



Appendix A

Traffic Study

PREPARED FOR:

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Clements Ferry Road from Jack Primus Road to SC 41 Widening Study

March 16, 2017

Revised: September 29, 2017 & February 7, 2018



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Purpose of Study

The purpose of this Traffic Study is to determine the existing and design year traffic volumes and operational conditions of the study corridor and recommend improvements to address deficiencies. Based on discussions with the South Carolina Department of Transportation (SCDOT), the City of Charleston, and Berkeley-Charleston-Dorchester Council of Governments (BCDCOG), the study objectives are:

- Collect data including: posted speed limits, existing traffic signal timings, and available SCDOT AADT information along Clements Ferry Road. Morning and afternoon peak hour turning movement traffic counts. The nine major intersections included in this study are:
 - 1) Jack Primus Road/Royal Assembly Drive
 - 2) Bradbury Lane/N. Steel Circle
 - 3) Nelliefield Creek Drive
 - 4) Peninsula Cove Drive
 - 5) Rivers Reach Drive
 - 6) Cainhoy Village Road
 - 7) Cainhoy Road
 - 8) Reflectance Road
 - 9) SC 41

- The development of design-year traffic volume projections using the BCDCOG Charleston Area Transportation Study (CHATS) regional travel demand model.

- To perform detailed traffic analyses for the existing year (2016) and design year (2040) including traffic volumes and operational conditions of the study corridor. Intersection and roadway capacity analysis will be performed in accordance with the Transportation Research Board's *Highway Capacity Manual 2010 (HCM 2010)* methodologies of the *Synchro/SimTraffic*, Version 9 software.

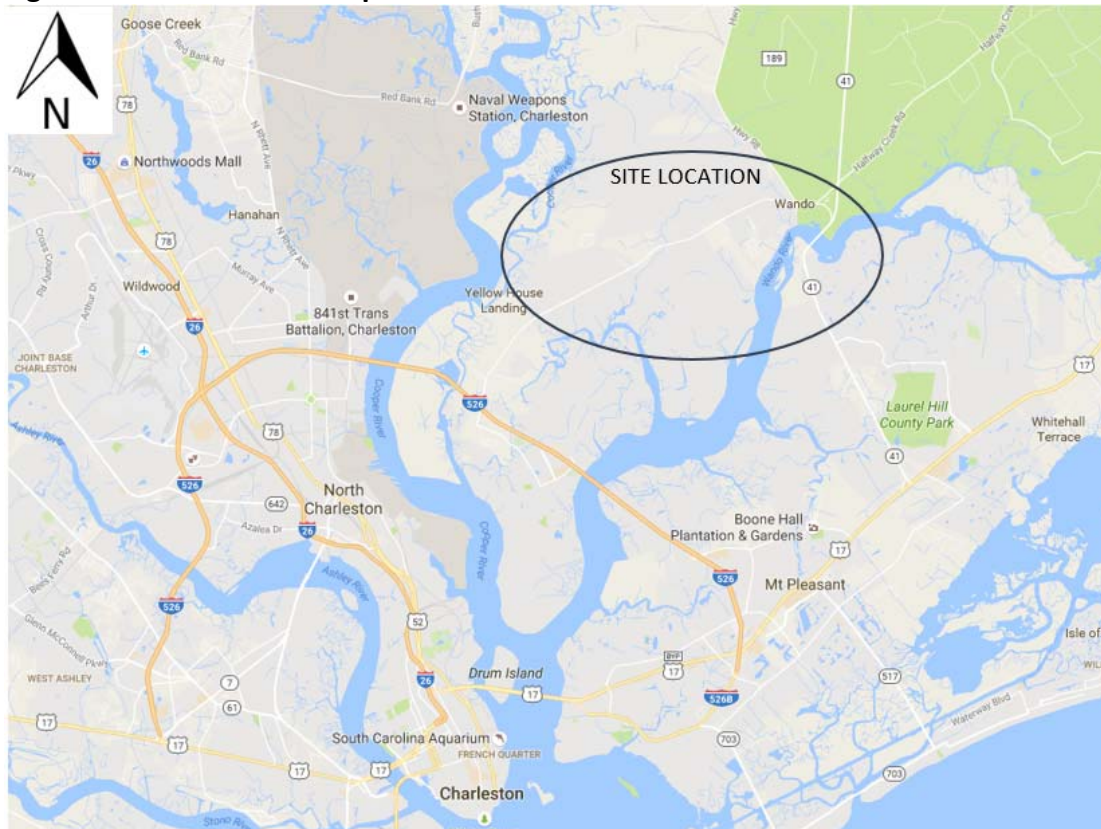
- Geometric and capacity improvements to incorporate the target level of service. The year in which the study intersections and/or roadway segments fall below an acceptable level of service (it is assumed LOS C is acceptable) shall be determined for planning purposes.

This study incorporates the Traffic Impact Analysis for Clements Ferry Road widening from I-526 to Jack Primus Road completed in January 2015 by Thomas and Hutton and the Traffic Study for Clements Ferry Road widening from I-526 to Jack Primus Road completed in September 2012 by South Carolina Department of Transportation (SCDOT). These studies are included in **Appendix C**.

Study Site Location

The study is located in Berkeley County just northeast of Charleston. I-526 is the main access to the site location along with SC 41 from Charleston. It is located between the Cooper River and the Wando River, along with Nowell Creek, a branch off the Wando River. The land has various streams and woodland areas. The site location map with the surrounding roadway network is shown in **Figure 1**. The major roadways that are included within the study area are Jack Primus Road/Royal Assembly Drive, Cainhoy Road, and SC 41.

Figure 1 – Site Location Map



List of Analyses Developed in this Study

The analyses developed in this study consist of the existing and future condition with the proposed geometric widening and without the widening. The study years are 2016 (existing), 2022 (opening year), and 2040 (design year). The following analysis of level of service (LOS) and delay were conducted:

- LOS of Existing Geometry with Existing 2016 Volumes
- LOS of Existing Geometry with Future 2022 & 2040 Volumes at CHATS Growth Rate
- LOS of Proposed Geometry with Future 2022 & 2040 Volumes at CHATS Growth Rate
- LOS of Existing Geometry with Future 2022 & 2040 Volumes at CHATS Growth Rate + Cainhoy Development
- LOS of Proposed Geometry with Future 2022 & 2040 Volumes at CHATS Growth Rate + Cainhoy Development
- LOS of Proposed Geometry (with double left turns from WB Clements Ferry Road into the new main site entrance) with Future 2040 Volumes at CHATS Growth Rate + Cainhoy Development

Area Transportation Network Characteristics

Clements Ferry Road is currently a two-lane section from Jack Primus Road to SC 41 with a 55-mph speed limit from Jack Primus Road to Nelliefield Creek Drive, 45 mph from Nelliefield Creek Drive to Cainhoy Road then 35 mph to SC 41.

Jack Primus Road/Royal Assembly Drive intersection is controlled by a signal. Jack Primus Road is a three-lane road with a two way left turn center lane and a 40-mph speed limit. There is a proposed access point for the Cainhoy Development on Jack Primus Road. Royal Assembly Drive is a two-lane roadway with a 25-mph speed limit.

Bradbury Lane is a residential street for Martin's Creek neighborhood. N. Steel Circle is a dead-end business entry roadway.

A future signal 'Main Entrance Site' roadway is under construction to access Clements Ferry Road east of N Steel Circle/Bradbury Lane intersection and west of Nelliefield Creek Drive. The south section of road will access the Berkeley County Middle/Elementary and High school sites that are under construction and have interconnectivity with proposed residential neighborhoods and mixed use. The north section is proposed but not under construction at this time.

'Future Site Road' is proposed just east of the 'Main Entrance Site' and is planned to access the north and south sections of Clements Ferry Road by 2040. This road will also have interconnectivity with proposed neighborhoods and mixed use facilities to the north and south. The road to the south will have interconnectivity with the Berkeley County Middle/Elementary and High school sites.

Nelliefield Creek Drive is a residential street for Nelliefield Plantation with a 25-mph posted speed limit.

Peninsula Cove Drive is a residential street for The Peninsula neighborhood with a 20-mph posted speed limit. Peninsula Cove Drive will connect to the north of Clements Ferry Road to access proposed residential neighborhoods and mixed use facilities by 2040.

Rivers Reach Drive is a two-lane road with a posted 35 mph speed limit. Rivers Reach Drive will connect to the north of Clements Ferry Road to access proposed residential neighborhoods and mixed use facilities by 2040.

Cainhoy Village Road is a two-lane roadway with no posted speed limit. Cainhoy Village Road will connect to the north of Clements Ferry Road and connect to the 'Main Entrance Site Road' to access proposed mixed use and residential development by 2040.

Cainhoy Road (Highway 98) is controlled by a signal and has a posted 35 mph speed limit. There will be access points to the Cainhoy Development located on Cainhoy Road.

Reflectance Road is a two-lane roadway with a 40-mph posted speed limit.

SC 41 is a two-lane highway with a posted 45 mph speed limit. SCDOT plans to widen and replace the SC 41 Wando River Bridge through Federal Highway Bridge Replacement and Rehabilitation Program funding. The project would include realigning the SC 41/Clements Ferry Road intersection to add a signalized T-intersection. The new pavement marking plan for this intersection is shown in **Appendix C**.

Discussion of Existing Traffic Volumes

Peak hour turning movement counts were collected on Tuesday, April 28, 2015 at the Jack Primus Road/Royal Assembly Drive, Steel Circle/Bradbury Lane, Nelliefield Creek Drive, Peninsula Cove Drive, Rivers Reach Drive, Cainhoy Village Road, Cainhoy Road, Reflectance Road, and SC 41 intersections. Turning movement counts were conducted at each of the intersections from 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. to determine the a.m. and p.m. peak hours.

The normal weekday a.m. peak hour time for all of the study intersections was found to be from 7:00 to 8:00 a.m. The normal weekday p.m. peak hour time varied, but the majority of the intersections had a peak time from 5:00 to 6:00 p.m. so this time was used in the study analysis.

The 2016 existing peak hour turning movement volumes at the study intersections are shown in **Figure 2**. All traffic count data can be found in the **Appendix A** which also includes bicycle and pedestrian counts.

Level of Service (LOS) of Existing Geometry with Existing Volumes Analysis

An intersection capacity analysis was conducted for the existing intersections per the *Highway Capacity Manual*. Intersections are assigned a “Level of Service” letter grade for the peak hour of traffic based on the number of lanes at the intersection, traffic volumes, and traffic control. Level of Service A (LOS A) represents light traffic flow (free flow conditions) while Level of Service F (LOS F) represents heavy traffic flow (over capacity conditions). A Level of Service C (LOS C) or better is ideal. Individual movements are also assigned LOS grades. One or more individual movements typically operate at LOS D when the overall intersection is operating acceptably at LOS C.

The LOS and Delay (seconds) results for the existing study hours are shown in **Table 1**. These are based on the existing lane configurations and lane usages. The existing turning movement volumes from the Appendix were used in the LOS calculations. Signal timings were determined based upon existing signal plans provided by SCDOT. The LOS calculations were done per the 2010 *Highway Capacity Manual* using *Synchro/Simtraffic, Version 9* software. The complete LOS calculations, which include grades for individual movements, are included in the **Appendix B**. The individual movements are included in the table.

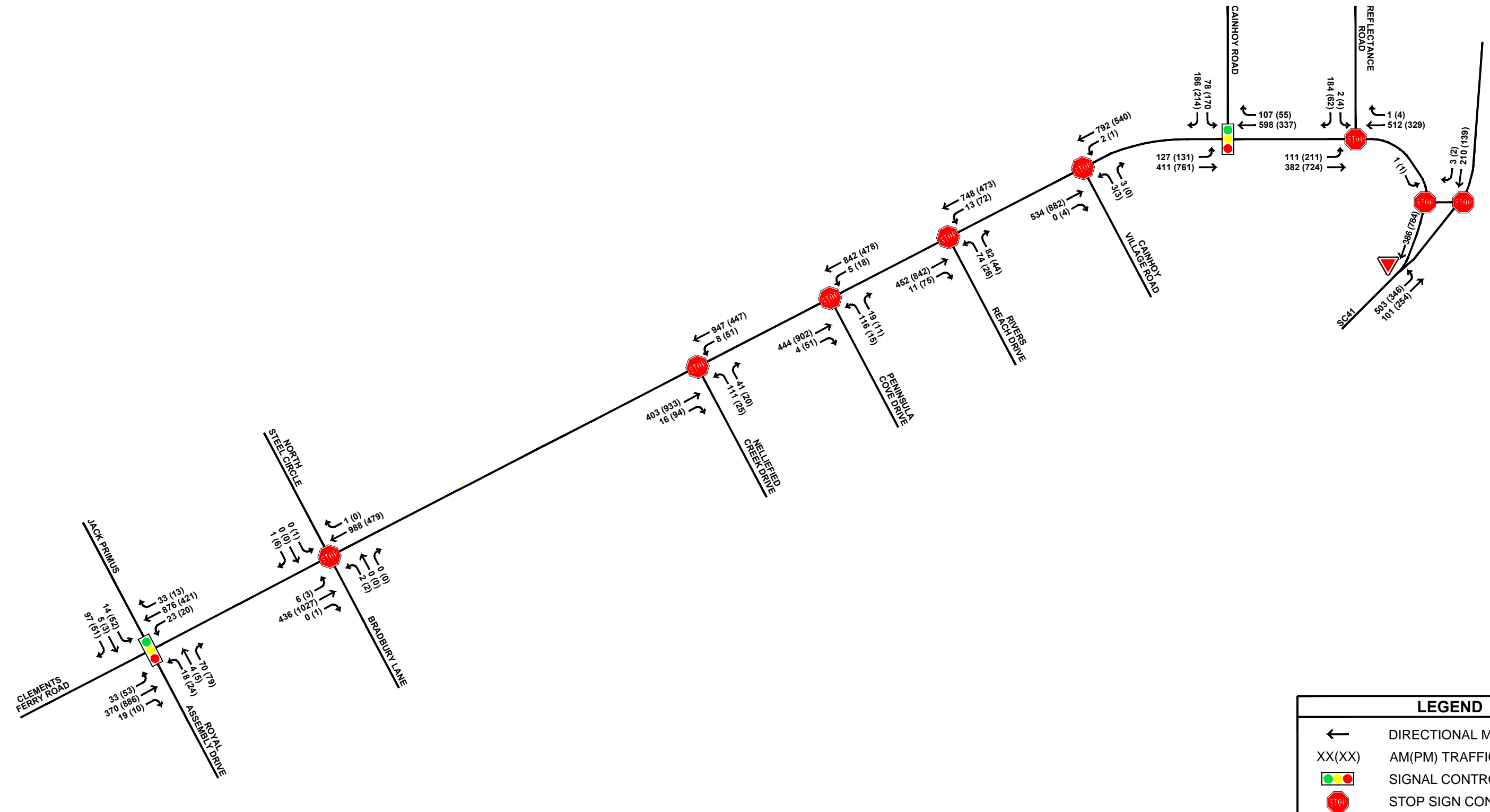
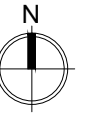
The following study intersections currently operate at **LOS F** for the a.m. peak:

- Nelliefield Creek Drive
- Peninsula Cove Drive

The following study intersections currently operate at **LOS F** for the p.m. peak:

- Bradbury Lane/ N. Steel Circle
- Nelliefield Creek Drive
- Rivers Reach Drive

The side streets are the worst LOS for these unsignalized intersections during the peak periods of the day. The heavier main street traffic volumes make it difficult for the stop controlled traffic to make left turns onto Clements Ferry Road.



LEGEND	
←	DIRECTIONAL MOVEMENT
XX(XX)	AM(PM) TRAFFIC VOLUMES
	SIGNAL CONTROLLED
	STOP SIGN CONTROLLED

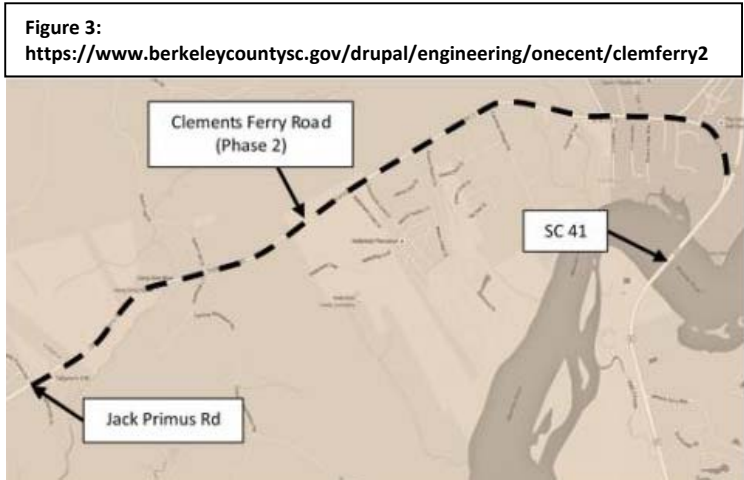
Table 1 – Level of Service (LOS) of Existing Geometry with Existing Volumes¹

Intersection	Movement Approach	A.M. Peak Hour LOS (DELAY- SECONDS)	P.M. Peak Hour LOS (DELAY- SECONDS)
<i>Jack Primus Road/Royal Assembly Drive</i>	EB L EB T EB R WB L WB T WB R SB TL SB R NB LTR INTERSECTION OVERALL	A (3.6) A (7.2) A (0.1) A (3.3) B (18.0) A (0.1) D (39.5) B (12.9) B (19.6) B (14.4)	A (3.5) B (18.0) A (0.0) A (4.2) B (11.0) A (0.0) E (58.7) A (5.5) C (22.8) B (16.6)
Bradbury Lane/ N. Steel Circle	EB L EB TR WB LTR SB LTR NB LTR INTERSECTION OVERALL	B (13.9) A (0.0) A (0.0) C (20.3) C (20.8) E (48.5)	B (10.1) A (0.0) A (0.0) F (115.5) F (951.8) F (65.3)
Nelliefield Creek Drive	EB T EB R WB L WB T NB L NB R INTERSECTION OVERALL	A (0.0) A (0.0) A (8.3) A (0.0) F (130.0) B (11.4) F (130.5)	A (0.0) A (0.0) B (12.0) A (0.0) F (67.8) C (20.4) F (67.2)
Peninsula Cove Drive	EB T EB R WB L WB T NB LR INTERSECTION OVERALL	A (0.0) A (0.0) A (8.4) A (0.0) F (107.9) F (108.2)	A (0.0) A (0.0) B (11.0) A (0.0) E (38.3) E (37.8)
Rivers Reach Drive	EB TR WB L WB T NB LR INTERSECTION OVERALL	A (0.0) A (0.2) A (0.4) E (48.3) E (49.7)	A (0.0) A (0.13) A (3.5) F (58.4) F (63.0)
Cainhoy Village Road	EB TR WB L WB T NB LR INTERSECTION OVERALL	A (0.0) A (0.0) A (0.1) C (22.0) C (22.1)	A (0.0) A (0.0) A (0.0) E (41.0) E (40.8)
<i>Cainhoy Road</i>	EB L EB T WB TR SB LR INTERSECTION OVERALL	B (11.4) A (6.2) D (41.6) D (52.0) C (31.2)	B (11.2) C (26.3) C (25.2) D (47.9) C (29.8)
Reflectance Road	EB L EB T WB TR SB LR INTERSECTION OVERALL	A (2.0) A (3.8) A (0.0) C (18.5) C (18.6)	A (4.3) A (5.5) A (0.0) C (15.3) C (16.7)
SC 41	INTERSECTION OVERALL	B (10.5)	B (11.3)

¹The signalized intersections are italicized

Proposed Development Plan

Clements Ferry Road is located in Berkeley County. Clements Ferry Road is proposed to be widened from Jack Primus Road to SC 41 from a two-lane roadway to a four-lane curb and gutter section, with a raised planted median and multi-use path along one side of the roadway. Along the 4.5 miles' section, two of the nine study intersections are signalized. The widening is projected to be complete by 2022. **Figure 3** shows the project location map.



Development Information: According to the City of Charleston Planning Department the Cainhoy Development was adopted as three separate PUDs and there are two development agreements covering all of the PUDs listed below:

[Cainhoy Land & Timber PUD](#) (5,653.5 ac.) – PUD adopted 02/25/14 (2014-024) – annexed about 742 acres at same time

[Cainhoy Southern Timber \(ST\) PUD](#) (1,860.2 ac.) – PUD adopted 02/25/14 (2014-025)

[Cainhoy T7 PUD](#) (1,323.5 ac.) – PUD adopted 06/17/14 (2014-082)

Two Development Agreements covering all of the above property:

[Second Amendment to the Development Agreement for Cainhoy Plantation – Trust #2 – adopted 02/25/14 \(2014-027\)](#)

[Second Amendment to the Development Agreement for Cainhoy Plantation – PLJ Trusts – adopted 06/17/14 \(2014-083\)](#)

Number of units: A previous amendment to the governing development agreements (2001) set the maximum number of units at 11,042. The maximum density of dwelling units is 2.1 units per gross acreage.

Status: Since the PUD guidelines were adopted, the only development to occur so far has been the entrance roads into the southern portion of the development (south of Clements Ferry Road) leading to the Berkeley County Middle/Elementary and High school sites. Both schools are well underway and the Middle/Elementary school is expected to open fall of 2016. No residential subdivisions have been submitted thus far. There is also the pending BP Amoco lawsuit against the developer and the City that has not been resolved as far as the City Planning Department knows.

The development is located along the northern and southern sides of Clements Ferry Road. The distribution of the development according to City of Charleston Planning department will have approximately 50% to the north of Clements Ferry Road and 50% to the south of Clements Ferry Road. **Figure 4** shows the most up to date City Council approved planned unit development.



DEVELOPMENT SUMMARY

POD	OWNER	ZONING	GROSS ACREAGE
C1	CAINHOJ LAND & TIMBER, LLC	RESIDENTIAL	±912 AC.
C2	CAINHOJ LAND & TIMBER, LLC	MIXED USE	±3,769 AC.
C3	CAINHOJ LAND & TIMBER, LLC	RESIDENTIAL	±973 AC.
T1	TRACT 7, LLC	RESIDENTIAL	±1,404 AC.
T2	TRACT 7, LLC	MIXED USE	±169 AC.
S1	SOUTHERN TIMBER, LLC	MIXED USE	±515 AC.
S2	SOUTHERN TIMBER, LLC	MIXED USE	±57 AC.
S3	SOUTHERN TIMBER, LLC	RESIDENTIAL	±1,288 AC.
TOTAL			±9,087 AC.

NOTES:

1. Acreages shown above are approximate and are based on best available data to date.
2. Wetlands shown on this plan provided by Sabine & Waters

AGGREGATE PROPERTY MAP

CAINHOJ

PLANNED UNIT DEVELOPMENT

Berkeley County, South Carolina
JANUARY 24, 2014

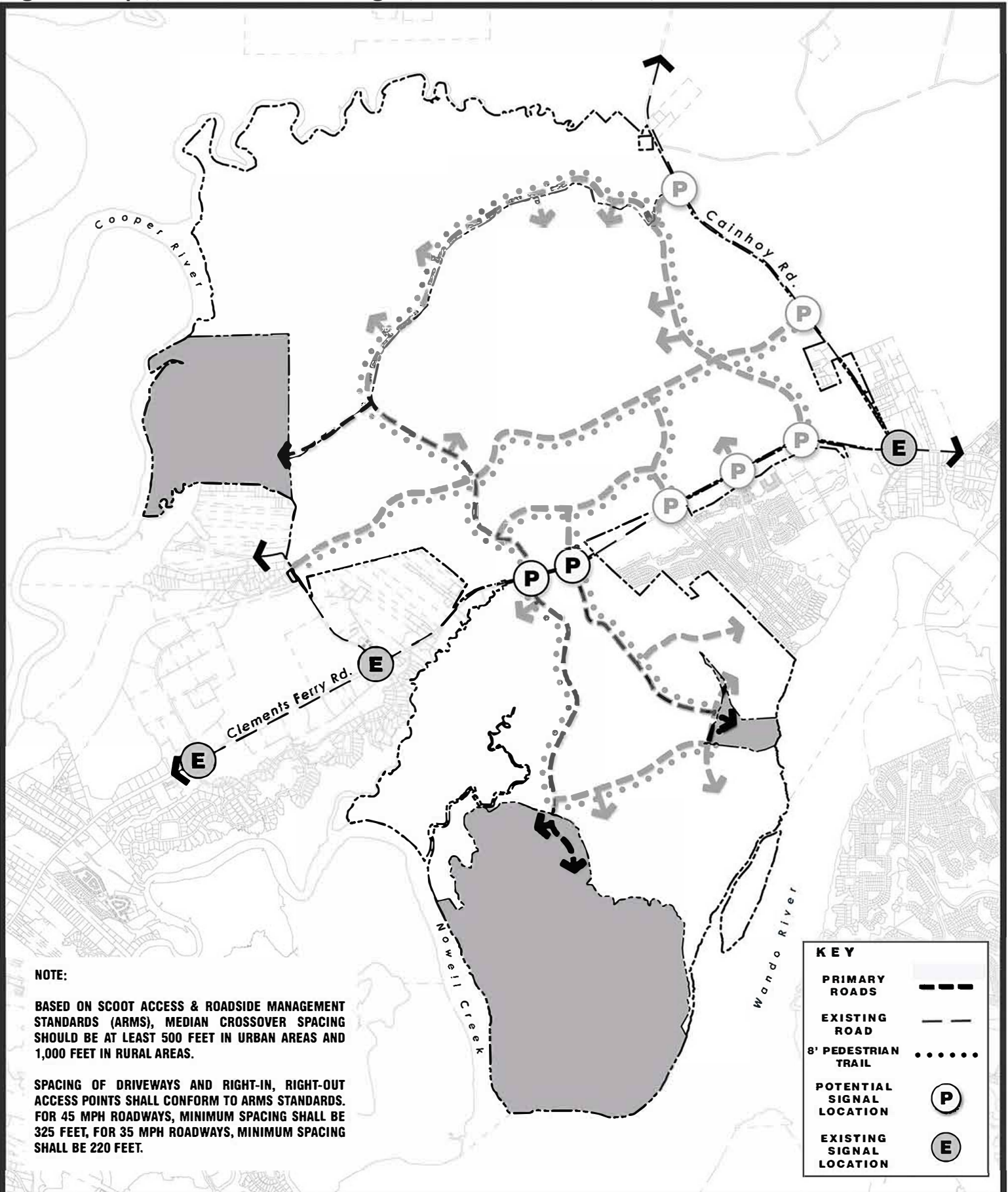
Prepared for:
Cainhoj Land & Timber, LLC.
Southern Timber, LLC.
Tract 7, LLC.

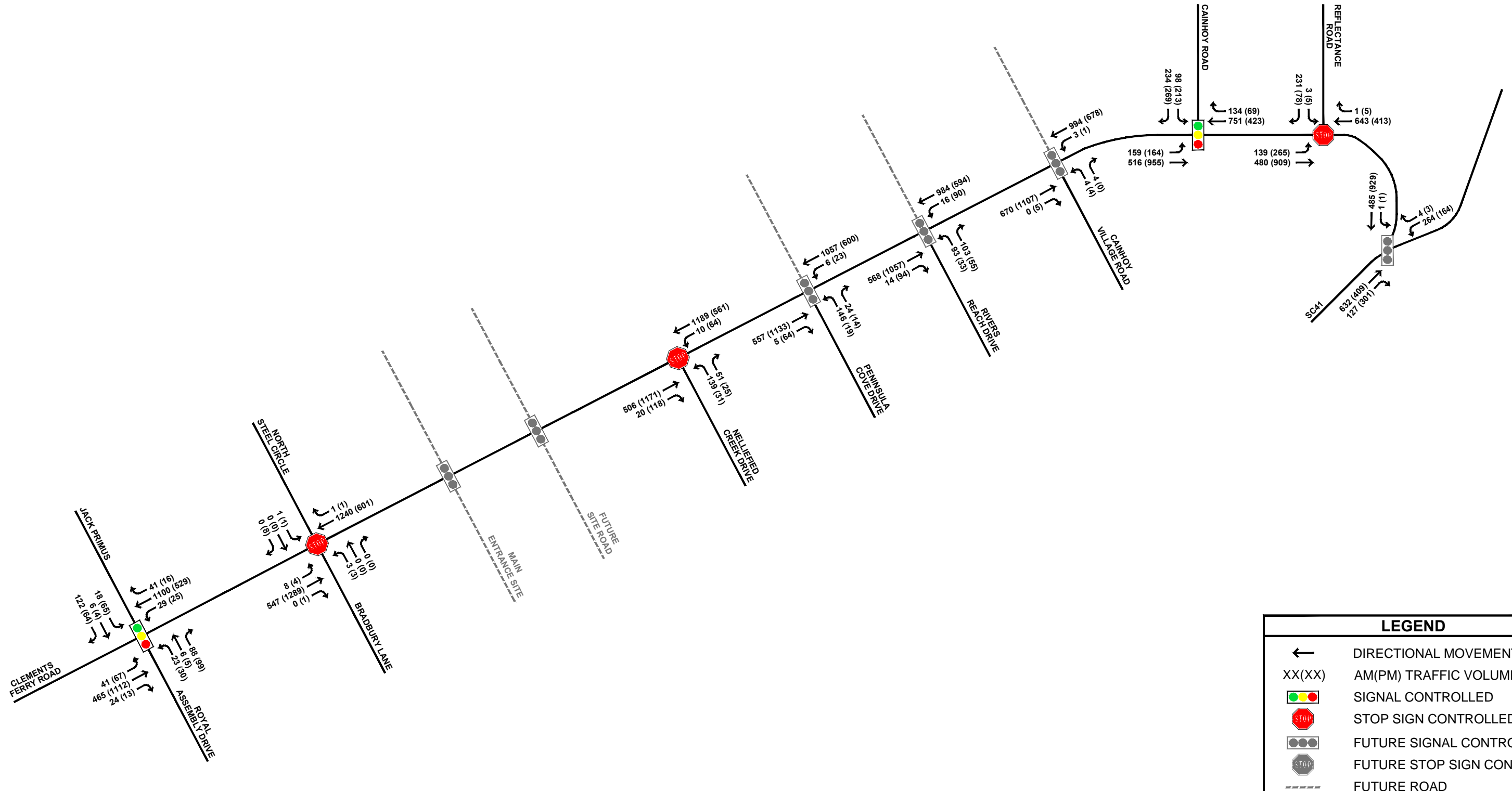
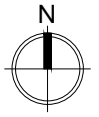


Discussion of Future Volumes based on CHATS Growth Rate

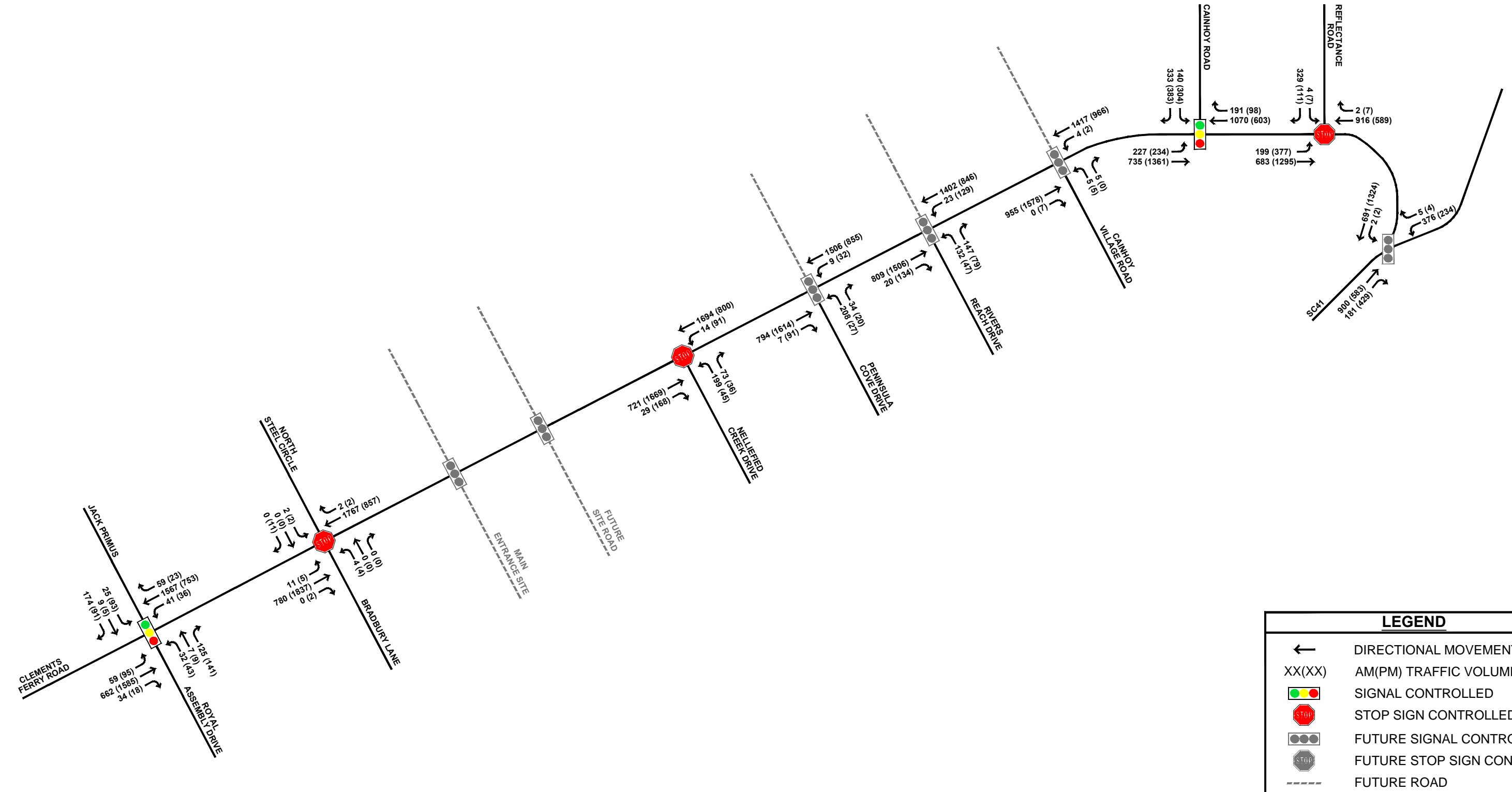
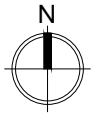
Traffic forecasts were developed for the year 2022 and 2040 by applying a 2% annual growth rate to the existing traffic volume data. This growth rate is based on the Berkeley Charleston Dorchester Council of Governments (BCDCOG) CHATS Travel Demand Model, the SCDOT Traffic Study for Clements Ferry Road from I-526 to Jack Primus Road and the Traffic Study developed by Thomas and Hutton. The forecast for future signalized intersections is shown in **Figure 5** from the most up to date City Council approved planned unit development. There has not been a Signal Warrant Analysis run for these forecast signals. The signal spacing along the corridor was analyzed in the SCDOT Traffic Study and preferred to stay at one-mile spacing's. The Berkeley County and City of Charleston Planning Departments should strive to provide this spacing throughout the corridor to attain optimum signal progression and reduce delay in the future.

