Langford Rd & Sandfield Rd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	67	1079	446
Average Queue (ft)	6	976	382
95th Queue (ft)	37	1385	557
Link Distance (ft)	916	1025	416
Upstream Blk Time (%)		86	81
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: Trading Post Rd & Langford Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	5	50	313
Average Queue (ft)	0	3	160
95th Queue (ft)	3	24	309
Link Distance (ft)	779	1336	2950
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 18: Hardscrabble Rd/Grover Wilson Rd & Langford Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	79	58	182	62
Average Queue (ft)	6	12	77	26
95th Queue (ft)	33	39	137	49
Link Distance (ft)	576	367	403	441
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 19: Round Top Church Rd & Trading Post Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	62	63
Average Queue (ft)	23	15
95th Queue (ft)	44	46
Link Distance (ft)	658	758
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Longtown Rd E/Round Top Church Rd & Rimer Pond Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	425	984	350	833	600	711	54	180
Average Queue (ft)	150	898	339	783	590	663	16	79
95th Queue (ft)	482	1155	387	949	682	814	41	145
Link Distance (ft)		927		792		657		758
Upstream Blk Time (%)		84		95		76		
Queuing Penalty (veh)		0		0		0		
Storage Bay Dist (ft)	325		250		500		150	
Storage Blk Time (%)		78	96	2	94	12		1
Queuing Penalty (veh)		20	1086	8	627	102		0

Intersection: 21: Hardscrabble Rd & Rimer Pond Rd/Kelly Mill Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	523	629	470	387
Average Queue (ft)	493	597	443	221
95th Queue (ft)	530	628	468	404
Link Distance (ft)	474	577	422	403
Upstream Blk Time (%)	96	97	97	13
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection	
Int Delay, s/veh	17.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	136	108	386	275	99	244
Future Vol, veh/h	136	108	386	275	99	244
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, %	2	2	2	2	2	2
Mvmt Flow	151	120	429	306	110	271

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1073	582	0	0	734	0
Stage 1	582	-	-	-	-	-
Stage 2	491	-	-	-	-	-
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	244	513	-	-	871	-
Stage 1	559	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	208	513	-	-	871	-
Mov Cap-2 Maneuver	208	-	-	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	523	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	83.9	0	2.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	282	871	-
HCM Lane V/C Ratio	-	-	0.961	0.126	-
HCM Control Delay (s)	-	-	83.9	9.7	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	9.4	0.4	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↰	ᛉ	
Traffic Vol, veh/h	346	46	97	269	43	90
Future Vol, veh/h	346	46	97	269	43	90
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, %	2	2	2	2	2	2
Mvmt Flow	384	51	108	299	48	100

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	436	0	924	410
Stage 1	-	-	-	-	410	-
Stage 2	-	-	-	-	514	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1124	-	299	642
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1124	-	265	642
Mov Cap-2 Maneuver	-	-	-	-	265	-
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	531	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	440	-	-	1124	-
HCM Lane V/C Ratio	0.336	-	-	0.096	-
HCM Control Delay (s)	17.3	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.5	-	-	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	478	0	6	413	284	3	5	25	136	0	2
Future Volume (veh/h)	25	478	0	6	413	284	3	5	25	136	0	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	28	531	0	7	459	316	3	6	28	151	0	2
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	393	1275	0	52	556	379	60	47	163	288	0	209
Arrive On Green	0.05	0.68	0.00	0.54	0.54	0.54	0.13	0.13	0.13	0.13	0.00	0.13
Sat Flow, veh/h	1774	1863	0	4	1029	701	45	352	1234	1369	0	1583
Grp Volume(v), veh/h	28	531	0	782	0	0	37	0	0	151	0	2
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1734	0	0	1631	0	0	1369	0	1583
Q Serve(g_s), s	0.4	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.1
Cycle Q Clear(g_c), s	0.4	9.1	0.0	27.3	0.0	0.0	1.5	0.0	0.0	7.3	0.0	0.1
Prop In Lane	1.00		0.00	0.01		0.40	0.08		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	393	1275	0	988	0	0	269	0	0	288	0	209
V/C Ratio(X)	0.07	0.42	0.00	0.79	0.00	0.00	0.14	0.00	0.00	0.52	0.00	0.01
Avail Cap(c_a), veh/h	504	1411	0	1005	0	0	537	0	0	516	0	473
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	1.00	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	5.4	5.1	0.0	13.9	0.0	0.0	28.0	0.0	0.0	30.4	0.0	27.4
Incr Delay (d2), s/veh	0.1	0.2	0.0	4.3	0.0	0.0	0.2	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.6	0.0	14.0	0.0	0.0	0.7	0.0	0.0	3.1	0.0	0.0
LnGrp Delay(d),s/veh	5.5	5.3	0.0	18.2	0.0	0.0	28.2	0.0	0.0	31.8	0.0	27.4
LnGrp LOS	A	A		B			C			C		C
Approach Vol, veh/h		559			782			37			153	
Approach Delay, s/veh		5.3			18.2			28.2			31.8	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		56.7		15.9	10.5	46.2		15.9
Change Period (Y+Rc), s		7.0		6.3	7.0	7.0		6.3
Max Green Setting (Gmax), s		55.0		21.7	8.0	40.0		21.7
Max Q Clear Time (g_c+I1), s		11.1		9.3	2.4	29.3		3.5
Green Ext Time (p_c), s		36.0		0.5	0.0	10.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	822	260	294	1125	0	0	0	0	224	0	119
Future Volume (veh/h)	0	822	260	294	1125	0	0	0	0	224	0	119
Number	5	2	12	1	6	16				7	4	14
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	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	913	0	327	1250	0				249	0	0
Adj No. of Lanes	0	1	1	1	1	0				0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1196	1017	378	1427	0				273	0	244
Arrive On Green	0.00	0.64	0.00	0.11	1.00	0.00				0.15	0.00	0.00
Sat Flow, veh/h	0	1863	1583	1774	1863	0				1774	0	1583
Grp Volume(v), veh/h	0	913	0	327	1250	0				249	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1774	1863	0				1774	0	1583
Q Serve(g_s), s	0.0	51.6	0.0	9.3	0.0	0.0				20.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	51.6	0.0	9.3	0.0	0.0				20.7	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1196	1017	378	1427	0				273	0	244
V/C Ratio(X)	0.00	0.76	0.00	0.87	0.88	0.00				0.91	0.00	0.00
Avail Cap(c_a), veh/h	0	1196	1017	502	1427	0				308	0	274
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.21	0.21	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.8	0.0	24.9	0.0	0.0				62.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.6	0.0	2.8	1.8	0.0				27.8	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	0.0	27.9	0.0	8.9	0.7	0.0				12.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	23.5	0.0	27.7	1.8	0.0				90.3	0.0	0.0
LnGrp LOS		C		C	A					F		
Approach Vol, veh/h		913			1577						249	
Approach Delay, s/veh		23.5			7.2						90.3	
Approach LOS		C			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	18.5	102.3		29.1		120.9		
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		
Max Green Setting (Gmax), s	23.0	83.0		26.0		112.0		
Max Q Clear Time (g_c+I1), s	11.3	53.6		22.7		2.0		
Green Ext Time (p_c), s	1.3	28.8		0.4		102.6		

Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	994	0	0	816	145	544	0	773	0	0	0
Future Volume (veh/h)	54	994	0	0	816	145	544	0	773	0	0	0
Number	5	2	12	1	6	16	3	8	18			
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	0	0	1863	1863	1900	1863	1863			
Adj Flow Rate, veh/h	60	1104	0	0	907	0	604	0	0			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	390	1040	0	0	1040	884	641	0	572			
Arrive On Green	0.74	0.74	0.00	0.00	1.00	0.00	0.36	0.00	0.00			
Sat Flow, veh/h	612	1863	0	0	1863	1583	1774	0	1583			
Grp Volume(v), veh/h	60	1104	0	0	907	0	604	0	0			
Grp Sat Flow(s),veh/h/ln	612	1863	0	0	1863	1583	1774	0	1583			
Q Serve(g_s), s	4.3	83.8	0.0	0.0	0.0	0.0	49.4	0.0	0.0			
Cycle Q Clear(g_c), s	4.3	83.8	0.0	0.0	0.0	0.0	49.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	390	1040	0	0	1040	884	641	0	572			
V/C Ratio(X)	0.15	1.06	0.00	0.00	0.87	0.00	0.94	0.00	0.00			
Avail Cap(c_a), veh/h	390	1040	0	0	1040	884	721	0	644			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.38	0.38	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	9.1	19.3	0.0	0.0	0.0	0.0	46.4	0.0	0.0			
Incr Delay (d2), s/veh	0.3	36.2	0.0	0.0	10.0	0.0	19.4	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	0.8	52.6	0.0	0.0	2.9	0.0	27.6	0.0	0.0			
LnGrp Delay(d),s/veh	9.4	55.5	0.0	0.0	10.0	0.0	65.8	0.0	0.0			
LnGrp LOS	A	F			B		E					
Approach Vol, veh/h		1164			907			604				
Approach Delay, s/veh		53.1			10.0			65.8				
Approach LOS		D			B			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		89.8				89.8		60.2
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		77.0				77.0		61.0
Max Q Clear Time (g_c+I1), s		85.8				2.0		51.4
Green Ext Time (p_c), s		0.0				35.9		2.8

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	774.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	199	1308	121	45	855	45	40	6	43	11	0	176
Future Vol, veh/h	199	1308	121	45	855	45	40	6	43	11	0	176
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	150	-	-	25	-	-	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	221	1453	134	50	950	50	44	7	48	12	0	196

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1000	0	0	1588	0	0	3136	3063	1521	3065	3105	975
Stage 1	-	-	-	-	-	-	1963	1963	-	1075	1075	-
Stage 2	-	-	-	-	-	-	1173	1100	-	1990	2030	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	692	-	-	413	-	-	~ 7	12	146	~ 8	12	305
Stage 1	-	-	-	-	-	-	82	109	-	266	296	-
Stage 2	-	-	-	-	-	-	234	288	-	79	101	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	692	-	-	413	-	-	~ 2	7	146	~ 1	7	305
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 2	7	-	~ 1	7	-
Stage 1	-	-	-	-	-	-	56	74	-	181	260	-
Stage 2	-	-	-	-	-	-	74	253	-	33	69	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0.7	$ 12447.5	$ 5857.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	4	692	-	-	413	-	-	16
HCM Lane V/C Ratio	24.722	0.32	-	-	0.121	-	-	-12.986
HCM Control Delay (s)	$ 12447.5	12.6	-	-	14.9	-	-	$-5857.4
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	14.4	1.4	-	-	0.4	-	-	26.9

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
7: Boney Rd & Blythewood Rd