The existing geometry with future volumes at a CHATS growth rate are shown in **Figure 6** for 2022 and **Figure 7** for 2040.





LEGEND	
←	DIRECTIONAL MOVEMENT
XX(XX)	AM(PM) TRAFFIC VOLUMES
🚦	SIGNAL CONTROLLED
🛑	STOP SIGN CONTROLLED
⬜⬜⬜	FUTURE SIGNAL CONTROL
⬜	FUTURE STOP SIGN CONTROL
---	FUTURE ROAD



LEGEND	
←	DIRECTIONAL MOVEMENT
XX(XX)	AM(PM) TRAFFIC VOLUMES
🚦	SIGNAL CONTROLLED
🛑	STOP SIGN CONTROLLED
⬜⬜⬜	FUTURE SIGNAL CONTROL
⬜🛑⬜	FUTURE STOP SIGN CONTROL
---	FUTURE ROAD

LOS OF Future Volumes based on CHATS Growth Rate

To compare LOS and Delay of the before and after construction of Clements Ferry Road widening, two separate scenarios for 2022 and 2040 were analyzed using 2010 *Highway Capacity Manual* using *Synchro/Simtraffic, Version 9* software. The scenarios are as follows:

- LOS of Existing Geometry with Future Volumes at CHATS Growth Rate -shown in **Table 2**
- LOS of Proposed Geometry with Future Volumes at CHATS Growth Rate -shown in **Table 3**

The complete LOS and Delay calculations, which include grades for individual movements, are included in the **Appendix B**. The table shows LOS and Delay per individual movement and the overall intersection LOS and Delay.

Table 2 –2022 & 2040 LOS of Existing Geometry with Future Volumes at CHATS Growth Rate¹

Intersection	Movement Approach	A.M. Peak Hour		P.M. Peak Hour	
		LOS (DELAY-SECONDS)		LOS (DELAY-SECONDS)	
		2022	2040	2022	2040
Jack Primus Road/Royal Assembly Drive	EB L	A (4.6)	A (8.3)	A (3.6)	A (5.7)
	EB T	A (7.8)	B (12.5)	C (20.2)	F (166.4)
	EB R	A (0.0)	A (0.1)	A (0.0)	A (0.0)
	WB L	A (3.4)	A (3.9)	A (4.6)	A (7.2)
	WB T	C (26.5)	F (178.8)	B (11.0)	B (18.5)
	WB R	A (0.1)	A (0.7)	A (0.0)	A (0.0)
	SB T	D (42.2)	D (50.2)	E (79.1)	F (106.3)
	SB R	B (13.3)	B (13.2)	A (6.3)	B (10.3)
	NB LTR	C (21.3)	C (21.5)	C (23.1)	C (26.1)
	INTERSECTION OVERALL	B (19.5)	F (106.2)	B (18.5)	F (102.1)
Bradbury Lane/ N. Steel Circle	EB L	C (15.4)	C (23.5)	B (10.3)	B (11.8)
	EB TR	A (0.0)	A (0.0)	A (0.76)	A (0.0)
	WB LTR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	SB LTR	C (23.5)	E (42.4)	F (218.7)	F (ERROR)
	NB LTR	C (24.3)	E (47.3)	F (2192.2)	F (ERROR)
	INTERSECTION OVERALL	F (65.5)	F (285.9)	F (79.2)	F (365.6)
Nelliefield Creek Drive	EB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	EB R	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	A (8.5)	A (9.3)	B (12.6)	C (19.9)
	WB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	NB L	F (314.7)	F (ERROR)	F (90.4)	F (1093.4)
	NB R	B (12.0)	C (15.2)	C (22.2)	E (47.9)
	INTERSECTION OVERALL	F (317.1)	F (2495.8)	F (89.1)	F (1040.8)
Peninsula Cove Drive	EB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	EB R	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	A (8.6)	A (9.4)	B (11.4)	C (15.6)
	WB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	NB LR	F (266.5)	F (ERROR)	E (46.1)	F (334.7)
	INTERSECTION OVERALL	F (268.8)	F (2034.5)	E (45.4)	F (323.0)
Rivers Reach Drive	EB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	A (0.3)	A (1.6)	A (2.7)	B (12.0)
	WB T	A (0.5)	A (1.7)	A (3.9)	B (12.9)
	NB LR	F (113.9)	F (ERROR)	F (84.6)	F (ERROR)
	INTERSECTION OVERALL	F (119.4)	F (1363.7)	F (96.1)	F (2462.7)
Cainho Village Road	EB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	A (0.1)	A (0.3)	A (0.0)	A (0.2)
	WB T	A (0.1)	A (0.4)	A (0.0)	A (0.2)
	NB LR	D (27.1)	F (67.7)	E (47.4)	F (152.0)
	INTERSECTION OVERALL	D (27.0)	F (69.9)	E (47.2)	F (155.4)

Table 2 Continued –2022 & 2040 LOS of Existing Geometry with Future Volumes at CHATS Growth Rate¹

Intersection	Movement Approach	A.M. Peak Hour LOS (DELAY-SECONDS)		P.M. Peak Hour LOS (DELAY-SECONDS)	
		2022	2040	2022	2040
<i>Cainhoy Road</i>	EB L	C (22.1)	F (94.2)	B (11.8)	B (16.0)
	EB T	A (6.7)	B (10.6)	C (30.8)	E (79.1)
	WB T	E (69.6)	F (222.9)	C (25.2)	C (24.7)
	SB LR	E (72.1)	F (175.1)	E (60.3)	F (465.5)
	INTERSECTION OVERALL	D (48.9)	F (145.8)	C (34.8)	F (148.3)
Reflectance Road	EB L	A (2.7)	A (7.7)	A (5.2)	B (11.8)
	EB T	A (4.4)	A (9.1)	A (6.1)	B (11.8)
	WB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	SB LR	C (23.8)	F (155.7)	C (16.5)	F (64.3)
	INTERSECTION OVERALL	C (24.1)	F (165.7)	C (19.6)	B (14.8)
SC 41	WB L	F (152.9)	F (ERROR)	F (116.1)	F (ERROR)
	WB R	F (152.9)	F (ERROR)	F (116.1)	F (ERROR)
	NB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	NB R	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	SB L	A (0.0)	A (0.0)	A (8.1)	A (8.6)
	SB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
INTERSECTION OVERALL	F (151.2)	F (1060.8)	F (119.0)	F (1075.1)	

¹The signalized intersections are italicized

Without widening Clements Ferry Road by year 2022 the following intersections are operating at the LOS F:

- Bradbury Lane/N. Steel Circle (AM & PM LOS F)
- Nelliefield Creek Drive (AM & PM LOS F)
- Peninsula Cove Drive (AM LOS F)
- Rivers Reach Drive (AM & PM LOS F)
- SC 41 (AM & PM LOS F)

By year 2040 ALL intersections will be operating at LOS F, with the exception of Reflectance Road operating at a LOS B during the p.m. peak.

Table 3 – 2022 & 2040 LOS of Proposed Geometry with Future Volumes at CHATS Growth Rate¹

Intersection	Movement Approach	A.M. Peak Hour LOS (DELAY-SECONDS)		P.M. Peak Hour LOS (DELAY-SECONDS)	
		2022	2040	2022	2040
Jack Primus Road/Royal Assembly Drive	EB L	A (4.0)	A (5.3)	A (4.8)	A (5.9)
	EB T	A (8.0)	B (10.3)	B (12.6)	B (18.8)
	EB R	A (0.0)	A (0.1)	A (0.0)	A (0.1)
	WB L	A (3.5)	A (3.9)	A (4.5)	A (5.7)
	WB TR	B (12.7)	B (19.5)	B (11.7)	B (14.9)
	NB LTR	B (17.4)	B (18.0)	B (14.9)	B (15.5)
	SB L	C (31.6)	C (34.5)	C (29.1)	D (43.8)
	SB T	C (29.8)	C (29.9)	C (26.2)	C (25.2)
	SB R	B (11.3)	B (11.2)	A (3.3)	A (6.7)
	INTERSECTION OVERALL	B (11.4)	B (16.1)	B (12.3)	B (17.3)
Bradbury Lane/ N. Steel Circle	EB L	C (19.1)	D (34.1)	B (11.2)	B (13.4)
	EB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	NB LTR	C (15.6)	F (65.0)	E (37.5)	F (139.1)
	SB LTR	D (25.3)	F (160.4)	B (11.6)	B (14.9)
		INTERSECTION OVERALL	F (51.9)	F (166.8)	F (58.3)
Nelliefield Creek Drive	EB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	EB R	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	A (8.5)	A (9.3)	B (12.7)	C (20.2)
	WB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	NB L	F (57.1)	F (591.5)	F (66.8)	F (699.2)
	NB R	B (10.2)	B (11.4)	B (13.4)	C (18.1)
	INTERSECTION OVERALL	F (57.5)	F (597.7)	F (66.0)	F (634.1)
Peninsula Cove Drive	EB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	EB R	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	A (8.6)	A (9.4)	B (11.5)	C (15.7)
	WB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	NB LR	F (55.5)	F (592.6)	D (32.2)	F (149.0)
		INTERSECTION OVERALL	F (55.3)	F (593.9)	E (41.7)
Rivers Reach Drive	EB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	A (0.2)	A (2.0)	A (2.0)	C (18.7)
	WB T	A (0.2)	A (0.0)	A (1.7)	A (0.0)
	NB LR	D (31.6)	F (335.1)	E (45.6)	F (732.0)
		INTERSECTION OVERALL	D (32.3)	F (336.0)	F (50.9)
Cainhoy Village Road	EB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L		B (10.1)		B (13.8)
	WB T	A (0.0)	A (0.1)	A (0.0)	A (0.0)
	NB LR	C (17.8)	D (31.0)	E (35.7)	F (91.3)
		INTERSECTION OVERALL	C (17.8)	D (30.8)	E (35.7)
Cainhoy Road	EB L	B (10.0)	D (54.9)	B (10.2)	B (11.7)
	EB T	A (6.4)	A (7.1)	B (11.3)	B (11.6)
	WB TR	B (19.8)	C (24.8)	C (20.8)	B (18.0)
	SB LR	D (37.6)	F (122.5)	D (52.1)	F (291.6)
		INTERSECTION OVERALL	B (18.5)	D (39.6)	C (22.8)
Reflectance Road	EB L	A (2.4)	C (15.7)	A (3.1)	B (12.3)
	EB T	A (2.2)	A (0.0)	A (2.1)	A (0.0)
	WB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	SB LR	C (15.2)	D (33.1)	B (12.9)	D (25.2)
		INTERSECTION OVERALL	C (15.1)	D (32.3)	B (14.6)

Table 3 Continued– 2022 & 2040 LOS of Proposed Geometry with Future Volumes at CHATS Growth Rate¹

Intersection	Movement Approach	A.M. Peak Hour LOS (DELAY-SECONDS)		P.M. Peak Hour LOS (DELAY-SECONDS)	
		2022	2040	2022	2040
		<i>SC 41</i>	WB L	F (72.3)	F (648.5)
	WB R	F (72.3)	F (648.5)	D (32.4)	A (0.0)
	NB TR	A (0.0)	A (0.0)	A (0.0)	A (8.7)
	SB L	A (8.8)	A (9.8)	A (8.1)	A (0.0)
	SB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	INTERSECTION OVERALL	F (61.9)	F (560.8)	E (41.3)	F (227.0)

¹The signalized intersections are italicized

After widening Clements Ferry Road, in year 2022 all the signalized intersections show a LOS C or better with the exception of SC 41 showing a **LOS F** in the a.m. peak and LOS E in the p.m. peak. The stop control intersections are showing LOS D or worse for the majority of the intersections with the following showing a **LOS F**:

- Bradbury Lane/N. Steel Circle (AM & PM **LOS F**)
- Nelliefield Creek Drive (AM & PM **LOS F**)
- Peninsula Cove Drive (AM **LOS F**)
- Rivers Reach Drive (PM **LOS F**)

By year 2040 the following signalized and stop-control intersections are shown operating at a **LOS F**:

- Bradbury Lane/N. Steel Circle (AM & PM **LOS F**)
- Nelliefield Creek Drive (AM & PM **LOS F**)
- Peninsula Cove Drive (AM & PM **LOS F**)
- Rivers Reach Drive (AM & PM **LOS F**)
- Cainhoy Village Road (PM **LOS F**)
- SC 41 (AM & PM **LOS F**)

When comparing the existing geometry to the proposed geometry, the individual intersection and overall delay does go down significantly and the level of service (LOS) improves by implementing the proposed geometry by widening Clements Ferry Road.

The operational efficiency of the stop-control intersection will naturally decrease as its traffic volume increases. High traffic volumes on Clements Ferry Road cause significant delay for side street drivers seeking to enter or cross the intersection, as well as for Clements Ferry Road drivers looking for a gap in traffic to make a left-turn maneuver.

Motorists on the side street will frequently experience long delays during the peak periods in making crossing or turning maneuvers because of the lack of safe gaps on Clements Ferry Road traffic flow.

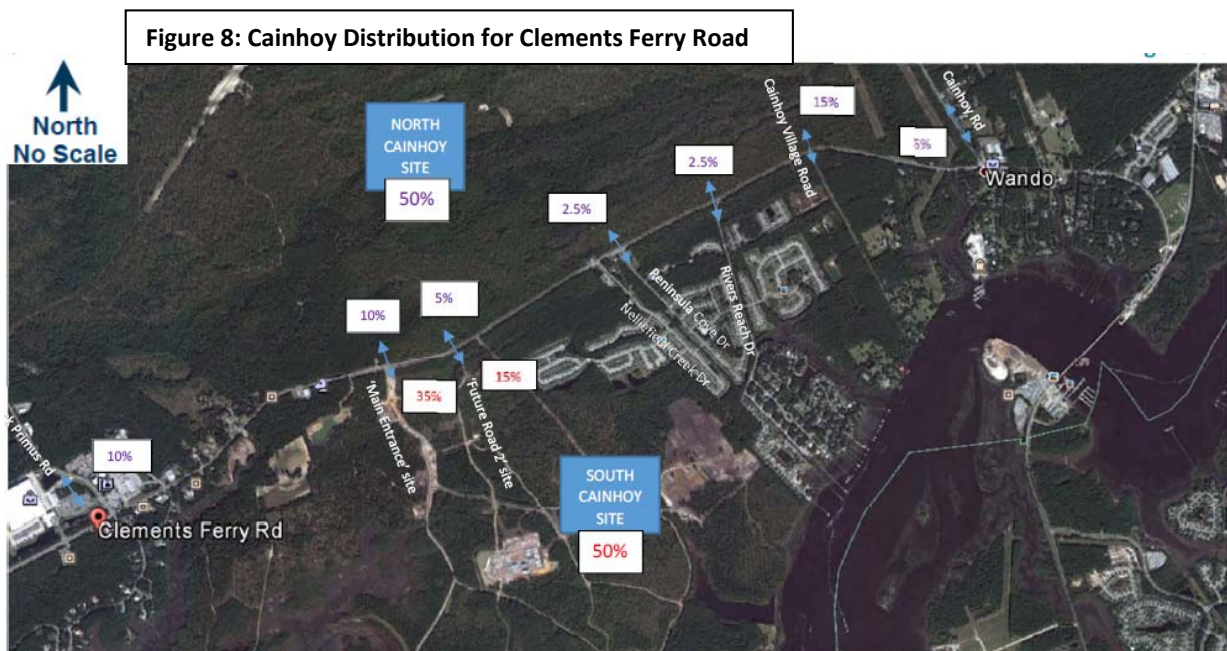
Cainho Development Traffic Volumes

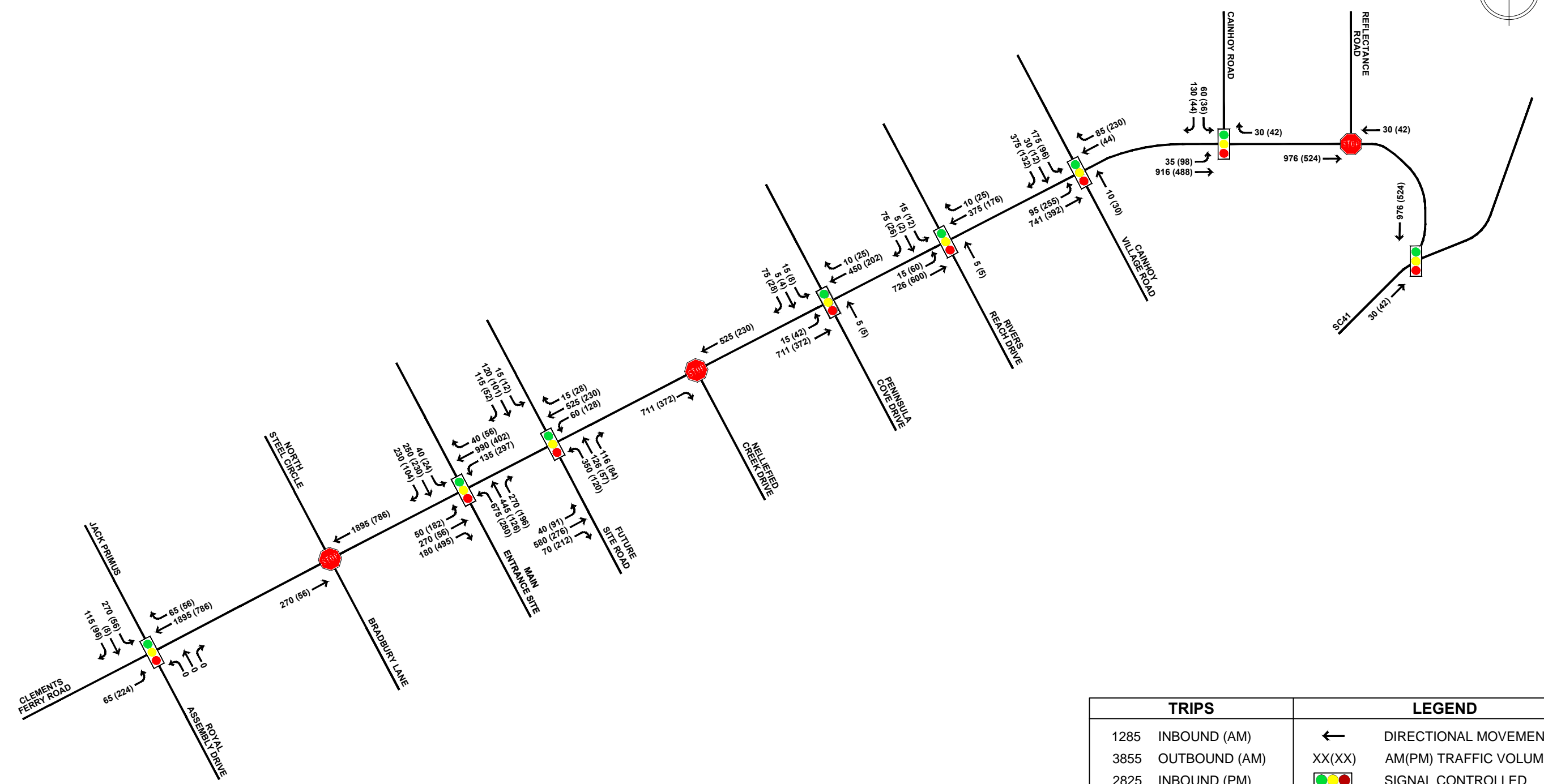
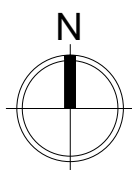
A trip generation analysis was performed to develop the Cainho Development traffic volumes based on the methods and rates published in the *ITE Trip Generation Manual, 9th Edition*. According to the City of Charleston Planning Department a projected 11,042 single family detached homes (code 210) will be developed by year 2040. The development will also have mixed use facilities, an elementary/middle and high school, and apartment homes. A Traffic Study by Thomas and Hutton complete in 2015 reflects these uses. This study will only reflect the projected 11,042 units. The Berkeley Charleston Dorchester Council of Governments (BCDCOG) 2040 projection model includes 1250 units. The 2% growth rate incorporated these units so the trip generation reflects the 11,042 minus 1250 units for the 2040 future year. The 2022 future scenario will use the Trip Generation of 6,854 units. These units were developed by using the growth factor equation with the expectation of 2 % reduction in growth over an 18-year period. The resultant trip generation is shown in **Table 4**.

Table 4 – Trip Generation

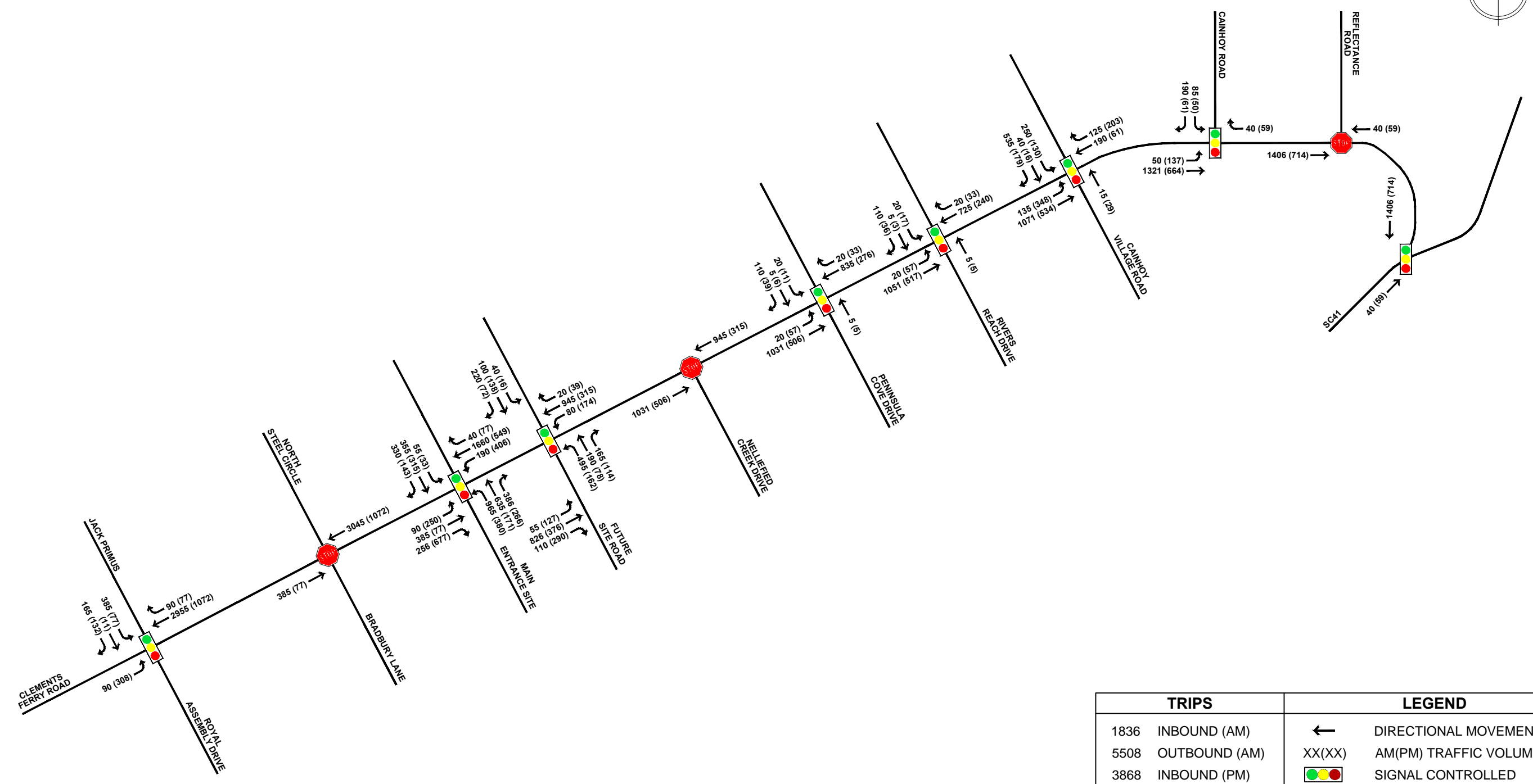
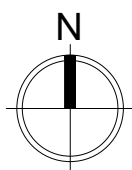
ITE Land Use Code	Description	Daily Trips		A.M. peak Hour			P.M. Peak Hour		
		In	Out	Trips/Unit	In	Out	Trips/Unit	In	Out
210	Single Family Detached Housing (9,792 units) year 2040	35,633	35,633	0.75	1836	5508	1.0	3868	2175
	Single Family Detached Housing (6,854 units) year 2022	25,664	25,664		1285	3855		2825	1590

The site generated trips were added to the study roadways through the use of a trip distribution pattern as shown in **Figure 8**. This distribution pattern is based on the most recent City of Charleston [PUD Cainho CLT Master Plan and Zoning Text](#) using the gross acreage for residential development on the aggregate property map. The traffic generated by the Cainho development was assigned to the area roadways per the development trips shown on **Figure 9** for 2022 and **Figure 10** for 2040.





TRIPS		LEGEND	
1285	INBOUND (AM)	←	DIRECTIONAL MOVEMENT
3855	OUTBOUND (AM)	XX(XX)	AM(PM) TRAFFIC VOLUMES
2825	INBOUND (PM)	🚦	SIGNAL CONTROLLED
1590	OUTBOUND (PM)	🛑	STOP SIGN CONTROLLED



TRIPS		LEGEND	
1836	INBOUND (AM)	←	DIRECTIONAL MOVEMENT
5508	OUTBOUND (AM)	XX(XX)	AM(PM) TRAFFIC VOLUMES
3868	INBOUND (PM)	🚦	SIGNAL CONTROLLED
2175	OUTBOUND (PM)	🛑	STOP SIGN CONTROLLED

Haselden
AND ASSOCIATES
471 Greentree Lane
Lexington, SC 29072
(803) 629-9523

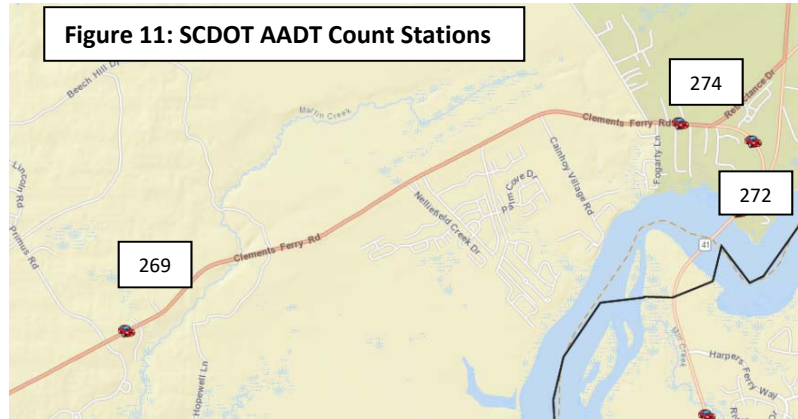
**CLEMENTS FERRY ROAD
WIDENING STUDY
BERKELEY COUNTY, SC**

**2040 CAINHOY
DEVELOPMENT TRIPS**

FIGURE: 10
SCALE:
NONE

Clements Ferry Roadway Corridor Study

A corridor study was developed for Clements Ferry Road using South Carolina Department of Transportation’s (SCDOT) Average Annual Daily Traffic (AADT) volumes count station data and SCDOT corridor acceptable LOS chart. For Clements Ferry Road, there are three count stations within the study boundaries between Jack Primus Road and SC 41, **Figure 11** shows the numbered stations along Clements Ferry Road.



SCDOT Count Station 269 is located just west of Jack Primus Road
 SCDOT Count Station 274 is located in between Cainhoy Road and Reflectance Road
 SCDOT Count Station 272 is located in between Reflectance Road and SC 41

The latest AADT year for volumes is 2015. The CHATS 2% growth rate was used for years 2016, 2022, and 2040. The Cainhoy Development Trip Generation daily rates from **Table 4** were added to the 2022 and 2040 AADT. The projected volumes are shown in **Table 5**.

Table 5 – AADT Volumes on Clements Ferry Road

CLEMENTS FERRY RD	2 lane roadway				4 lane roadway				4 lane roadway with Cainhoy Development			
	2015 AADT	LOS	2016 AADT	LOS	2022 AADT	LOS	2040 AADT	LOS	2022 AADT	LOS	2040 AADT	LOS
269	13,800	E	14,075	E	15,850	B	22,640	D	41,514	F	58,273	F
274	13,200	E	13,460	E	15,160	B	21,650	C	40,824	F	57,283	F
272	9,800	C	10,000	C	11,260	A	16,080	B	36,924	F	51,713	F

The v/c thresholds for the LOS categories were obtained from the SCDOT planning department guidelines. as follows:

- LOS A: v/c ratios range between 0.00 to 0.60
- LOS B: v/c ratios range between 0.60 to 0.80
- LOS C: v/c ratios range between 0.80 to 1.00
- LOS D: v/c ratios range between 1.00 to 1.20
- LOS E: v/c ratios range between 1.20 to 1.50
- LOS F: v/c ratios greater than 1.50

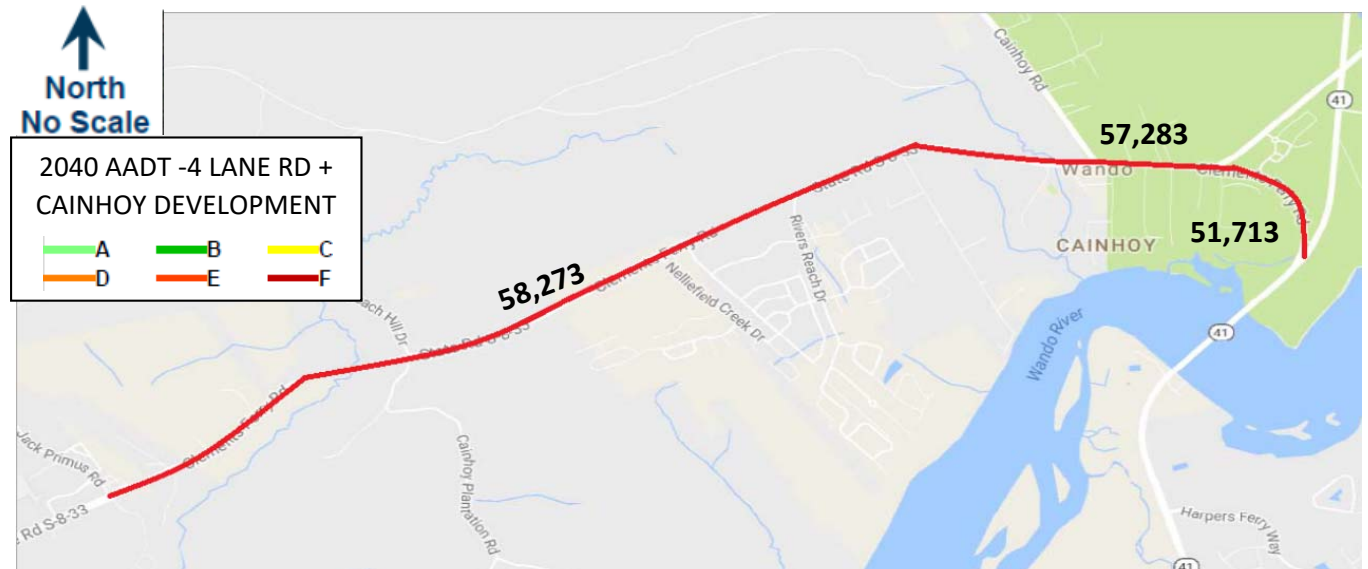
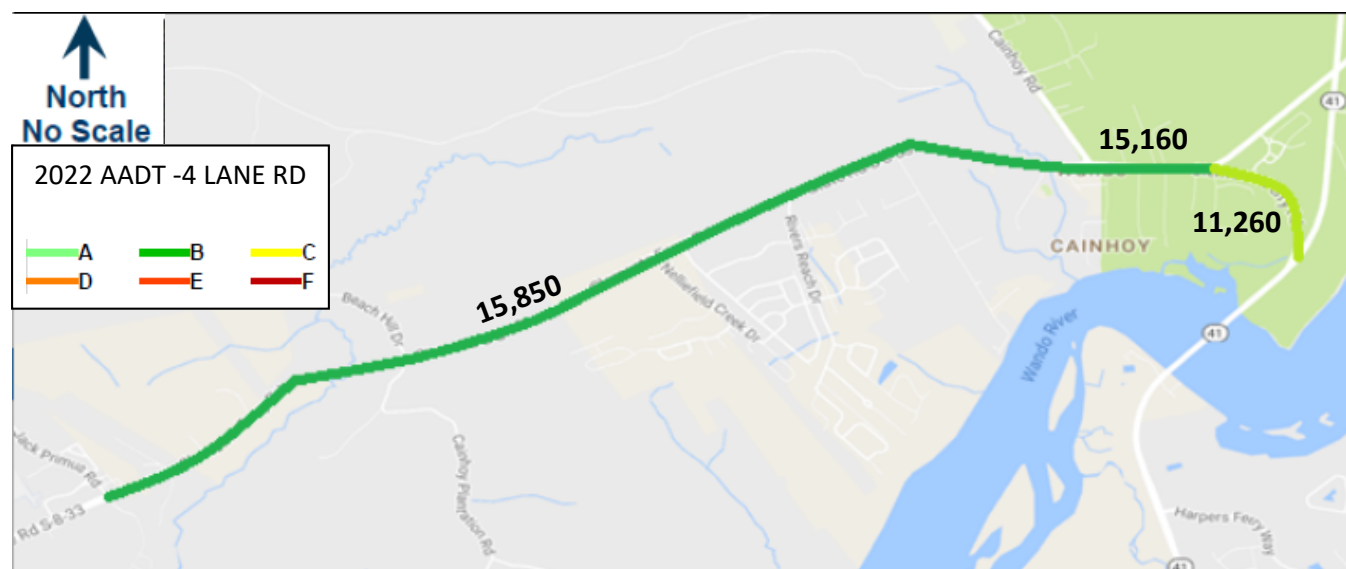
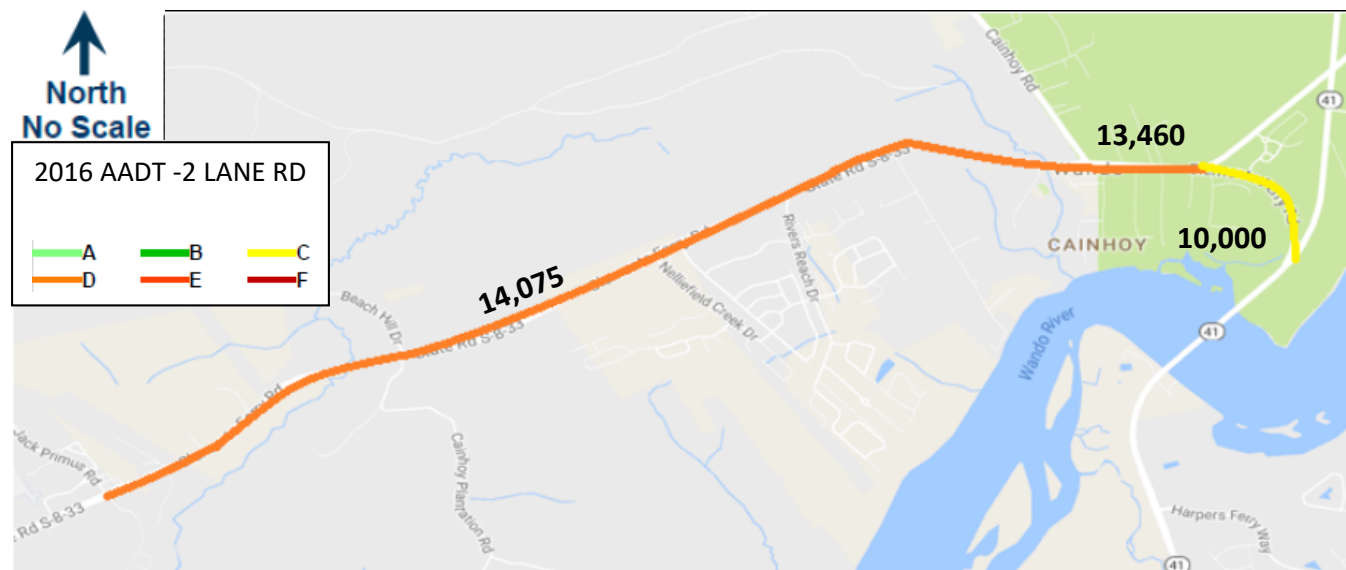
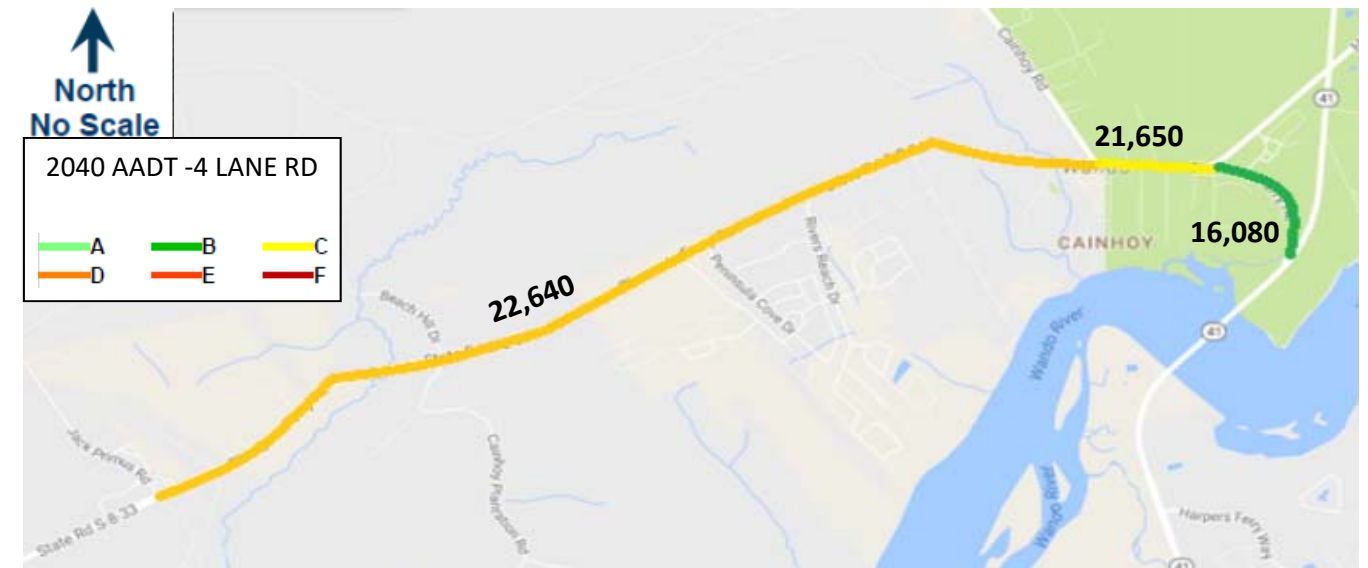
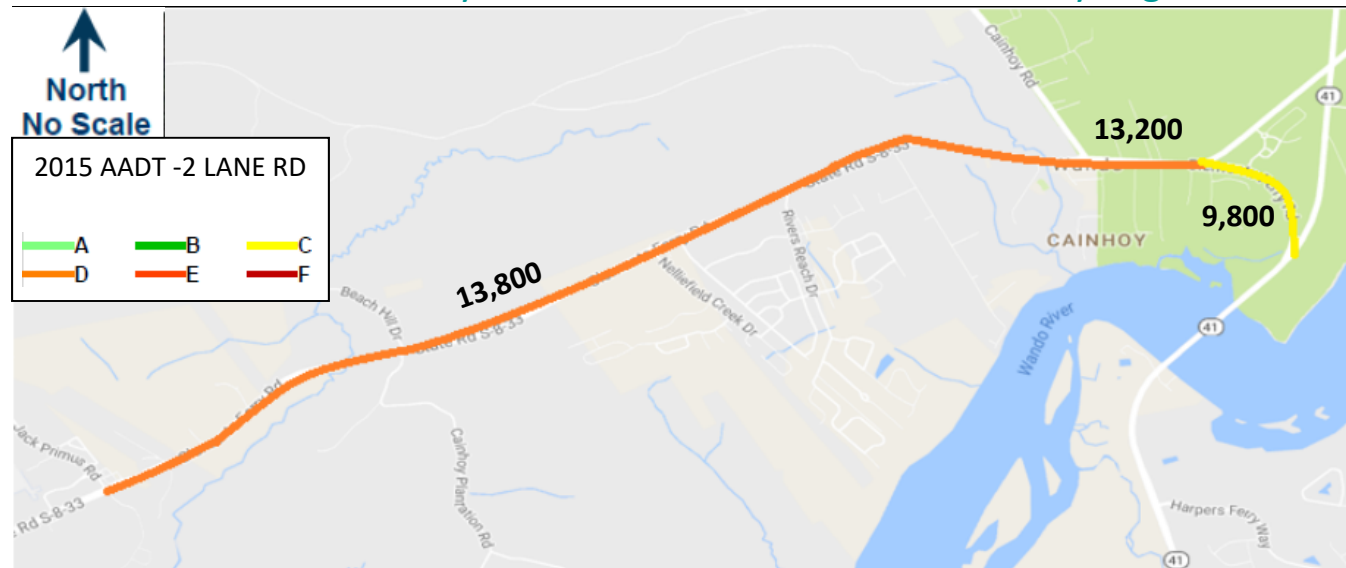
According to the SCDOT Roadway Average Daily Traffic Capacities Chart (Shown in **Appendix C**) for Clements Ferry Road as it is before widening as a 2 lane, undivided minor arterial street a passing LOS C is 10,800 AADT. Clements Ferry Road from Jack Primus Road to Reflectance Drive is not passing an acceptable level of service existing in 2015 or 2016.

Once Clements Ferry Road is widened to a 4 lane section a passing LOS C is 21,600 AADT. For year 2022 Clements Ferry Road has an acceptable level of service. In 2040 Clements Ferry Road, will be just over an acceptable level of service from Jack Primus Road to Reflectance Road.

Once the Cainhoy Development Traffic is included, with the anticipated 11,042 units, Clements Ferry Road as a 4-lane section will not be at acceptable LOS C by year 2022 and by year 2040 very unacceptable. The future site shows interconnectivity and a parallel route north of Clements Ferry Road which will help distribute the 11,042 units off of Clements Ferry Road if built.

Figure 12 shows the Clements Ferry Road volumes and LOS by road segment according to SCDOT count stations by AADT and CHATS growth rate.

FIGURE 12: Clements Ferry Road Corridor LOS and Volumes by Segment



Discussion of Cainhoy Development Volumes Based on CHATS Growth Rate

Traffic forecasts were developed for each study period in the 2022 and 2040 scenarios by adding the traffic generated by the proposed Cainhoy development to the 2022 and 2040 volumes at CHATS growth rate.

The future volumes at CHATS growth rate plus the Cainhoy Development are shown in **Figure 13** for 2022 and **Figure 14** for 2040.

The following analysis were developed to show the Cainhoy Development Impact on Clements Ferry Road from Jack Primus Road to SC 41:

Analysis 1:

Existing Geometry with Future Volumes at CHATS growth rate + Cainhoy Development, the LOS and delay per approach at each intersection are shown in **Table 6**.

The complete LOS and Delay calculations, which include grades for individual movements, are included in the **Appendix B**

Table 6 –2022 & 2040 LOS of Existing Geometry with Future Volumes at CHATS Growth Rate + Cainhoy Development

Intersection	Movement Approach	A.M. Peak Hour LOS (DELAY-SECONDS)		P.M. Peak Hour LOS (DELAY-SECONDS)	
		2022	2040	2022	2040
Jack Primus Road/Royal Assembly Drive	EB L	D (48.9)	D (39.2)	F (328.1)	F (1758.8)
	EB T	D (44.7)	B (17.6)	C (31.7)	F (683.0)
	EB R	A (2.3)	A (0.1)	A (0.8)	A (0.1)
	WB L	D (49.9)	A (5.1)	D (48.2)	B (13.1)
	WB T	F (1068.5)	F (1915.2)	F (538.6)	F (2997.1)
	WB R	A (5.1)	A (4.9)	A (5.0)	A (7.5)
	SB T	F (254.4)	F (1275.3)	C (22.2)	F (711.5)
	SB R	C 25.8	E (72.6)	F (215.7)	F (2034.5)
	NB LTR	B (17.0)	F (150.3)	A (9.2)	F (274.1)
	INTERSECTION OVERALL	F (683.9)	F (1452.6)	F (299.4)	F (2117.1)
Bradbury Lane/ N. Steel Circle	EB L	F (161.0)	F (3047.1)	D (29.0)	F (ERROR)
	EB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB LTR	A (0.0)	A (0.0)	A (2.0)	A (0.0)
	SB LTR	F (430.7)	F (ERROR)	F (ERROR)	F (ERROR)
	NB LTR	F (ERROR)	F (ERROR)	F (ERROR)	F (ERROR)
	INTERSECTION OVERALL	F (162.5)	F (3533.2)	F (72.6)	F (ERROR)
Nelliefield Creek Drive	EB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	EB R	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	B (12.4)	C (18.1)	C (23.5)	F (2575.9)
	WB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	NB L	F (ERROR)	F (ERROR)	F (ERROR)	F (ERROR)
	NB R	D (33.2)	F (191.9)	F (72.9)	F (ERROR)
	INTERSECTION OVERALL	F (5954.2)	F (106,148.2)	F (2086.8)	F (11537)
Peninsula Cove Drive	EB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	EB R	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	B (12.6)	C (18.5)	B (12.8)	F (593.0)
	WB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	NB LR	F (ERROR)	F (ERROR)	F (164.0)	F (ERROR)
	INTERSECTION OVERALL	F (4988.7)	F (127,666.2)	F (170.3)	F (19888.1)

Table 6 Continued–2022 & 2040 LOS of Existing Geometry with Future Volumes at CHATS Growth Rate + Cainhoy Development

Intersection	Movement Approach	A.M. Peak Hour LOS (DELAY-SECONDS)		P.M. Peak Hour LOS (DELAY-SECONDS)	
		2022	2040	2022	2040
Rivers Reach Drive	EB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	B (10.1)	A (0.0)	C (19.2)	A (0.0)
	WB T	B (10.1)	A (0.2)	C (19.6)	F (246.6)
	NB LR	F (ERROR)	F (ERROR)	F (ERROR)	F (ERROR)
	INTERSECTION OVERALL	F (4890.3)	F (36,218.8)	F (5955.0)	F (26697.3)
Cainhoy Village Road	EB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB L	A (0.9)	A (0.0)	A (0.1)	A (0.0)
	WB T	A (0.9)	A (0.2)	A (0.1)	A (0.4)
	NB LR	F (217.0)	F (ERROR)	F (201.9)	F (ERROR)
	INTERSECTION OVERALL	F (253.0)	F (36,218.8)	F (206.1)	F (120.5)
<i>Cainhoy Road</i>	EB L	E (62.8)	F (228.9)	C (22.9)	F (949.6)
	EB T	F (173.5)	F (443.6)	F (262.0)	F (1093.1)
	WB T	F (115.4)	F (766.3)	C (21.10)	F (355.1)
	SB L	F (302.2)	F (602.9)	F (486.9)	F (1489.4)
	INTERSECTION OVERALL	F (170.9)	F (586.2)	F (239.2)	F (1008.9)
Reflectance Road	EB L	B (11.5)	A (0.0)	A (0.0)	A (0.0)
	EB T	A (11.5)	A (1.5)	A (1.4)	C (24.8)
	WB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	SB LR	D (30.1)	F (ERROR)	F (99.1)	F (ERROR)
	INTERSECTION OVERALL	C (17.6)	F (791.9)	F (52.0)	F (178.5)
SC 41	WB L	F (ERROR)	F (ERROR)	F (ERROR)	F (ERROR)
	WB R	F (ERROR)	F (ERROR)	F (ERROR)	F (ERROR)
	NB T	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	NB R	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	SB L	A (9.1)	B (10.4)	A (8.4)	B (11.3)
	SB T	A (0.0)	A (0.0)	A (0.)	A (0.0)
	INTERSECTION OVERALL	F (3134.8)	F (23,955.0)	F (2120.5)	F (ERROR)

¹The signalized intersections are italicized

The results in **Table 6** show that Clements Ferry Road would be overall **LOS F** if the Cainhoy Development was built under the existing road conditions. It is recommended to widen Clements Ferry Road from a 2-lane section to a 4-lane section to accommodate the Cainhoy Development traffic.

Analysis 2:

Proposed Geometry with Future Volumes at CHATS growth rate + Cainhoy Development, the LOS and delay per approach at each intersection are shown in **Table 7**.

The following intersections were generated as signalized from the **Figure 7** planned unit development:

- Main Entrance Site
- Future Road Site
- Peninsula Cove Drive
- Rivers Reach Drive
- Cainhoy Village Road
- SC 41.

The complete LOS and Delay calculations, which include grades for individual movements, are included in the **Appendix B**.

Table 7 –2022 & 2040 LOS of Proposed Geometry with Future Volumes at CHATS Growth Rate + Cainhoy Development¹

Intersection	Movement Approach	A.M. Peak Hour LOS (DELAY-SECONDS)		P.M. Peak Hour LOS (DELAY-SECONDS)	
		2022	2040	2022	2040
<i>Jack Primus Road/Royal Assembly Drive</i>	EB L	E (69.5)	F (106.6)	D (53.8)	F (142.5)
	EB T	C (20.8)	C (23.6)	B (14.2)	C (30.1)
	EB R	A (0.0)	A (0.6)	A (0.0)	A (0.1)
	WB L	A (9.7)	B (12.7)	B (8.4)	B (14.2)
	WB T	F (382.3)	F (956.4)	C (34.0)	F (89.7)
	WBR	/	B (11.7)	/	A (3.7)
	NB LTR	B (18.2)	C (26.5)	C (25.3)	C (34.9)
	SB T	F (208.7)	F (347.4)	F (122.9)	F (127.6)
	SB R	D (35.0)	D (36.4)	C (24.9)	A (8.1)
	INTERSECTION OVERALL	F (263.6)	F (710.0)	C (31.9)	E (65.3)
<i>Bradbury Lane/ N. Steel Circle</i>	EB L	F (467.9)	F (ERROR)	C (23.8)	E (46.0)
	EB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	WB LTR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	NB LTR	F (1861.0)	F (ERROR)	F (121.0)	F (4198.8)
	SB LTR	F (ERROR)	F (ERROR)	F (129.8)	F (684.4)
INTERSECTION OVERALL	F (1781.8)	F (11246.2)	F (144.0)	F (1449.7)	
<i>Main Entrance Site</i>	EB L	C (30.3)	D (48.4)	C (30.1)	F (229.4)
	EB T	D (48.2)	D (54.3)	E (64.0)	F (218.3)
	EB R	A (5.1)	A (9.3)	B (10.8)	C (28.3)
	WB L	D (47.9)	F (113.7)	F (114.9)	F (260.8)
	WB TR	F (288.7)	F (760.1)	C (34.0)	F (123.4)
	NB L	F (268.2)	F (736.5)	F (130.6)	F (219.3)
	NB T	C (35.0)	C (29.0)	D (38.1)	D (37.2)
	NB R	B (12.4)	C (26.2)	A (5.7)	B (10.0)
	SB TL	F (226.5)	F (362.0)	F (125.4)	F (170.2)
	SB R	D (50.8)	E (62.1)	B (19.2)	B (11.0)
INTERSECTION OVERALL	F (174.5)	F (499.4)	E (56.6)	F (155.9)	
<i>Future Road Site</i>	EB L	D (41.7)	C (27.2)	A (9.2)	C (26.4)
	EB T	C (23.4)	D (46.1)	C (30.0)	F (180.4)
	EB R	A (2.7)	A (4.0)	A (3.9)	A (4.8)
	WB L	F (81.4)	D (42.5)	D (39.9)	F (184.3)
	WB TR	C (33.0)	F (313.3)	B (16.4)	C (23.0)
	NB L	E (73.9)	F (321.9)	D (46.1)	F (148.8)
	NB T	C (23.7)	D (44.0)	D (36.1)	D (51.6)
	NB R	B (17.4)	B (16.3)	A (7.2)	B (15.3)
	SB LT	C (24.1)	F (123.8)	E (77.8)	F (119.3)
	SB R	A (3.0)	E (74.8)	A (4.2)	A (7.2)
INTERSECTION OVERALL	C (32.1)	F (199.2)	C (26.1)	F (113.9)	
<i>Nelliefield Creek Drive (Signal for 2040)</i>	EB T	A (0.0)	B (10.6)	A (0.0)	B (10.0)
	EB R	A (0.0)	A (0.9)	A (0.0)	A (0.5)
	WB L	B (12.4)	A (6.0)	C (16.8)	F (98.9)
	WB T	A (0.0)	E (68.3)	A (0.0)	A (3.4)
	NB L	F (ERROR)	F (146.6)	F (275.4)	E (80.5)
	NB R	C (15.6)	D (36.0)	C (16.8)	E (80.5)
INTERSECTION OVERALL	F (1830.8)	D (49.0)	F (303)	B (11.0)	

Table 7 Continued–2022 & 2040 LOS of Proposed Geometry with Future Volumes at CHATS Growth Rate + Cainhoy Development¹

Intersection	Movement Approach	A.M. Peak Hour LOS (DELAY-SECONDS)		P.M. Peak Hour LOS (DELAY-SECONDS)	
		2022	2040	2022	2040
<i>Peninsula Cove Drive</i>	EB L	B (17.3)	B (17.1)	A (7.7)	A (6.6)
	EB T	C (23.6)	E (77.6)	B (16.9)	E (76.3)
	EB R	A (0.0)	A (0.0)	A (0.8)	A (1.0)
	WB L	B (13.7)	B (11.1)	B (13.5)	B (14.4)
	WB TR	C (25.9)	F (130.6)	A (8.3)	C (28.5)
	NB L	C (21.3)	E (71.6)	C (20.8)	D (46.9)
	NB TR	B (12.2)	B (15.1)	B (15.4)	C (22.7)
	SB LTR	D (54.1)	D (41.9)	C (23.7)	D (45.3)
	INTERSECTION OVERALL	C (25.3)	F (102.4)	B (13.6)	E (56.0)
<i>Rivers Reach Drive</i>	EB L	A (7.2)	D (36.7)	A (3.5)	A (2.9)
	EB TR	A (5.7)	C (27.7)	A (8.1)	A (8.8)
	WB L	/	D (43.6)	/	F (203.1)
	WB TR	B (13.0)	D (40.7)	A (6.4)	A (2.7)
	NB L	C (23.3)	F (81.1)	C (30.9)	F (106.3)
	NB TR	B (10.9)	D (47.7)	B (15.9)	E (72.2)
	SB LTR	D (39.4)	F (102.8)	C (20.1)	D (48.4)
		INTERSECTION OVERALL	B (12.1)	D (38.6)	A (8.1)
<i>Cainhoy Village Road</i>	EB L	B (12.7)	E (57.3)	B (15.4)	F (97.8)
	EB TR	B (10.9)	D (35.6)	B (11.7)	B (15.0)
	WB LTR	C (30.2)	E (72.9)	C (22.8)	C (27.8)
	NB LTR	C (26.5)	C (35.0)	C (25.0)	E (58.7)
	SB LT	F (79.7)	F (173.2)	D (46.2)	F (110.3)
	SB R	C (32.8)	F (102.0)	A (7.0)	B (16.2)
		INTERSECTION OVERALL	C (25.0)	E (65.7)	B (17.0)
<i>Cainhoy Road</i>	EB L	B (16.0)	F (139.2)	B (10.8)	C (25.1)
	EB T	B (10.3)	B (16.1)	B (11.5)	C (30.1)
	WB TR	B (18.6)	F (132.5)	B (13.8)	D (35.8)
	SB L	D (47.3)	F (206.3)	D (54.2)	F (96.9)
	SB R	B (19.5)	F (158.3)	A (8.7)	B (17.6)
		INTERSECTION OVERALL	B (16.2)	F (92.6)	B (15.3)
Reflectance Road	EB L	A (4.4)	C (19.9)	A (4.4)	C (16.1)
	EB T	A (2.1)	A (0.0)	A (2.2)	A (0.0)
	WB TR	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	SB LR	C (19.8)	F (180.7)	C (16.2)	F (85.1)
		INTERSECTION OVERALL	C (16.9)	F (209.8)	B (10.7)
<i>SC 41</i>	WB L	C (33.0)	F (83.8)	C (33.3)	E (65.8)
	WB R	B (11.5)	B (16.4)	B (18.5)	C (23.7)
	NB T	B (14.1)	C (25.1)	A (6.5)	A (7.5)
	NB R	A (2.0)	A (1.5)	A (1.4)	A (0.5)
	SB L	A (7.0)	A (7.0)	A (5.0)	A (4.0)
	SB T	B (15.0)	D (48.4)	A (9.2)	B (13.6)
	INTERSECTION OVERALL	B (16.0)	D (43.6)	A (9.4)	B (14.4)

¹The signalized intersections are italicized

The results in **Table 7** show that Clements Ferry Road will be acceptable in year 2022 with the exception of Main Entrance Site, Bradbury Lane/N. Steel Circle, Nelliefield Creek Drive and Jack Primus Road intersections. By year 2040 most intersections are **LOS F**, it is recommended to re-evaluate Clements Ferry Road by year 2040.

Table 7 shows as follows per intersection:

Jack Primus Road/Royal Assembly Drive:

- This is one of the major signalized intersections to access the northern Cainhoy Development. For year 2022 it operating at an acceptable level of service. It will need re-evaluation for year 2040 if the projections are correct for the **LOS F** during the a.m. peak and LOS E for the p.m. peak. The westbound and eastbound directions have the majority of the delay.

Bradbury Lane/N. Steel Circle

- The stop-controlled side street (Bradbury Lane and N. Steel Circle) is showing a **LOS F** with a very high delay on the model, but the model does not take into account the gap in traffic that the signals on either side of the intersection will generate to allow the traffic to turn onto Clements Ferry Road. The volumes are very low for the side street.

Main Entrance Site

- This signalized intersection is **LOS F** for 2022 a.m. peak and even higher delay for 2040 a.m. and p.m. peak. This is the main entrance for the schools on the south side of Cainhoy Development and the projected main entrance for the projected single family units. *Another analysis has been developed to allow double left turns into the development to compare with a single left turn.*

Future Road Site

- This signalized intersection is LOS D for 2022 p.m. peak and **LOS F** for 2040.

Nelliefield Creek Drive

- This intersection is shown as stop control for 2022 and signal control for 2040. A signal would improve the **LOS F** for the northbound traffic. the If Nelliefield Creek Drive passes a Signal Warrant Analysis (since the intersection is not the SCDOT desired 1 mile apart, but approximately 530 feet from Peninsula Cove Drive it may not warrant a signal), it will allow the left turn to have an allotted time to turn out of Nelliefield Creek Drive and cause the delay and LOS to be more acceptable. The model does not take into account the gap in traffic that the signals on either side of the intersection will generate to allow the traffic to turn onto Clements Ferry Road.

Peninsula Cove Drive

- This signalized intersection has an acceptable LOS for year 2022. It has a **LOS F** for the a.m. peak because of the westbound thru-right-turn by year 2040.

Rivers Reach Drive

- This signalized intersection has an acceptable LOS for year 2022. It has a LOS D by year 2040 for the a.m. peak period.

Cainhoy Village Road

- This signalized intersection is one of the major accesses to the northern development of the Cainhoy Development. It has an acceptable LOS for year 2022. It has a LOS E by year 2040 for the a.m. peak period.

Cainhoy Road

- This signalized intersection has an acceptable LOS for year 2022. It has a **LOS F** by year 2040 for the a.m. peak and a LOS D for the p.m. peak.

Reflectance Road

- This stop-control intersection is acceptable for year 2022. By year 2040 it has a **LOS F**. The model does not take into account the gap in traffic that the signals on either side of the intersection will generate to allow the traffic to turn onto Clements Ferry Road.

SC 41

- With the SCDOT improvements and signalization to this intersection it is acceptable for years 2022 and 2040 p.m. peak, but there is a LOS D for the 2040 a.m. peak period and the westbound left turn is **LOS F**.

Analysis 3:

- Proposed Geometry with Future Volumes at CHATS growth rate + Cainhoy Development (with double left turn westbound into the Main Entrance Site), the LOS and delay per approach at each intersection are shown in **Table 8**.

Another capacity analysis was run on account of the Main Entrance Site. A double left turn was run westbound into the site to analyze the LOS and delay. The analysis was run for a.m. and p.m. peak periods in year 2040 only.

Table 8 – 2040 LOS of Proposed Geometry (with double left turns) with Future Volumes at CHATS Growth Rate + Cainhoy Development¹

Intersection	Movement Approach	A.M. Peak Hour LOS (DELAY- SECONDS)	P.M. Peak Hour LOS (DELAY- SECONDS)
<i>Jack Primus Road/Royal Assembly Drive</i>	EB L	F (106.6)	F (142.5)
	EB T	C (23.6)	C (30.1)
	EB R	A (0.6)	A (0.1)
	WB L	B (12.7)	B (14.2)
	WB T	F (956.4)	F (89.7)
	WB R	B (11.7)	A (3.7)
	NB LTR	C (26.5)	C (34.9)
	SB T	F (347.4)	F (127.6)
	SB R	D (36.4)	A (8.1)
		INTERSECTION OVERALL	F (710.0)
<i>Bradbury Lane/ N. Steel Circle</i>	EB L	F (ERROR)	E (46.0)
	EB TR	A (0.0)	A (0.0)
	WB LTR	A (0.0)	A (0.0)
	NB LTR	F (ERROR)	F (4198.8)
	SB LTR	F (ERROR)	F (684.4)
	INTERSECTION OVERALL	F (11,246.2)	F (1449.7)
<i>Main Entrance Site</i>	EB L	D (47.7)	F (171.8)
	EB T	D (45.8)	F (179.2)
	EB R	A (7.9)	C (25.8)
	WB 2L	D (40.5)	F (210.8)
	WB TR	F (760.1)	F (164.1)
	NB L	F (736.5)	F (198.6)
	NB T	C (29.0)	C (34.9)
	NB R	C (26.6)	B (11.6)
	SB TL	F (362.0)	F (139.5)
	SB R	E (62.1)	B (10.3)
		INTERSECTION OVERALL	F (496.2)

Table 8 Continued – 2040 LOS of Proposed Geometry (with double left turns) with Future Volumes at CHATS Growth Rate + Cainhoy Development¹

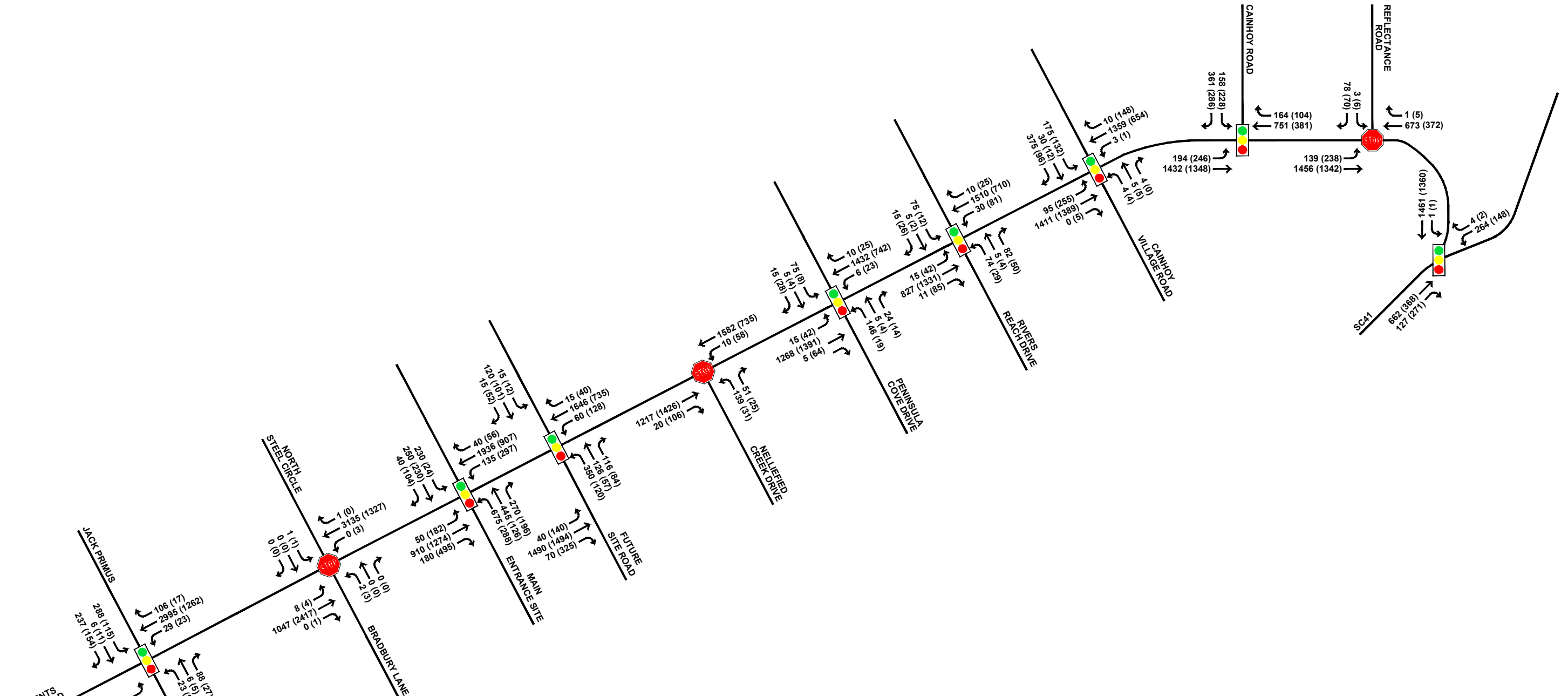
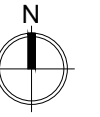
Intersection	Movement Approach	A.M. Peak Hour LOS (DELAY- SECONDS)	P.M. Peak Hour LOS (DELAY- SECONDS)
<i>Future Road Site</i>	EB L	C (27.2)	C (26.4)
	EB T	D (46.1)	F (180.4)
	EB R	A (4.0)	A (4.8)
	WB L	D (42.5)	F (184.3)
	WB TR	F (313.3)	C (23.0)
	NB L	F (321.9)	F (148.8)
	NB T	D (44.0)	D (51.6)
	NB R	B (16.3)	B (15.3)
	SB LT	F (123.8)	F (119.3)
	SB R	E (74.8)	A (7.2)
	INTERSECTION OVERALL	F (199.2)	F (113.9)
<i>Nelliefield Creek Drive (Signal for 2040)</i>	EB T	B (10.6)	B (10.0)
	EB R	A (0.9)	A (0.5)
	WB L	A (6.0)	F (98.9)
	WB T	E (68.3)	A (3.4)
	NB L	F (146.6)	F (80.5)
	NB R	D (36.0)	E (80.5)
	INTERSECTION OVERALL	D (49.0)	B (11.0)
<i>Peninsula Cove Drive</i>	EB L	B (17.1)	A (6.6)
	EB T	E (77.6)	E (76.3)
	EB R	A (0.0)	A (1.0)
	WB L	B (11.1)	B (14.4)
	WB TR	F (130.6)	C (28.5)
	NB L	E (71.6)	D (46.9)
	NB TR	B (15.1)	C (22.7)
	SB LTR	D (41.9)	D (45.3)
	INTERSECTION OVERALL	F (102.4)	E (56.0)
<i>Rivers Reach Drive</i>	EB L	D (36.7)	A (2.9)
	EB TR	C (27.7)	A (8.8)
	WB L	D (43.6)	F (203.1)
	WB TR	D (40.7)	A (2.7)
	NB L	F (81.1)	F (106.3)
	NB TR	D (47.7)	E (72.2)
	SB LTR	F (102.8)	D (48.4)
	INTERSECTION OVERALL	D (38.6)	B (16.8)
<i>Cainhoy Village Road</i>	EB L	E (57.3)	F (97.8)
	EB TR	D (35.6)	B (15.0)
	WB LTR	E (72.9)	C (27.8)
	NB LTR	C (35.0)	E (58.7)
	SB LT	F (173.2)	F (110.3)
	SB R	F (102.0)	B (16.2)
	INTERSECTION OVERALL	E (65.7)	C (30.5)
<i>Cainhoy Road</i>	EB L	F (139.2)	C (26.9)
	EB T	B (16.1)	C (30.1)
	WB TR	F (132.5)	C (30.4)
	SB L	F (206.3)	F (96.9)
	SB R	F (158.3)	C (21.5)
	INTERSECTION OVERALL	F (92.6)	C (34.8)