12/10/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	318	955	85	94	595	88	59	54	172	124	26	189
Future Volume (veh/h)	318	955	85	94	595	88	59	54	172	124	26	189
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	353	1061	94	104	661	98	66	60	191	138	29	0
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	453	1279	113	153	994	147	164	138	248	133	19	248
Arrive On Green	0.09	0.76	0.76	0.63	0.63	0.63	0.16	0.16	0.16	0.16	0.16	0.00
Sat Flow, veh/h	1774	1687	149	485	1586	235	812	881	1583	571	120	1583
Grp Volume(v), veh/h	353	0	1155	104	0	759	126	0	191	167	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1836	485	0	1821	1692	0	1583	691	0	1583
Q Serve(g_s), s	3.1	0.0	61.5	32.1	0.0	40.0	0.0	0.0	17.4	13.4	0.0	0.0
Cycle Q Clear(g_c), s	3.1	0.0	61.5	93.7	0.0	40.0	10.1	0.0	17.4	23.5	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.13	0.52		1.00	0.83		1.00
Lane Grp Cap(c), veh/h	453	0	1392	153	0	1141	302	0	248	152	0	248
V/C Ratio(X)	0.78	0.00	0.83	0.68	0.00	0.67	0.42	0.00	0.77	1.10	0.00	0.00
Avail Cap(c_a), veh/h	453	0	1392	153	0	1141	302	0	248	152	0	248
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.44	0.00	0.44	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	44.2	0.0	11.8	58.6	0.0	17.9	57.5	0.0	60.7	70.2	0.0	0.0
Incr Delay (d2), s/veh	8.5	0.0	5.9	10.2	0.0	1.4	0.9	0.0	13.7	101.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.7	0.0	33.1	4.7	0.0	20.5	4.8	0.0	8.5	10.6	0.0	0.0
LnGrp Delay(d),s/veh	52.7	0.0	17.7	68.9	0.0	19.3	58.4	0.0	74.4	172.0	0.0	0.0
LnGrp LOS	D		B	E		B	E		E	F		
Approach Vol, veh/h		1508			863			317			167	
Approach Delay, s/veh		25.9			25.3			68.0			172.0	
Approach LOS		C			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		119.8		30.2	19.7	100.1		30.2
Change Period (Y+Rc), s		6.1		* 6.7	6.1	6.1		* 6.7
Max Green Setting (Gmax), s		113.7		* 24	13.6	94.0		* 24
Max Q Clear Time (g_c+I1), s		63.5		25.5	5.1	95.7		19.4
Green Ext Time (p_c), s		39.1		0.0	7.9	0.0		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	825	365	344	646	353	448
Future Volume (vph)	825	365	344	646	353	448
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.7	5.7	6.4	5.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	917	406	382	718	392	498
RTOR Reduction (vph)	0	13	0	0	0	11
Lane Group Flow (vph)	917	393	382	718	392	487
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	4 1	1	1 2	2	4
Permitted Phases						2
Actuated Green, G (s)	83.1	112.3	23.3	54.6	25.6	108.7
Effective Green, g (s)	83.1	112.3	23.3	54.6	25.6	108.7
Actuated g/C Ratio	0.55	0.75	0.16	0.36	0.17	0.72
Clearance Time (s)	5.9		5.7		6.4	5.9
Vehicle Extension (s)	3.0		3.0		4.0	3.0
Lane Grp Cap (vph)	980	1185	274	678	317	1147
v/s Ratio Prot	c0.52	0.25	c0.22	c0.39	c0.21	0.24
v/s Ratio Perm						0.07
v/c Ratio	0.94	0.33	1.39	1.06	1.24	0.42
Uniform Delay, d1	31.0	6.3	63.4	47.7	62.2	8.2
Progression Factor	0.93	0.83	1.00	1.00	0.78	1.88
Incremental Delay, d2	10.5	0.1	198.2	51.2	109.1	0.0
Delay (s)	39.2	5.3	261.5	98.9	157.9	15.5
Level of Service	D	A	F	F	F	B
Approach Delay (s)	28.8			155.4	78.2	
Approach LOS	C			F	E	

Intersection Summary			
HCM 2000 Control Delay	84.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

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	0	0	17	59	0	26	0	383	138	11	254	0
Future Vol, veh/h	0	0	17	59	0	26	0	383	138	11	254	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	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	66	0	29	0	426	153	12	282	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	824	886	282	818	809	502	-	0	0	579	0	0
Stage 1	307	307	-	502	502	-	-	-	-	-	-	-
Stage 2	517	579	-	316	307	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	-	-	-	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	-	-
Pot Cap-1 Maneuver	292	284	757	295	314	569	0	-	-	995	-	0
Stage 1	703	661	-	552	542	-	0	-	-	-	-	0
Stage 2	541	501	-	695	661	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	274	280	757	285	310	569	-	-	-	995	-	-
Mov Cap-2 Maneuver	274	280	-	285	310	-	-	-	-	-	-	-
Stage 1	703	652	-	552	542	-	-	-	-	-	-	-
Stage 2	514	501	-	668	652	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	19.9	0	0.4
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	757	336	995	-
HCM Lane V/C Ratio	-	-	0.025	0.281	0.012	-
HCM Control Delay (s)	-	-	9.9	19.9	8.7	0
HCM Lane LOS	-	-	A	C	A	A
HCM 95th %tile Q(veh)	-	-	0.1	1.1	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	57	68	519	294	11
Future Vol, veh/h	19	57	68	519	294	11
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, %	2	2	2	2	2	2
Mvmt Flow	21	63	76	577	327	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1061	333	339	0	-	0
Stage 1	333	-	-	-	-	-
Stage 2	728	-	-	-	-	-
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	248	709	1220	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	225	709	1220	-	-	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	434	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1220	-	461	-	-
HCM Lane V/C Ratio	0.062	-	0.183	-	-
HCM Control Delay (s)	8.1	0	14.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	68	88	90	424	267	20
Future Vol, veh/h	68	88	90	424	267	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	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	98	100	471	297	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	979	308	319	0	-	0
Stage 1	308	-	-	-	-	-
Stage 2	671	-	-	-	-	-
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	277	732	1241	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	255	732	1241	-	-	-
Mov Cap-2 Maneuver	255	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	467	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.5	1.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1241	-	403	-	-
HCM Lane V/C Ratio	0.081	-	0.43	-	-
HCM Control Delay (s)	8.2	-	20.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	2.1	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	476	181	492	1001	214	319
Future Volume (vph)	476	181	492	1001	214	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9		6.4		6.4	6.4
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.96		0.91		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1731		1694		1770	1863
Flt Permitted	0.97		1.00		0.04	1.00
Satd. Flow (perm)	1731		1694		76	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	529	201	547	1112	238	354
RTOR Reduction (vph)	9	0	49	0	0	0
Lane Group Flow (vph)	721	0	1610	0	238	354
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		6			6
Permitted Phases					6	
Actuated Green, G (s)	40.1		97.6		97.6	97.6
Effective Green, g (s)	40.1		97.6		97.6	97.6
Actuated g/C Ratio	0.27		0.65		0.65	0.65
Clearance Time (s)	5.9		6.4		6.4	6.4
Vehicle Extension (s)	4.0		4.0		4.0	4.0
Lane Grp Cap (vph)	462		1102		49	1212
v/s Ratio Prot	c0.42		0.95			0.19
v/s Ratio Perm					c3.12	
v/c Ratio	1.56		1.46		4.86	0.29
Uniform Delay, d1	54.9		26.2		26.2	11.3
Progression Factor	1.00		0.97		1.00	1.00
Incremental Delay, d2	262.9		209.0		1780.8	0.2
Delay (s)	317.8		234.4		1807.0	11.5
Level of Service	F		F		F	B
Approach Delay (s)	317.8		234.4			733.3
Approach LOS	F		F			F

Intersection Summary			
HCM 2000 Control Delay	353.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	4.03		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	152.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	204	172	744	540	356	673
Future Volume (veh/h)	204	172	744	540	356	673
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	227	191	827	0	396	748
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	208	341	1175	0	449	1454
Arrive On Green	0.12	0.12	0.63	0.00	0.10	0.78
Sat Flow, veh/h	1774	1583	1863	0	1774	1863
Grp Volume(v), veh/h	227	191	827	0	396	748
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	0	1774	1863
Q Serve(g_s), s	16.0	14.7	40.3	0.0	10.1	20.1
Cycle Q Clear(g_c), s	16.0	14.7	40.3	0.0	10.1	20.1
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	208	341	1175	0	449	1454
V/C Ratio(X)	1.09	0.56	0.70	0.00	0.88	0.51
Avail Cap(c_a), veh/h	208	341	1241	0	560	1637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	60.3	47.8	16.8	0.0	21.4	5.5
Incr Delay (d2), s/veh	89.2	2.1	1.7	0.0	13.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	13.1	21.2	0.0	11.3	10.3
LnGrp Delay(d),s/veh	149.5	49.8	18.5	0.0	34.4	5.8
LnGrp LOS	F	D	B		C	A
Approach Vol, veh/h	418		827			1144
Approach Delay, s/veh	104.0		18.5			15.7
Approach LOS	F		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		113.6		23.0	20.4	93.1		
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		
Max Green Setting (Gmax), s		120.0		16.0	22.0	91.0		
Max Q Clear Time (g_c+I1), s		22.1		18.0	12.1	42.3		
Green Ext Time (p_c), s		80.5		0.0	1.4	43.9		

Intersection Summary	
HCM 2010 Ctrl Delay	32.1
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	85.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	292	1325	51	379	485
Future Vol, veh/h	12	292	1325	51	379	485
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, %	2	2	2	2	2	2
Mvmt Flow	13	324	1472	57	421	539

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2882	1501	0	0	1529	0
Stage 1	1501	-	-	-	-	-
Stage 2	1381	-	-	-	-	-
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	18	~ 150	-	-	436	-
Stage 1	204	-	-	-	-	-
Stage 2	233	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	~ 150	-	-	436	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	204	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 632.6	0	28.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	150	436	-
HCM Lane V/C Ratio	-	-	2.252	0.966	-
HCM Control Delay (s)	-	-	$ 632.6	66	0
HCM Lane LOS	-	-	F	F	A
HCM 95th %tile Q(veh)	-	-	28	11.7	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	24181.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	860	0	1279	0	0	0	2	361	895	0	19	0	1463	416
Future Vol, veh/h	860	0	1279	0	0	0	2	361	895	0	19	0	1463	416
Conflicting Peds, #/hr	0	0	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	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	225	-	-	-	-	-	-	250	-	-	-	225	-	-
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	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	956	0	1421	0	0	0	2	401	994	0	21	0	1626	462

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	3203	3700	1044	2656	3931	497	1524	2088	0	0	726	994	0	0
Stage 1	1899	1899	-	1801	1801	-	-	-	-	-	-	-	-	-
Stage 2	1304	1801	-	855	2130	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	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	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	~ 4	5	~ 226	11	3	519	152	~ 261	-	-	497	692	-	-
Stage 1	~ 71	116	-	83	130	-	-	-	-	-	-	-	-	-
Stage 2	~ 169	130	-	319	89	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	~ 3	3	~ 226	-	2	519	947	947	-	-	497	497	-	-
Mov Cap-2 Maneuver	~ 3	3	-	-	2	-	-	-	-	-	-	-	-	-
Stage 1	~ 41	116	-	48	75	-	-	-	-	-	-	-	-	-
Stage 2	~ 97	75	-	-	89	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 59858.4	0	3.3	0.1
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	947	-	-	3	226	-	497	-	-
HCM Lane V/C Ratio	0.426	-	-	318.519	6.288	-	0.042	-	-
HCM Control Delay (s)	11.6	-	$ 145282	$ 12419.4	0	12.6	-	-
HCM Lane LOS	B	-	-	F	F	A	B	-	-
HCM 95th %tile Q(veh)	2.2	-	-	122	152.9	-	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	32.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	193	991	579	22	30	82
Future Vol, veh/h	193	991	579	22	30	82
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, %	2	2	2	2	2	2
Mvmt Flow	214	1101	643	24	33	91