Table 8 Continued– 2040 LOS of Proposed Geometry (with double left turns) with Future Volumes at CHATS Growth Rate + Cainhoy Development¹

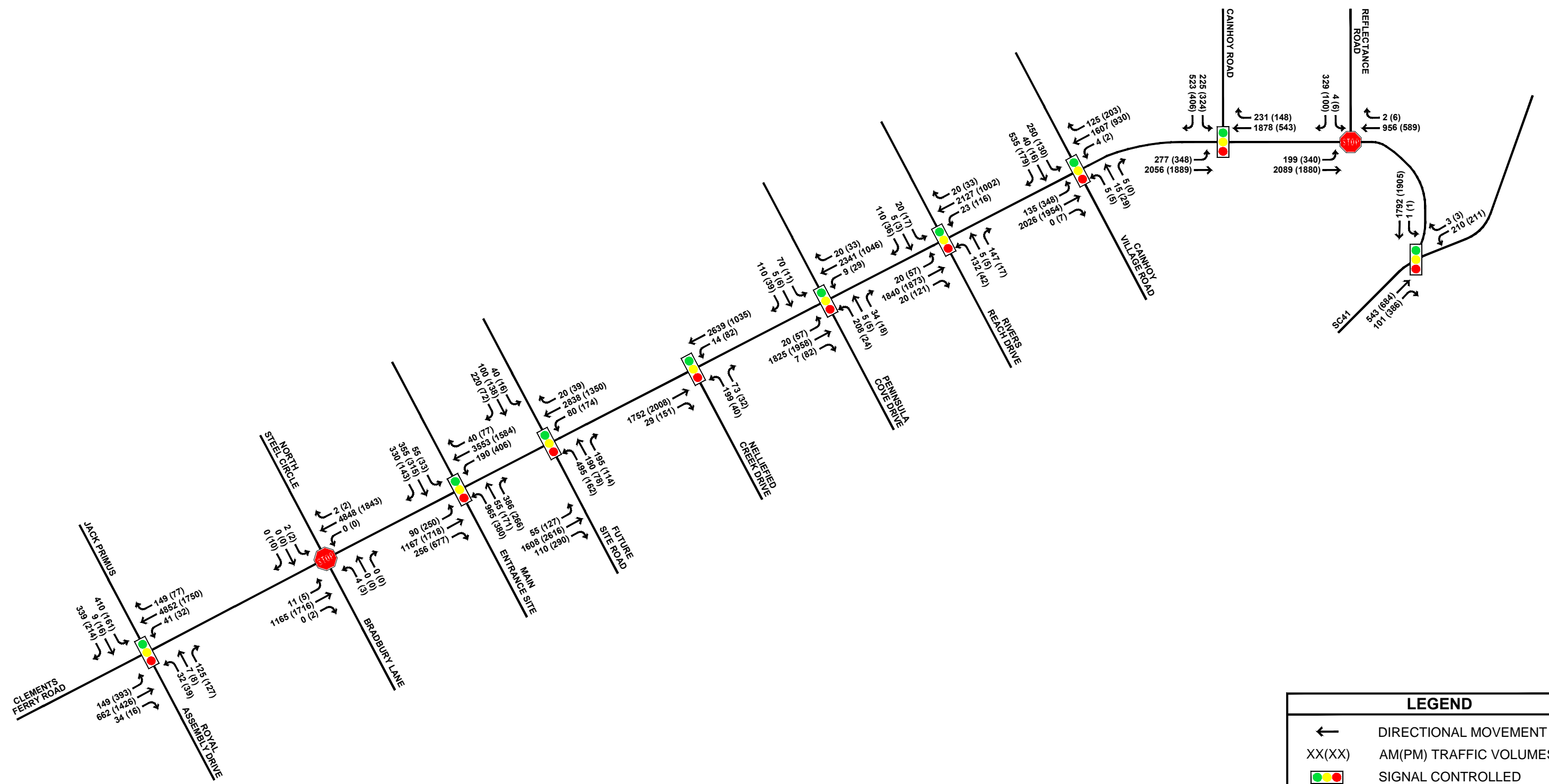
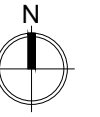
Intersection	Movement Approach	A.M. Peak Hour LOS (DELAY- SECONDS)	P.M. Peak Hour LOS (DELAY- SECONDS)
Reflectance Road	EB L EB T WB TR SB LR INTERSECTION OVERALL	C (19.9) A (0.0) A (0.0) F (180.7) F (209.8)	C (16.1) A (0.0) A (0.0) F (85.1) F (86.0)
<i>SC 41</i>	WB L WB R NB T NB R SB L SB T INTERSECTION OVERALL	F (83.8) B (16.4) C (25.1) A (1.5) A (7.0) D (48.4) D (43.6)	E (65.8) C (23.7) A (7.5) A (0.5) A (4.0) B (13.6) B (14.4)

¹The signalized intersections are italicized

The results in **Table 8** show that the LOS and the delay for the double left turn lanes at the Main Entrance Site is lower than a single left turn lane shown in **Table 7**. For the a.m. peak a westbound double left turn has a LOS D and the westbound single left turn in **Table 7** shows a **LOS F**. The delay improves with a double left by 71 seconds in the a.m. peak. For the p.m. peak the westbound double left turn and the westbound single left both have a **LOS F**. The delay improves with a double left by 50 seconds. For the overall intersection, there is a **LOS F** for both scenarios. The westbound double left turn improves the delay by only 3 seconds in the AM and 10 seconds in the p.m. peak. There were no significant changes to the other intersections.



LEGEND	
←	DIRECTIONAL MOVEMENT
XX(X)	AM(PM) TRAFFIC VOLUMES
	SIGNAL CONTROLLED
	STOP SIGN CONTROLLED



LEGEND	
←	DIRECTIONAL MOVEMENT
XX(X)	AM(PM) TRAFFIC VOLUMES
🚦	SIGNAL CONTROLLED
🛑	STOP SIGN CONTROLLED

Recommendations

The following recommendations are a direct result of the traffic analysis data from the scenarios run for the forecasts that were developed for years 2022 and 2040. The results and recommendations are only an estimate of the traffic projections for year 2022 and 2040. These can change depending on the type of development approval from City Council. No residential subdivisions have been submitted thus far. **Figure 15** shows 2022 recommendations and **Figure 16** shows 2040 recommendations.

According to Federal Highway Administration (FHA), the proposed storage lengths for the left-turn movements are applicable when the delay caused to through vehicles adversely affects the operations and/or safety of an approach. Physically separating turning vehicles from the through stream removes slow or decelerating vehicles from through traffic, thus reducing the potential for rear-end collisions. Left-turn lanes also increase the capacity of the approach by adding an additional approach lane; they allow for a wider variety of phasing options.

The proposed right turn storage lanes are for significant volumes of right-turning traffic which can have an adverse effect on both intersection operations and safety. The deceleration of the turning vehicles creates a speed differential between them and the through vehicles. This can lead to delay for the through vehicles, as well as rear-end crashes involving both movements.

The following recommendations are for year 2022:

Coordinate, monitor and adjust the signal timing for the existing and recommended signals.

Jack Primus Road/Royal Assembly Drive:

- Clements Ferry Road eastbound consider providing
 - o 500' left turn lane
- Jack Primus Road southbound consider providing
 - o 200' right turn lane

Bradbury Lane/North Steel Circle:

- Unlikely to be signalized in the Future due to the close proximity to Jack Primus Road

Main Entrance Site:

- Consider Signalization when warranted
- Clements Ferry Road eastbound consider providing
 - o 250' left turn storage lane
 - o 400' right turn storage lane
- Clements Ferry Road westbound consider providing
 - o 350' left turn storage lane
- Main Entrance Site northbound consider providing
 - o 500' left turn storage lane
 - o Thru lane
 - o 250' right turn storage lane
- Main Entrance Site southbound consider providing
 - o Shared thru-left turn lane
 - o 200' right turn storage lane

Future Road Site:

- Consider Signalization when warranted
- Clements Ferry Road eastbound consider providing
 - o 200' left turn storage lane
 - o 275' right turn storage lane
- Clements Ferry Road westbound consider providing
 - o 200' left turn storage lane

- Future Road Site northbound consider providing
 - o 300' left turn storage lane
 - o One thru lane
 - o 100' right turn storage lane
- Future Road Site southbound consider providing
 - o Shared thru-left turn lane
 - o 100' right turn storage lane

Peninsula Cove Drive:

- Consider Signalization when warranted (According to SCDOT the Signalization would not be approved at both Nelliefield Creek Drive and Peninsula Cove Drive due to signal spacing of only approximately 530 feet)
- Clements Ferry Road eastbound consider providing
 - o 200' left turn storage lane
- Peninsula Cove Drive northbound consider providing
 - o 200' left turn storage lane
- New Peninsula Cove Drive southbound consider providing
 - o Shared left-thru-right turn lane

Rivers Reach Drive:

- Consider Signalization when warranted
- Clements Ferry Road eastbound consider providing
 - o 200' left turn storage lane
- Rivers Research Drive northbound consider providing
 - o 200' left turn storage lane
- Rivers Research Drive southbound consider providing
 - o Shared left-thru-right turn lane

Cainhoy Village Road:

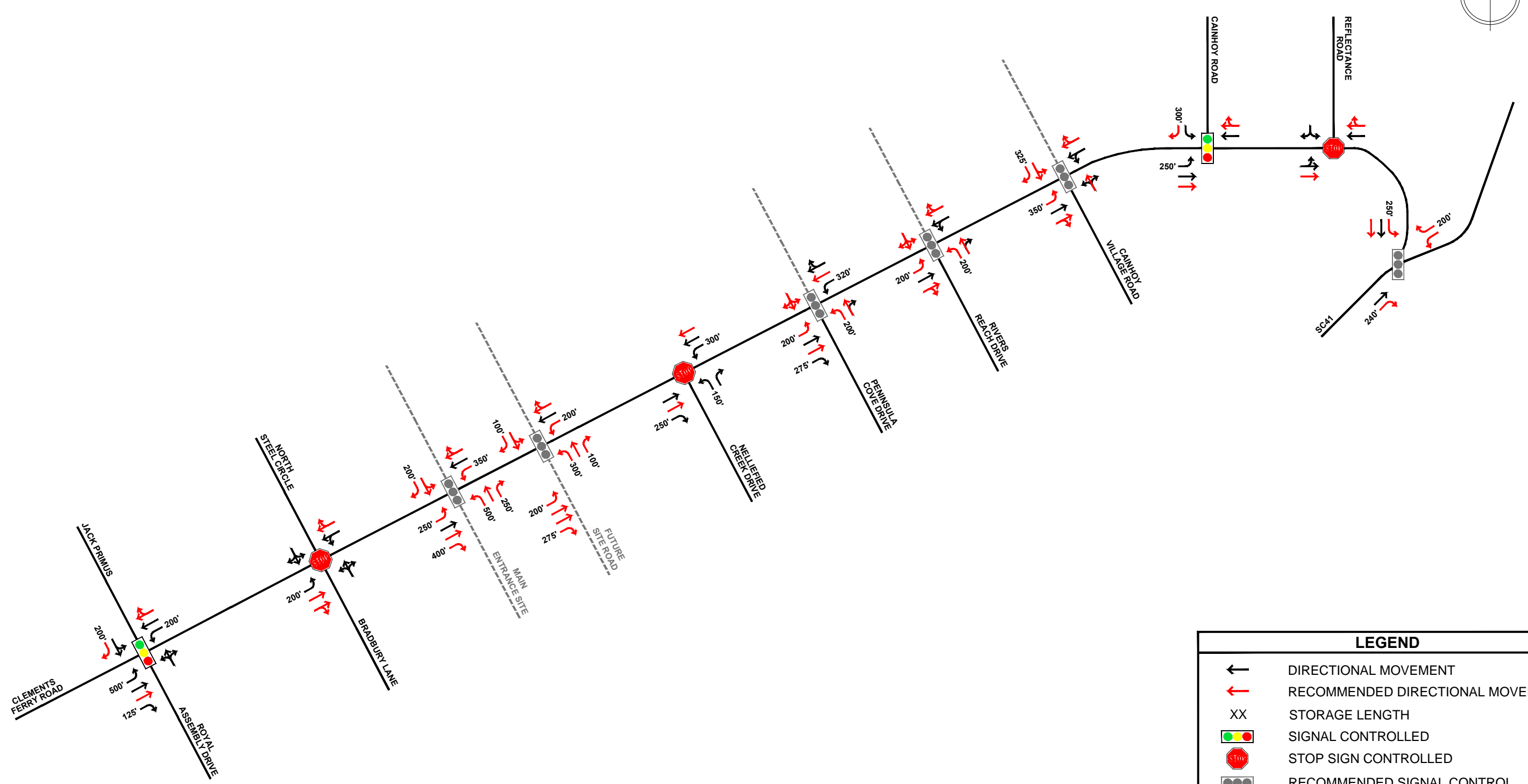
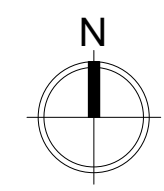
- Consider Signalization when warranted
- Clements Ferry Road eastbound consider providing
 - o 350' left turn storage lane
- Cainhoy Village Road southbound consider providing
 - o Shared thru-left lane
 - o 325' right turn storage lane

Cainhoy Road:

- Cainhoy Road southbound consider providing
 - o 300' right turn storage lane

SC 41:

- SCDOT Improvements will be complete



LEGEND	
←	DIRECTIONAL MOVEMENT
← (red)	RECOMMENDED DIRECTIONAL MOVEMENT
XX	STORAGE LENGTH
🚦	SIGNAL CONTROLLED
🛑	STOP SIGN CONTROLLED
🚦 (grey)	RECOMMENDED SIGNAL CONTROL
---	FUTURE ROAD

The following recommendations are for year 2040:

Coordinate, monitor and adjust the signal timing for the existing and recommended signals.

Jack Primus Road/Royal Assembly Drive:

- Clements Ferry Road eastbound consider providing
 - o 550' left turn lane
- Consider providing a 275' right turn lane southbound on Jack Primus Road
- Clements Ferry Road westbound consider providing
 - o 175' right turn storage lane

Bradbury Lane/North Steel Circle:

- Clements Ferry Road westbound consider providing
 - o 150' left turn storage lane
- Unlikely to be signalized in the Future due to the close proximity to Jack Primus Road

Main Entrance Site:

- Recommend Signal Warrant Study
- Clements Ferry Road eastbound consider providing
 - o 350' left turn storage lane
 - o 550' right turn storage lane
- Clements Ferry Road westbound consider providing
 - o 550' left turn storage lane
- Main Entrance Site northbound consider providing
 - o 550' left turn storage lane
 - o 325' right turn storage lane
- Main Entrance Site southbound consider providing
 - o 325' right turn storage lane

Future Road Site:

- Recommend Signal Warrant Study (Signalization would not be approved at both Nelliefield Creek Drive and Peninsula Cove Drive due to signal spacing)
- Clements Ferry Road eastbound consider providing
 - o 400' right turn storage lane
- Future Road Site northbound consider providing
 - o 400' left turn storage lane

Nelliefield Creek Drive:

- Recommend Signal Warrant Study (According to SCDOT the signalization would not be approved at both Nelliefield Creek Drive and Peninsula Cove Drive due to signal spacing)
- There may be a future north leg of Nelliefield Creek Drive to access the Cainhoy Development

Peninsula Cove Drive:

- Recommend Signal Warrant Study

Rivers Reach Drive:

- Recommend Signal Warrant Study
- Clements Ferry Road westbound consider providing
 - o 150' left turn storage lane

Cainhoy Village Road:

- Recommend Signal Warrant Study
- Clements Ferry Road eastbound consider providing
 - o 550' left turn storage lane
- Clements Ferry Road westbound consider providing
 - o 225' right turn storage lane
 - o 150' left turn storage lane

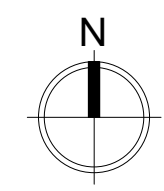
- Cainhoy Village Road southbound consider providing
 - o Shared thru-left lane
 - o 450' right turn storage lane

Reflectance Road:

- Clements Ferry eastbound consider providing
 - o 325' left turn storage lane

SC 41:

- SCDOT construction will be complete



LEGEND	
←	DIRECTIONAL MOVEMENT
← (red)	RECOMMENDED DIRECTIONAL MOVEMENT
XX	STORAGE LENGTH
🚦	SIGNAL CONTROLLED
🛑	STOP SIGN CONTROLLED
🚦 (grey)	RECOMMENDED SIGNAL CONTROL
---	FUTURE ROAD

Results and Conclusions

The purpose of this Traffic Study was to determine the existing and design year traffic volumes and operational conditions of the study corridor and recommend improvements to address deficiencies. The years 2022 and 2040 were studied. As a result of this study, widening Clements Ferry Road to a 4-lane section is recommended before the Cainhoy Development of 11,042 units. For the proposed geometry results, including the CHATS 2% growth rate of the existing traffic, Clements Ferry Road has an acceptable level of service (LOS) for year 2022. Five of the nine intersections are operating at and unacceptable LOS D, E, or F by year 2040.

The Cainhoy Development for this study includes:

- 11,042 units (**Table 5** – Trip Generation shows these units broken down)
- two new intersections
 - o Main Entrance Site
 - o Future Road Site
- three new legs to existing intersections to the north of Clements Ferry Road
 - o Peninsula Cove Drive
 - o Rivers Reach Drive
 - o Cainhoy Village Road

There is an existing SCDOT project at the SC 41 intersection that includes signaling the existing yield/stop control with re-alignment of intersection, this is scheduled to be complete by 2022. This project geometry was included in the 2022 and 2040 proposed geometry study.

The study shows that with the proposed geometry, CHATS growth rate, and the Cainhoy Development included, by year 2022 three of the eleven intersections are operating at and unacceptable LOS D, E, or F. For year 2040 ten of the eleven intersections are operating at LOS D, E, or F.

The Cainhoy planned unit development (**Figure 4**) shows a proposed parallel primary route on the northern side of Clements Ferry Road connecting from Jack Primus Road to Cainhoy Road. The roadway network throughout the development from the Northern and Southern sides of Clements Ferry Road shows interconnectivity that will relieve some of the Cainhoy Development traffic off of Clements Ferry Road.

APPENDIX A- Traffic Count Data

Project ID: 15-9156-001
 Location: Jack Primus Rd & Clements Ferry Rd
 City: Charleston

Day: Tuesday
 Date: 4/28/2015

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Jack Primus Rd Southbound					Clements Ferry Rd Westbound					Jack Primus Rd Northbound					Clements Ferry Rd Eastbound					Int. Total
	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	
7:00 AM	27	1	4	0	32	12	261	6	0	279	11	0	7	0	18	3	96	6	0	105	434
7:15 AM	31	1	5	0	37	4	259	8	0	271	16	3	2	0	21	4	94	6	0	104	433
7:30 AM	21	0	2	0	23	4	189	7	0	200	25	1	6	0	32	6	76	13	0	95	350
7:45 AM	18	3	3	0	24	13	167	2	0	182	18	0	3	0	21	6	104	8	0	118	345
Total	97	5	14	0	116	33	876	23	0	932	70	4	18	0	92	19	370	33	0	422	1562
8:00 AM	17	2	3	0	22	7	205	3	0	215	23	0	5	0	28	8	108	11	0	127	392
8:15 AM	18	1	5	0	24	0	210	6	0	216	12	0	3	0	15	4	90	8	0	102	357
8:30 AM	17	0	1	0	18	4	192	3	0	199	14	0	4	0	18	9	108	9	0	126	361
8:45 AM	11	0	6	0	17	0	145	3	0	148	15	0	3	0	18	5	100	6	0	111	294
Total	63	3	15	0	81	11	752	15	0	778	64	0	15	0	79	26	406	34	0	466	1404
BREAK																					
4:00 PM	14	1	15	0	30	6	118	3	0	127	21	1	5	0	27	3	173	13	0	189	373
4:15 PM	14	0	4	0	18	5	121	9	0	135	26	2	8	0	36	2	202	8	0	212	401
4:30 PM	29	1	8	0	38	0	119	5	0	124	27	1	3	0	31	6	223	17	0	246	439
4:45 PM	10	0	6	0	16	1	129	5	0	135	18	0	3	0	21	2	236	18	0	256	428
Total	67	2	33	0	102	12	487	22	0	521	92	4	19	0	115	13	834	56	0	903	1641
5:00 PM	16	1	23	0	40	6	105	5	0	116	21	1	6	0	28	2	222	16	0	240	424
5:15 PM	10	1	11	0	22	2	104	6	0	112	19	1	5	0	25	3	185	10	0	198	357
5:30 PM	12	0	7	0	19	5	112	6	0	123	24	0	11	0	35	0	261	12	0	273	450
5:45 PM	13	1	11	0	25	0	100	3	0	103	15	3	2	0	20	5	218	15	0	238	386
Total	51	3	52	0	106	13	421	20	0	454	79	5	24	0	108	10	886	53	0	949	1617
Grand Total	278	13	114	0	405	69	2536	80	0	2685	305	13	76	0	394	68	2496	176	0	2740	6224
Apprch %	68.6	3.2	28.1	0.0		2.6	94.5	3.0	0.0		77.4	3.3	19.3	0.0		2.5	91.1	6.4	0.0		
Total %	4.5	0.2	1.8	0.0	6.5	1.1	40.7	1.3	0.0	43.1	4.9	0.2	1.2	0.0	6.3	1.1	40.1	2.8	0.0	44.0	
Cars, PU, Vans	240	13	106	0	359	69	2355	79	0	2503	302	13	75	0	390	68	2307	162	0	2537	5789
% Cars, PU, Vans	86.3	###	93.0	0.0	88.6	###	92.9	98.8	0.0	93.2	99.0	100.0	98.7	0.0	99.0	100.0	92.4	92.0	0.0	92.6	93.0
Heavy Trucks	38	0	8		46	0	181	1		182	3	0	1		4	0	189	14		203	435
% Heavy Trucks	13.7	0.0	7.0	0.0	11.4	0.0	7.1	1.3	0.0	6.8	1.0	0.0	1.3	0.0	1.0	0.0	7.6	8.0	0.0	7.4	7.0

Project ID: 15-9156-001
 Location: Jack Primus Rd & Clem
 City: Charleston

PEAK HOURS

Day: Tuesday
 Date: 4/28/2015

AM

Start Time	Jack Primus Rd Southbound				Clements Ferry Rd Westbound				Jack Primus Rd Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
7:00 AM	27	1	4	32	12	261	6	279	11	0	7	18	3	96	6	105	434
7:15 AM	31	1	5	37	4	259	8	271	16	3	2	21	4	94	6	104	433
7:30 AM	21	0	2	23	4	189	7	200	25	1	6	32	6	76	13	95	350
7:45 AM	18	3	3	24	13	167	2	182	18	0	3	21	6	104	8	118	345
Total Volume	97	5	14	116	33	876	23	932	70	4	18	92	19	370	33	422	1562
% App. Total	83.6	4.3	12.1	100	3.5	94.0	2.5	100	76.1	4.3	19.6	100	4.5	87.7	7.8	100	
PHF	0.784				0.835				0.719				0.894				
Cars, PU, Vans	85	5	13	103	33	833	23	889	69	4	18	91	19	305	32	356	1439
% Cars, PU, Vans	87.6	###	92.9	88.8	100.0	95.1	###	95.4	98.6	100.0	###	98.9	###	82.4	97.0	84.4	92.1
Heavy Trucks	12	0	1	13	0	43	0	43	1	0	0	1	0	65	1	66	123
% Heavy Trucks	12.4	0.0	7.1	11.2	0.0	4.9	0.0	4.6	1.4	0.0	0.0	1.1	0.0	17.6	3.0	15.6	7.9

PM

Start Time	Jack Primus Rd Southbound				Clements Ferry Rd Westbound				Jack Primus Rd Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
4:15 PM	14	0	4	18	5	121	9	135	26	2	8	36	2	202	8	212	401
4:30 PM	29	1	8	38	0	119	5	124	27	1	3	31	6	223	17	246	439
4:45 PM	10	0	6	16	1	129	5	135	18	0	3	21	2	236	18	256	428
5:00 PM	16	1	23	40	6	105	5	116	21	1	6	28	2	222	16	240	424
Total Volume	69	2	41	112	12	474	24	510	92	4	20	116	12	883	59	954	1692
% App. Total	61.6	1.8	36.6	100	2.4	92.9	4.7	100	79.3	3.4	17.2	100	1.3	92.6	6.2	100	
PHF	0.700				0.944				0.806				0.932				
Cars, PU, Vans	62	2	39	103	12	436	23	471	91	4	20	115	12	854	54	920	1609
% Cars, PU, Vans	89.9	###	95.1	92.0	100.0	92.0	95.8	92.4	98.9	100.0	###	99.1	###	96.7	91.5	96.4	95.1
Heavy Trucks	7	0	2	9	0	38	1	39	1	0	0	1	0	29	5	34	83
% Heavy Trucks	10.1	0.0	4.9	8.0	0.0	8.0	4.2	7.6	1.1	0.0	0.0	0.9	0.0	3.3	8.5	3.6	4.9

Project ID: 15-9156-002
 Location: Steel Circle _ Bradbury Ln & Clements Ferry Rd
 City: Charleston

Day: Tuesday
 Date: 4/28/2015

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Steel Circle _ Bradbury Ln Southbound					Clements Ferry Rd Westbound					Steel Circle _ Bradbury Ln Northbound					Clements Ferry Rd Eastbound					Int. Total
	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	
7:00 AM	0	0	0	0	0	0	299	0	0	299	0	0	0	0	0	0	111	1	0	112	411
7:15 AM	1	0	0	0	1	0	289	0	0	289	0	0	1	0	1	0	110	3	0	113	404
7:30 AM	0	0	0	0	0	0	216	0	0	216	0	0	1	0	1	0	104	1	0	105	322
7:45 AM	0	0	0	0	0	1	184	0	0	185	0	0	0	0	0	0	111	1	0	112	297
Total	1	0	0	0	1	1	988	0	0	989	0	0	2	0	2	0	436	6	0	442	1434
8:00 AM	0	0	0	0	0	0	210	0	0	210	1	0	0	0	1	0	133	3	0	136	347
8:15 AM	0	0	0	0	0	1	225	0	0	226	0	0	0	0	0	0	105	1	0	106	332
8:30 AM	1	0	0	0	1	2	204	0	0	206	0	0	0	0	0	0	121	0	0	121	328
8:45 AM	2	0	0	0	2	1	143	0	0	144	0	0	0	0	0	1	123	1	0	125	271
Total	3	0	0	0	3	4	782	0	0	786	1	0	0	0	1	1	482	5	0	488	1278
BREAK																					
4:00 PM	0	0	0	0	0	0	135	0	0	135	0	0	0	0	0	1	213	4	0	218	353
4:15 PM	0	0	0	0	0	0	137	1	0	138	0	0	0	0	0	0	231	3	0	234	372
4:30 PM	2	0	0	0	2	0	120	0	0	120	0	0	0	0	0	0	249	2	0	251	373
4:45 PM	6	0	1	0	7	0	138	0	0	138	0	0	2	0	2	1	253	1	0	255	402
Total	8	0	1	0	9	0	530	1	0	531	0	0	2	0	2	2	946	10	0	958	1500
5:00 PM	0	0	0	0	0	0	107	0	0	107	0	0	1	0	1	0	269	1	0	270	378
5:15 PM	0	0	0	0	0	0	121	0	0	121	0	0	0	0	0	0	232	1	0	233	354
5:30 PM	0	0	0	0	0	0	135	0	0	135	0	0	0	0	0	0	280	1	0	281	416
5:45 PM	0	0	0	0	0	0	116	0	0	116	1	0	0	0	1	1	246	0	0	247	364
Total	0	0	0	0	0	0	479	0	0	479	1	0	1	0	2	1	1027	3	0	1031	1512
Grand Total	12	0	1	0	13	5	2779	1	0	2785	2	0	5	0	7	4	2891	24	0	2919	5724
Apprch %	92.3	0.0	7.7	0.0		0.2	99.8	0.0	0.0		28.6	0.0	71.4	0.0		0.1	99.0	0.8	0.0		
Total %	0.2	0.0	0.0	0.0	0.2	0.1	48.5	0.0	0.0	48.7	0.0	0.0	0.1	0.0	0.1	0.1	50.5	0.4	0.0	51.0	
Cars, PU, Vans	10	0	1	0	11	3	2588	1	0	2592	2	0	5	0	7	4	2702	2	0	2708	5318
% Cars, PU, Vans	83.3	0.0	####	0.0	84.6	60.0	93.1	100.0	0.0	93.1	####	0.0	####	0.0	100.0	100.0	93.5	8.3	0.0	92.8	92.9
Heavy Trucks	2	0	0		2	2	191	0		193	0	0	0		0	0	189	22		211	406
%Heavy Trucks	16.7	0.0	0.0	0.0	15.4	40.0	6.9	0.0	0.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	6.5	91.7	0.0	7.2	7.1

Project ID: 15-9156-002
 Location: Steel Circle _ Bradbury I
 City: Charleston

PEAK HOURS

Day: Tuesday
 Date: 4/28/2015

AM

Start Time	Steel Circle _ Bradbury Ln Southbound				Clements Ferry Rd Westbound				Steel Circle _ Bradbury Ln Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
7:00 AM	0	0	0	0	0	299	0	299	0	0	0	0	0	111	1	112	411
7:15 AM	1	0	0	1	0	289	0	289	0	0	1	1	0	110	3	113	404
7:30 AM	0	0	0	0	0	216	0	216	0	0	1	1	0	104	1	105	322
7:45 AM	0	0	0	0	1	184	0	185	0	0	0	0	0	111	1	112	297
Total Volume	1	0	0	1	1	988	0	989	0	0	2	2	0	436	6	442	1434
% App. Total	####	0.0	0.0	100	0.1	99.9	0.0	100	0.0	0.0	####	100	0.0	98.6	1.4	100	
PHF	0.250				0.827				0.500				0.978				
Cars, PU, Vans	0	0	0	0	0	943	0	943	0	0	2	2	0	375	1	376	1321
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	95.4	0.0	95.3	0.0	0.0	####	100.0	0.0	86.0	16.7	85.1	92.1
Heavy Trucks	1	0	0	1	1	45	0	46	0	0	0	0	0	61	5	66	113
%Heavy Trucks	####	0.0	0.0	100.0	100.0	4.6	0.0	4.7	0.0	0.0	0.0	0.0	0.0	14.0	83.3	14.9	7.9

PM

Start Time	Steel Circle _ Bradbury Ln Southbound				Clements Ferry Rd Westbound				Steel Circle _ Bradbury Ln Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
4:45 PM	6	0	1	7	0	138	0	138	0	0	2	2	1	253	1	255	402
5:00 PM	0	0	0	0	0	107	0	107	0	0	1	1	0	269	1	270	378
5:15 PM	0	0	0	0	0	121	0	121	0	0	0	0	0	232	1	233	354
5:30 PM	0	0	0	0	0	135	0	135	0	0	0	0	0	280	1	281	416
Total Volume	6	0	1	7	0	501	0	501	0	0	3	3	1	1034	4	1039	1550
% App. Total	85.7	0.0	14.3	100	0.0	####	0.0	100	0.0	0.0	####	100	0.1	99.5	0.4	100	
PHF	0.250				0.908				0.375				0.924				
Cars, PU, Vans	5	0	1	6	0	468	0	468	0	0	3	3	1	989	0	990	1467
% Cars, PU, Vans	83.3	0.0	####	85.7	0.0	93.4	0.0	93.4	0.0	0.0	####	100.0	####	95.6	0.0	95.3	94.6
Heavy Trucks	1	0	0	1	0	33	0	33	0	0	0	0	0	45	4	49	83
%Heavy Trucks	16.7	0.0	0.0	14.3	0.0	6.6	0.0	6.6	0.0	0.0	0.0	0.0	0.0	4.4	100.0	4.7	5.4

Project ID: 15-9156-003
 Location: Nelliefield Creek Dr & Clements Ferry Rd
 City: Charleston

Day: Tuesday
 Date: 4/28/2015

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Nelliefield Creek Dr Southbound					Clements Ferry Rd Westbound					Nelliefield Creek Dr Northbound					Clements Ferry Rd Eastbound					Int. Total
	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	
7:00 AM	0	0	0	0	0	0	286	3	0	289	14	0	43	0	57	2	103	0	0	105	451
7:15 AM	0	0	0	0	0	0	258	0	0	258	8	0	36	0	44	3	103	0	0	106	408
7:30 AM	0	0	0	0	0	0	239	4	0	243	10	0	19	0	29	5	86	0	0	91	363
7:45 AM	0	0	0	0	0	0	164	1	0	165	9	0	13	0	22	6	111	0	0	117	304
Total	0	0	0	0	0	0	947	8	0	955	41	0	111	0	152	16	403	0	0	419	1526
8:00 AM	0	0	0	0	0	0	183	3	0	186	9	0	9	0	18	9	121	0	0	130	334
8:15 AM	0	0	0	0	0	0	163	4	0	167	5	0	17	0	22	5	112	0	0	117	306
8:30 AM	0	0	0	0	0	0	189	0	0	189	9	0	18	0	27	10	94	0	0	104	320
8:45 AM	0	0	0	0	0	0	130	4	0	134	3	0	12	0	15	7	125	0	0	132	281
Total	0	0	0	0	0	0	665	11	0	676	26	0	56	0	82	31	452	0	0	483	1241
BREAK																					
4:00 PM	0	0	0	0	0	0	125	8	0	133	8	0	8	0	16	16	186	0	0	202	351
4:15 PM	0	0	0	0	0	0	128	5	0	133	6	0	9	0	15	15	219	0	0	234	382
4:30 PM	0	0	0	0	0	0	115	6	0	121	4	0	6	0	10	13	233	0	0	246	377
4:45 PM	0	0	0	0	0	0	123	8	0	131	3	0	8	0	11	18	238	0	0	256	398
Total	0	0	0	0	0	0	491	27	0	518	21	0	31	0	52	62	876	0	0	938	1508
5:00 PM	0	0	0	0	0	0	106	10	0	116	3	0	6	0	9	18	243	0	0	261	386
5:15 PM	0	0	0	0	0	0	108	17	0	125	6	0	9	0	15	25	225	0	0	250	390
5:30 PM	0	0	0	0	0	0	131	6	0	137	6	0	5	0	11	19	237	0	0	256	404
5:45 PM	0	0	0	0	0	0	102	18	0	120	5	0	5	0	10	32	228	0	0	260	390
Total	0	0	0	0	0	0	447	51	0	498	20	0	25	0	45	94	933	0	0	1027	1570
Grand Total	0	0	0	0	0	0	2550	97	0	2647	108	0	223	0	331	203	2664	0	0	2867	5845
Apprch %	0.0	0.0	0.0	0.0	0.0	0.0	96.3	3.7	0.0	96.3	32.6	0.0	67.4	0.0	67.4	7.1	92.9	0.0	0.0	92.9	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	43.6	1.7	0.0	45.3	1.8	0.0	3.8	0.0	5.7	3.5	45.6	0.0	0.0	49.1	
Cars, PU, Vans	0	0	0	0	0	0	2331	97	0	2428	108	0	223	0	331	203	2439	0	0	2642	5401
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	91.4	100.0	0.0	91.7	###	0.0	###	0.0	100.0	100.0	91.6	0.0	0.0	92.2	92.4
Heavy Trucks	0	0	0	0	0	0	219	0	0	219	0	0	0	0	0	0	225	0	0	225	444
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	8.6	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0	8.4	0.0	0.0	7.8	7.6

Project ID: 15-9156-003
 Location: Nelliefield Creek Dr & Cl
 City: Charleston

PEAK HOURS

Day: Tuesday
 Date: 4/28/2015

AM

Start Time	Nelliefield Creek Dr Southbound				Clements Ferry Rd Westbound				Nelliefield Creek Dr Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
7:00 AM	0	0	0	0	0	286	3	289	14	0	43	57	2	103	0	105	451
7:15 AM	0	0	0	0	0	258	0	258	8	0	36	44	3	103	0	106	408
7:30 AM	0	0	0	0	0	239	4	243	10	0	19	29	5	86	0	91	363
7:45 AM	0	0	0	0	0	164	1	165	9	0	13	22	6	111	0	117	304
Total Volume	0	0	0	0	0	947	8	955	41	0	111	152	16	403	0	419	1526
% App. Total	0.0	0.0	0.0	0.0	0.0	99.2	0.8	100	27.0	0.0	73.0	100	3.8	96.2	0.0	100	
PHF	0.000				0.826				0.667				0.895				
Cars, PU, Vans	0	0	0	0	0	887	8	895	41	0	111	152	16	335	0	351	1398
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	93.7	####	93.7	####	0.0	####	100.0	####	83.1	0.0	83.8	91.6
Heavy Trucks	0	0	0	0	0	60	0	60	0	0	0	0	0	68	0	68	128
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	6.3	0.0	6.3	0.0	0.0	0.0	0.0	0.0	16.9	0.0	16.2	8.4

PM

Start Time	Nelliefield Creek Dr Southbound				Clements Ferry Rd Westbound				Nelliefield Creek Dr Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
4:45 PM	0	0	0	0	0	123	8	131	3	0	8	11	18	238	0	256	398
5:00 PM	0	0	0	0	0	106	10	116	3	0	6	9	18	243	0	261	386
5:15 PM	0	0	0	0	0	108	17	125	6	0	9	15	25	225	0	250	390
5:30 PM	0	0	0	0	0	131	6	137	6	0	5	11	19	237	0	256	404
Total Volume	0	0	0	0	0	468	41	509	18	0	28	46	80	943	0	1023	1578
% App. Total	0.0	0.0	0.0	0.0	0.0	91.9	8.1	100	39.1	0.0	60.9	100	7.8	92.2	0.0	100	
PHF	0.000				0.929				0.767				0.980				
Cars, PU, Vans	0	0	0	0	0	438	41	479	18	0	28	46	80	893	0	973	1498
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	93.6	####	94.1	####	0.0	####	100.0	####	94.7	0.0	95.1	94.9
Heavy Trucks	0	0	0	0	0	30	0	30	0	0	0	0	0	50	0	50	80
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	6.4	0.0	5.9	0.0	0.0	0.0	0.0	0.0	5.3	0.0	4.9	5.1

Project ID: 15-9156-004
 Location: Peninsula Cove Dr & Clements Ferry Rd
 City: Charleston

Day: Tuesday
 Date: 4/28/2015

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Peninsula Cove Dr Southbound					Clements Ferry Rd Westbound					Peninsula Cove Dr Northbound					Clements Ferry Rd Eastbound					Int. Total
	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	
7:00 AM	0	0	0	0	0	0	248	1	0	249	6	0	47	0	53	2	115	0	0	117	419
7:15 AM	0	0	0	0	0	0	217	1	0	218	7	0	35	0	42	0	108	0	0	108	368
7:30 AM	0	0	0	0	0	0	216	3	0	219	3	0	24	0	27	1	99	0	0	100	346
7:45 AM	0	0	0	0	0	0	161	0	0	161	3	0	10	0	13	1	122	0	0	123	297
Total	0	0	0	0	0	0	842	5	0	847	19	0	116	0	135	4	444	0	0	448	1430
8:00 AM	0	0	0	0	0	0	171	1	0	172	1	0	11	0	12	3	125	0	0	128	312
8:15 AM	0	0	0	0	0	0	156	1	0	157	1	0	16	0	17	2	117	0	0	119	293
8:30 AM	0	0	0	0	0	0	182	0	0	182	4	0	13	0	17	7	95	0	0	102	301
8:45 AM	0	0	0	0	0	0	131	0	0	131	2	0	4	0	6	1	126	0	0	127	264
Total	0	0	0	0	0	0	640	2	0	642	8	0	44	0	52	13	463	0	0	476	1170
BREAK																					
4:00 PM	0	0	0	0	0	0	120	0	0	120	2	0	9	0	11	5	188	0	0	193	324
4:15 PM	0	0	0	0	0	0	133	5	0	138	1	0	4	0	5	13	210	0	0	223	366
4:30 PM	0	0	0	0	0	0	120	1	0	121	4	0	4	0	8	12	223	0	0	235	364
4:45 PM	0	0	0	0	0	0	125	2	0	127	0	0	4	0	4	15	227	0	0	242	373
Total	0	0	0	0	0	0	498	8	0	506	7	0	21	0	28	45	848	0	0	893	1427
5:00 PM	0	0	0	0	0	0	114	6	0	120	2	0	6	0	8	19	229	0	0	248	376
5:15 PM	0	0	0	0	0	0	117	4	0	121	1	0	3	0	4	12	216	0	0	228	353
5:30 PM	0	0	0	0	0	0	134	2	0	136	6	0	5	0	11	16	229	0	0	245	392
5:45 PM	0	0	0	0	0	0	113	6	0	119	2	0	1	0	3	4	228	0	0	232	354
Total	0	0	0	0	0	0	478	18	0	496	11	0	15	0	26	51	902	0	0	953	1475
Grand Total	0	0	0	0	0	0	2458	33	0	2491	45	0	196	0	241	113	2657	0	0	2770	5502
Apprch %	0.0	0.0	0.0	0.0	0.0	0.0	98.7	1.3	0.0	18.7	0.0	81.3	0.0	0.0	4.1	95.9	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	44.7	0.6	0.0	45.3	0.8	0.0	3.6	0.0	4.4	2.1	48.3	0.0	0.0	50.3	
Cars, PU, Vans	0	0	0	0	0	0	2239	33	0	2272	45	0	196	0	241	113	2430	0	0	2543	5056
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	91.1	100.0	0.0	91.2	###	0.0	###	0.0	100.0	100.0	91.5	0.0	0.0	91.8	91.9
Heavy Trucks	0	0	0	0	0	0	219	0	0	219	0	0	0	0	0	0	227	0	0	227	446
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	8.9	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	8.5	0.0	0.0	8.2	8.1

Project ID: 15-9156-004
 Location: Peninsula Cove Dr & Cle
 City: Charleston

PEAK HOURS

Day: Tuesday
 Date: 4/28/2015

AM

Start Time	Peninsula Cove Dr Southbound				Clements Ferry Rd Westbound				Peninsula Cove Dr Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
7:00 AM	0	0	0	0	0	248	1	249	6	0	47	53	2	115	0	117	419
7:15 AM	0	0	0	0	0	217	1	218	7	0	35	42	0	108	0	108	368
7:30 AM	0	0	0	0	0	216	3	219	3	0	24	27	1	99	0	100	346
7:45 AM	0	0	0	0	0	161	0	161	3	0	10	13	1	122	0	123	297
Total Volume	0	0	0	0	0	842	5	847	19	0	116	135	4	444	0	448	1430
% App. Total	0.0	0.0	0.0	0	0.0	99.4	0.6	100	14.1	0.0	85.9	100	0.9	99.1	0.0	100	
PHF	0.000				0.850				0.637				0.911				
Cars, PU, Vans	0	0	0	0	0	781	5	786	19	0	116	135	4	375	0	379	1300
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	92.8	####	92.8	####	0.0	####	100.0	####	84.5	0.0	84.6	90.9
Heavy Trucks	0	0	0	0	0	61	0	61	0	0	0	0	0	69	0	69	130
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	7.2	0.0	7.2	0.0	0.0	0.0	0.0	0.0	15.5	0.0	15.4	9.1

PM

Start Time	Peninsula Cove Dr Southbound				Clements Ferry Rd Westbound				Peninsula Cove Dr Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
4:45 PM	0	0	0	0	0	125	2	127	0	0	4	4	15	227	0	242	373
5:00 PM	0	0	0	0	0	114	6	120	2	0	6	8	19	229	0	248	376
5:15 PM	0	0	0	0	0	117	4	121	1	0	3	4	12	216	0	228	353
5:30 PM	0	0	0	0	0	134	2	136	6	0	5	11	16	229	0	245	392
Total Volume	0	0	0	0	0	490	14	504	9	0	18	27	62	901	0	963	1494
% App. Total	0.0	0.0	0.0	0	0.0	97.2	2.8	100	33.3	0.0	66.7	100	6.4	93.6	0.0	100	
PHF	0.000				0.926				0.614				0.971				
Cars, PU, Vans	0	0	0	0	0	461	14	475	9	0	18	27	62	851	0	913	1415
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	94.1	####	94.2	####	0.0	####	100.0	####	94.5	0.0	94.8	94.7
Heavy Trucks	0	0	0	0	0	29	0	29	0	0	0	0	0	50	0	50	79
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	5.9	0.0	5.8	0.0	0.0	0.0	0.0	0.0	5.5	0.0	5.2	5.3

Project ID: 15-9156-005
 Location: Rivers Reach Dr & Clements Ferry Rd
 City: Charleston

Day: Tuesday
 Date: 4/28/2015

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Rivers Reach Dr Southbound					Clements Ferry Rd Westbound					Rivers Reach Dr Northbound					Clements Ferry Rd Eastbound					Int. Total
	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	
7:00 AM	0	0	0	0	0	0	229	1	0	230	20	0	28	0	48	3	113	0	0	116	394
7:15 AM	0	0	0	0	0	0	225	6	0	231	26	0	19	0	45	5	114	0	0	119	395
7:30 AM	0	0	0	0	0	0	180	4	0	184	24	0	11	0	35	2	99	0	0	101	320
7:45 AM	0	0	0	0	0	0	150	2	0	152	12	0	16	0	28	1	126	0	0	127	307
Total	0	0	0	0	0	0	784	13	0	797	82	0	74	0	156	11	452	0	0	463	1416
8:00 AM	0	0	0	0	0	0	157	4	0	161	18	0	15	0	33	6	123	0	0	129	323
8:15 AM	0	0	0	0	0	0	138	0	0	138	16	0	19	0	35	4	111	0	0	115	288
8:30 AM	0	0	0	0	0	0	161	7	0	168	12	0	22	0	34	4	95	0	0	99	301
8:45 AM	0	0	0	0	0	0	117	5	0	122	7	0	17	0	24	7	126	0	0	133	279
Total	0	0	0	0	0	0	573	16	0	589	53	0	73	0	126	21	455	0	0	476	1191
BREAK																					
4:00 PM	0	0	0	0	0	0	114	9	0	123	14	0	11	0	25	14	174	0	0	188	336
4:15 PM	0	0	0	0	0	0	138	15	0	153	15	0	2	0	17	20	200	0	0	220	390
4:30 PM	0	0	0	0	0	0	112	10	0	122	10	0	6	0	16	15	213	0	0	228	366
4:45 PM	0	0	0	0	0	0	123	20	0	143	10	0	5	0	15	20	198	0	0	218	376
Total	0	0	0	0	0	0	487	54	0	541	49	0	24	0	73	69	785	0	0	854	1468
5:00 PM	0	0	0	0	0	0	111	16	0	127	9	0	9	0	18	8	220	0	0	228	373
5:15 PM	0	0	0	0	0	0	123	14	0	137	11	0	2	0	13	21	206	0	0	227	377
5:30 PM	0	0	0	0	0	0	127	19	0	146	5	0	6	0	11	23	201	0	0	224	381
5:45 PM	0	0	0	0	0	0	112	23	0	135	19	0	9	0	28	23	215	0	0	238	401
Total	0	0	0	0	0	0	473	72	0	545	44	0	26	0	70	75	842	0	0	917	1532
Grand Total	0	0	0	0	0	0	2317	155	0	2472	228	0	197	0	425	176	2534	0	0	2710	5607
Apprch %	0.0	0.0	0.0	0.0	0.0	0.0	93.7	6.3	0.0	93.7	53.6	0.0	46.4	0.0	53.6	6.5	93.5	0.0	0.0	93.5	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	41.3	2.8	0.0	44.1	4.1	0.0	3.5	0.0	7.6	3.1	45.2	0.0	0.0	48.3	
Cars, PU, Vans	0	0	0	0	0	0	2099	155	0	2254	228	0	196	0	424	175	2309	0	0	2484	5162
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	90.6	100.0	0.0	91.2	###	0.0	99.5	0.0	99.8	99.4	91.1	0.0	0.0	91.7	92.1
Heavy Trucks	0	0	0	0	0	0	218	0	0	218	0	0	1	0	1	1	225	0	0	226	445
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	8.8	0.0	0.0	0.5	0.0	0.2	0.6	8.9	0.0	0.0	8.3	7.9

Project ID: 15-9156-005
 Location: Rivers Reach Dr & Clem
 City: Charleston

PEAK HOURS

Day: Tuesday
 Date: 4/28/2015

AM

Start Time	Rivers Reach Dr Southbound				Clements Ferry Rd Westbound				Rivers Reach Dr Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
7:00 AM	0	0	0	0	0	229	1	230	20	0	28	48	3	113	0	116	394
7:15 AM	0	0	0	0	0	225	6	231	26	0	19	45	5	114	0	119	395
7:30 AM	0	0	0	0	0	180	4	184	24	0	11	35	2	99	0	101	320
7:45 AM	0	0	0	0	0	150	2	152	12	0	16	28	1	126	0	127	307
Total Volume	0	0	0	0	0	784	13	797	82	0	74	156	11	452	0	463	1416
% App. Total	0.0	0.0	0.0	0	0.0	98.4	1.6	100	52.6	0.0	47.4	100	2.4	97.6	0.0	100	
PHF	0.000				0.863				0.813				0.911				
Cars, PU, Vans	0	0	0	0	0	723	13	736	82	0	73	155	11	382	0	393	1284
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	92.2	####	92.3	####	0.0	98.6	99.4	####	84.5	0.0	84.9	90.7
Heavy Trucks	0	0	0	0	0	61	0	61	0	0	1	1	0	70	0	70	132
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	7.8	0.0	7.7	0.0	0.0	1.4	0.6	0.0	15.5	0.0	15.1	9.3

PM

Start Time	Rivers Reach Dr Southbound				Clements Ferry Rd Westbound				Rivers Reach Dr Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	0	0	0	0	0	111	16	127	9	0	9	18	8	220	0	228	373
5:15 PM	0	0	0	0	0	123	14	137	11	0	2	13	21	206	0	227	377
5:30 PM	0	0	0	0	0	127	19	146	5	0	6	11	23	201	0	224	381
5:45 PM	0	0	0	0	0	112	23	135	19	0	9	28	23	215	0	238	401
Total Volume	0	0	0	0	0	473	72	545	44	0	26	70	75	842	0	917	1532
% App. Total	0.0	0.0	0.0	0	0.0	86.8	13.2	100	62.9	0.0	37.1	100	8.2	91.8	0.0	100	
PHF	0.000				0.933				0.625				0.963				
Cars, PU, Vans	0	0	0	0	0	443	72	515	44	0	26	70	74	800	0	874	1459
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	93.7	####	94.5	####	0.0	####	100.0	98.7	95.0	0.0	95.3	95.2
Heavy Trucks	0	0	0	0	0	30	0	30	0	0	0	0	1	42	0	43	73
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	6.3	0.0	5.5	0.0	0.0	0.0	0.0	1.3	5.0	0.0	4.7	4.8

Project ID: 15-9156-006
 Location: Cainhoy Village Rd & Clements Ferry Rd
 City: Charleston

Day: Tuesday
 Date: 4/28/2015

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Cainhoy Village Rd Southbound					Clements Ferry Rd Westbound					Cainhoy Village Rd Northbound					Clements Ferry Rd Eastbound					Int. Total
	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	
7:00 AM	0	0	0	0	0	0	223	0	0	223	2	0	1	0	3	0	130	0	0	130	356
7:15 AM	0	0	0	0	0	0	238	2	0	240	1	0	1	0	2	0	137	0	0	137	379
7:30 AM	0	0	0	0	0	0	172	0	0	172	0	0	0	0	0	0	128	0	0	128	300
7:45 AM	0	0	0	0	0	0	159	0	0	159	0	0	1	0	1	0	139	0	0	139	299
Total	0	0	0	0	0	0	792	2	0	794	3	0	3	0	6	0	534	0	0	534	1334
8:00 AM	0	0	0	0	0	0	153	0	0	153	0	0	0	0	0	1	139	0	0	140	293
8:15 AM	0	0	0	0	0	0	140	0	0	140	0	0	0	0	0	0	129	0	0	129	269
8:30 AM	0	0	0	0	0	0	164	0	0	164	0	0	0	0	0	0	103	1	0	104	268
8:45 AM	0	0	0	0	0	0	120	0	0	120	0	0	0	0	0	1	134	0	0	135	255
Total	0	0	0	0	0	0	577	0	0	577	0	0	0	0	0	2	505	1	0	508	1085
BREAK																					
4:00 PM	0	0	0	0	0	0	125	0	0	125	0	0	1	0	1	0	182	0	0	182	308
4:15 PM	0	0	0	0	0	0	150	0	0	150	0	0	0	0	0	1	222	0	0	223	373
4:30 PM	0	0	0	0	0	0	127	0	0	127	0	0	0	0	0	0	221	0	0	221	348
4:45 PM	0	0	0	0	0	0	138	1	0	139	2	0	0	0	2	1	214	0	0	215	356
Total	0	0	0	0	0	0	540	1	0	541	2	0	1	0	3	2	839	0	0	841	1385
5:00 PM	0	0	0	0	0	0	127	0	0	127	0	0	1	0	1	2	229	0	0	231	359
5:15 PM	0	0	0	0	0	0	133	0	0	133	0	0	1	0	1	0	211	0	0	211	345
5:30 PM	0	0	0	0	0	0	150	1	0	151	0	0	0	0	0	0	204	0	0	204	355
5:45 PM	0	0	0	0	0	0	130	1	0	131	0	0	1	0	1	1	238	0	0	239	371
Total	0	0	0	0	0	0	540	2	0	542	0	0	3	0	3	3	882	0	0	885	1430
Grand Total	0	0	0	0	0	0	2449	5	0	2454	5	0	7	0	12	7	2760	1	0	2768	5234
Apprch %	0.0	0.0	0.0	0.0	0.0	0.0	99.8	0.2	0.0	41.7	0.0	58.3	0.0	0.0	0.3	99.7	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	46.8	0.1	0.0	46.9	0.1	0.0	0.1	0.0	0.2	0.1	52.7	0.0	0.0	52.9	
Cars, PU, Vans	0	0	0	0	0	0	2232	5	0	2237	5	0	7	0	12	7	2531	1	0	2539	4788
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	91.1	100.0	0.0	91.2	###	0.0	###	0.0	100.0	100.0	91.7	###	0.0	91.7	91.5
Heavy Trucks	0	0	0	0	0	0	217	0	0	217	0	0	0	0	0	0	229	0	0	229	446
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	8.9	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0	8.3	8.5

Project ID: 15-9156-006
 Location: Cainhoy Village Rd & Cl
 City: Charleston

PEAK HOURS

Day: Tuesday
 Date: 4/28/2015

AM

Start Time	Cainhoy Village Rd Southbound				Clements Ferry Rd Westbound				Cainhoy Village Rd Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
7:00 AM	0	0	0	0	0	223	0	223	2	0	1	3	0	130	0	130	356
7:15 AM	0	0	0	0	0	238	2	240	1	0	1	2	0	137	0	137	379
7:30 AM	0	0	0	0	0	172	0	172	0	0	0	0	0	128	0	128	300
7:45 AM	0	0	0	0	0	159	0	159	0	0	1	1	0	139	0	139	299
Total Volume	0	0	0	0	0	792	2	794	3	0	3	6	0	534	0	534	1334
% App. Total	0.0	0.0	0.0	0.0	0.0	99.7	0.3	100	50.0	0.0	50.0	100	0.0	#####	0.0	100	
PHF	0.000				0.827				0.500				0.960				
Cars, PU, Vans	0	0	0	0	0	730	2	732	3	0	3	6	0	463	0	463	1201
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	92.2	#####	92.2	#####	0.0	#####	100.0	0.0	86.7	0.0	86.7	90.0
Heavy Trucks	0	0	0	0	0	62	0	62	0	0	0	0	0	71	0	71	133
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	7.8	0.0	7.8	0.0	0.0	0.0	0.0	0.0	13.3	0.0	13.3	10.0

PM

Start Time	Cainhoy Village Rd Southbound				Clements Ferry Rd Westbound				Cainhoy Village Rd Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
4:15 PM	0	0	0	0	0	150	0	150	0	0	0	0	1	222	0	223	373
4:30 PM	0	0	0	0	0	127	0	127	0	0	0	0	0	221	0	221	348
4:45 PM	0	0	0	0	0	138	1	139	2	0	0	2	1	214	0	215	356
5:00 PM	0	0	0	0	0	127	0	127	0	0	1	1	2	229	0	231	359
Total Volume	0	0	0	0	0	542	1	543	2	0	1	3	4	886	0	890	1436
% App. Total	0.0	0.0	0.0	0.0	0.0	99.8	0.2	100	66.7	0.0	33.3	100	0.4	99.6	0.0	100	
PHF	0.000				0.905				0.375				0.963				
Cars, PU, Vans	0	0	0	0	0	497	1	498	2	0	1	3	4	850	0	854	1355
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	91.7	#####	91.7	#####	0.0	#####	100.0	#####	95.9	0.0	96.0	94.4
Heavy Trucks	0	0	0	0	0	45	0	45	0	0	0	0	0	36	0	36	81
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	8.3	0.0	8.3	0.0	0.0	0.0	0.0	0.0	4.1	0.0	4.0	5.6

Project ID: 15-9156-007
 Location: Cainhoy Rd & Clements Ferry Rd
 City: Charleston

Day: Tuesday
 Date: 4/28/2015

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Cainhoy Rd Southbound					Clements Ferry Rd Westbound					Cainhoy Rd Northbound					Clements Ferry Rd Eastbound					Int. Total
	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	
7:00 AM	40	0	21	0	61	22	176	0	0	198	0	0	0	0	0	0	88	33	0	121	380
7:15 AM	66	0	20	0	86	19	174	0	0	193	0	0	0	0	0	0	109	36	0	145	424
7:30 AM	44	0	22	0	66	33	124	0	0	157	0	0	0	0	0	0	113	21	0	134	357
7:45 AM	36	0	15	0	51	33	124	0	0	157	0	0	0	0	0	0	101	37	0	138	346
Total	186	0	78	0	264	107	598	0	0	705	0	0	0	0	0	0	411	127	0	538	1507
8:00 AM	24	0	13	0	37	10	128	0	0	138	0	0	0	0	0	0	114	18	0	132	307
8:15 AM	22	0	12	0	34	19	120	0	0	139	0	0	0	0	0	0	108	26	0	134	307
8:30 AM	26	0	14	0	40	7	135	0	0	142	0	0	0	0	0	0	79	24	0	103	285
8:45 AM	18	0	11	0	29	6	102	0	0	108	0	0	0	0	0	0	110	25	0	135	272
Total	90	0	50	0	140	42	485	0	0	527	0	0	0	0	0	0	411	93	0	504	1171
BREAK																					
4:00 PM	31	0	27	0	58	15	100	0	0	115	0	0	0	0	0	0	155	28	0	183	356
4:15 PM	50	0	24	0	74	17	96	0	0	113	0	0	0	0	0	0	182	35	0	217	404
4:30 PM	40	0	26	0	66	19	91	0	0	110	0	0	0	0	0	0	177	40	0	217	393
4:45 PM	36	0	35	0	71	20	96	0	0	116	0	0	0	0	0	0	184	31	0	215	402
Total	157	0	112	0	269	71	383	0	0	454	0	0	0	0	0	0	698	134	0	832	1555
5:00 PM	44	0	49	0	93	21	83	0	0	104	0	0	0	0	0	0	195	34	0	229	426
5:15 PM	54	0	62	0	116	11	79	0	2	90	0	0	0	0	0	0	190	32	0	222	428
5:30 PM	75	0	34	0	109	9	82	0	0	91	0	0	0	0	0	0	170	33	0	203	403
5:45 PM	41	0	25	0	66	14	93	0	0	107	0	0	0	0	0	0	206	32	0	238	411
Total	214	0	170	0	384	55	337	0	2	392	0	0	0	0	0	0	761	131	0	892	1668
Grand Total	647	0	410	0	1057	275	1803	0	2	2078	0	0	0	0	0	0	2281	485	0	2766	5901
Apprch %	61.2	0.0	38.8	0.0		13.2	86.8	0.0	0.1		0.0	0.0	0.0	0.0		0.0	82.5	17.5	0.0		
Total %	11.0	0.0	6.9	0.0	17.9	4.7	30.6	0.0	0.0	35.2	0.0	0.0	0.0	0.0	0.0	0.0	38.7	8.2	0.0	46.9	
Cars, PU, Vans	533	0	373	0	906	243	1694	0	2	1937	0	0	0	0	0	0	2125	415	0	2540	5383
% Cars, PU, Vans	82.4	0.0	91.0	0.0	85.7	88.4	94.0	0.0	####	93.2	0.0	0.0	0.0	0.0	0.0	0.0	93.2	85.6	0.0	91.8	91.2
Heavy Trucks	114	0	37	0	151	32	109	0	0	141	0	0	0	0	0	0	156	70	0	226	518
%Heavy Trucks	17.6	0.0	9.0	0.0	14.3	11.6	6.0	0.0	0.0	6.8	0.0	0.0	0.0	0.0	0.0	0.0	6.8	14.4	0.0	8.2	8.8

Project ID: 15-9156-007
 Location: Cainhoy Rd & Clements
 City: Charleston

PEAK HOURS

Day: Tuesday
 Date: 4/28/2015

AM

Start Time	Cainhoy Rd Southbound				Clements Ferry Rd Westbound				Cainhoy Rd Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
7:00 AM	40	0	21	61	22	176	0	198	0	0	0	0	0	88	33	121	380
7:15 AM	66	0	20	86	19	174	0	193	0	0	0	0	0	109	36	145	424
7:30 AM	44	0	22	66	33	124	0	157	0	0	0	0	0	113	21	134	357
7:45 AM	36	0	15	51	33	124	0	157	0	0	0	0	0	101	37	138	346
Total Volume	186	0	78	264	107	598	0	705	0	0	0	0	0	411	127	538	1507
% App. Total	70.5	0.0	29.5	100	15.2	84.8	0.0	100	0.0	0.0	0.0	0	0.0	76.4	23.6	100	
PHF	0.767				0.890				0.000				0.928				
Cars, PU, Vans	160	0	71	231	94	560	0	654	0	0	0	0	0	367	102	469	1354
% Cars, PU, Vans	86.0	0.0	91.0	87.5	87.9	93.6	0.0	92.8	0.0	0.0	0.0	0.0	0.0	89.3	80.3	87.2	89.8
Heavy Trucks	26	0	7	33	13	38	0	51	0	0	0	0	0	44	25	69	153
%Heavy Trucks	14.0	0.0	9.0	12.5	12.1	6.4	0.0	7.2	0.0	0.0	0.0	0.0	0.0	10.7	19.7	12.8	10.2

PM

Start Time	Cainhoy Rd Southbound				Clements Ferry Rd Westbound				Cainhoy Rd Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	44	0	49	93	21	83	0	104	0	0	0	0	0	195	34	229	426
5:15 PM	54	0	62	116	11	79	0	90	0	0	0	0	0	190	32	222	428
5:30 PM	75	0	34	109	9	82	0	91	0	0	0	0	0	170	33	203	403
5:45 PM	41	0	25	66	14	93	0	107	0	0	0	0	0	206	32	238	411
Total Volume	214	0	170	384	55	337	0	392	0	0	0	0	0	761	131	892	1668
% App. Total	55.7	0.0	44.3	100	14.0	86.0	0.0	100	0.0	0.0	0.0	0	0.0	85.3	14.7	100	
PHF	0.828				0.916				0.000				0.937				
Cars, PU, Vans	191	0	165	356	53	330	0	383	0	0	0	0	0	726	121	847	1586
% Cars, PU, Vans	89.3	0.0	97.1	92.7	96.4	97.9	0.0	97.7	0.0	0.0	0.0	0.0	0.0	95.4	92.4	95.0	95.1
Heavy Trucks	23	0	5	28	2	7	0	9	0	0	0	0	0	35	10	45	82
%Heavy Trucks	10.7	0.0	2.9	7.3	3.6	2.1	0.0	2.3	0.0	0.0	0.0	0.0	0.0	4.6	7.6	5.0	4.9

Project ID: 15-9156-008
 Location: Reflectance Rd & Clements Ferry Rd
 City: Charleston

Day: Tuesday
 Date: 4/28/2015

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Reflectance Rd Southbound					Clements Ferry Rd Westbound					Reflectance Rd Northbound					Clements Ferry Rd Eastbound					Int. Total
	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	
7:00 AM	45	0	1	0	46	0	152	0	0	152	0	0	0	0	0	0	90	21	0	111	309
7:15 AM	51	0	1	0	52	1	119	0	0	120	0	0	0	0	0	0	90	36	0	126	298
7:30 AM	43	0	0	0	43	0	115	0	0	115	0	0	0	0	0	0	103	30	0	133	291
7:45 AM	45	0	0	0	45	0	126	0	0	126	0	0	0	0	0	0	99	24	0	123	294
Total	184	0	2	0	186	1	512	0	0	513	0	0	0	0	0	0	382	111	0	493	1192
8:00 AM	36	0	1	0	37	0	106	0	0	106	0	0	0	0	0	0	85	35	0	120	263
8:15 AM	29	0	0	0	29	0	114	0	0	114	0	0	0	0	0	0	87	36	0	123	266
8:30 AM	40	0	0	0	40	0	109	0	0	109	0	0	0	0	0	0	74	20	0	94	243
8:45 AM	31	0	0	0	31	0	79	0	0	79	0	0	0	0	0	0	82	36	0	118	228
Total	136	0	1	0	137	0	408	0	0	408	0	0	0	0	0	0	328	127	0	455	1000
BREAK																					
4:00 PM	27	0	0	0	27	2	87	0	0	89	0	0	0	0	0	0	140	47	0	187	303
4:15 PM	27	0	0	0	27	0	86	0	0	86	0	0	0	0	0	0	159	54	0	213	326
4:30 PM	24	0	1	0	25	4	86	0	0	90	0	0	0	0	0	0	139	56	0	195	310
4:45 PM	19	0	0	0	19	0	91	0	0	91	0	0	0	0	0	0	159	56	0	215	325
Total	97	0	1	0	98	6	350	0	0	356	0	0	0	0	0	0	597	213	0	810	1264
5:00 PM	16	0	1	0	17	1	84	0	0	85	0	0	0	0	0	0	189	51	0	240	342
5:15 PM	10	0	0	0	10	1	78	0	0	79	0	0	0	0	0	0	208	52	0	260	349
5:30 PM	20	0	0	0	20	1	74	0	0	75	0	0	0	0	0	0	145	58	0	203	298
5:45 PM	16	0	3	0	19	1	93	0	0	94	0	0	0	0	0	0	182	50	0	232	345
Total	62	0	4	0	66	4	329	0	0	333	0	0	0	0	0	0	724	211	0	935	1334
Grand Total	479	0	8	0	487	11	1599	0	0	1610	0	0	0	0	0	0	2031	662	0	2693	4790
Apprch %	98.4	0.0	1.6	0.0		0.7	99.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	75.4	24.6	0.0		
Total %	10.0	0.0	0.2	0.0	10.2	0.2	33.4	0.0	0.0	33.6	0.0	0.0	0.0	0.0	0.0	0.0	42.4	13.8	0.0	56.2	
Cars, PU, Vans	353	0	8	0	361	11	1585	0	0	1596	0	0	0	0	0	0	2016	486	0	2502	4459
% Cars, PU, Vans	73.7	0.0	###	0.0	74.1	###	99.1	0.0	0.0	99.1	0.0	0.0	0.0	0.0	0.0	0.0	99.3	73.4	0.0	92.9	93.1
Heavy Trucks	126	0	0		126	0	14	0		14	0	0	0		0	0	15	176		191	331
%Heavy Trucks	26.3	0.0	0.0	0.0	25.9	0.0	0.9	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.7	26.6	0.0	7.1	6.9