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	668	0	-	0	2186	656
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	1530	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	922	-	-	-	50	465
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	197	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	922	-	-	-	~ 20	465
Mov Cap-2 Maneuver	-	-	-	-	~ 20	-
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	79	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	$ 538.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	922	-	-	-	67
HCM Lane V/C Ratio	0.233	-	-	-	1.857
HCM Control Delay (s)	10.1	0	-		$ 538.2
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.9	-	-	-	11.3

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	91

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	856	209	9	479	230	7
Future Vol, veh/h	856	209	9	479	230	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	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	951	232	10	532	256	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1183	0	1619	1067
Stage 1	-	-	-	-	1067	-
Stage 2	-	-	-	-	552	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	590	-	~ 114	270
Stage 1	-	-	-	-	331	-
Stage 2	-	-	-	-	577	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	590	-	~ 111	270
Mov Cap-2 Maneuver	-	-	-	-	~ 111	-
Stage 1	-	-	-	-	331	-
Stage 2	-	-	-	-	563	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	$ 686.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	113	-	-	590	-
HCM Lane V/C Ratio	2.33	-	-	0.017	-
HCM Control Delay (s)	$ 686.9	-	-	11.2	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	23.1	-	-	0.1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1159

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	209	280	424	47	145	0	246	97	55	0	57	107
Future Vol, veh/h	209	280	424	47	145	0	246	97	55	0	57	107
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	-	-	Stop
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	232	311	471	52	161	0	273	108	61	0	63	119

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	161	0	0	782	0	0	1308	1277	547	1362	1513	161
Stage 1	-	-	-	-	-	-	1011	1011	-	266	266	-
Stage 2	-	-	-	-	-	-	297	266	-	1096	1247	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1418	-	-	836	-	-	~ 136	166	537	125	120	884
Stage 1	-	-	-	-	-	-	289	317	-	739	689	-
Stage 2	-	-	-	-	-	-	712	689	-	259	245	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1418	-	-	836	-	-	~ 27	~ 105	537	-	76	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 27	~ 105	-	-	76	-
Stage 1	-	-	-	-	-	-	~ 197	216	-	503	642	-
Stage 2	-	-	-	-	-	-	518	642	-	78	167	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	2.3	$ 4849	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	39	1418	-	-	836	-	-	-
HCM Lane V/C Ratio	11.339	0.164	-	-	0.062	-	-	-
HCM Control Delay (s)	$ 4849	8	0	-	9.6	0	-	-
HCM Lane LOS	F	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	53.5	0.6	-	-	0.2	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	201	223	164	52	5
Future Vol, veh/h	0	201	223	164	52	5
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, %	2	2	2	2	2	2
Mvmt Flow	0	223	248	182	58	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	739	61	63	0	-	0
Stage 1	61	-	-	-	-	-
Stage 2	678	-	-	-	-	-
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	385	1004	1540	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	504	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	316	1004	1540	-	-	-
Mov Cap-2 Maneuver	316	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	414	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	4.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1540	-	1004	-	-
HCM Lane V/C Ratio	0.161	-	0.222	-	-
HCM Control Delay (s)	7.8	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.6	-	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	1027	401	190	519	85	142	267	270	47	214	19
Future Volume (veh/h)	81	1027	401	190	519	85	142	267	270	47	214	19
Number	3	8	18	7	4	14	1	6	16	5	2	12
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	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	90	1141	446	211	577	94	158	297	0	52	238	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	382	790	309	80	967	158	228	449	0	185	449	0
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.24	0.24	0.00	0.24	0.24	0.00
Sat Flow, veh/h	763	1276	499	320	1563	255	1138	1863	0	1078	1863	0
Grp Volume(v), veh/h	90	0	1587	211	0	671	158	297	0	52	238	0
Grp Sat Flow(s),veh/h/ln	763	0	1775	320	0	1818	1138	1863	0	1078	1863	0
Q Serve(g_s), s	7.3	0.0	55.7	0.0	0.0	20.1	11.7	13.0	0.0	4.1	10.0	0.0
Cycle Q Clear(g_c), s	27.3	0.0	55.7	55.7	0.0	20.1	21.7	13.0	0.0	17.1	10.0	0.0
Prop In Lane	1.00		0.28	1.00		0.14	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	382	0	1098	80	0	1125	228	449	0	185	449	0
V/C Ratio(X)	0.24	0.00	1.44	2.64	0.00	0.60	0.69	0.66	0.00	0.28	0.53	0.00
Avail Cap(c_a), veh/h	382	0	1098	80	0	1125	228	449	0	185	449	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.6	0.0	17.2	45.0	0.0	10.4	39.5	30.8	0.0	38.5	29.7	0.0
Incr Delay (d2), s/veh	0.3	0.0	205.4	771.5	0.0	0.9	8.7	3.6	0.0	0.8	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	89.5	19.1	0.0	10.1	4.5	7.1	0.0	1.3	5.3	0.0
LnGrp Delay(d),s/veh	18.9	0.0	222.5	816.5	0.0	11.2	48.3	34.4	0.0	39.4	30.9	0.0
LnGrp LOS	B		F	F		B	D	C		D	C	
Approach Vol, veh/h		1677			882			455			290	
Approach Delay, s/veh		211.6			203.9			39.2			32.4	
Approach LOS		F			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.0		62.0		28.0		62.0
Change Period (Y+Rc), s		6.3		6.3		6.3		6.3
Max Green Setting (Gmax), s		21.7		55.7		21.7		55.7
Max Q Clear Time (g_c+I1), s		19.1		57.7		23.7		57.7
Green Ext Time (p_c), s		0.8		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	170.1
HCM 2010 LOS	F

Summary of All Intervals

Number	1	2	3		Avg
Start Time	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60
# of Intervals	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1
Vehs Entered	16834	16826	16905	16463	16762
Vehs Exited	15720	15725	16027	15378	15711
Starting Vehs	999	1017	1014	991	997
Ending Vehs	2113	2118	1892	2076	2048
Travel Distance (mi)	8839	8769	9061	8675	8836
Travel Time (hr)	6576.8	6689.7	6536.4	6999.2	6700.5
Total Delay (hr)	6337.2	6452.1	6289.3	6764.9	6460.9
Total Stops	14690	13961	14727	13950	14335
Fuel Used (gal)	1762.7	1789.4	1761.2	1854.2	1791.9

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Number	1	2	3		Avg
Vehs Entered	16834	16826	16905	16463	16762
Vehs Exited	15720	15725	16027	15378	15711
Starting Vehs	999	1017	1014	991	997
Ending Vehs	2113	2118	1892	2076	2048
Travel Distance (mi)	8839	8769	9061	8675	8836
Travel Time (hr)	6576.8	6689.7	6536.4	6999.2	6700.5
Total Delay (hr)	6337.2	6452.1	6289.3	6764.9	6460.9
Total Stops	14690	13961	14727	13950	14335
Fuel Used (gal)	1762.7	1789.4	1761.2	1854.2	1791.9

Intersection: 1: US 321 & Blythewood Rd

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	494	49	185
Average Queue (ft)	232	7	73
95th Queue (ft)	500	33	152
Link Distance (ft)	468	559	380
Upstream Blk Time (%)	12		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Fulmer Rd & Blythewood Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	5	79	93
Average Queue (ft)	0	23	37
95th Queue (ft)	3	57	68
Link Distance (ft)	682	722	660
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blythewood Rd & Muller Rd

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	LTR	L	TR
Maximum Queue (ft)	37	115	249	60	148	15
Average Queue (ft)	7	41	98	25	59	1
95th Queue (ft)	25	92	199	54	116	8
Link Distance (ft)		788	1428	163		615
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200				250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: I-77 SB On-Ramp/I-77 SB Off-Ramp & Blythewood Rd

Movement	EB	WB	WB	SB	SB
Directions Served	T	L	T	LT	R
Maximum Queue (ft)	335	234	375	670	130
Average Queue (ft)	241	73	94	311	4
95th Queue (ft)	388	178	241	657	66
Link Distance (ft)	330		849	659	
Upstream Blk Time (%)	30			21	
Queuing Penalty (veh)	89			0	
Storage Bay Dist (ft)		300			300
Storage Blk Time (%)			1	28	
Queuing Penalty (veh)			2	33	

Intersection: 5: I-77 NB Off-Ramp/I-77 NB On-Ramp & Blythewood Rd

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	T	LT	R
Maximum Queue (ft)	304	856	345	450	833
Average Queue (ft)	36	543	113	305	808
95th Queue (ft)	158	987	302	640	823
Link Distance (ft)		849	446		793
Upstream Blk Time (%)		32			76
Queuing Penalty (veh)		335			0
Storage Bay Dist (ft)	275			350	
Storage Blk Time (%)		42		6	80
Queuing Penalty (veh)		23		47	433

Intersection: 6: Creech Rd/McNulty St & Blythewood Rd

Movement	EB	EB	WB	WB	NB	SB	B67
Directions Served	L	TR	L	TR	LTR	LTR	T
Maximum Queue (ft)	167	511	48	510	319	263	217
Average Queue (ft)	67	188	11	143	257	107	38
95th Queue (ft)	196	581	36	665	372	259	225
Link Distance (ft)		446		965	290	198	792
Upstream Blk Time (%)		34		6	62	22	
Queuing Penalty (veh)		607		49	0	32	
Storage Bay Dist (ft)	150		25				
Storage Blk Time (%)	20	25	6	18			
Queuing Penalty (veh)	288	50	58	8			

Intersection: 7: Boney Rd & Blythewood Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	LT	R
Maximum Queue (ft)	270	817	122	853	327	167	486	175
Average Queue (ft)	158	385	21	340	170	56	171	56
95th Queue (ft)	321	1014	85	934	349	140	397	187
Link Distance (ft)		965		839	321	321	536	
Upstream Blk Time (%)		25		29	27		0	
Queuing Penalty (veh)		345		230	0		0	
Storage Bay Dist (ft)	175		175					75
Storage Blk Time (%)	40	4		40			47	0
Queuing Penalty (veh)	411	13		37			88	0

Intersection: 8: US 21 & Blythewood Rd

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	275	673	325	1825	328	275
Average Queue (ft)	185	257	300	1380	162	114
95th Queue (ft)	360	653	402	1808	348	266
Link Distance (ft)		839		1814	313	
Upstream Blk Time (%)		0		13	26	
Queuing Penalty (veh)		1		72	210	
Storage Bay Dist (ft)	175		225			175
Storage Blk Time (%)	18	0	36	65	7	27
Queuing Penalty (veh)	66	1	235	222	33	96

Intersection: 9: US 21 & McLean Rd

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	99	830	437
Average Queue (ft)	49	457	299
95th Queue (ft)	105	993	574
Link Distance (ft)	87	818	408
Upstream Blk Time (%)	33	27	50
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: US 21 & Oakhurst Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	744	52	80
Average Queue (ft)	358	4	61
95th Queue (ft)	837	23	102
Link Distance (ft)	2480	1213	65
Upstream Blk Time (%)			68
Queuing Penalty (veh)			225
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: US 21 & McNulty St

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	1352	30	1227
Average Queue (ft)	1130	1	1151
95th Queue (ft)	1666	12	1481
Link Distance (ft)	1336		1213
Upstream Blk Time (%)	59		69
Queuing Penalty (veh)	93		241
Storage Bay Dist (ft)		75	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: US 21 & Langford Rd

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	932	326	100	230
Average Queue (ft)	913	245	71	208
95th Queue (ft)	982	449	138	218
Link Distance (ft)	916	313		206
Upstream Blk Time (%)	64	11		90
Queuing Penalty (veh)	423	165		318
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			70	36
Queuing Penalty (veh)			224	76

Intersection: 13: US 21 & Rimer Pond Rd

Movement	WB	WB	NB	B39	SB	SB
Directions Served	L	R	TR	T	L	T
Maximum Queue (ft)	300	905	803	3180	325	2197
Average Queue (ft)	274	667	746	2601	194	1369
95th Queue (ft)	351	1204	900	4197	420	3094
Link Distance (ft)		873	692	3185		2805
Upstream Blk Time (%)		63	52	2		20
Queuing Penalty (veh)		0	844	30		116
Storage Bay Dist (ft)	200				225	
Storage Blk Time (%)	82	0			0	67
Queuing Penalty (veh)	141	0			1	238

Intersection: 14: US 21 & Farrow Rd

Movement	WB	NB	SB	B39
Directions Served	LR	TR	LT	T
Maximum Queue (ft)	928	1488	3288	706
Average Queue (ft)	920	1008	3214	611
95th Queue (ft)	962	2394	3548	955
Link Distance (ft)	922	1780	3185	692
Upstream Blk Time (%)	97	43	90	41
Queuing Penalty (veh)	0	0	792	361
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: US 21 & Community Rd

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	316	447	350	1054	1036	32	10	59
Average Queue (ft)	316	447	346	1028	556	3	0	8
95th Queue (ft)	319	448	356	1043	1386	16	5	34
Link Distance (ft)		440		1015	1015		980	980
Upstream Blk Time (%)		100		100	20			
Queuing Penalty (veh)		0		0	0			
Storage Bay Dist (ft)	225		250			225		
Storage Blk Time (%)	100		100					
Queuing Penalty (veh)	1279		447					

Intersection: 16: Langford Rd & Sandfield Rd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	113	861	442
Average Queue (ft)	18	737	339
95th Queue (ft)	73	1111	567
Link Distance (ft)	916	815	418
Upstream Blk Time (%)		76	69
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: Trading Post Rd & Langford Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	16	339	987
Average Queue (ft)	1	28	604
95th Queue (ft)	8	159	1089
Link Distance (ft)	779	1336	2950
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 18: Hardscrabble Rd/Grover Wilson Rd & Langford Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	187	121	448	279
Average Queue (ft)	55	35	421	97
95th Queue (ft)	131	90	435	281
Link Distance (ft)	576	367	403	441
Upstream Blk Time (%)			100	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 19: Round Top Church Rd & Trading Post Rd

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	66	69
Average Queue (ft)	27	8
95th Queue (ft)	50	36
Link Distance (ft)	658	758
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Longtown Rd E/Round Top Church Rd & Rimer Pond Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	425	987	350	834	600	707	93	230
Average Queue (ft)	219	949	342	802	521	675	24	117
95th Queue (ft)	558	970	352	823	842	691	65	200
Link Distance (ft)		927		792		657		758
Upstream Blk Time (%)		59		99		94		
Queuing Penalty (veh)		0		0		0		
Storage Bay Dist (ft)	325		250		500		150	
Storage Blk Time (%)		47	100			98		4
Queuing Penalty (veh)		38	604			139		2

Intersection: 21: Hardscrabble Rd & Rimer Pond Rd/Kelly Mill Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	526	638	480	455
Average Queue (ft)	493	600	444	424
95th Queue (ft)	510	622	465	442
Link Distance (ft)	474	577	422	403
Upstream Blk Time (%)	100	100	100	99
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Appendix B – Public Outreach Data

AECOM
Built to deliver a better world

Meeting Minutes

Date: August 23, 2018 10:00am

For: Town of Blythewood Traffic Improvement Study

From: Patrick Tyndall, AICP, Project Manager

Subject: Meeting with Technical Working Group

Attendees:

Name	Organization
Malcolm Gordge	Town of Blythewood
Brian Cook	Town of Blythewood
Ben Lewis	Richland Penny
Kenny Larimore	SCDOT
Darren Ledbetter	SCDOT
Tevia Brown	SCDOT
Kimberly Toney	Richland County
Matt Kelly	SCDOT
Lori Campbell	SCDOT
Tiffany James	COMET
John Andoh	COMET
Michael Davis	AECOM
Carrie Barr	AECOM
Ryan Eckenrode	AECOM
Patrick Tyndall	AECOM
Bill Jordan	AECOM
Peter Dondanville	AECOM

Discussion:

1. Introductions and Roles
   - Patrick covered the meeting agenda and gave a brief AECOM overview. Introductions were made by the project team and all members present from the Technical Working Group. Patrick identified the role of the Technical Working Group in the study as well as the roles of all other groups.

2. Overview and Purpose of the Project
   - Patrick gave a brief overview of the origin and purpose of the study.

3. Project Initiation and Approach
   - Patrick identified all involved in the Technical Working Group and asked for suggestions on other parties to be included.
   - Roland suggested that the school district should be included in the Technical Working Group.

4. Overview of Study Area
   - Patrick gave a detailed overview of the study area. He discussed key areas that influenced the extent of the study.

5. Land Use, Traffic and Design Approach

- Carrie gave an overview of land use approach. She discussed the current land use map as well as the future land use map that will be developed through the study. Carrie provided an example of the land use matrix that will be used to evaluate effects of current and future land use.
- Ryan gave an overview of the traffic approach and identified a preliminary list of intersections to be analyzed.
- Per Ben and Roland – several of the identified intersections have already been studied including 10, 14, 15 and possibly others.
- Michael gave and overview of the design approach. He discussed the creation of design alternatives and cost estimates that can be evaluated for each of the identified intersections.

6. Public Outreach & Develop Area Plan
    - Bill covered the public outreach plan and the development area plan. He discussed the importance of developing short-term, mid-term, and long-term goals in the overall plan.

7. What are we missing?
    - Per Brian – Great Southern Homes planning a development of approximately 600 homes just west of Blythewood town limits off Langford Rd. – SCDOT has been discussing traffic impacts
    - A new hotel is planned on Creech Rd. just off of Blythewood Rd.
    - Per Roland – possibly moving Bethel Hanberry Elementary in future
    - Per Ben – Richland Penny has several projects in the area – need to coordinate
    - Per Roland – Blythewood Rd. widening in long range plan
    - Need to be sure to coordinate with large churches in the area
    - Per DOT – heavy emphasis on freight movement in 30 year plan and how large trucks get to/from I-77
    - Per John – consider park & ride locations, bus stop improvements, public outreach for COMET

8. Overview of Schedule & Next Steps
    - Patrick gave a quick overview of the schedule and where we are currently.

Action Items:

- AECOM to include school district in future Technical Working Group or Stakeholder Advisory Group meetings
- AECOM to email list of all identified intersections for review by all
- AECOM to set up meeting with Ben to coordinate with Richland Penny projects
- AECOM to revise identified intersection list as needed after investigating previously completed studies involving these intersections

Meeting adjourned at 11:30am

AECOM
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Meeting Minutes

Date: August 23, 2018 2:00pm

For: Town of Blythewood Traffic Improvement Study

From: Patrick Tyndall, AICP, Project Manager

Subject: Meeting with Stakeholders Advisory Group

Attendees:

Name	Organization
Malcolm Gordge	Town of Blythewood
Kellie Ballentine	Allstate
Scott Morrison	Great Southern Homes
Justin Waring	4D Engineering
Frank Berry	Essex Homes
Brian Crooks	Richland County
Michael Davis	AECOM
Carrie Barr	AECOM
Ryan Eckenrode	AECOM
Patrick Tyndall	AECOM
Bill Jordan	AECOM
Peter Dondanville	AECOM

Discussion:

1. Introductions and Roles
   - Patrick covered the meeting agenda and gave a brief AECOM overview. Introductions were made by the project team and all members present from the Stakeholders Advisory Group. Patrick identified the role of the Stakeholders Advisory Group in the study as well as the roles of all other groups.

2. Overview and Purpose of the Project
   - Patrick gave a brief overview of the origin and purpose of the study.

3. Project Initiation and Approach
   - Patrick identified all involved in the Stakeholders Advisory Group and asked for suggestions on other parties to be included.

4. Overview of Study Area
   - Patrick gave a detailed overview of the study area. He discussed key areas that influenced the extent of the study.

5. Land Use, Traffic and Design Approach
   - Carrie gave an overview of land use approach. She discussed the current land use map as well as the future land use map that will be developed through the study. Carrie provided an example of the land use matrix that will be used to evaluate effects of current and future land use.
   - Ryan gave an overview of the traffic approach and identified a preliminary list of intersections to be analyzed.
   - Per Kellie – Trading Post Rd. @ Langford intersection should be included

- Great Southern Homes has looked at intersections: 1, 2, 11, 18
- Essex is getting ready to look at intersection 4
- Michael gave and overview of the design approach. He discussed the creation of design alternatives and cost estimates that can be evaluated for each of the identified intersections.

6. Public Outreach & Develop Area Plan
    - Bill covered the public outreach plan and the develop area plan. He discussed the importance of developing short-term, mid-term, and long-term goals in the overall plan.

7. What are we missing?
    - Per Malcolm – Richland 2 possibly another school located at Fulmer & Blythewood Rd.
    - Per Frank – Ashley Oaks development SW of Blythewood Town Limits: 154 Units
    - Per Frank – Abney Hills: approximately 350 lots total. Currently working on phase 2 of 3. Phase 3 to begin early 2019
    - Per Frank – Adaptive traffic signal in Lexington has made major improvements. Could help with traffic on Langford short term
    - Per Kellie – If considering connecting Langford and Blythewood Rd. contact Marie Berry – owns property & buildings between
    - Per Brian – Contact Tommy Delage and Geonardo Price for more information (different department)
    - Per Justin – Blythewood Farms @ US 21 & Langford Rd.: 600 lots and have completed traffic study – 233 homes in first phase. 40 homes to enter through driveway off Rimer Pond, all others to enter through two driveways on Langford
    - Per Scott – Just below southern border of study area: 3 developments (Blythewood Crossing = 200+, Summer Pines - Essex, and Beasley Creek – Hurricane Construction?) – all of these will be coming to Blythewood for school
    - Per Scott – 93 units on south side of Kelly Mill
    - Per Scott – 200+ planned across from Lake Carolina
    - Development @ Smyrna Church & Hines possibly turned down?
    - Many people west of Blythewood interested in selling to developers.
    - Bony Rd. north of school – Cambridge Point development 68 lots

8. Overview of Schedule & Next Steps
    - Patrick gave a quick overview of the schedule and where we are currently.

Action Items:

- AECOM to follow up with Brian about maps and contact information for Tommy Delage and Geonardo Price