Project ID: 15-9156-008
 Location: Reflectance Rd & Cleme
 City: Charleston

PEAK HOURS

Day: Tuesday
 Date: 4/28/2015

AM

Start Time	Reflectance Rd Southbound				Clements Ferry Rd Westbound				Reflectance Rd Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
7:00 AM	45	0	1	46	0	152	0	152	0	0	0	0	0	90	21	111	309
7:15 AM	51	0	1	52	1	119	0	120	0	0	0	0	0	90	36	126	298
7:30 AM	43	0	0	43	0	115	0	115	0	0	0	0	0	103	30	133	291
7:45 AM	45	0	0	45	0	126	0	126	0	0	0	0	0	99	24	123	294
Total Volume	184	0	2	186	1	512	0	513	0	0	0	0	0	382	111	493	1192
% App. Total	98.9	0.0	1.1	100	0.2	99.8	0.0	100	0.0	0.0	0.0	0	0.0	77.5	22.5	100	
PHF	0.894				0.844				0.000				0.927				
Cars, PU, Vans	136	0	2	138	1	508	0	509	0	0	0	0	0	378	64	442	1089
% Cars, PU, Vans	73.9	0.0	####	74.2	100.0	99.2	0.0	99.2	0.0	0.0	0.0	0.0	0.0	99.0	57.7	89.7	91.4
Heavy Trucks	48	0	0	48	0	4	0	4	0	0	0	0	0	4	47	51	103
%Heavy Trucks	26.1	0.0	0.0	25.8	0.0	0.8	0.0	0.8	0.0	0.0	0.0	0.0	0.0	1.0	42.3	10.3	8.6

PM

Start Time	Reflectance Rd Southbound				Clements Ferry Rd Westbound				Reflectance Rd Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	16	0	1	17	1	84	0	85	0	0	0	0	0	189	51	240	342
5:15 PM	10	0	0	10	1	78	0	79	0	0	0	0	0	208	52	260	349
5:30 PM	20	0	0	20	1	74	0	75	0	0	0	0	0	145	58	203	298
5:45 PM	16	0	3	19	1	93	0	94	0	0	0	0	0	182	50	232	345
Total Volume	62	0	4	66	4	329	0	333	0	0	0	0	0	724	211	935	1334
% App. Total	93.9	0.0	6.1	100	1.2	98.8	0.0	100	0.0	0.0	0.0	0	0.0	77.4	22.6	100	
PHF	0.825				0.886				0.000				0.899				
Cars, PU, Vans	54	0	4	58	4	329	0	333	0	0	0	0	0	722	172	894	1285
% Cars, PU, Vans	87.1	0.0	####	87.9	100.0	####	0.0	100.0	0.0	0.0	0.0	0.0	0.0	99.7	81.5	95.6	96.3
Heavy Trucks	8	0	0	8	0	0	0	0	0	0	0	0	0	2	39	41	49
%Heavy Trucks	12.9	0.0	0.0	12.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	18.5	4.4	3.7

Project ID: 15-9156-009
 Location: SC 41 & Clements Ferry Rd
 City: Charleston

Day: Tuesday
 Date: 4/28/2015

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	SC 41 Southbound					Clements Ferry Rd Westbound					SC 41 Northbound					Clements Ferry Rd Eastbound					Int. Total
	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	
7:00 AM	0	52	0	0	52	0	0	0	0	0	0	26	161	0	187	96	0	0	0	96	335
7:15 AM	0	59	0	0	59	0	0	0	0	0	0	19	112	0	131	89	0	0	0	89	279
7:30 AM	0	52	0	0	52	0	0	0	0	0	0	25	113	0	138	106	0	0	0	106	296
7:45 AM	3	47	0	0	50	0	0	0	0	0	0	31	117	0	148	95	0	0	0	95	293
Total	3	210	0	0	213	0	0	0	0	0	0	101	503	0	604	386	0	0	0	386	1203
8:00 AM	1	50	0	0	51	0	0	0	0	0	0	23	113	0	136	89	0	0	0	89	276
8:15 AM	1	37	0	0	38	0	0	0	0	0	0	24	107	0	131	96	0	0	0	96	265
8:30 AM	0	41	0	0	41	0	0	0	0	0	0	17	98	0	115	72	0	0	0	72	228
8:45 AM	1	55	0	0	56	0	0	0	0	0	0	16	80	0	96	85	0	0	0	85	237
Total	3	183	0	0	186	0	0	0	0	0	0	80	398	0	478	342	0	0	0	342	1006
BREAK																					
4:00 PM	0	25	0	0	25	0	0	0	0	0	0	39	90	0	129	136	0	1	0	137	291
4:15 PM	2	27	0	0	29	0	0	0	0	0	0	49	91	0	140	161	0	1	0	162	331
4:30 PM	1	23	0	0	24	0	0	0	0	0	0	48	101	0	149	146	0	1	0	147	320
4:45 PM	0	28	0	0	28	0	0	0	0	0	0	63	103	0	166	148	0	0	0	148	342
Total	3	103	0	0	106	0	0	0	0	0	0	199	385	0	584	591	0	3	0	594	1284
5:00 PM	0	23	0	0	23	0	0	0	0	0	0	59	80	0	139	207	0	1	0	208	370
5:15 PM	1	34	0	0	35	0	0	0	0	0	0	56	88	0	144	196	0	0	0	196	375
5:30 PM	0	33	0	0	33	0	0	0	0	0	0	60	75	0	135	159	0	0	0	159	327
5:45 PM	1	41	0	0	42	0	0	0	0	0	0	65	83	0	148	178	0	0	0	178	368
Total	2	131	0	0	133	0	0	0	0	0	0	240	326	0	566	740	0	1	0	741	1440
Grand Total	11	627	0	0	638	0	0	0	0	0	0	620	1612	0	2232	2059	0	4	0	2063	4933
Apprch %	1.7	98.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	27.8	72.2	0.0		99.8	0.0	0.2	0.0		
Total %	0.2	12.7	0.0	0.0	12.9	0.0	0.0	0.0	0.0	0.0	0.0	12.6	32.7	0.0	45.2	41.7	0.0	0.1	0.0	41.8	
Cars, PU, Vans	10	613	0	0	623	0	0	0	0	0	0	596	1603	0	2199	2048	0	4	0	2052	4874
% Cars, PU, Vans	90.9	97.8	0.0	0.0	97.6	0.0	0.0	0.0	0.0	0.0	0.0	96.1	99.4	0.0	98.5	99.5	0.0	####	0.0	99.5	98.8
Heavy Trucks	1	14	0	0	15	0	0	0	0	0	0	24	9	33	11	11	0	0	0	11	59
%Heavy Trucks	9.1	2.2	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.6	0.0	1.5	0.5	0.0	0.0	0.0	0.5	1.2

Project ID: 15-9156-009
 Location: SC 41 & Clements Ferry
 City: Charleston

PEAK HOURS

Day: Tuesday
 Date: 4/28/2015

AM

Start Time	SC 41 Southbound				Clements Ferry Rd Westbound				SC 41 Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
7:00 AM	0	52	0	52	0	0	0	0	0	26	161	187	96	0	0	96	335
7:15 AM	0	59	0	59	0	0	0	0	0	19	112	131	89	0	0	89	279
7:30 AM	0	52	0	52	0	0	0	0	0	25	113	138	106	0	0	106	296
7:45 AM	3	47	0	50	0	0	0	0	0	31	117	148	95	0	0	95	293
Total Volume	3	210	0	213	0	0	0	0	0	101	503	604	386	0	0	386	1203
% App. Total	1.4	98.6	0.0	100	0.0	0.0	0.0	0	0.0	16.7	83.3	100	####	0.0	0.0	100	
PHF	0.903				0.000				0.807				0.910				
Cars, PU, Vans	3	206	0	209	0	0	0	0	0	96	499	595	383	0	0	383	1187
% Cars, PU, Vans	####	98.1	0.0	98.1	0.0	0.0	0.0	0.0	0.0	95.0	99.2	98.5	99.2	0.0	0.0	99.2	98.7
Heavy Trucks	0	4	0	4	0	0	0	0	0	5	4	9	3	0	0	3	16
%Heavy Trucks	0.0	1.9	0.0	1.9	0.0	0.0	0.0	0.0	0.0	5.0	0.8	1.5	0.8	0.0	0.0	0.8	1.3

PM

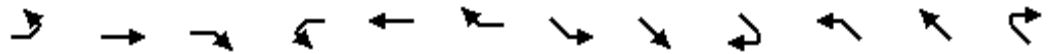
Start Time	SC 41 Southbound				Clements Ferry Rd Westbound				SC 41 Northbound				Clements Ferry Rd Eastbound				Int. Total
	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	0	23	0	23	0	0	0	0	0	59	80	139	207	0	1	208	370
5:15 PM	1	34	0	35	0	0	0	0	0	56	88	144	196	0	0	196	375
5:30 PM	0	33	0	33	0	0	0	0	0	60	75	135	159	0	0	159	327
5:45 PM	1	41	0	42	0	0	0	0	0	65	83	148	178	0	0	178	368
Total Volume	2	131	0	133	0	0	0	0	0	240	326	566	740	0	1	741	1440
% App. Total	1.5	98.5	0.0	100	0.0	0.0	0.0	0	0.0	42.4	57.6	100	99.9	0.0	0.1	100	
PHF	0.792				0.000				0.956				0.891				
Cars, PU, Vans	2	130	0	132	0	0	0	0	0	235	326	561	740	0	1	741	1434
% Cars, PU, Vans	####	99.2	0.0	99.2	0.0	0.0	0.0	0.0	0.0	97.9	####	99.1	####	0.0	100.0	100.0	99.6
Heavy Trucks	0	1	0	1	0	0	0	0	0	5	0	5	0	0	0	0	6
%Heavy Trucks	0.0	0.8	0.0	0.8	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.9	0.0	0.0	0.0	0.0	0.4

APPENDIX B- Synchro Output Files

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/1/2017

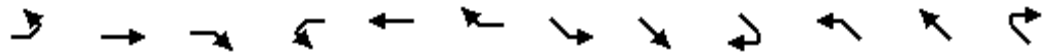


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	33	370	19	23	876	33	14	5	97	18	4	70
Future Volume (vph)	33	370	19	23	876	33	14	5	97	18	4	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		175	175		175	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.897	
Flt Protected	0.950			0.950				0.965			0.990	
Satd. Flow (prot)	1770	1610	1583	1770	1810	1583	0	1678	1583	0	1654	0
Flt Permitted	0.142			0.521				0.777			0.926	
Satd. Flow (perm)	265	1610	1583	970	1810	1583	0	1351	1583	0	1547	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			98			108			78
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1021			1211			1133			1015	
Travel Time (s)		15.5			18.3			22.1			19.8	
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
Heavy Vehicles (%)	2%	18%	2%	2%	5%	2%	12%	2%	2%	2%	2%	2%
Adj. Flow (vph)	37	411	21	26	973	37	16	6	108	20	4	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	411	21	26	973	37	0	22	108	0	102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Thru	Right	Left	Thru	Right	Left	Right	Right	Left	Right	
Leading Detector (ft)	30	391	20	80	391	20	80	20	20	80	20	
Trailing Detector (ft)	0	255	0	50	255	0	50	0	0	50	0	
Detector 1 Position(ft)	0	255	0	50	255	0	50	0	0	50	0	
Detector 1 Size(ft)	30	6	20	30	6	20	30	20	20	30	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		385			385							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4				8

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/1/2017

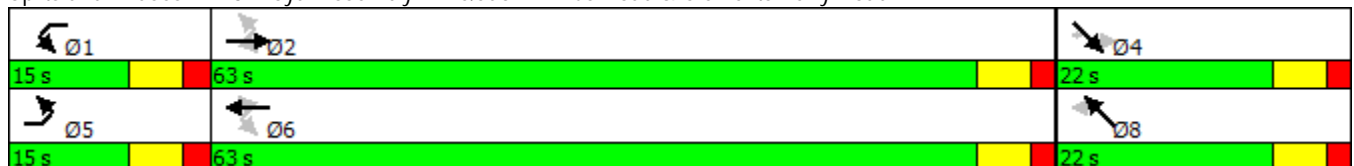


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	15.0	63.0	63.0	15.0	63.0	63.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	15.0%	63.0%	63.0%	15.0%	63.0%	63.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	56.6	56.3	56.3	53.7	53.3	53.3		8.6	8.6			9.0
Actuated g/C Ratio	0.75	0.75	0.75	0.71	0.71	0.71		0.11	0.11			0.12
v/c Ratio	0.11	0.34	0.02	0.03	0.76	0.03		0.14	0.39			0.40
Control Delay	3.6	7.2	0.1	3.3	18.0	0.1		39.5	12.9			19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	3.6	7.2	0.1	3.3	18.0	0.1		39.5	12.9			19.6
LOS	A	A	A	A	B	A		D	B			B
Approach Delay		6.6			17.0			17.4				19.6
Approach LOS		A			B			B				B
Stops (vph)	8	133	0	6	550	0		20	19			30
Fuel Used(gal)	1	15	1	0	17	0		0	1			1
CO Emissions (g/hr)	86	1039	43	19	1184	18		33	83			89
NOx Emissions (g/hr)	17	202	8	4	230	4		6	16			17
VOC Emissions (g/hr)	20	241	10	4	274	4		8	19			21
Dilemma Vehicles (#)	0	5	0	0	45	0		1	0			5

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	75.5
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	14.4
Intersection LOS:	B
Intersection Capacity Utilization:	72.6%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/1/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	127	411	598	107	78	186
Future Volume (vph)	127	411	598	107	78	186
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.979		0.905	
Flt Protected	0.950				0.985	
Satd. Flow (prot)	1504	1712	1674	0	1533	0
Flt Permitted	0.115				0.985	
Satd. Flow (perm)	182	1712	1674	0	1533	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			14		113	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	20%	11%	12%	6%	14%	9%
Adj. Flow (vph)	141	457	664	119	87	207
Shared Lane Traffic (%)						
Lane Group Flow (vph)	141	457	783	0	294	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	
Detector Template						
Leading Detector (ft)	80	166	166		80	
Trailing Detector (ft)	50	0	0		50	
Detector 1 Position(ft)	50	160	160		50	
Detector 1 Size(ft)	30	6	6		30	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		0	0			
Detector 2 Size(ft)		0	0			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	

CLEMENTS FERRY RD WIDENING
19: Clements Ferry Road & Cainhoy Road

2/1/2017

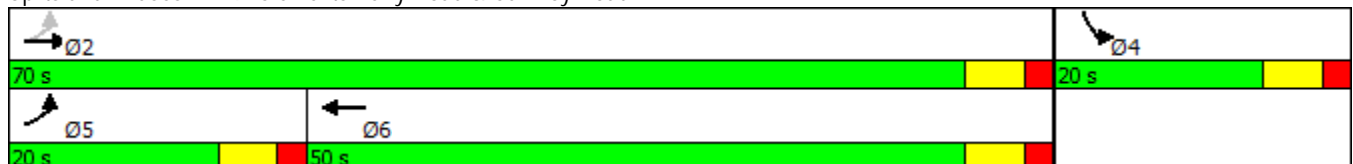


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		20.0	
Total Split (s)	20.0	70.0	50.0		20.0	
Total Split (%)	22.2%	77.8%	55.6%		22.2%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Recall Mode	None	Min	Min		None	
Act Effect Green (s)	60.3	60.3	42.3		13.2	
Actuated g/C Ratio	0.71	0.71	0.49		0.15	
v/c Ratio	0.45	0.38	0.94		0.89	
Control Delay	11.4	6.2	41.6		52.0	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	11.4	6.2	41.6		52.0	
LOS	B	A	D		D	
Approach Delay		7.4	41.6		52.0	
Approach LOS		A	D		D	
Stops (vph)	44	149	563		142	
Fuel Used(gal)	4	12	22		6	
CO Emissions (g/hr)	262	820	1524		414	
NOx Emissions (g/hr)	51	159	296		81	
VOC Emissions (g/hr)	61	190	353		96	
Dilemma Vehicles (#)	0	11	35		0	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	85.5
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.94
Intersection Signal Delay:	31.2
Intersection LOS:	C
Intersection Capacity Utilization:	77.1%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

2/1/2017



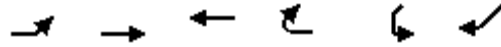
Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	0	386	503	101	210	0
Future Volume (vph)	0	386	503	101	210	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.865				
Fl _t Protected				0.960		
Satd. Flow (prot)	0	1611	0	1779	1863	0
Fl _t Permitted				0.960		
Satd. Flow (perm)	0	1611	0	1779	1863	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	2492			2464	297	
Travel Time (s)	48.5			56.0	6.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%
Adj. Flow (vph)	0	429	559	112	233	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	429	0	671	233	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Yield			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.9%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/1/2017



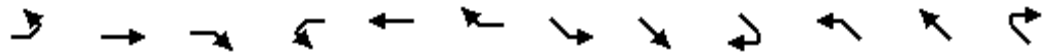
Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	111	382	512	1	2	184
Future Volume (vph)	111	382	512	1	2	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t					0.866	
Fl _t Protected		0.989				
Satd. Flow (prot)	0	1693	1863	0	1308	0
Fl _t Permitted		0.989				
Satd. Flow (perm)	0	1693	1863	0	1308	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2492		1587	
Travel Time (s)		44.4	48.5		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	42%	2%	2%	2%	2%	26%
Adj. Flow (vph)	123	424	569	1	2	204
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	547	570	0	206	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	74.8%
Analysis Period (min)	15
	ICU Level of Service D

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/1/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	6	436	0	0	988	1	1	0	0	2	0	0
Future Volume (vph)	6	436	0	0	988	1	1	0	0	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected	0.950							0.950			0.950	
Satd. Flow (prot)	986	1667	0	0	1808	0	0	1770	0	0	1770	0
Flt Permitted	0.950							0.950			0.950	
Satd. Flow (perm)	986	1667	0	0	1808	0	0	1770	0	0	1770	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1211			9191			1111			1229	
Travel Time (s)		15.0			113.9			25.3			27.9	
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
Heavy Vehicles (%)	83%	14%	2%	2%	5%	100%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	7	484	0	0	1098	1	1	0	0	2	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	484	0	0	1099	0	0	1	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.1%
Analysis Period (min)	15
	ICU Level of Service B

CLEMENTS FERRY RD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

2/1/2017



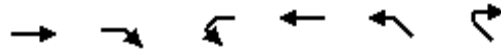
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	534	0	2	792	3	3
Future Volume (vph)	534	0	2	792	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.932	
Flt Protected					0.976	
Satd. Flow (prot)	1681	0	0	1759	1694	0
Flt Permitted					0.976	
Satd. Flow (perm)	1681	0	0	1759	1694	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	13%	2%	2%	8%	2%	2%
Adj. Flow (vph)	593	0	2	880	3	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	593	0	0	882	6	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	53.3%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/1/2017



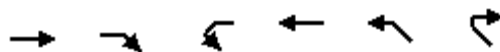
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	403	16	8	947	111	41
Future Volume (vph)	403	16	8	947	111	41
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1624	1583	1770	1792	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1624	1583	1770	1792	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	17%	2%	2%	6%	2%	2%
Adj. Flow (vph)	448	18	9	1052	123	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	448	18	9	1052	123	46
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.7%
Analysis Period (min)	15
	ICU Level of Service B

CLEMENTS FERRY RD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

2/1/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	444	4	5	842	116	19
Future Volume (vph)	444	4	5	842	116	19
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.981	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	1638	1583	1770	1776	1752	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	1638	1583	1770	1776	1752	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	16%	2%	2%	7%	2%	2%
Adj. Flow (vph)	493	4	6	936	129	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	493	4	6	936	150	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.6%
Analysis Period (min)	15
	ICU Level of Service B

CLEMENTS FERRY RD WIDENING
 43: Rivers Reach Dr & Clements Ferry Road

2/1/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	452	11	13	784	74	82
Future Volume (vph)	452	11	13	784	74	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997			0.929		
Flt Protected				0.999	0.977	
Satd. Flow (prot)	1638	0	0	1759	1691	0
Flt Permitted				0.999	0.977	
Satd. Flow (perm)	1638	0	0	1759	1691	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1280	
Travel Time (s)	30.7			30.0	29.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	16%	2%	2%	8%	2%	2%
Adj. Flow (vph)	502	12	14	871	82	91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	514	0	0	885	173	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	67.5%
Analysis Period (min)	15
	ICU Level of Service C

CLEMENTS FERRY RD WIDENING

51: SC 41

2/1/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	0	0	101	210	3
Future Volume (vph)	1	0	0	101	210	3
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t					0.998	
Fl _t Protected	0.950					
Satd. Flow (prot)	1770	0	0	1863	1859	0
Fl _t Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1863	1859	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	246			297	724	
Travel Time (s)	5.6			6.8	16.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	0	0	112	233	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	0	112	236	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.2%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	886	10	20	421	13	24	5	79	52	3	51
Future Volume (vph)	53	886	10	20	421	13	24	5	79	52	3	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		175	175		175	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.901				0.850
Flt Protected	0.950			0.950				0.989			0.955	
Satd. Flow (prot)	1656	1845	1583	1736	1759	1583	0	1660	0	0	1731	1468
Flt Permitted	0.399			0.126				0.905			0.617	
Satd. Flow (perm)	696	1845	1583	230	1759	1583	0	1519	0	0	1118	1468
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			98		93				98
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1693			1211			1391				1347
Travel Time (s)		25.7			18.3			27.1				26.2
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
Growth Factor	106%	106%	106%	106%	106%	106%	106%	106%	106%	106%	106%	106%
Heavy Vehicles (%)	9%	3%	2%	4%	8%	2%	2%	2%	2%	5%	2%	10%
Adj. Flow (vph)	62	1044	12	24	496	15	28	6	93	61	4	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	1044	12	24	496	15	0	127	0	0	65	60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0	22.0	22.0	22.0		22.0	22.0	22.0
Total Split (s)	15.0	63.0	63.0	15.0	63.0	63.0	22.0	22.0		22.0	22.0	22.0
Total Split (%)	15.0%	63.0%	63.0%	15.0%	63.0%	63.0%	22.0%	22.0%		22.0%	22.0%	22.0%
Maximum Green (s)	9.0	57.0	57.0	9.0	57.0	57.0	16.0	16.0		16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	None
Act Effct Green (s)	56.0	53.6	53.6	51.4	47.3	47.3		7.5			7.5	7.5
Actuated g/C Ratio	0.73	0.69	0.69	0.67	0.61	0.61		0.10			0.10	0.10
v/c Ratio	0.11	0.82	0.01	0.09	0.46	0.01		0.55			0.60	0.26
Control Delay	3.5	18.0	0.0	4.2	11.0	0.0		22.8			58.7	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	3.5	18.0	0.0	4.2	11.0	0.0		22.8			58.7	5.5
LOS	A	B	A	A	B	A		C			E	A



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		17.0			10.4			22.8			33.1	
Approach LOS		B			B			C			C	
Stops (vph)	14	590	0	6	230	0		39			54	4
Fuel Used(gal)	1	21	0	0	7	0		2			2	1
CO Emissions (g/hr)	58	1475	8	19	515	8		137			116	43
NOx Emissions (g/hr)	11	287	2	4	100	1		27			23	8
VOC Emissions (g/hr)	13	342	2	4	119	2		32			27	10
Dilemma Vehicles (#)	0	34	0	0	5	0		2			1	0
Queue Length 50th (ft)	6	214	0	2	121	0		14			27	0
Queue Length 95th (ft)	19	#845	0	9	235	0		71			78	14
Internal Link Dist (ft)		1613			1131			1311			1267	
Turn Bay Length (ft)	175		175	175		175						
Base Capacity (vph)	625	1396	1222	342	1331	1222		395			237	389
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	0.10	0.75	0.01	0.07	0.37	0.01		0.32			0.27	0.15

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 77.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 16.6
 Intersection LOS: B
 Intersection Capacity Utilization 72.9%
 ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



2016 Existing PM
19: Clements Ferry Road & Cainhoy Road

2/1/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	131	761	337	55	170	214
Future Volume (vph)	131	761	337	55	170	214
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.981		0.925	
Flt Protected	0.950				0.978	
Satd. Flow (prot)	1671	1810	1822	0	1608	0
Flt Permitted	0.263				0.978	
Satd. Flow (perm)	463	1810	1822	0	1608	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			12		69	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		990	
Travel Time (s)		20.6	44.4		19.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	106%	106%	106%	106%	106%	106%
Heavy Vehicles (%)	8%	5%	2%	4%	3%	10%
Adj. Flow (vph)	154	896	397	65	200	252
Shared Lane Traffic (%)						
Lane Group Flow (vph)	154	896	462	0	452	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		20.0	
Total Split (s)	15.0	60.0	45.0		30.0	
Total Split (%)	16.7%	66.7%	50.0%		33.3%	
Maximum Green (s)	9.0	54.0	39.0		24.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.5	
Recall Mode	None	Min	Min		None	
Act Effct Green (s)	46.0	46.0	30.7		23.1	
Actuated g/C Ratio	0.57	0.57	0.38		0.28	
v/c Ratio	0.39	0.88	0.67		0.89	
Control Delay	11.2	26.3	25.2		47.9	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	11.2	26.3	25.2		47.9	
LOS	B	C	C		D	

2016 Existing PM
 19: Clements Ferry Road & Cainhoy Road

2/1/2017

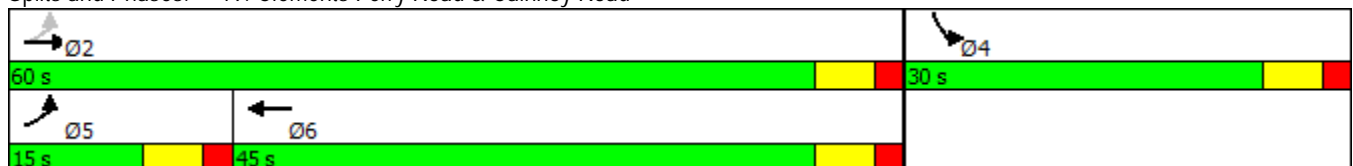


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		24.1	25.2		47.9	
Approach LOS		C	C		D	
Stops (vph)	58	631	311		287	
Fuel Used(gal)	4	28	11		9	
CO Emissions (g/hr)	290	1978	791		632	
NOx Emissions (g/hr)	56	385	154		123	
VOC Emissions (g/hr)	67	458	183		146	
Dilemma Vehicles (#)	0	34	11		0	
Queue Length 50th (ft)	35	370	188		207	
Queue Length 95th (ft)	63	566	286		#410	
Internal Link Dist (ft)		976	2198		910	
Turn Bay Length (ft)	120					
Base Capacity (vph)	398	1225	897		532	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.39	0.73	0.52		0.85	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 81.4
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 29.8
 Intersection LOS: C
 Intersection Capacity Utilization 76.4%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



2016 Existing PM
31: SC 41 & Clements Ferry Road

2/1/2017



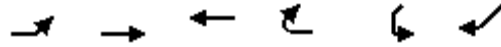
Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations		↑		↑	↑	
Traffic Volume (vph)	0	740	326	240	131	0
Future Volume (vph)	0	740	326	240	131	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.865				
Fl _t Protected				0.972		
Satd. Flow (prot)	0	1611	0	1811	1863	0
Fl _t Permitted				0.972		
Satd. Flow (perm)	0	1611	0	1811	1863	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	2490			2464	297	
Travel Time (s)	48.5			56.0	6.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	106%	106%	106%	106%	106%	106%
Adj. Flow (vph)	0	872	384	283	154	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	872	0	667	154	0
Sign Control	Yield			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.5%
ICU Level of Service	B
Analysis Period (min)	15

2016 Existing PM
 33: Clements Ferry Road & Reflectance Rd

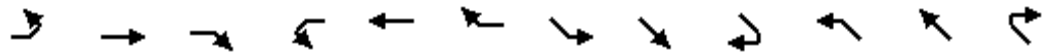
2/1/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	211	724	329	4	4	62
Future Volume (vph)	211	724	329	4	4	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.874	
Flt Protected		0.989			0.997	
Satd. Flow (prot)	0	1775	1859	0	1474	0
Flt Permitted		0.989			0.997	
Satd. Flow (perm)	0	1775	1859	0	1474	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2490		1587	
Travel Time (s)		44.4	48.5		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	106%	106%	106%	106%	106%	106%
Heavy Vehicles (%)	19%	2%	2%	2%	2%	13%
Adj. Flow (vph)	249	853	387	5	5	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1102	392	0	78	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	85.7%
Analysis Period (min)	15
	ICU Level of Service E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	3	1027	1	0	479	1	1	0	6	2	0	0
Future Volume (vph)	3	1027	1	0	479	1	1	0	6	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.882				
Flt Protected	0.950							0.994			0.950	
Satd. Flow (prot)	1003	1827	0	0	1793	0	0	1447	0	0	1770	0
Flt Permitted	0.950							0.994			0.950	
Satd. Flow (perm)	1003	1827	0	0	1793	0	0	1447	0	0	1770	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1211			9191			1383			1484	
Travel Time (s)		15.0			113.9			31.4			33.7	
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
Growth Factor	106%	106%	106%	106%	106%	106%	106%	106%	106%	106%	106%	106%
Heavy Vehicles (%)	80%	4%	2%	2%	6%	2%	2%	2%	17%	2%	2%	2%
Adj. Flow (vph)	4	1210	1	0	564	1	1	0	7	2	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	1211	0	0	565	0	0	8	0	0	2	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	67.4%
ICU Level of Service	C
Analysis Period (min)	15

2016 Existing PM
37: Cainhoy Village Rd & Clements Ferry Road

2/1/2017



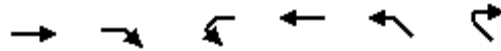
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	882	4	1	540	3	0
Future Volume (vph)	882	4	1	540	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999					
Flt Protected					0.950	
Satd. Flow (prot)	1825	0	0	1759	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1825	0	0	1759	1770	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	106%	106%	106%	106%	106%	106%
Heavy Vehicles (%)	4%	2%	2%	8%	2%	2%
Adj. Flow (vph)	1039	5	1	636	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1044	0	0	637	4	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	59.5% ICU Level of Service B
Analysis Period (min)	15

2016 Existing PM
 39: Nelliefield Creek Drive & Clements Ferry Road

2/1/2017



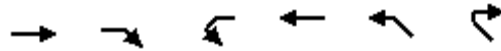
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	933	94	51	447	25	20
Future Volume (vph)	933	94	51	447	25	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1810	1583	1770	1792	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1810	1583	1770	1792	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	106%	106%	106%	106%	106%	106%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1099	111	60	526	29	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1099	111	60	526	29	24
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.1% ICU Level of Service B
Analysis Period (min)	15

2016 Existing PM
41: Peninsula Cove Drive & Clements Ferry Road

2/1/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	902	51	18	478	15	11
Future Volume (vph)	902	51	18	478	15	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.943	
Flt Protected			0.950		0.972	
Satd. Flow (prot)	1792	1583	1770	1792	1707	0
Flt Permitted			0.950		0.972	
Satd. Flow (perm)	1792	1583	1770	1792	1707	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	106%	106%	106%	106%	106%	106%
Heavy Vehicles (%)	6%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1062	60	21	563	18	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1062	60	21	563	31	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.3% ICU Level of Service B
Analysis Period (min)	15

2016 Existing PM
43: Rivers Reach Dr & Clements Ferry Road

2/1/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	842	75	72	473	26	44
Future Volume (vph)	842	75	72	473	26	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989			0.915		
Flt Protected				0.993	0.982	
Satd. Flow (prot)	1794	0	0	1789	1674	0
Flt Permitted				0.993	0.982	
Satd. Flow (perm)	1794	0	0	1789	1674	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1581	
Travel Time (s)	30.7			30.0	35.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	106%	106%	106%	106%	106%	106%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	992	88	85	557	31	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1080	0	0	642	83	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	96.8% ICU Level of Service F
Analysis Period (min)	15



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	0	0	240	131	2
Future Volume (vph)	1	0	0	240	131	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998	
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1863	1859	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1863	1859	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	232			297	724	
Travel Time (s)	5.3			6.8	16.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	106%	106%	106%	106%	106%	106%
Adj. Flow (vph)	1	0	0	283	154	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	0	283	156	0
Sign Control	Stop			Free	Free	

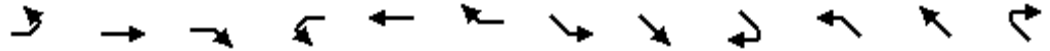
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.4% ICU Level of Service A
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017

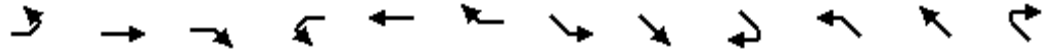


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	106	965	24	29	2995	106	288	6	237	23	6	88
Future Volume (vph)	106	965	24	29	2995	106	288	6	237	23	6	88
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		175	175		175	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.899	
Flt Protected	0.950			0.950				0.953			0.990	
Satd. Flow (prot)	1770	1610	1583	1770	1810	1583	0	1620	1583	0	1658	0
Flt Permitted	0.056			0.062				0.596			0.622	
Satd. Flow (perm)	104	1610	1583	115	1810	1583	0	1013	1583	0	1042	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			82			131		98	
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1021			1211			1133			1015	
Travel Time (s)		15.5			18.3			22.1			19.8	
Adj. Flow (vph)	118	1072	27	32	3328	118	320	7	263	26	7	98
Lane Group Flow (vph)	118	1072	27	32	3328	118	0	327	263	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	15.0	87.0	87.0	72.0	72.0	72.0	33.0	33.0	33.0	33.0	33.0	33.0
Total Split (%)	12.5%	72.5%	72.5%	60.0%	60.0%	60.0%	27.5%	27.5%	27.5%	27.5%	27.5%	27.5%
Maximum Green (s)	9.0	81.0	81.0	66.0	66.0	66.0	27.0	27.0	27.0	27.0	27.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	4.0	4.0	
Recall Mode	None	Min	Min	Min	Min	Min	None	None	None	None	None	
Act Effct Green (s)	80.7	80.7	80.7	66.0	66.0	66.0		27.0	27.0		27.0	
Actuated g/C Ratio	0.67	0.67	0.67	0.55	0.55	0.55		0.23	0.23		0.23	
v/c Ratio	0.62	0.99	0.03	0.51	3.33	0.13		1.43	0.57		0.42	