Meeting adjourned at 3:15pm

TRAFFIC IMPROVEMENT PLAN
Blythewood, South Carolina

Stakeholder Meeting
April 9, 2019
The Manor at Doko Meadows

Name	First Name	Last Name	Address/Organization	City, State Zip
Justin Waring	Justin	Waring	4D Engineering	
Ben Lewis	Ben	Lewis	Richland Penny Sales Tax (PDT)	
Mike Switzer	Mike	Switzer	Blythewood Chamber	
Emily Estep	Emily	Estep	11 Winding Wood Court	Blythewood, SC 29016
Malcolm Gordge	Malcolm	Gordge	219 Winding Oak Way	Blythewood, SC 29016
Kenny Larimore	Kenny	Larimore	955 Park Street	Columbia, SC 29201
Roland Bart	Roland	Bart	CMCOG	
Scott Morrison	Scott	Morrison	Great Southern Homes	
Larry Sharpe II	Larry	Sharpe II	Blythewood Oil	
Mike Pippin	Mike	Pippin	McDonald's	
Jim McLean	Jim	McLean	Property Owner	
Frankie McLean	Frankie	McLean	Property Owner	
John Cosby	John	Cosby	Blythewood Village Dental	
Allison Steele	Allison	Steele	RC Trans	
Ray Bryson	Ray	Bryson	McNulty (illegible)	
William Simon	William	Simon	RSD2 - 763 Fashion Drive	Columbia, SC 29229
Lori Campbell	Lori	Campbell	SCDOT	
Brian Crooks	Brian	Crooks	2020 Hampton Street	Columbia, SC 29204

Project Team			Address/Organization
Patrick Tyndall	Patrick	Tyndall	AECOM
William Jordan	William	Jordan	AECOM
Augustine CM Wong	Augustine	Wong	CMW Design Strategies, PLLC
LaTonya Derrick	LaTonya	Derrick	Three Oaks Engineering

TRAFFIC IMPROVEMENT PLAN
Blythewood, South Carolina

Stakeholder Meeting
April 9, 2019
The Manor at Doko Meadows

Name	First Name	Last Name	Address/Organization	City, State Zip
David Roper	David	Roper	315 Howell Road	Blythewood, SC 29016
Kay Roper	Kay	Roper	315 Howell Road	Blythewood, SC 29016
Jack Younts	Jack	Younts	11123 Wilson Boulevard	Blythewood, SC 29016
Roland Bart	Roland	Bart	CMCOG	
Woody Wilson	Woody	Wilson	2015 Cottonwood Drive	Ridgeway, SC
Sylvia Wilson	Sylvia	Wilson	2015 Cottonwood Drive	Ridgeway, SC
Samuel Waden	Samuel	Waden	116 George Robertson Road	
Jeanne Reynolds	Jeanne	Reynolds	101 Old Course Loop	Blythewood, SC 29016
Sara Beaver	Sara	Beaver	749-2 University Village Drive	Blythewood, SC 29016
Robert White	Robert	White	305 Sandfield Road	Blythewood, SC 29016
Phil Frye	Phil	Frye	171 Elton Walker Road	Blythewood, SC 29016
Gregg Martin	Gregg	Martin	233 Talon Way	Blythewood, SC 29016
Jason McLees, RC BoZA	Jason	McLees	81 Sand Oak Court	Blythewood, SC 29016
Erica Page	Erica	Page	621 Dew Pond Road	Blythewood, SC 29016
Darlene Embleton	Darlene	Embleton	140 N. Means Street	Ridgeway, SC 29130
Darren Rhodes	Darren	Rhodes	vdarrenrhodes@aol.com	
Andy Busbee	Andy	Busbee	abusbee@mbakerintl.com	
J. Michael Ross	J. Michael	Ross	406 Links Crossing Drive	Blythewood, SC 29016
Reginald Simmons	Reginald	Simmons	236 Stoneridge Drive	Columbia, Sc 29210
Jay Keefer	Jay	Keefer	2009 Dobson Road	Blythewood, SC 29016

Project Team			Address/Organization
Patrick Tyndall	Patrick	Tyndall	AECOM
William Jordan	William	Jordan	AECOM
Augustine CM Wong	Augustine	Wong	CMW Design Strategies
LaTonya Derrick	LaTonya	Derrick	Three Oaks Engineering
Mark Mohr	Mark	Mohr	Three Oaks Engineering

TRAFFIC IMPROVEMENT PLAN
Blythewood, South Carolina

Stakeholder Meeting
April 9, 2019
The Manor at Doko Meadows

Name	First Name	Last Name	Mailing Address	Email Address	Comment
Emily Estep	Emily	Estep	-	emilyestep@remax.net	I appreciate the opportunity to learn more about plans. Your ideas seem wise and well considered ideas. I vote for the long term plan to be expedited.
No Name Given	-	-	-	-	* Intersection Blythewood & Langford is need now. Can we have addition of Creech Rd and the Langford/Blythewood first. *I realize with new subdivisions, that Rimer Pond and Trading are becoming problem but Langford/Blythewood is problem now. *Not a fan of "round-abouts" but understand the necessity. *General perception is excellent plans with lots of thought and planning.
David Roper, age 75	David	Roper		davidroper@gmail.com	Very pleased with Mr. Wong's descriptions. I hope that an extra lane be added to whatever width roads are planned, i.e. if plans are 5 lanes, add room for easy addition to have 7 lanes, etc. Future, Future. I like the traffic circles thanks to Mr. Wong explaining it.

Samuel Waden, II	Samuel	Waden, II	116 George Robertson Road Blythewood, SC 29016	mr.waden@gmail.com	The proposal plan look great! I only hope it does not take 20 years to complete!

Appendix C – Resource Agency Data

TRAFFIC IMPROVEMENT PLAN

Blythewood, South Carolina

March 4, 2019

SUBJECT: BLYTHEWOOD TRAFFIC IMPROVEMENT PLAN, RICHLAND COUNTY SOUTH CAROLINA

To Whom It May Concern:

The Town of Blythewood and the Central Midlands Council of Governments (CMCOG) are partnering to complete the Blythewood Traffic Improvement Plan. The purpose of the plan is to carry out a detailed review of current traffic operations in the Town of Blythewood area and prepare recommendations to address current and future traffic issues. These recommendations will be made based on the population increase and economic development anticipated over the next 20 years.

US 21 between Blythewood Road and Langford Road has been identified as a key focal area of this study, but an additional 20 intersections will be examined. The study area (Figure 1) encompasses a vast area extending beyond the Town's limits. Significant roadways studied include Blythewood Road (S-59), Main Street (US 21) north of I-77, Langford Road (S-54), Round Top Church Road (S-1051), Rimer Pond Road (S-1041), and Hard Scrabble Road (S-83) which are all classified as major collectors. Main Street (US 21) south of I-77 and Hardscrabble Road (S-83) south of Rimer Pond Road (S-1041) are minor arterial and Boney Road (S-1367), Oakhurst Road (S-1143), McNulty Road (S-1362), Trading Post Road (S-1899) and Creech Road are all local streets.

Public participation is an integral part of the transportation planning process which helps to ensure that decisions are made in consideration of and to benefit public needs and preferences. The purpose of this letter is to solicit comments to help identify and evaluate the impacts related to the implementation of the traffic study recommendations.

In order to fully evaluate the potential impacts of the proposed project, the Town and CMCOG requests that you respond in writing within 15 days of your receipt of this letter concerning any beneficial or adverse impacts within the study area relating to the interests of your agency.

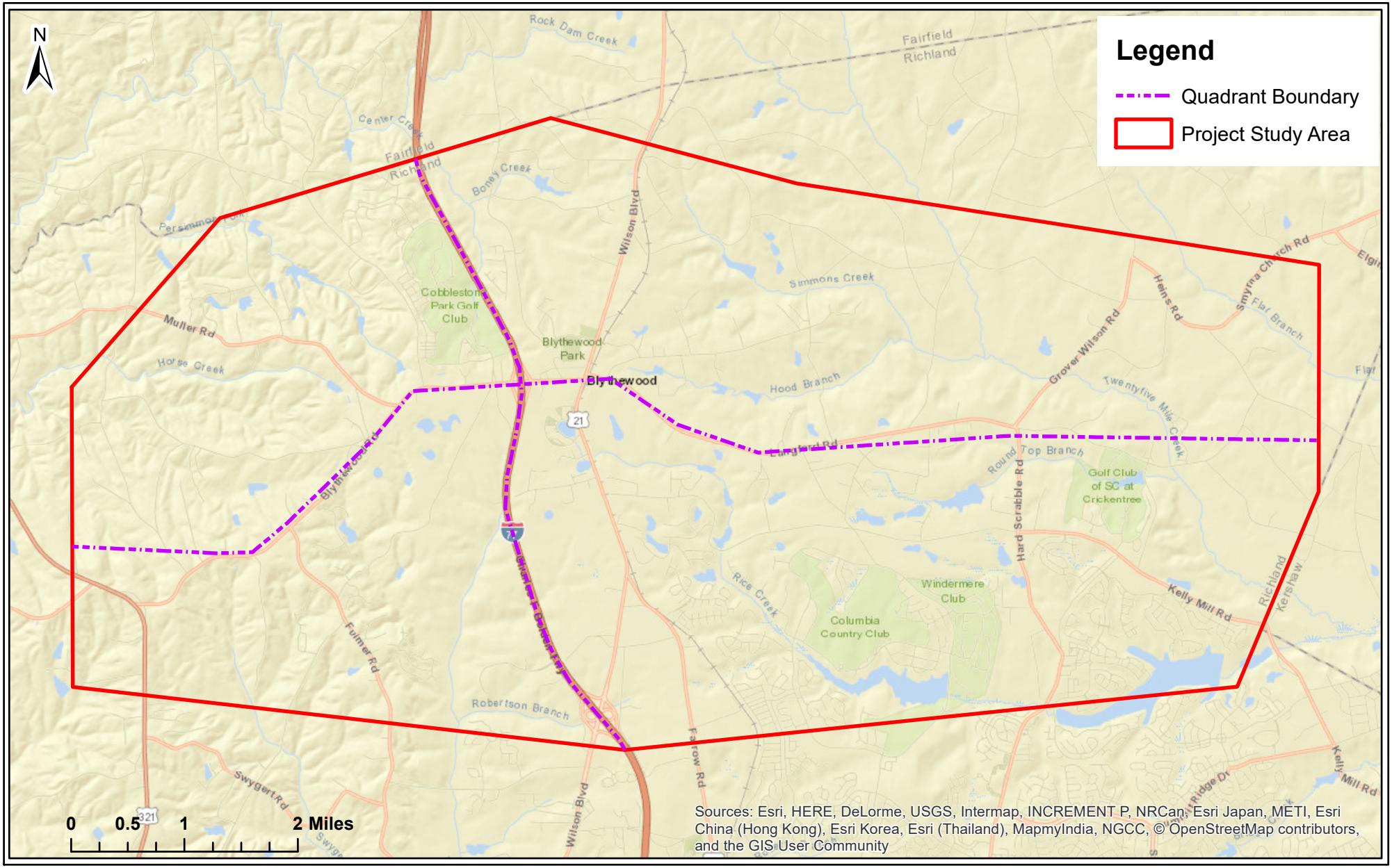
Comments should be addressed to Mr. Mark Mohr and can be sent by email to Mark.Mohr@Threeoaksengineering.com or mailed to:

Mr. Mark Mohr
Three Oaks Engineering
1310 Lady Street, Suite 400
Columbia, SC 29201

Sincerely,

Mark Mohr
Sr. Environmental Planner

Attachment



THREE OAKS ENGINEERING

Prepared For:

AECOM

Blythewood Traffic Improvement Plan

Richland County, South Carolina

Date: September 2018	
Scale: 1 in = 1 miles	
Job No.: 18-039	
Drawn By: SMM	Checked By: HMR

Figure

1

From:	Mark Mohr
To:	Mark Mohr
Bcc:	"robertln@dhec.sc.gov"; "thompsrb@dhec.sc.gov"; "shealyrg@dhec.sc.gov"; "neeldg@dhec.sc.gov"; "reecemc@dhec.sc.gov"; "brownrj@dhec.sc.gov"; "prestohs@dhec.sc.gov"; "msrmason@regstaff.sc.gov"; "lmasters@regstaff.sc.gov"; "mehtam@dhec.sc.gov"; "lori.dunn@sierraclub.org"; "ben.mack@sierraclub.org"; "SC_Webmanager@hud.gov"; "rbuxton@schac.sc.gov"; "eemerson@scdah.state.sc.us"; "MixonG@dnr.sc.gov"; "DanielT@dnr.sc.gov"; "RigginL@dnr.sc.gov"; "ben@scwf.org"; "mrobertson@tnc.org"; "delbert@oed.sc.gov"; "mhoffstatter@nwtf.net"; "bhitt@sccommerce.com"; "leader@sc.edu"; "Hnicholson@scfc.gov"; "travis.hughes@usace.army.mil"; "Peter.B.McKoy@usace.army.mil."; "laycock.kelly@epa.gov"; "militscher.chris@epa.gov"; "Charleston_regulatory@fws.gov"; "Mia@scsenate.gov"; "KambrellGarvin@schouse.gov"; "JohnScott@scsenate.gov"; "Jeffrey.Belcher@dot.gov"; "Michelle.Herrell@dot.gov"; "emily.lawton@dot.gov"; "longcc@scdot.org"; "rewisb@scdot.org"; "DickinsoRC@scdot.org"; "huttoja@scdot.org"; "poorejp@scdot.org"; "action@scccl.org"; "Cesac-rd-mail@usace.army.mil"; Tyndall, Patrick; Heather Robbins; "Jordan, William E."; "dparrish@scprt.com"
Subject:	Scoping information Request: Blythewood Traffic Plan
Date:	Monday, March 4, 2019 1:11:00 PM
Attachments:	Scoping Letter Blythewood Traffic Plan_342019.pdf image003.png

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March 4, 2019

Electronic Correspondence – In an effort to save resources and expedite delivery you are receiving this document in an electronic format. Please consider the environment before printing.

RE: Scoping Letter for the *Blythewood Traffic Improvement Plan*, Richland County, SC

Dear Sir/Madam:

The Town of Blythewood and the Central Midlands Council of Governments (CMCOG) are partnering to complete the *Blythewood Traffic Improvement Plan.* Please see the attached scoping letter for the plan. The purpose of the plan is to carry out a detailed review of current traffic operations in the Town of Blythewood area and prepare recommendations to address current and future traffic issues.

In order to fully evaluate the traffic improvement plan, the Town of Blythewood and the Central Midlands Council of Governments (CMCOG) respectfully request your comments within 15 days of your receipt of this letter.

If you need additional information, please let me know.

Respectfully,

Mark Mohr

Mark Mohr
Senior Environmental Planner
Three Oaks Engineering
803.205.5563

Agency	POC	Date Received	Agency Comment	Recommended Action
SCDHEC UST Management Division	Alison Post	3/9/2019	SCDHEC provided maps and addresses of sites that include non vulnerable, known, permitted or regulated by the Bureau of Land and Waste Management	Recommend mapping each proposed traffic improvement and each site address provided by SCDHEC to evaluate potential impacts
SC Departartment of Archives and History- SHPO	Joseph E. Wilkinson	3/6/2019	Our office is aware of one historic resource within the proposed study area that is currently listed on the National Register of Historic Places, the George P. Hoffman House. There are also several additional known resources in the project area that meet the criteria for listing in the National Register of Historic Places. Our office is also aware that several surveys for historic resources have occurred in portions of, but not all of, the proposed study area. We believe there is potential for the identification of additional resources eligible for the National Register of Historic Places within the proposed study area.	If the Blythewood Traffic Improvement Plan were to require state permits or federal permits, licenses, funds, loans, grants, or assistance for implementation, recommend to the federal or state agency or agencies that coordination with the SHPO is required so that the proposed undertaking can be reviewed for its potential for effects on known and unknown cultural resources of historic significance.
SC Department of Natural Resources	Tom Daniel (Greg Mix	4/4/2019	The study area you identified in your letter encircles a vast area encompassing streams, wetlands, and occurrence data of several state-priority species, including several state- and federally-listed protected species. As such, our staff are unable to complete your request for a formal review with the information provided at this time. Please provide a more detailed description of the type of work being proposed. If possible, please provide a shapefile or project map of the roads involved with this project.....Our office would be happy to provide you with a letter describing which species of concern may be found in or near the project area, identifying if streams or wetlands may be impacted by the proposed activity, and general guidance on best management practices specific to your project type or activity.	SCDNR requested additional info in order to analize the impacts of the projects. Also they offered to provide a species list and general recommendations if we'd rather. I would recommend we reach back out to them and request the general recommendations and explain that the detailed analysis would come later once these projects are funded and being evaluated as part of the NEPA and permitting process
US EPA NEPA Program Office Rigion 4	Alya Singh-White	4/09/2019	Waters of the United States: A review of the proposed project area shows the presence of numerous waterbodies and wetlands. The EPA recommends that any contractor working onsite should use best management practices and should address any potential impacts to offsite streams and waterways. The site grading, excavation, and construction plans should include implementable measures to prevent erosion and sediment runoff from the various project sites both during and after construction. Consistent with Section 404 of the Clean Water Act, the project should avoid and minimize, to the maximum extent practicable, placement of fill into jurisdictional waters of the United States, which include wetlands and streams. It should be noted that jurisdictional waters of the United States can differ from waters of the State subject to the State of South Carolina laws and regulations, which are the basis for any County issued permits. Any fill material in waters of the United States may require a permit or authorization from the U.S. Army Corps of Engineers (COE). Any wetland or stream losses allowed under a COE Section 404 permit should be mitigated by the applicant. This mitigation can be designed and implemented by the applicant or procured by the purchase of wetland and/or stream mitigation credits from a commercial wetland mitigation bank. Wetland and stream mitigation can add considerable expense to any project, which is another good reason to avoid and minimize those impacts. Social Impacts: Based on a review of Geographic Information Systems (GIS) data, the proposed project has the potential to cause social impacts to residential populations and communities as well as businesses. Roadway construction could result in property acquisition, property and business relocations, increased noise and roadway vibration, construction detours and travel pattern disruptions, and increased traffic volumes. Please keep the local community informed and involved throughout design and construction of the project by having community meetings and/or updating the community through local media (social media, radio, local paper and TV). Upon completion of your draft document, please submit 1 hard copy and an electronic copy of the NEPA document to the NEPA Program Office (see address listed below). Thank you for the opportunity to comment on the proposed project. Should you have any questions, feel free to contact me via the information below.	Waters of the US and Social impacts will be analized during ther NEPA and permitting process. Suggest confirming that the EPA would like a copy of the NEPA document submitted to them.

Appendix D – Photo Log

AECOM Photo Log

Blythewood Traffic Improvement Plan

May 2019

ROUND TOP
ELEMENTARY
SCHOOL
22 FIRST DAY OF SCHOOL
24 PICTURE DAY WWW.RICHLAND/.ORG/RTE

The Depot Building at Doko Meadows Park
The Town of Blythewood

BLYTHEWOOD HIGH SCHOOL
BLYTHEWOOD ACADEMY
BETHEL HANBERRY ELEMENTARY
LANGFORD ELEMENTARY
MULLER RD. MIDDLE SCHOOL
BW

Town Of
Blythewood
1879

Allstate
KELLIE BALLENTINE
803-691-3000
ADOPT-A-HIGHWAY
SPONSORED BY

McDonald's
SPEED LIMIT 30

THE
COMET
BUS STOP
Doko Park

Allstate

Langford
Crossing

Appendix E – Environmental Data

AECOM Imagine it. Delivered.

AECOM
101 Research Drive
Columbia, SC 29203
aecom.com

Project name:
Town of Blythewood Traffic Improvement Plan

Project ref:
60582923

To:
Mr. Reginald Simmons, MPA
Deputy Executive Director / Director of Transportation
Central Midlands Council of Governments
236 Stoneridge Drive
Columbia, SC 29210

From:
Mr. Patrick Tyndall, AECOM
Natalie Adams Pope, New South Associates
Shelby Moody, Three Oaks Engineering

Date:
November 29, 2018

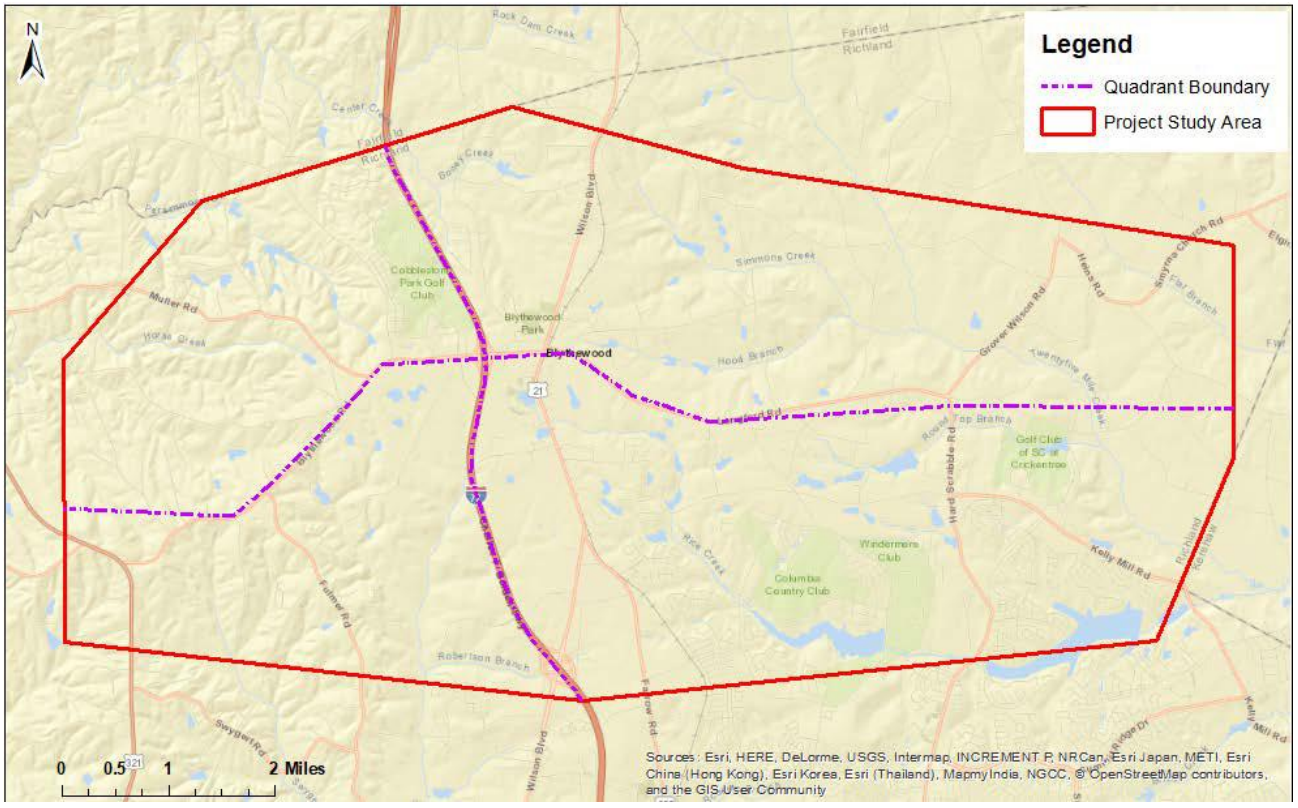
Memo

Subject: Natural Resources Inventory and Summary of Existing Environmental Permits and Implications for Plan Development

This memorandum is intended to document the existing 2018 Natural and Cultural Resources Inventory along with a Summary of Existing Environmental Permits and Implications for Plan Development for the Town of Blythewood Traffic Improvement Area study.

For the purposes of this review, the project study area was divided into four quadrants (NW, SW, NE, SE). Interstate 77 (I-77) was used to divide east and west, while Blythewood Rd/Langford Rd were used as guidelines to divide north and south (refer to Figure 1).

Figure 1: Project Study Area Quadrants

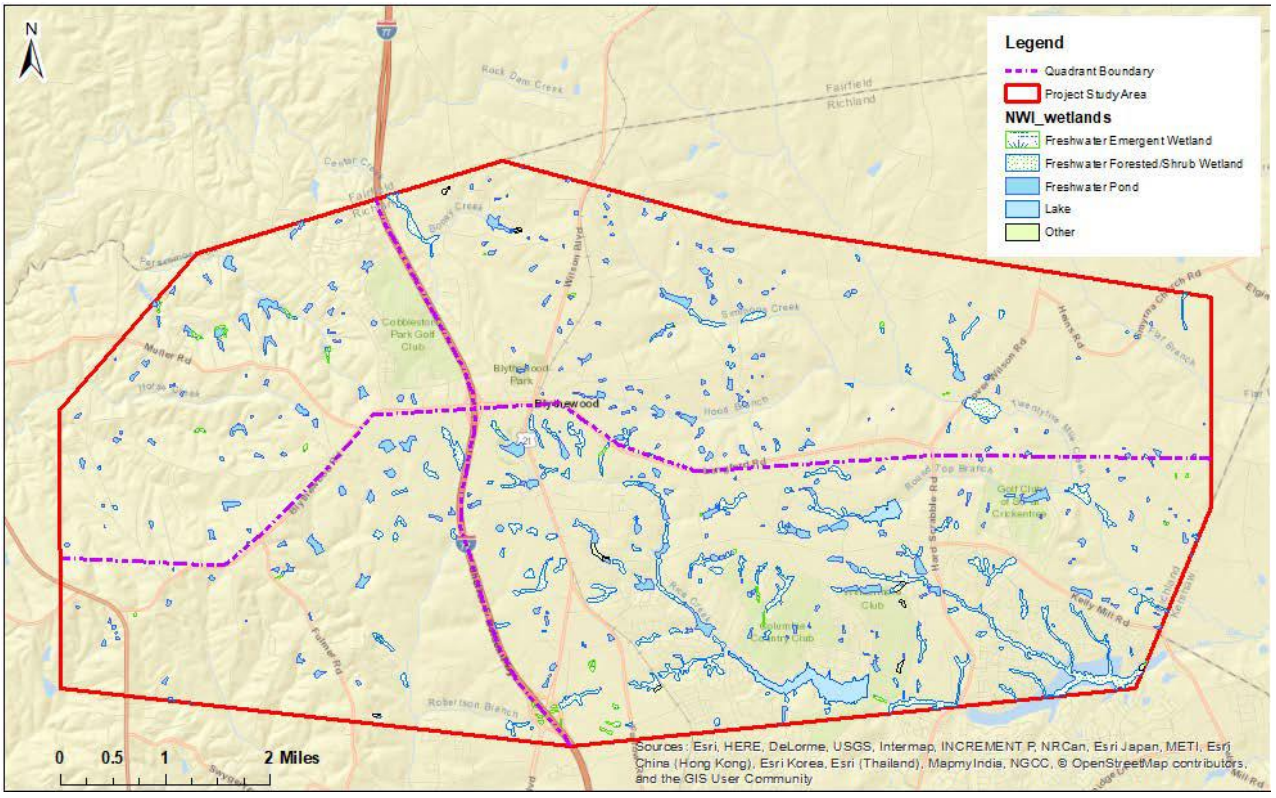


1. Environmental Analysis

WETLANDS AND STREAMS

According to the National Wetland Inventory mapping, the southeast quadrant of the study area contains the highest quantity of wetlands (refer to Figure 2). Rice creek extends the entire southeast quadrant, flowing into Lake Columbia and Lake Carolina, this portion of the study area also contains freshwater ponds, freshwater emergent wetlands, and freshwater forest/shrub wetlands. The northeast quadrant encompasses freshwater ponds, freshwater emergent wetlands, freshwater forested/shrub wetlands, and several riverine systems. Including Simmons Creek, Hood Branch and Round Top Branch that feed into Twenty-five Mile Creek. The area west of I-77 includes fewer freshwater ponds, freshwater emergent wetlands, freshwater forested/shrub wetlands. Riverine systems in the southwest quadrant include Swygert Creek, Beasley creek, and Robertson Branch. Riverine systems in the northwest quadrant include Horse Creek and Persimmon Fork.

Figure 2: Wetlands within the project study area.



Once a preferred alternative is chosen, all streams and wetlands could be delineated to determine potential impacts. This field delineation would be completed in accordance with US Army Corps of Engineers (USACE) guidelines. A Jurisdictional Determination (JD) could then be prepared for submittal to USACE in order to define the limits of Federal jurisdiction. Following the approval of the JD, a permit application could be developed for the USACE. Coordination with USACE and South Carolina Department of Health and Environmental Control (SCDHEC) may be completed through site visits with these agencies to allow for better communication and help improve the permitting process efficiency.

A conceptual mitigation plan will have to be developed for the potential impacts through coordination with USACE. According to the Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS) there are several mitigation banks that service this area (refer to Table 1).

Table 1 Available Mitigation Banks			
Mitigation Bank	Service Area	Study Area Quadrant	Credit Types Available
Arrowhead Mitigation Bank	Secondary	Northwest &	
Mill Creek Wetland Mitigation	Primary & Secondary	Southeast	Stream & Freshwater Wetland
			Stream
Taylor Creek Stream	Primary & Secondary	Northwest	Stream
Turners Branch	Tertiary	Northwest &	

FEDERALLY PROTECTED SPECIES

Federally threatened and endangered species (T&E species) listed by the US Fish and Wildlife Service for Richland County are included in Table 2. There are no known occurrences for any of the listed T&E species near the proposed study area. Additionally, there are several At Risk Species that may become listed as threatened or endangered at some point in the future.

Once a preferred alternative is chosen, a field visit to review the area for potential habitat or occurrences of T&E species would be completed.

Table 2 Federally Protected Species in Richland County		
Common Name	Scientific Name	Federal Status
American wood stork	*Mycteria americana*	T
Red-cockaded woodpecker	*Picoides borealis*	E
Atlantic sturgeon	*Acipenser oxyrinchus*	E
Shortnose sturgeon	*Acipenser brevirostrum*	E
Canby's dropwort	*Oxypolis canbyi*	E
Michaux's sumac	*Rhus michauxii*	E
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	E
Smooth coneflower	*Echinacea laevigata*	E
Bald Eagle	*Haliaeetus leucocephalus*	BGEPA
T = Threatened; E = Federally Endangered; BGEPA = Federally protected under the Bald and Golden Eagle Protection Act		

HAZMAT

During a desktop evaluation, several hazmat sites were identified within the project area, mostly concentrated in the south portion of the study area (refer to Figure 3). There are four (4) hazmat sites along Blythewood/Langford Rd (refer to Figure 4), while I-77 and Farrow Rd. (refer to Figure 5) has fifteen (15) hazmat sites. These include hazardous waste, air pollution, water discharge, and toxic release sites.

Once a preferred alternative is chosen, a Phase 1 and/or Phase 2 Hazardous Material assessment may be recommended to further evaluate sites that may be impacted.

Figure 3: Hazmat sites within project study area.

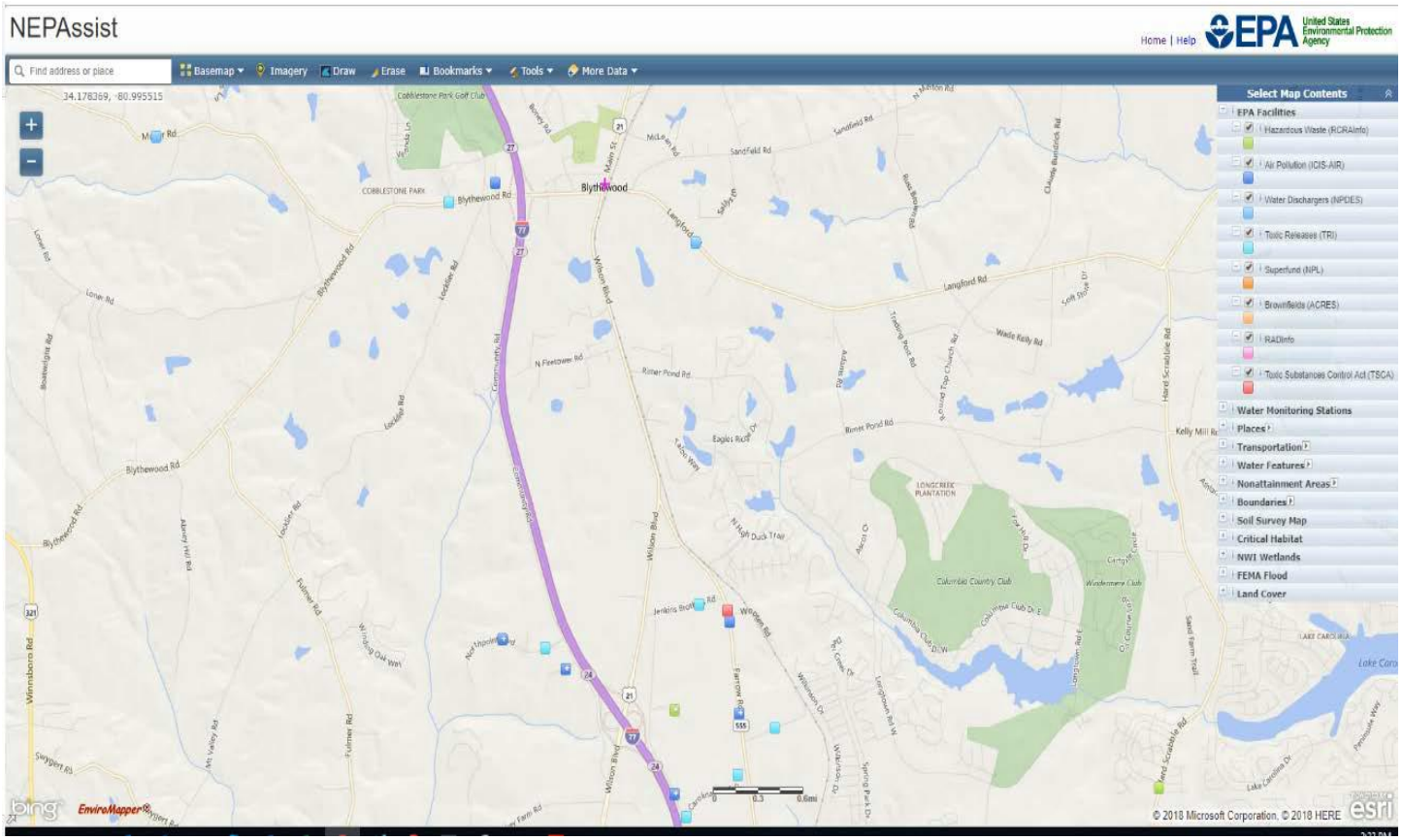


Figure 4: Blythewood/ Langford Rd. hazmat sites.