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Control Delay	48.9	44.7	2.3	49.9	1068.5	5.1		254.4	25.8		17.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	48.9	44.7	2.3	49.9	1068.5	5.1		254.4	25.8		17.0	
LOS	D	D	A	D	F	A		F	C		B	
Approach Delay		44.2			1023.0			152.5			17.0	
Approach LOS		D			F			F			B	
Queue Length 50th (ft)	39	737	0	15	-4562	12		-343	89		21	
Queue Length 95th (ft)	101	#1107	9	#70	#4779	40		#527	180		81	
Internal Link Dist (ft)		941			1131			1053			935	
Turn Bay Length (ft)	175		175	175		175						
Base Capacity (vph)	195	1089	1080	63	998	909		228	458		311	
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	
Reduced v/c Ratio	0.61	0.98	0.03	0.51	3.33	0.13		1.43	0.57		0.42	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 119.7
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 3.33
 Intersection Signal Delay: 683.9
 Intersection LOS: F
 Intersection Capacity Utilization 194.3%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	194	1411	751	164	158	361
Future Volume (vph)	194	1411	751	164	158	361
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.976		0.906	
Flt Protected	0.950				0.985	
Satd. Flow (prot)	1504	1712	1672	0	1534	0
Flt Permitted	0.077				0.985	
Satd. Flow (perm)	122	1712	1672	0	1534	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			18		111	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Adj. Flow (vph)	216	1568	834	182	176	401
Lane Group Flow (vph)	216	1568	1016	0	577	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		22.0	
Total Split (s)	16.0	68.0	52.0		22.0	
Total Split (%)	17.8%	75.6%	57.8%		24.4%	
Maximum Green (s)	10.0	62.0	46.0		16.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.5	
Recall Mode	None	Min	Min		None	
Walk Time (s)		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	

CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017

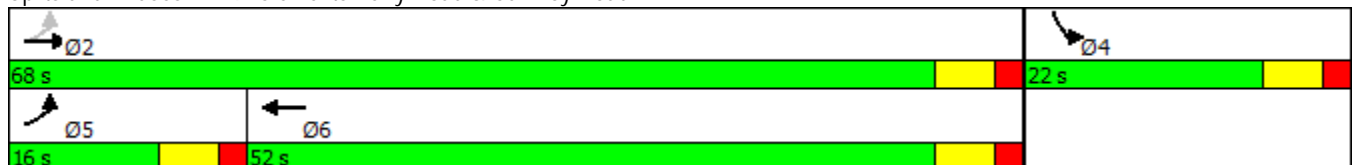


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effect Green (s)	62.0	62.0	46.0		16.0	
Actuated g/C Ratio	0.69	0.69	0.51		0.18	
v/c Ratio	0.91	1.33	1.18		1.59	
Control Delay	62.8	173.5	115.4		302.2	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	62.8	173.5	115.4		302.2	
LOS	E	F	F		F	
Approach Delay		160.1	115.4		302.2	
Approach LOS		F	F		F	
Queue Length 50th (ft)	78	~1169	~697		-421	
Queue Length 95th (ft)	#213	#1425	#938		#625	
Internal Link Dist (ft)		976	2198		992	
Turn Bay Length (ft)	120					
Base Capacity (vph)	237	1179	863		363	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.91	1.33	1.18		1.59	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.59
 Intersection Signal Delay: 170.9
 Intersection LOS: F
 Intersection Capacity Utilization 115.2%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

2/2/2017



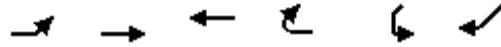
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	264	4	662	127	1	1461
Future Volume (vph)	264	4	662	127	1	1461
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1538	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1538	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Adj. Flow (vph)	293	4	736	141	1	1623
Lane Group Flow (vph)	293	4	736	141	1	1623
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	10		10			10
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	98.2%
Analysis Period (min)	15
	ICU Level of Service F

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	139	1456	673	1	3	78
Future Volume (vph)	139	1456	673	1	3	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.869	
Flt Protected		0.996			0.998	
Satd. Flow (prot)	0	1794	1863	0	1316	0
Flt Permitted		0.996			0.998	
Satd. Flow (perm)	0	1794	1863	0	1316	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		44.4	50.0		27.1	
Adj. Flow (vph)	154	1618	748	1	3	87
Lane Group Flow (vph)	0	1772	749	0	90	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

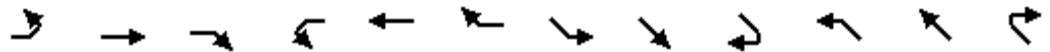
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	134.8%
Analysis Period (min)	15
	ICU Level of Service H

CLEMENTS FERRY RD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (vph)	8	1047	0	0	3135	1	1	0	0	2	0	0	
Future Volume (vph)	8	1047	0	0	3135	1	1	0	0	2	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	200		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	100			100			100			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt													
Flt Protected	0.950								0.950		0.950		
Satd. Flow (prot)	986	1667	0	0	1809	0	0	1770	0	0	1770	0	
Flt Permitted	0.950								0.950		0.950		
Satd. Flow (perm)	986	1667	0	0	1809	0	0	1770	0	0	1770	0	
Link Speed (mph)	55								30		30		
Link Distance (ft)	1211								1111		1229		
Travel Time (s)	15.0								25.3		27.9		
Adj. Flow (vph)	9	1163	0	0	3483	1	1	0	0	2	0	0	
Lane Group Flow (vph)	9	1163	0	0	3484	0	0	1	0	0	2	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(ft)	12								0		0		
Link Offset(ft)	0								0		0		
Crosswalk Width(ft)	10								10		10		
Two way Left Turn Lane	Yes												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Sign Control	Free								Free		Stop		Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	175.1%
Analysis Period (min)	15
	ICU Level of Service H

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

2/2/2017



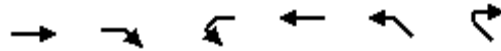
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1411	0	3	1359	4	4
Future Volume (vph)	1411	0	3	1359	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.932	
Flt Protected					0.976	
Satd. Flow (prot)	1681	0	0	1759	1694	0
Flt Permitted					0.976	
Satd. Flow (perm)	1681	0	0	1759	1694	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Adj. Flow (vph)	1568	0	3	1510	4	4
Lane Group Flow (vph)	1568	0	0	1513	8	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	84.3%
Analysis Period (min)	15
	ICU Level of Service E

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/2/2017



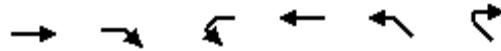
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	1217	20	10	1582	139	51
Future Volume (vph)	1217	20	10	1582	139	51
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1624	1583	1770	1792	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1624	1583	1770	1792	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Adj. Flow (vph)	1352	22	11	1758	154	57
Lane Group Flow (vph)	1352	22	11	1758	154	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	97.6%
ICU Level of Service	F
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	1268	5	6	1432	146	24
Future Volume (vph)	1268	5	6	1432	146	24
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.981	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	1638	1583	1770	1776	1752	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	1638	1583	1770	1776	1752	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Adj. Flow (vph)	1409	6	7	1591	162	27
Lane Group Flow (vph)	1409	6	7	1591	189	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	91.6%
Analysis Period (min)	15
	ICU Level of Service F

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	827	11	30	1510	74	82
Future Volume (vph)	827	11	30	1510	74	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998			0.929		
Flt Protected				0.999	0.977	
Satd. Flow (prot)	1637	0	0	1759	1691	0
Flt Permitted				0.999	0.977	
Satd. Flow (perm)	1637	0	0	1759	1691	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1280	
Travel Time (s)	30.7			30.0	29.1	
Adj. Flow (vph)	919	12	33	1678	82	91
Lane Group Flow (vph)	931	0	0	1711	173	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	119.3%
Analysis Period (min)	15
	ICU Level of Service H

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	407	1112	13	25	1779	96	30	5	99	214	14	155
Future Volume (vph)	407	1112	13	25	1779	96	30	5	99	214	14	155
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		175	175		175	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.900				0.850
Flt Protected	0.950			0.950				0.989				0.955
Satd. Flow (prot)	1656	1845	1583	1736	1759	1583	0	1658	0	0	1731	1468
Flt Permitted	0.058			0.063				0.623				0.555
Satd. Flow (perm)	101	1845	1583	115	1759	1583	0	1044	0	0	1006	1468
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			82		105				172
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1693			1211			1391				1347
Travel Time (s)		25.7			18.3			27.1				26.2
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
Heavy Vehicles (%)	9%	3%	2%	4%	8%	2%	2%	2%	2%	5%	2%	10%
Adj. Flow (vph)	452	1236	14	28	1977	107	33	6	110	238	16	172
Shared Lane Traffic (%)												
Lane Group Flow (vph)	452	1236	14	28	1977	107	0	149	0	0	254	172
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8				4
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0		22.0	22.0	22.0
Total Split (s)	22.0	91.0	91.0	69.0	69.0	69.0	29.0	29.0		29.0	29.0	29.0
Total Split (%)	18.3%	75.8%	75.8%	57.5%	57.5%	57.5%	24.2%	24.2%		24.2%	24.2%	24.2%
Maximum Green (s)	16.0	85.0	85.0	63.0	63.0	63.0	23.0	23.0		23.0	23.0	23.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Lead/Lag	Lag			Lead	Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Min	Min	None	None		None	None	None
Act Effect Green (s)	85.0	85.0	85.0	63.0	63.0	63.0		23.0			23.0	23.0
Actuated g/C Ratio	0.71	0.71	0.71	0.52	0.52	0.52		0.19			0.19	0.19
v/c Ratio	1.63	0.95	0.01	0.47	2.14	0.12		0.52			1.32	0.41
Control Delay	328.1	31.7	0.8	48.2	538.6	5.0		22.2			215.7	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	328.1	31.7	0.8	48.2	538.6	5.0		22.2			215.7	9.2
LOS	F	C	A	D	F	A		C			F	A
Approach Delay		110.2			505.1			22.2			132.3	

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017

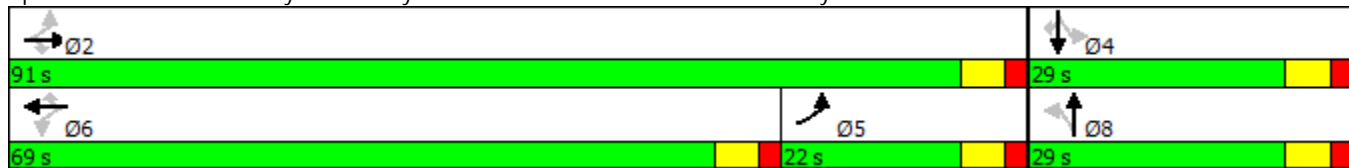


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	F			F			C			F		
Stops (vph)	238	862	1	19	1141	15		44			172	21
Fuel Used(gal)	35	30	0	1	223	1		2			14	2
CO Emissions (g/hr)	2420	2105	11	47	15606	73		159			949	137
NOx Emissions (g/hr)	471	410	2	9	3036	14		31			185	27
VOC Emissions (g/hr)	561	488	3	11	3617	17		37			220	32
Dilemma Vehicles (#)	0	30	0	0	34	0		2			7	0
Queue Length 50th (ft)	~460	756	0	13	~2442	9		29			~254	0
Queue Length 95th (ft)	#670	#1200	3	#61	#2705	37		99			#422	60
Internal Link Dist (ft)	1613			1131			1311			1267		
Turn Bay Length (ft)	175		175	175		175						
Base Capacity (vph)	278	1306	1129	60	923	870		284			192	420
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	1.63	0.95	0.01	0.47	2.14	0.12		0.52			1.32	0.41

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.14
 Intersection Signal Delay: 299.4
 Intersection LOS: F
 Intersection Capacity Utilization 150.4%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY ROAD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	314	1715	423	134	268	339
Future Volume (vph)	314	1715	423	134	268	339
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.968		0.925	
Flt Protected	0.950				0.978	
Satd. Flow (prot)	1671	1810	1795	0	1608	0
Flt Permitted	0.231				0.978	
Satd. Flow (perm)	406	1810	1795	0	1608	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			25		62	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		990	
Travel Time (s)		20.6	44.4		19.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	5%	2%	4%	3%	10%
Adj. Flow (vph)	349	1906	470	149	298	377
Shared Lane Traffic (%)						
Lane Group Flow (vph)	349	1906	619	0	675	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		20.0	
Total Split (s)	17.0	68.0	51.0		22.0	
Total Split (%)	18.9%	75.6%	56.7%		24.4%	
Maximum Green (s)	11.0	62.0	45.0		16.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.5	
Recall Mode	None	Min	Min		None	
Act Effct Green (s)	62.0	62.0	45.0		16.0	
Actuated g/C Ratio	0.69	0.69	0.50		0.18	
v/c Ratio	0.80	1.53	0.68		2.01	
Control Delay	22.9	262.0	21.0		486.9	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	22.9	262.0	21.0		486.9	
LOS	C	F	C		F	
Approach Delay		225.0	21.0		486.9	

CLEMENTS FERRY ROAD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach LOS		F	C		F	
Stops (vph)	115	1217	399		388	
Fuel Used(gal)	10	142	15		68	
CO Emissions (g/hr)	701	9909	1017		4721	
NOx Emissions (g/hr)	136	1928	198		918	
VOC Emissions (g/hr)	163	2296	236		1094	
Dilemma Vehicles (#)	0	62	19		0	
Queue Length 50th (ft)	68	~1533	244		-583	
Queue Length 95th (ft)	#144	#1793	368		#798	
Internal Link Dist (ft)		976	2198		910	
Turn Bay Length (ft)	120					
Base Capacity (vph)	434	1246	910		336	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.80	1.53	0.68		2.01	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.01
 Intersection Signal Delay: 239.2
 Intersection LOS: F
 Intersection Capacity Utilization 135.9%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY ROAD WIDENING

31: SC 41 & Clements Ferry Road

2/2/2017



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	164	3	439	301	1	1744
Future Volume (vph)	164	3	439	301	1	1744
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1237		2480			2655
Travel Time (s)	18.7		37.6			40.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	182	3	488	334	1	1938
Shared Lane Traffic (%)						
Lane Group Flow (vph)	182	3	488	334	1	1938
Sign Control	Free		Free			Yield

Intersection Summary

Area Type: Other

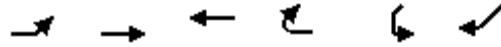
Control Type: Unsignalized

Intersection Capacity Utilization 107.5% ICU Level of Service G

Analysis Period (min) 15

CLEMENTS FERRY ROAD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	265	1724	478	5	5	78
Future Volume (vph)	265	1724	478	5	5	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.874	
Flt Protected		0.993			0.997	
Satd. Flow (prot)	0	1810	1859	0	1474	0
Flt Permitted		0.993			0.997	
Satd. Flow (perm)	0	1810	1859	0	1474	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2655		1587	
Travel Time (s)		44.4	51.7		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	19%	2%	2%	2%	2%	13%
Adj. Flow (vph)	294	1916	531	6	6	87
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2210	537	0	93	0
Sign Control		Free	Free		Stop	

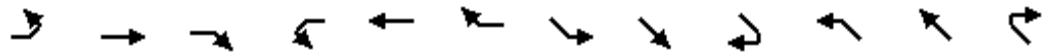
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	145.9%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	4	2414	1	3	1851	1	1	0	8	3	0	0
Future Volume (vph)	4	2414	1	3	1851	1	1	0	8	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.878				
Flt Protected	0.950							0.995			0.950	
Satd. Flow (prot)	1003	1827	0	0	1793	0	0	1437	0	0	1770	0
Flt Permitted	0.950							0.995			0.950	
Satd. Flow (perm)	1003	1827	0	0	1793	0	0	1437	0	0	1770	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1211			9191			1383			1484	
Travel Time (s)		15.0			113.9			31.4			33.7	
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
Heavy Vehicles (%)	80%	4%	2%	2%	6%	2%	2%	2%	17%	2%	2%	2%
Adj. Flow (vph)	4	2682	1	3	2057	1	1	0	9	3	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	2683	0	0	2061	0	0	10	0	0	3	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	137.1%
Analysis Period (min)	15
	ICU Level of Service H

CLEMENTS FERRY ROAD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

2/2/2017



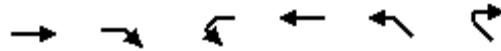
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1717	5	1	748	4	0
Future Volume (vph)	1717	5	1	748	4	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1827	0	0	1759	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1827	0	0	1759	1770	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	2%	8%	2%	2%
Adj. Flow (vph)	1908	6	1	831	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1914	0	0	832	4	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	100.7%
ICU Level of Service	G
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/2/2017



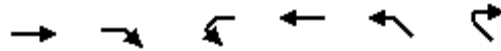
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	1761	118	64	931	31	25
Future Volume (vph)	1761	118	64	931	31	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1810	1583	1770	1792	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1810	1583	1770	1792	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1957	131	71	1034	34	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1957	131	71	1034	34	28
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	102.7%
Analysis Period (min)	15
	ICU Level of Service G

CLEMENTS FERRY ROAD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	1193	64	23	925	19	14
Future Volume (vph)	1193	64	23	925	19	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.942	
Flt Protected			0.950		0.972	
Satd. Flow (prot)	1792	1583	1770	1792	1706	0
Flt Permitted			0.950		0.972	
Satd. Flow (perm)	1792	1583	1770	1792	1706	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1326	71	26	1028	21	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1326	71	26	1028	37	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	72.8% ICU Level of Service C
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1657	94	95	874	33	55
Future Volume (vph)	1657	94	95	874	33	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993			0.916		
Flt Protected				0.995	0.981	
Satd. Flow (prot)	1800	0	0	1790	1674	0
Flt Permitted				0.995	0.981	
Satd. Flow (perm)	1800	0	0	1790	1674	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1581	
Travel Time (s)	30.7			30.0	35.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1841	104	106	971	37	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1945	0	0	1077	98	0
Sign Control	Free			Free	Stop	

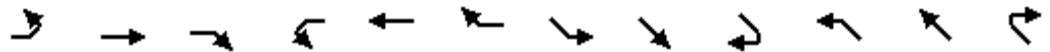
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	137.1%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/1/2017

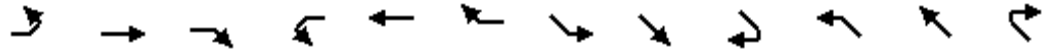


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	33	370	19	23	876	33	14	5	97	18	4	70
Future Volume (vph)	33	370	19	23	876	33	14	5	97	18	4	70
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		175	175		175	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.898	
Flt Protected	0.950			0.950				0.964			0.990	
Satd. Flow (prot)	1770	1610	1583	1770	1810	1583	0	1673	1583	0	1656	0
Flt Permitted	0.081			0.482				0.653			0.925	
Satd. Flow (perm)	151	1610	1583	898	1810	1583	0	1133	1583	0	1547	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			98			122			88
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1021			1211			1133			1015	
Travel Time (s)		15.5			18.3			22.1			19.8	
Adj. Flow (vph)	41	465	24	29	1100	41	18	6	122	23	5	88
Lane Group Flow (vph)	41	465	24	29	1100	41	0	24	122	0	116	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	15.0	63.0	63.0	15.0	63.0	63.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	15.0%	63.0%	63.0%	15.0%	63.0%	63.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
Maximum Green (s)	9.0	57.0	57.0	9.0	57.0	57.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	4.0	4.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Act Effect Green (s)	67.3	64.3	64.3	63.9	60.8	60.8		8.8	8.8		8.8	
Actuated g/C Ratio	0.75	0.72	0.72	0.71	0.68	0.68		0.10	0.10		0.10	
v/c Ratio	0.17	0.40	0.02	0.04	0.90	0.04		0.22	0.46		0.50	

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/1/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Control Delay	4.6	7.8	0.0	3.4	26.5	0.1		42.2	13.3		21.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	4.6	7.8	0.0	3.4	26.5	0.1		42.2	13.3		21.3	
LOS	A	A	A	A	C	A		D	B		C	
Approach Delay		7.2			25.0			18.1			21.3	
Approach LOS		A			C			B			C	
Queue Length 50th (ft)	4	64	0	3	532	0		13	0		15	
Queue Length 95th (ft)	14	214	0	11	#973	0		38	50		66	
Internal Link Dist (ft)		941			1131			1053			935	
Turn Bay Length (ft)	175		175	175		175						
Base Capacity (vph)	277	1155	1164	749	1229	1106		203	384		350	
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	
Reduced v/c Ratio	0.15	0.40	0.02	0.04	0.90	0.04		0.12	0.32		0.33	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 89.5
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 19.5
 Intersection LOS: B
 Intersection Capacity Utilization 80.1%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/1/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	127	411	598	107	78	186
Future Volume (vph)	127	411	598	107	78	186
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.980		0.905	
Flt Protected	0.950				0.985	
Satd. Flow (prot)	1504	1712	1676	0	1533	0
Flt Permitted	0.080				0.985	
Satd. Flow (perm)	127	1712	1676	0	1533	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			14		113	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Adj. Flow (vph)	159	516	751	134	98	234
Lane Group Flow (vph)	159	516	885	0	332	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		20.0	
Total Split (s)	20.0	70.0	50.0		20.0	
Total Split (%)	22.2%	77.8%	55.6%		22.2%	
Maximum Green (s)	14.0	64.0	44.0		14.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.5	
Recall Mode	None	Min	Min		None	
Act Effct Green (s)	62.4	62.4	44.0		14.0	
Actuated g/C Ratio	0.71	0.71	0.50		0.16	
v/c Ratio	0.57	0.43	1.05		0.98	

CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/1/2017

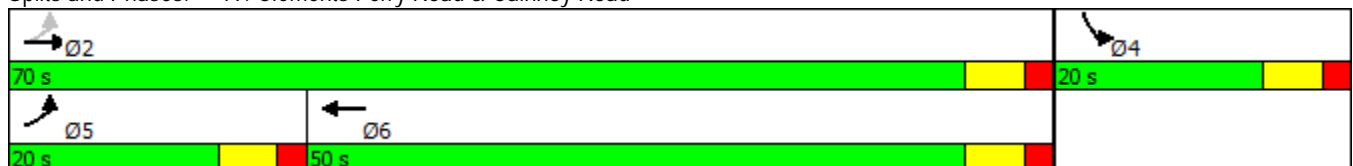


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Control Delay	22.1	6.7	69.6		72.1	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	22.1	6.7	69.6		72.1	
LOS	C	A	E		E	
Approach Delay		10.4	69.6		72.1	
Approach LOS		B	E		E	
Queue Length 50th (ft)	37	103	-549		128	
Queue Length 95th (ft)	100	156	#794		#306	
Internal Link Dist (ft)		976	2198		992	
Turn Bay Length (ft)	120					
Base Capacity (vph)	307	1240	841		338	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.52	0.42	1.05		0.98	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 88.4
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 48.9
 Intersection LOS: D
 Intersection Capacity Utilization 84.1%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
 31: SC 41 & Clements Ferry Road

2/1/2017



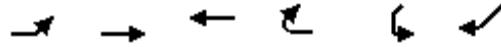
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	210	3	503	101	1	386
Future Volume (vph)	210	3	503	101	1	386
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1538	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1538	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Adj. Flow (vph)	264	4	632	127	1	485
Lane Group Flow (vph)	264	4	632	127	1	485
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	10		10			10
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Yield

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.7%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/1/2017



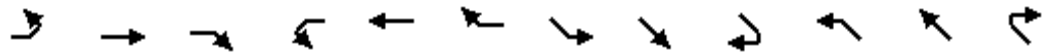
Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	111	382	512	1	2	184
Future Volume (vph)	111	382	512	1	2	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.867	
Flt Protected		0.989			0.999	
Satd. Flow (prot)	0	1693	1863	0	1309	0
Flt Permitted		0.989			0.999	
Satd. Flow (perm)	0	1693	1863	0	1309	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		44.4	50.0		27.1	
Adj. Flow (vph)	139	480	643	1	3	231
Lane Group Flow (vph)	0	619	644	0	234	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	83.2%
Analysis Period (min)	15
	ICU Level of Service E

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/1/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (vph)	6	436	0	0	988	1	1	0	0	2	0	0	
Future Volume (vph)	6	436	0	0	988	1	1	0	0	2	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	200		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	100			100			100			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt													
Flt Protected	0.950							0.950			0.950		
Satd. Flow (prot)	986	1667	0	0	1808	0	0	1770	0	0	1770	0	
Flt Permitted	0.950							0.950			0.950		
Satd. Flow (perm)	986	1667	0	0	1808	0	0	1770	0	0	1770	0	
Link Speed (mph)					55			30			30		
Link Distance (ft)					1211			9191			1111		
Travel Time (s)					15.0			113.9			25.3		
Adj. Flow (vph)	8	547	0	0	1240	1	1	0	0	3	0	0	
Lane Group Flow (vph)	8	547	0	0	1241	0	0	1	0	0	3	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(ft)	12					12		0			0		
Link Offset(ft)	0					0		0			0		
Crosswalk Width(ft)	10					10		10			10		
Two way Left Turn Lane	Yes												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Sign Control	Free				Free			Stop			Stop		

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	68.8%
ICU Level of Service	C
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

2/1/2017



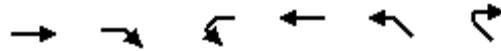
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	534	0	2	792	3	3
Future Volume (vph)	534	0	2	792	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.932	
Flt Protected					0.976	
Satd. Flow (prot)	1681	0	0	1760	1694	0
Flt Permitted					0.976	
Satd. Flow (perm)	1681	0	0	1760	1694	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Adj. Flow (vph)	670	0	3	994	4	4
Lane Group Flow (vph)	670	0	0	997	8	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.9%
Analysis Period (min)	15
	ICU Level of Service B

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/1/2017



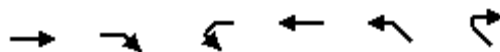
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	403	16	8	947	111	41
Future Volume (vph)	403	16	8	947	111	41
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1624	1583	1770	1792	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1624	1583	1770	1792	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Adj. Flow (vph)	506	20	10	1189	139	51
Lane Group Flow (vph)	506	20	10	1189	139	51
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	69.9%
Analysis Period (min)	15
	ICU Level of Service C

CLEMENTS FERRY RD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

2/1/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	444	4	5	842	116	19
Future Volume (vph)	444	4	5	842	116	19
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.981	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	1638	1583	1770	1776	1752	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	1638	1583	1770	1776	1752	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Adj. Flow (vph)	557	5	6	1057	146	24
Lane Group Flow (vph)	557	5	6	1057	170	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	65.3%
Analysis Period (min)	15
	ICU Level of Service C

CLEMENTS FERRY RD WIDENING
 43: Rivers Reach Dr & Clements Ferry Road

2/1/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	452	11	13	784	74	82
Future Volume (vph)	452	11	13	784	74	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997			0.929		
Flt Protected				0.999	0.977	
Satd. Flow (prot)	1638	0	0	1759	1691	0
Flt Permitted				0.999	0.977	
Satd. Flow (perm)	1638	0	0	1759	1691	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1280	
Travel Time (s)	30.7			30.0	29.1	
Adj. Flow (vph)	568	14	16	984	93	103
Lane Group Flow (vph)	582	0	0	1000	196	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	75.4%
Analysis Period (min)	15
	ICU Level of Service D

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	886	10	20	421	13	24	5	79	52	3	51
Future Volume (vph)	53	886	10	20	421	13	24	5	79	52	3	51
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		175	175		175	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.901				0.850
Flt Protected	0.950			0.950				0.989			0.955	
Satd. Flow (prot)	1656	1845	1583	1736	1759	1583	0	1660	0	0	1731	1468
Flt Permitted	0.386			0.100				0.904			0.541	
Satd. Flow (perm)	673	1845	1583	183	1759	1583	0	1517	0	0	981	1468
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			98		99				98
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1693			1211			1391				1347
Travel Time (s)		25.7			18.3			27.1				26.2
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
Growth Factor	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	9%	3%	2%	4%	8%	2%	2%	2%	2%	5%	2%	10%
Adj. Flow (vph)	67	1112	13	25	529	16	30	6	99	65	4	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	1112	13	25	529	16	0	135	0	0	69	64
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0	22.0	22.0	22.0		22.0	22.0	22.0
Total Split (s)	15.0	63.0	63.0	15.0	63.0	63.0	22.0	22.0		22.0	22.0	22.0
Total Split (%)	15.0%	63.0%	63.0%	15.0%	63.0%	63.0%	22.0%	22.0%		22.0%	22.0%	22.0%
Maximum Green (s)	9.0	57.0	57.0	9.0	57.0	57.0	16.0	16.0		16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	None
Act Effct Green (s)	63.1	60.5	60.5	58.6	54.4	54.4		8.1			8.1	8.1
Actuated g/C Ratio	0.74	0.71	0.71	0.69	0.64	0.64		0.10			0.10	0.10
v/c Ratio	0.12	0.85	0.01	0.11	0.47	0.02		0.58			0.74	0.28
Control Delay	3.6	20.2	0.0	4.6	11.0	0.0		23.1			79.1	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	3.6	20.2	0.0	4.6	11.0	0.0		23.1			79.1	6.3
LOS	A	C	A	A	B	A		C			E	A

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017

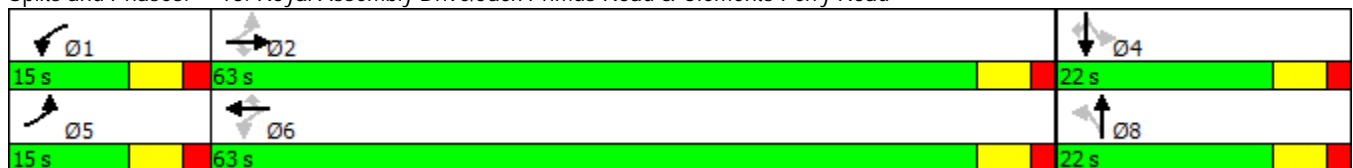


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		19.0			10.4			23.1			44.0	
Approach LOS		B			B			C			D	
Stops (vph)	15	603	0	6	244	0		41			59	5
Fuel Used(gal)	1	23	0	0	8	0		2			2	1
CO Emissions (g/hr)	62	1581	9	19	548	8		147			143	47
NOx Emissions (g/hr)	12	308	2	4	107	1		29			28	9
VOC Emissions (g/hr)	14	366	2	4	127	2		34			33	11
Dilemma Vehicles (#)	0	56	0	0	5	0		2			1	0
Queue Length 50th (ft)	6	259	0	2	135	0		16			33	0
Queue Length 95th (ft)	21	#950	0	10	265	0		74			83	18
Internal Link Dist (ft)		1613			1131			1311			1267	
Turn Bay Length (ft)	175		175	175		175						
Base Capacity (vph)	610	1314	1155	299	1252	1155		368			186	358
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	0.11	0.85	0.01	0.08	0.42	0.01		0.37			0.37	0.18

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 84.9
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 18.5
 Intersection LOS: B
 Intersection Capacity Utilization 76.7%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY ROAD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	131	761	337	55	170	214
Future Volume (vph)	131	761	337	55	170	214
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.981		0.925	
Flt Protected	0.950				0.978	
Satd. Flow (prot)	1671	1810	1822	0	1608	0
Flt Permitted	0.258				0.978	
Satd. Flow (perm)	454	1810	1822	0	1608	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			13		63	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		990	
Travel Time (s)		20.6	44.4		19.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	8%	5%	2%	4%	3%	10%
Adj. Flow (vph)	164	955	423	69	213	269
Shared Lane Traffic (%)						
Lane Group Flow (vph)	164	955	492	0	482	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		20.0	
Total Split (s)	16.0	66.0	50.0		24.0	
Total Split (%)	17.8%	73.3%	55.6%		26.7%	
Maximum Green (s)	10.0	60.0	44.0		18.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.5	
Recall Mode	None	Min	Min		None	
Act Effct Green (s)	47.7	47.7	31.4		18.4	
Actuated g/C Ratio	0.61	0.61	0.40		0.23	
v/c Ratio	0.38	0.87	0.67		1.13	
Control Delay	8.6	21.9	22.6		114.3	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	8.6	21.9	22.6		114.3	
LOS	A	C	C		F	

CLEMENTS FERRY ROAD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017

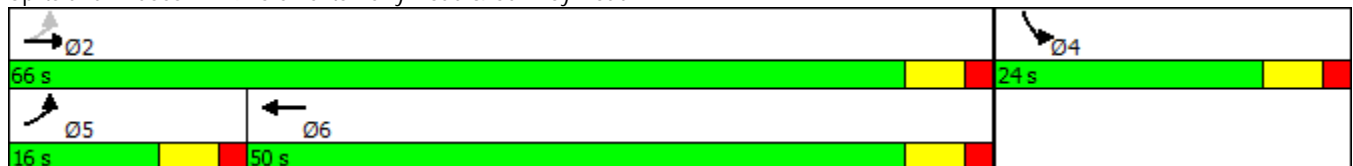


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		19.9	22.6		114.3	
Approach LOS		B	C		F	
Stops (vph)	52	652	319		281	
Fuel Used(gal)	4	29	12		15	
CO Emissions (g/hr)	300	2047	819		1071	
NOx Emissions (g/hr)	58	398	159		208	
VOC Emissions (g/hr)	69	474	190		248	
Dilemma Vehicles (#)	0	37	12		0	
Queue Length 50th (ft)	30	338	182		-263	
Queue Length 95th (ft)	53	525	275		#517	
Internal Link Dist (ft)		976	2198		910	
Turn Bay Length (ft)	120					
Base Capacity (vph)	434	1415	1050		425	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.38	0.67	0.47		1.13	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 78.4
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.13
 Intersection Signal Delay: 42.3
 Intersection LOS: D
 Intersection Capacity Utilization 80.7%
 ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY ROAD WIDENING

31: SC 41 & Clements Ferry Road

2/2/2017



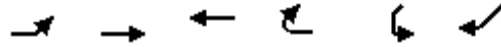
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	131	2	326	240	1	740
Future Volume (vph)	131	2	326	240	1	740
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1237		2480			2655
Travel Time (s)	18.7		37.6			40.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Adj. Flow (vph)	164	3	409	301	1	929
Shared Lane Traffic (%)						
Lane Group Flow (vph)	164	3	409	301	1	929
Sign Control	Free		Free			Yield

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.9%
Analysis Period (min)	15
	ICU Level of Service B

CLEMENTS FERRY ROAD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	211	724	329	4	4	62
Future Volume (vph)	211	724	329	4	4	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.873	
Flt Protected		0.989			0.997	
Satd. Flow (prot)	0	1775	1859	0	1472	0
Flt Permitted		0.989			0.997	
Satd. Flow (perm)	0	1775	1859	0	1472	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2655		1587	
Travel Time (s)		44.4	51.7		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	19%	2%	2%	2%	2%	13%
Adj. Flow (vph)	265	909	413	5	5	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1174	418	0	83	0
Sign Control		Free	Free		Stop	