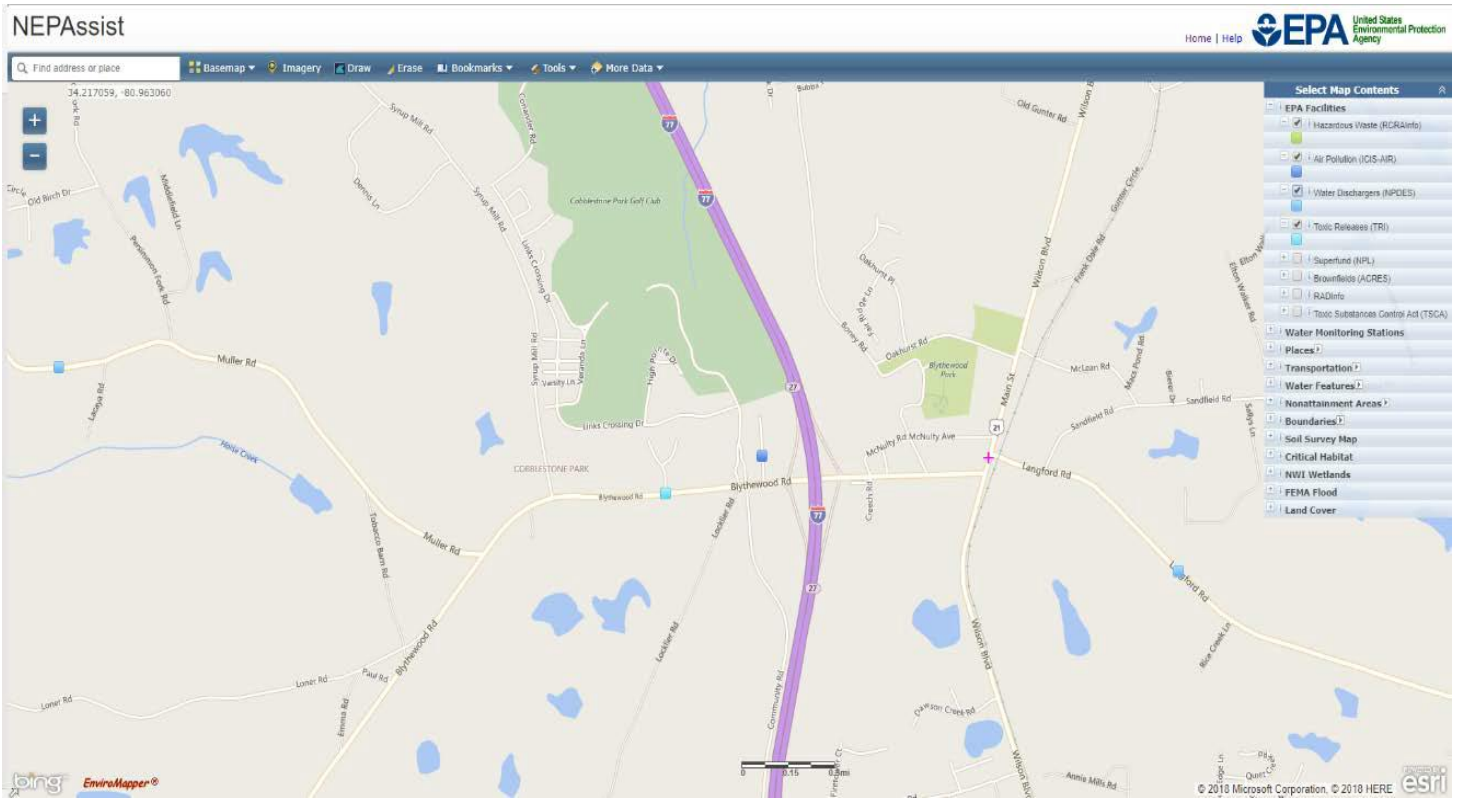
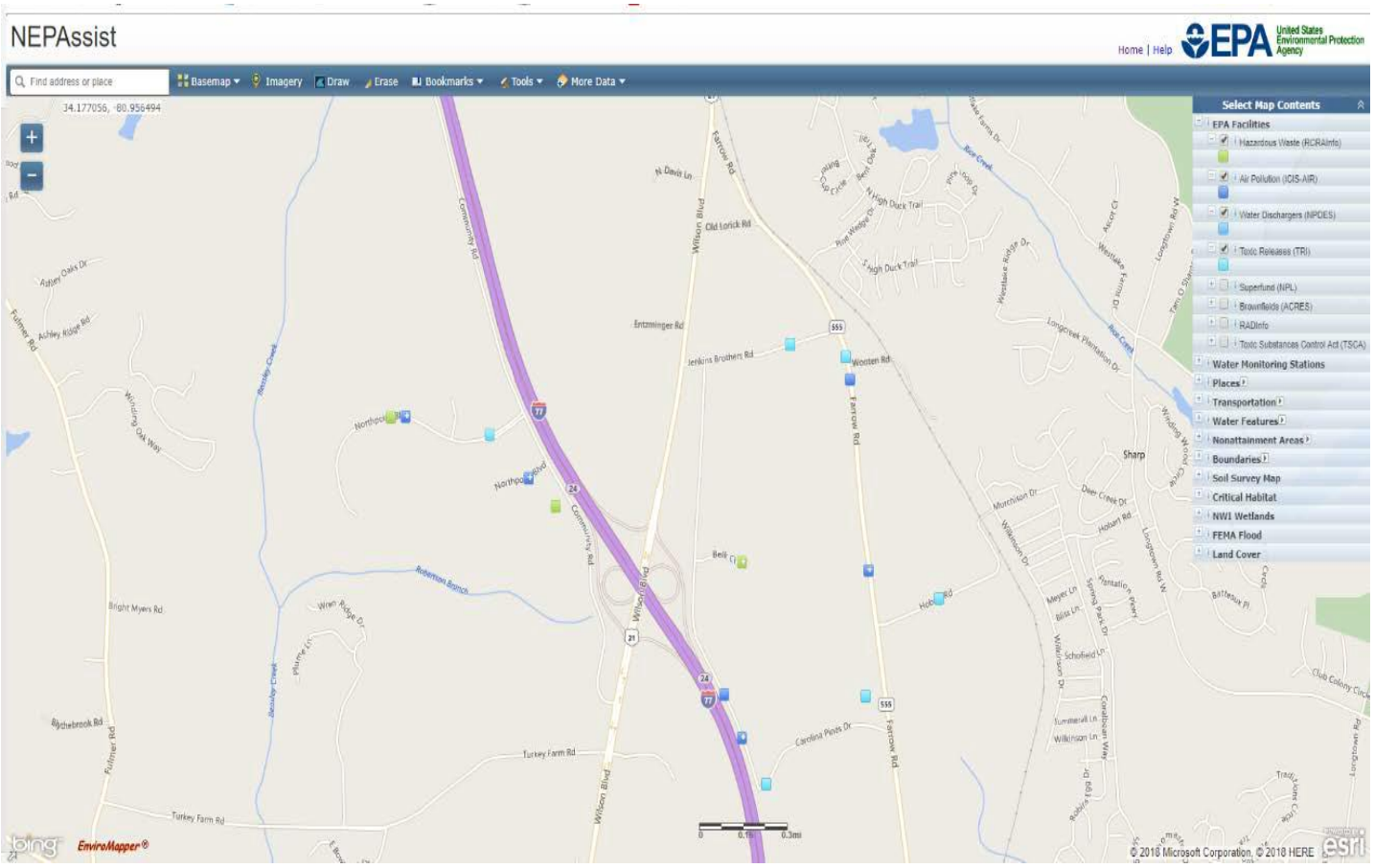


Figure 5: I-77 and Farrow Rd. hazmat sites.



2 . Cultural Analysis

New South Associates conducted a Cultural Resources literature review for the proposed traffic improvement plan to the town of Blythewood, South Carolina. There are 111 previously recorded resources found within the study area. Forty-nine of these 111 resources are identified archaeology sites. The remaining 62 resources are historic structures.

Of the identified resources one archaeology site (38RD1293) and three historic structures (Frank Brown House-4833, Abney House-4856, and George Hoffman House-48) are either eligible for or listed in the National Register of Historic Places (NRHP). Direct effects to these resources should be completely avoided. Also, adverse effects to the view shed of the historic structures should also be avoided. The NRHP eligibility of an additional 26 resources is unknown. These resources should be fully assessed for their NRHP eligibility or should be avoided. Resources that are listed or eligible are summarized in the table below along with resources that's NRHP eligibility is unknown.

Site Number	Resource Type/Name	Component/Period of Significance	Eligibility
38RD0096	Archaeology Site	Unknown	Unknown
38RD0099	Archaeology Site	Unknown	Unknown
38RD0098	Archaeology Site	Unknown	Unknown
38RD0145	Archaeology Site	Unknown	Unknown
38RD0104	Archaeology Site	Prehistoric	Unknown
38RD0132	Archaeology Site	Prehistoric	Unknown
38RD0146	Archaeology Site	Late Archaic	Unknown
38RD0149	Archaeology Site	Early Archaic	Unknown
38RD0150	Archaeology Site	Unknown	Unknown
38RD0279	Archaeology Site	Prehistoric	Unknown
38RD0280	Archaeology Site	Historic	Unknown
38RD0281	Archaeology Site	Historic	Unknown
38RD1082	Archaeology Site	Prehistoric	Unknown
38RD1205	Archaeology Site	Prehistoric	Unknown
38RD1206	Archaeology Site	Historic	Unknown
38RD1207	Archaeology Site	Historic	Unknown
38RD1293	Archaeology Site	Prehistoric	Eligible
38RD1367	Archaeology Site	Prehistoric	Unknown
38RD1368	Archaeology Site	Prehistoric	Unknown
38RD1369	Archaeology Site	Unknown	Unknown
38RD1382	Archaeology Site	Unknown	Unknown
38RD1435	Archaeology Site	Historic	Unknown
38RD1466	Archaeology Site	Prehistoric	Unknown
38RD1467	Archaeology Site	Historic	Unknown
38RD1468	Archaeology Site	Prehistoric	Unknown
38RD1469	Archaeology Site	Prehistoric	Unknown
38RD1470	Archaeology Site	Prehistoric	Unknown
4833	Brown, Frank, house	ca. 1932	Eligible
4856	Abney house	ca. 1850	Eligible
48	Hoffman, George House	ca. 1855	Listed

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About AECOM

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