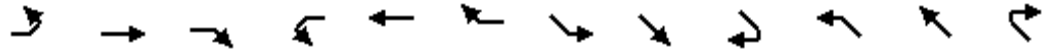
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	90.7%
Analysis Period (min)	15
	ICU Level of Service E

CLEMENTS FERRY ROAD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	3	1027	1	0	479	1	1	0	6	2	0	0
Future Volume (vph)	3	1027	1	0	479	1	1	0	6	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.880				
Flt Protected	0.950							0.994			0.950	
Satd. Flow (prot)	1003	1827	0	0	1793	0	0	1441	0	0	1770	0
Flt Permitted	0.950							0.994			0.950	
Satd. Flow (perm)	1003	1827	0	0	1793	0	0	1441	0	0	1770	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1211			9191			1383			1484	
Travel Time (s)		15.0			113.9			31.4			33.7	
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
Growth Factor	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	80%	4%	2%	2%	6%	2%	2%	2%	17%	2%	2%	2%
Adj. Flow (vph)	4	1289	1	0	601	1	1	0	8	3	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	1290	0	0	602	0	0	9	0	0	3	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	71.1%
ICU Level of Service	C
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

2/2/2017



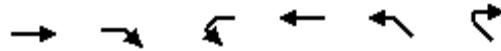
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Volume (vph)	882	4	1	540	3	0
Future Volume (vph)	882	4	1	540	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999					
Flt Protected					0.950	
Satd. Flow (prot)	1825	0	0	1759	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1825	0	0	1759	1770	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	4%	2%	2%	8%	2%	2%
Adj. Flow (vph)	1107	5	1	678	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1112	0	0	679	4	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.7% ICU Level of Service B
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/2/2017



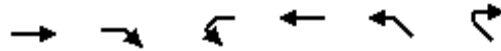
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	933	94	51	447	25	20
Future Volume (vph)	933	94	51	447	25	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1810	1583	1770	1792	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1810	1583	1770	1792	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1171	118	64	561	31	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1171	118	64	561	31	25
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	65.5% ICU Level of Service C
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	902	51	18	478	15	11
Future Volume (vph)	902	51	18	478	15	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.943	
Flt Protected			0.950		0.972	
Satd. Flow (prot)	1792	1583	1770	1792	1707	0
Flt Permitted			0.950		0.972	
Satd. Flow (perm)	1792	1583	1770	1792	1707	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	6%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1133	64	23	600	19	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1133	64	23	600	33	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	63.6% ICU Level of Service B
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 43: Rivers Reach Dr & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	842	75	72	473	26	44
Future Volume (vph)	842	75	72	473	26	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989			0.916		
Flt Protected				0.993	0.982	
Satd. Flow (prot)	1794	0	0	1789	1676	0
Flt Permitted				0.993	0.982	
Satd. Flow (perm)	1794	0	0	1789	1676	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1581	
Travel Time (s)	30.7			30.0	35.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1057	94	90	594	33	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1151	0	0	684	88	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	102.5%
Analysis Period (min)	15
	ICU Level of Service G

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/6/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	370	19	23	876	33	18	4	70	14	5	97
Future Volume (vph)	33	370	19	23	876	33	18	4	70	14	5	97
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		175	200		0	0		0	200		200
Storage Lanes	1		1	1		0	0		0	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995			0.898				0.850
Flt Protected	0.950			0.950				0.990		0.950		
Satd. Flow (prot)	1770	3059	1583	1770	3424	0	0	1656	0	1612	1863	1583
Flt Permitted	0.180			0.485				0.929		0.774		
Satd. Flow (perm)	335	3059	1583	903	3424	0	0	1554	0	1313	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			108		4			88				122
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1021			1211			1115				1147
Travel Time (s)		15.5			18.3			21.7				22.3
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
Growth Factor	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	2%	18%	2%	2%	5%	2%	2%	2%	2%	12%	2%	2%
Adj. Flow (vph)	41	465	24	29	1100	41	23	5	88	18	6	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	465	24	29	1141	0	0	116	0	18	6	122
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		4
Detector Phase	5	2	2	1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	15.0	25.7	25.7	15.0	40.8		32.6	32.6		40.0	40.0	40.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	15.0%	45.0%	45.0%	15.0%	45.0%		40.0%	40.0%		40.0%	40.0%	40.0%
Maximum Green (s)	8.4	38.3	38.3	8.3	38.3		33.8	33.8		33.8	33.8	33.8
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.2	2.3	2.3	2.3	2.3		2.2	2.2		2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	0.0
Total Lost Time (s)	6.6	6.7	6.7	6.7	6.7			6.2		6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0		2.0	2.0		2.0	2.0	2.0

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/6/2017

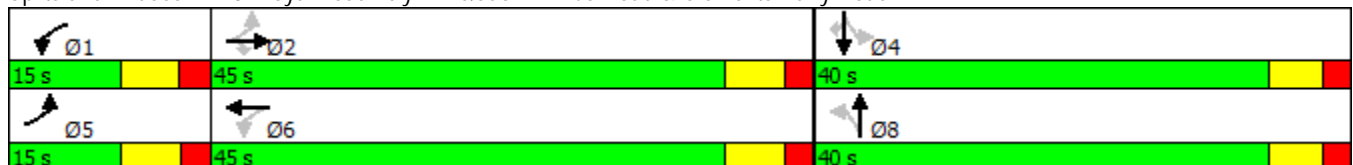


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	Min	Min	None	Min		None	None		None	None	None
Walk Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Flash Dont Walk (s)		15.0	15.0		28.0		22.0	22.0		26.0	26.0	26.0
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	0
Act Effect Green (s)	41.9	38.9	38.9	40.6	36.4			8.2		8.2	8.2	8.2
Actuated g/C Ratio	0.64	0.59	0.59	0.62	0.55			0.12		0.12	0.12	0.12
v/c Ratio	0.10	0.26	0.02	0.04	0.60			0.43		0.11	0.03	0.40
Control Delay	4.0	7.9	0.0	3.5	12.5			17.2		31.6	29.8	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	4.0	7.9	0.0	3.5	12.5			17.2		31.6	29.8	11.3
LOS	A	A	A	A	B			B		C	C	B
Approach Delay		7.3			12.3			17.2			14.6	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)	4	30	0	3	183			12		8	3	0
Queue Length 95th (ft)	11	87	0	9	247			58		26	13	45
Internal Link Dist (ft)		941			1131			1035			1067	
Turn Bay Length (ft)	200		175	200						200		200
Base Capacity (vph)	403	1954	1050	673	2053			863		694	985	895
Starvation Cap Reductn	0	0	0	0	0			0		0	0	0
Spillback Cap Reductn	0	0	0	0	0			0		0	0	0
Storage Cap Reductn	0	0	0	0	0			0		0	0	0
Reduced v/c Ratio	0.10	0.24	0.02	0.04	0.56			0.13		0.03	0.01	0.14

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 65.6
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 11.4
 Intersection LOS: B
 Intersection Capacity Utilization 57.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/6/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	127	411	598	107	78	186
Future Volume (vph)	127	411	598	107	78	186
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.977		0.905	
Flt Protected	0.950				0.985	
Satd. Flow (prot)	1504	3252	3175	0	1533	0
Flt Permitted	0.187				0.985	
Satd. Flow (perm)	296	3252	3175	0	1533	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			32		119	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	20%	11%	12%	6%	14%	9%
Adj. Flow (vph)	159	516	751	134	98	234
Shared Lane Traffic (%)						
Lane Group Flow (vph)	159	516	885	0	332	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		4.0	
Minimum Split (s)	16.0	22.0	50.0		22.0	
Total Split (s)	16.0	66.0	50.0		24.0	
Total Split (%)	17.8%	73.3%	55.6%		26.7%	
Maximum Green (s)	10.0	60.0	44.0		18.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.0	

CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/6/2017

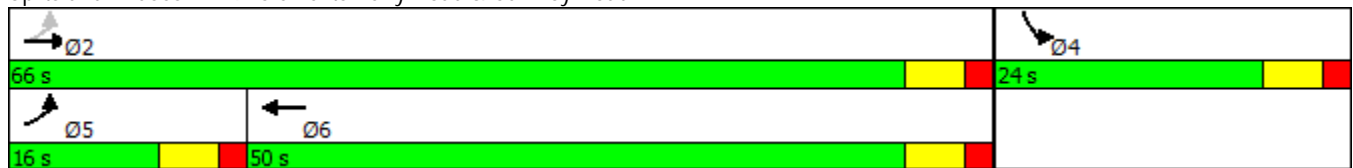


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Recall Mode	None	Min	Min		None	
Walk Time (s)		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	46.2	46.2	29.8		14.7	
Actuated g/C Ratio	0.63	0.63	0.41		0.20	
v/c Ratio	0.45	0.25	0.68		0.83	
Control Delay	10.0	6.4	19.8		37.6	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	10.0	6.4	19.8		37.6	
LOS	B	A	B		D	
Approach Delay		7.3	19.8		37.6	
Approach LOS		A	B		D	
Queue Length 50th (ft)	28	51	167		92	
Queue Length 95th (ft)	53	75	230		#259	
Internal Link Dist (ft)		976	2198		992	
Turn Bay Length (ft)	120					
Base Capacity (vph)	356	2680	1972		476	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.45	0.19	0.45		0.70	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 73.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 18.5
 Intersection LOS: B
 Intersection Capacity Utilization 63.7%
 ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
 31: SC 41 & Clements Ferry Road

2/6/2017



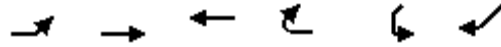
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	210	3	503	101	1	386
Future Volume (vph)	210	3	503	101	1	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1538	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1538	1770	3539
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%
Adj. Flow (vph)	264	4	632	127	1	485
Shared Lane Traffic (%)						
Lane Group Flow (vph)	264	4	632	127	1	485
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	10		10			10
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.7%
ICU Level of Service	A
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/6/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (vph)	111	382	512	1	2	184
Future Volume (vph)	111	382	512	1	2	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr _t					0.867	
Fl _t Protected		0.989			0.999	
Satd. Flow (prot)	0	3217	3539	0	1309	0
Fl _t Permitted		0.989			0.999	
Satd. Flow (perm)	0	3217	3539	0	1309	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		44.4	50.0		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	42%	2%	2%	2%	2%	26%
Adj. Flow (vph)	139	480	643	1	3	231
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	619	644	0	234	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.6%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY RD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/6/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	6	436	0	0	988	1	2	0	0	1	0	0	
Future Volume (vph)	6	436	0	0	988	1	2	0	0	1	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	200		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	100			100			100			100			
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt													
Flt Protected	0.950							0.950		0.950			
Satd. Flow (prot)	986	3167	0	0	3436	0	0	1770	0	0	1770	0	
Flt Permitted	0.950							0.950		0.950			
Satd. Flow (perm)	986	3167	0	0	3436	0	0	1770	0	0	1770	0	
Link Speed (mph)					55			30		30			
Link Distance (ft)					1211			9191		1450		987	
Travel Time (s)					15.0			113.9		33.0		22.4	
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	
Growth Factor	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	
Heavy Vehicles (%)	83%	14%	2%	2%	5%	100%	2%	2%	2%	2%	2%	2%	
Adj. Flow (vph)	8	547	0	0	1240	1	3	0	0	1	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	8	547	0	0	1241	0	0	3	0	0	1	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(ft)	12				12		0				0		
Link Offset(ft)	0				0		0				0		
Crosswalk Width(ft)	10				10		10				10		
Two way Left Turn Lane	Yes												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		9		15		9		15		9		
Sign Control	Free				Free			Stop			Stop		

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.9%
ICU Level of Service	A
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

2/6/2017



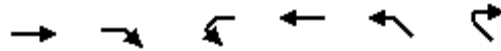
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	534	0	2	792	3	3
Future Volume (vph)	534	0	2	792	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr _t					0.932	
Fl _t Protected					0.976	
Satd. Flow (prot)	3195	0	0	3343	1694	0
Fl _t Permitted					0.976	
Satd. Flow (perm)	3195	0	0	3343	1694	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	13%	2%	2%	8%	2%	2%
Adj. Flow (vph)	670	0	3	994	4	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	670	0	0	997	8	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.3%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/6/2017



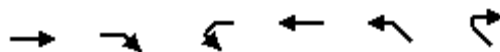
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (vph)	403	16	8	947	111	41
Future Volume (vph)	403	16	8	947	111	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3085	1583	1770	3406	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3085	1583	1770	3406	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	17%	2%	2%	6%	2%	2%
Adj. Flow (vph)	506	20	10	1189	139	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	506	20	10	1189	139	51
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.2%
ICU Level of Service	A
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

2/6/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑↑	
Traffic Volume (vph)	444	4	5	842	116	19
Future Volume (vph)	444	4	5	842	116	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850			0.981	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	3112	1583	1770	3374	1752	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	3112	1583	1770	3374	1752	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	16%	2%	2%	7%	2%	2%
Adj. Flow (vph)	557	5	6	1057	146	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	557	5	6	1057	170	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.5%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/6/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	452	11	13	784	74	82
Future Volume (vph)	452	11	13	784	74	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.996			0.929		
Flt Protected				0.999	0.977	
Satd. Flow (prot)	3109	0	0	3342	1691	0
Flt Permitted				0.999	0.977	
Satd. Flow (perm)	3109	0	0	3342	1691	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1280	
Travel Time (s)	30.7			30.0	29.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	16%	2%	2%	8%	2%	2%
Adj. Flow (vph)	568	14	16	984	93	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	582	0	0	1000	196	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.9%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/1/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	886	10	20	421	13	24	5	79	52	3	51
Future Volume (vph)	53	886	10	20	421	13	24	5	79	52	3	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		125	200		0	0		0	200		50
Storage Lanes	1		1	1		0	0		0	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996			0.901				0.850
Flt Protected	0.950			0.950				0.989		0.950		
Satd. Flow (prot)	1656	3505	1583	1736	3335	0	0	1660	0	1719	1863	1468
Flt Permitted	0.420			0.195				0.922		0.777		
Satd. Flow (perm)	732	3505	1583	356	3335	0	0	1547	0	1406	1863	1468
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			108		4			99				113
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1693			1211			1391				1347
Travel Time (s)		25.7			18.3			27.1				26.2
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
Growth Factor	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	9%	3%	2%	4%	8%	2%	2%	2%	2%	5%	2%	10%
Adj. Flow (vph)	67	1112	13	25	529	16	30	6	99	65	4	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	1112	13	25	545	0	0	135	0	65	4	64
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		4
Detector Phase	5	2	2	1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	15.0	25.7	25.7	15.0	40.0		32.2	32.2		36.2	36.2	36.2
Total Split (s)	15.0	48.0	48.0	15.0	48.0		37.0	37.0		37.0	37.0	37.0
Total Split (%)	15.0%	48.0%	48.0%	15.0%	48.0%		37.0%	37.0%		37.0%	37.0%	37.0%
Maximum Green (s)	8.3	41.3	41.3	8.3	41.3		30.8	30.8		30.8	30.8	30.8
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3		2.2	2.2		2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	6.7	6.7	6.7			6.2		6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	None		None	None	None
Walk Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Flash Dont Walk (s)		15.0	15.0		28.0		22.0	22.0		26.0	26.0	26.0
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	0
Act Effect Green (s)	31.1	28.5	28.5	29.6	25.3			8.9		8.9	8.9	8.9
Actuated g/C Ratio	0.56	0.51	0.51	0.53	0.45			0.16		0.16	0.16	0.16
v/c Ratio	0.12	0.62	0.02	0.06	0.36			0.41		0.29	0.01	0.20
Control Delay	4.8	12.6	0.0	4.5	11.7			14.9		29.1	26.2	3.3

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/1/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	4.8	12.6	0.0	4.5	11.7			14.9		29.1	26.2	3.3
LOS	A	B	A	A	B			B		C	C	A
Approach Delay		12.1			11.3			14.9			16.6	
Approach LOS		B			B			B			B	
Stops (vph)	22	652	0	9	290			42		51	7	4
Fuel Used(gal)	1	22	0	0	9			2		1	0	1
CO Emissions (g/hr)	69	1516	9	21	603			134		90	8	44
NOx Emissions (g/hr)	13	295	2	4	117			26		18	2	9
VOC Emissions (g/hr)	16	351	2	5	140			31		21	2	10
Dilemma Vehicles (#)	0	19	0	0	8			3		0	0	0
Queue Length 50th (ft)	7	88	0	3	70			9		17	1	0
Queue Length 95th (ft)	19	255	0	9	108			64		64	10	11
Internal Link Dist (ft)		1613			1131			1311			1267	
Turn Bay Length (ft)	200		125	200						200		50
Base Capacity (vph)	555	2667	1230	407	2539			948		824	1092	907
Starvation Cap Reductn	0	0	0	0	0			0		0	0	0
Spillback Cap Reductn	0	0	0	0	0			0		0	0	0
Storage Cap Reductn	0	0	0	0	0			0		0	0	0
Reduced v/c Ratio	0.12	0.42	0.01	0.06	0.21			0.14		0.08	0.00	0.07

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 55.8
 Natural Cycle: 95
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 12.3
 Intersection LOS: B
 Intersection Capacity Utilization 64.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY ROAD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/1/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	131	761	337	55	170	214
Future Volume (vph)	131	761	337	55	170	214
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.979		0.925	
Flt Protected	0.950				0.978	
Satd. Flow (prot)	1671	3438	3455	0	1608	0
Flt Permitted	0.310				0.978	
Satd. Flow (perm)	545	3438	3455	0	1608	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			28		63	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		990	
Travel Time (s)		20.6	44.4		19.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	8%	5%	2%	4%	3%	10%
Adj. Flow (vph)	164	955	423	69	213	269
Shared Lane Traffic (%)						
Lane Group Flow (vph)	164	955	492	0	482	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		22.0	
Total Split (s)	16.0	66.0	50.0		24.0	
Total Split (%)	17.8%	73.3%	55.6%		26.7%	
Maximum Green (s)	10.0	60.0	44.0		18.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.5	
Recall Mode	None	Min	Min		None	
Walk Time (s)		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	32.5	32.5	16.4		18.0	
Actuated g/C Ratio	0.52	0.52	0.26		0.29	
v/c Ratio	0.35	0.53	0.53		0.95	
Control Delay	10.2	11.3	20.8		52.1	

CLEMENTS FERRY ROAD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/1/2017

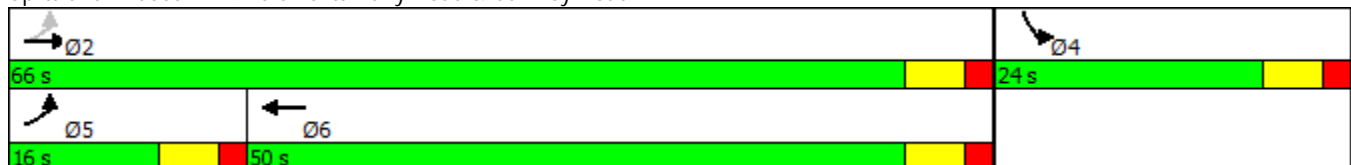


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	10.2	11.3	20.8		52.1	
LOS	B	B	C		D	
Approach Delay		11.1	20.8		52.1	
Approach LOS		B	C		D	
Stops (vph)	71	522	336		309	
Fuel Used(gal)	4	27	12		10	
CO Emissions (g/hr)	311	1864	817		701	
NOx Emissions (g/hr)	60	363	159		136	
VOC Emissions (g/hr)	72	432	189		162	
Dilemma Vehicles (#)	0	31	16		0	
Queue Length 50th (ft)	30	116	78		150	
Queue Length 95th (ft)	58	161	118		#360	
Internal Link Dist (ft)		976	2198		910	
Turn Bay Length (ft)	120					
Base Capacity (vph)	463	3304	2443		508	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.35	0.29	0.20		0.95	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 62.5
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 22.8
 Intersection LOS: C
 Intersection Capacity Utilization 61.3%
 ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY ROAD WIDENING

31: SC 41 & Clements Ferry Road

2/1/2017



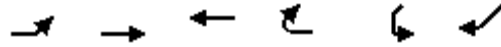
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	131	2	326	240	1	740
Future Volume (vph)	131	2	326	240	1	740
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	3539
Link Speed (mph)	45		45			45
Link Distance (ft)	1237		2480			2655
Travel Time (s)	18.7		37.6			40.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Adj. Flow (vph)	164	3	409	301	1	929
Shared Lane Traffic (%)						
Lane Group Flow (vph)	164	3	409	301	1	929
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.0%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY ROAD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/1/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (vph)	211	724	329	4	4	62
Future Volume (vph)	211	724	329	4	4	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.873	
Flt Protected		0.989			0.997	
Satd. Flow (prot)	0	3373	3532	0	1472	0
Flt Permitted		0.989			0.997	
Satd. Flow (perm)	0	3373	3532	0	1472	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2655		1587	
Travel Time (s)		44.4	51.7		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	19%	2%	2%	2%	2%	13%
Adj. Flow (vph)	265	909	413	5	5	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1174	418	0	83	0
Sign Control		Free	Free		Stop	

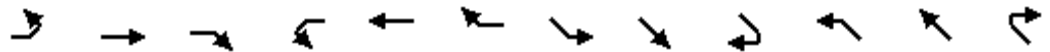
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.5%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY ROAD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/1/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	3	1027	1	0	479	1	1	0	6	2	0	0
Future Volume (vph)	3	1027	1	0	479	1	1	0	6	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.880				
Flt Protected	0.950							0.994			0.950	
Satd. Flow (prot)	1003	3471	0	0	3406	0	0	1441	0	0	1770	0
Flt Permitted	0.950							0.994			0.950	
Satd. Flow (perm)	1003	3471	0	0	3406	0	0	1441	0	0	1770	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1211			9191			1383			1484	
Travel Time (s)		15.0			113.9			31.4			33.7	
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
Growth Factor	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	80%	4%	2%	2%	6%	2%	2%	2%	17%	2%	2%	2%
Adj. Flow (vph)	4	1289	1	0	601	1	1	0	8	3	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	1290	0	0	602	0	0	9	0	0	3	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.1%
ICU Level of Service	A
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

2/1/2017



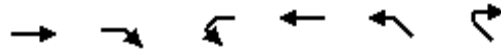
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	882	4	1	540	3	0
Future Volume (vph)	882	4	1	540	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.999					
Flt Protected					0.950	
Satd. Flow (prot)	3468	0	0	3343	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	3468	0	0	3343	1770	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	4%	2%	2%	8%	2%	2%
Adj. Flow (vph)	1107	5	1	678	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1112	0	0	679	4	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.7% ICU Level of Service A
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/1/2017



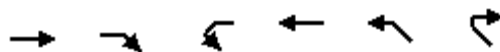
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (vph)	933	94	51	447	25	20
Future Volume (vph)	933	94	51	447	25	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3438	1583	1770	3406	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3438	1583	1770	3406	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1171	118	64	561	31	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1171	118	64	561	31	25
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.8% ICU Level of Service A
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

2/1/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↓	↑↑	↓	
Traffic Volume (vph)	902	51	18	478	15	11
Future Volume (vph)	902	51	18	478	15	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850			0.943	
Flt Protected			0.950		0.972	
Satd. Flow (prot)	3406	1583	1770	3406	1707	0
Flt Permitted			0.950		0.972	
Satd. Flow (perm)	3406	1583	1770	3406	1707	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	6%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1133	64	23	600	19	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1133	64	23	600	33	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.2% ICU Level of Service A
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/1/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	842	75	72	473	26	44
Future Volume (vph)	842	75	72	473	26	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.988				0.916	
Flt Protected				0.993	0.982	
Satd. Flow (prot)	3405	0	0	3399	1676	0
Flt Permitted				0.993	0.982	
Satd. Flow (perm)	3405	0	0	3399	1676	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1581	
Travel Time (s)	30.7			30.0	35.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	113%	113%	113%	113%	113%	113%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1057	94	90	594	33	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1151	0	0	684	88	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.8%
Analysis Period (min)	15
	ICU Level of Service B

CLEMENTS FERRY RD WIDENING
4: Main Entrance Site & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	910	180	135	1936	40	675	445	270	40	250	230
Future Volume (vph)	50	910	180	135	1936	40	675	445	270	40	250	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		400	350		0	500		250	0		200
Storage Lanes	1		1	1		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.997				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.993	
Satd. Flow (prot)	1770	3539	1583	1770	3529	0	1770	1863	1583	0	1850	1583
Flt Permitted	0.075			0.097			0.143				0.853	
Satd. Flow (perm)	140	3539	1583	181	3529	0	266	1863	1583	0	1589	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200		2				176			109
Link Speed (mph)		45		45			35			30		
Link Distance (ft)		4642		1391			1347			1355		
Travel Time (s)		70.3		21.1			26.2			30.8		
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
Adj. Flow (vph)	56	1011	200	150	2151	44	750	494	300	44	278	256
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	1011	200	150	2195	0	750	494	300	0	322	256
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			12			12		
Link Offset(ft)		0		0			0			0		
Crosswalk Width(ft)		10		10			10			10		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Detector Phase	5	2	2	1	6		3	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0		15.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	15.0	61.0	61.0	18.0	64.0		43.0	71.0	71.0	28.0	28.0	28.0
Total Split (%)	10.0%	40.7%	40.7%	12.0%	42.7%		28.7%	47.3%	47.3%	18.7%	18.7%	18.7%
Maximum Green (s)	9.0	55.0	55.0	12.0	58.0		37.0	65.0	65.0	22.0	22.0	22.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	Min	Min	Min	Min	Min
Walk Time (s)		5.0	5.0		5.0			5.0	5.0	5.0	5.0	5.0

CLEMENTS FERRY RD WIDENING
 4: Main Entrance Site & Clements Ferry Road

2/4/2017

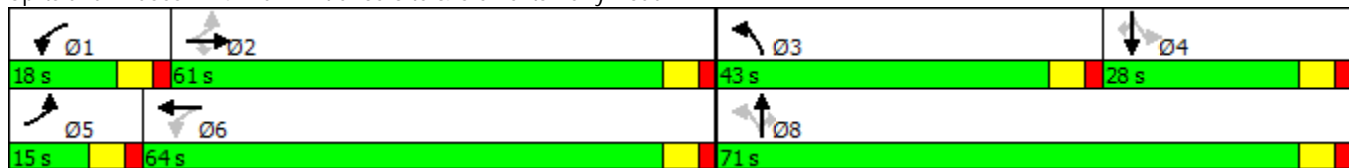


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0	0	0	0
Act Effct Green (s)	59.3	52.0	52.0	67.2	58.1		65.1	65.1	65.1		22.0	22.0
Actuated g/C Ratio	0.41	0.36	0.36	0.46	0.40		0.45	0.45	0.45		0.15	0.15
v/c Ratio	0.41	0.80	0.29	0.74	1.56		1.50	0.60	0.37		1.35	0.77
Control Delay	30.3	48.2	5.1	47.9	288.7		268.2	35.0	12.4		226.5	50.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	30.3	48.2	5.1	47.9	288.7		268.2	35.0	12.4		226.5	50.8
LOS	C	D	A	D	F		F	C	B		F	D
Approach Delay		40.6			273.3			143.9			148.6	
Approach LOS		D			F			F			F	
Queue Length 50th (ft)	29	460	0	81	~1601		~968	362	73		~410	142
Queue Length 95th (ft)	54	547	54	#167	#1756		#1239	493	151		#616	#278
Internal Link Dist (ft)		4562			1311			1267			1275	
Turn Bay Length (ft)	250		400	350			500		250			200
Base Capacity (vph)	159	1334	721	214	1404		500	830	802		239	331
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.35	0.76	0.28	0.70	1.56		1.50	0.60	0.37		1.35	0.77

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 146.1
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.56
 Intersection Signal Delay: 174.5
 Intersection LOS: F
 Intersection Capacity Utilization 130.9%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Main Entrance Site & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
8: Future Site Road & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1490	70	60	1646	15	350	126	116	15	120	15
Future Volume (vph)	40	1490	70	60	1646	15	350	126	116	15	120	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		275	200		0	300		100	0		100
Storage Lanes	1		1	1		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.994	
Satd. Flow (prot)	1770	3539	1583	1770	3536	0	1770	1863	1583	0	1852	1583
Flt Permitted	0.082			0.082			0.662				0.962	
Satd. Flow (perm)	153	3539	1583	153	3536	0	1233	1863	1583	0	1792	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78		2				36			36
Link Speed (mph)		45		45			30			30		
Link Distance (ft)		1391		3159			1306			1258		
Travel Time (s)		21.1		47.9			29.7			28.6		
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
Adj. Flow (vph)	44	1656	78	67	1829	17	389	140	129	17	133	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	1656	78	67	1846	0	389	140	129	0	150	17
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			12			12		
Link Offset(ft)		0		0			0			0		
Crosswalk Width(ft)		10		10			10			10		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2		6			8			4		
Permitted Phases	2		2	6			8		8	4		4
Detector Phase	2	2	2	6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0		35.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	61.1%	61.1%	61.1%	61.1%	61.1%		38.9%	38.9%	38.9%	38.9%	38.9%	38.9%
Maximum Green (s)	49.0	49.0	49.0	49.0	49.0		29.0	29.0	29.0	29.0	29.0	29.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min	Min	Min	Min	Min
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0

CLEMENTS FERRY RD WIDENING
 8: Future Site Road & Clements Ferry Road

2/4/2017

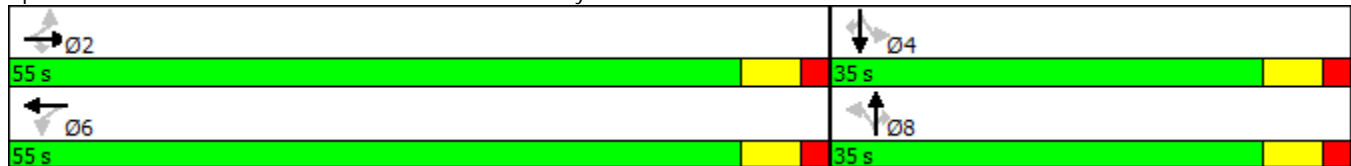


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effct Green (s)	49.0	49.0	49.0	49.0	49.0		28.9	28.9	28.9		28.9	28.9
Actuated g/C Ratio	0.55	0.55	0.55	0.55	0.55		0.32	0.32	0.32		0.32	0.32
v/c Ratio	0.53	0.86	0.09	0.81	0.96		0.98	0.23	0.24		0.26	0.03
Control Delay	41.7	23.4	2.7	81.4	33.0		73.9	23.7	17.4		24.1	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	41.7	23.4	2.7	81.4	33.0		73.9	23.7	17.4		24.1	3.0
LOS	D	C	A	F	C		E	C	B		C	A
Approach Delay		22.9				34.7		52.1			22.0	
Approach LOS		C				C		D			C	
Queue Length 50th (ft)	15	397	0	29	494		217	58	38		63	0
Queue Length 95th (ft)	#72	507	19	#114	#694		#402	104	81		110	7
Internal Link Dist (ft)		1311			3079			1226			1178	
Turn Bay Length (ft)	200		275	200			300		100			100
Base Capacity (vph)	83	1929	898	83	1929		398	601	535		578	535
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.53	0.86	0.09	0.81	0.96		0.98	0.23	0.24		0.26	0.03

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 89.9
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 32.1
 Intersection LOS: C
 Intersection Capacity Utilization 85.9%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 8: Future Site Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	965	24	29	2995	106	23	6	88	288	6	237
Future Volume (vph)	106	965	24	29	2995	106	23	6	88	288	6	237
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		125	200		0	0		0	0		200
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995			0.899				0.850
Flt Protected	0.950			0.950				0.990			0.953	
Satd. Flow (prot)	1770	3059	1583	1770	3424	0	0	1658	0	0	1620	1583
Flt Permitted	0.044			0.211				0.649			0.585	
Satd. Flow (perm)	82	3059	1583	393	3424	0	0	1087	0	0	994	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72		4			95				98
Link Speed (mph)		45		45				35			35	
Link Distance (ft)		1021		1211				1115			1147	
Travel Time (s)		15.5		18.3				21.7			22.3	
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
Heavy Vehicles (%)	2%	18%	2%	2%	5%	2%	2%	2%	2%	12%	2%	2%
Adj. Flow (vph)	118	1072	27	32	3328	118	26	7	98	320	7	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	1072	27	32	3446	0	0	131	0	0	327	263
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12				0			0	
Link Offset(ft)		0		0				0			0	
Crosswalk Width(ft)		10		10				10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		4		4	
Detector Phase	5	2	2	1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	15.0	25.7	25.7	15.0	40.8		32.6	32.6		40.0	40.0	40.0
Total Split (s)	15.0	91.0	91.0	15.0	91.0		44.0	44.0		44.0	44.0	44.0
Total Split (%)	10.0%	60.7%	60.7%	10.0%	60.7%		29.3%	29.3%		29.3%	29.3%	29.3%
Maximum Green (s)	8.4	84.3	84.3	8.3	84.3		37.8	37.8		37.8	37.8	37.8
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.2	2.3	2.3	2.3	2.3		2.2	2.2		2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.6	6.7	6.7	6.7	6.7			6.2			6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	None		None	None	None

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Flash Dont Walk (s)		15.0	15.0		28.0		22.0	22.0		26.0	26.0	26.0
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	0
Act Effct Green (s)	95.6	90.5	90.5	92.3	84.3			37.8			37.8	37.8
Actuated g/C Ratio	0.64	0.60	0.60	0.62	0.56			0.25			0.25	0.25
v/c Ratio	0.81	0.58	0.03	0.10	1.79			0.38			1.31	0.56
Control Delay	69.5	20.8	0.0	9.7	382.3			18.2			207.8	35.0
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	0.0
Total Delay	69.5	20.8	0.0	9.7	382.3			18.2			207.8	35.0
LOS	E	C	A	A	F			B			F	D
Approach Delay		25.0			378.8			18.2			130.8	
Approach LOS		C			F			B			F	
Queue Length 50th (ft)	67	358	0	10	~2672			27			~409	141
Queue Length 95th (ft)	#181	430	0	23	#2759			91			#610	239
Internal Link Dist (ft)		941			1131			1035			1067	
Turn Bay Length (ft)	500		125	200								200
Base Capacity (vph)	146	1845	983	318	1926			344			250	472
Starvation Cap Reductn	0	0	0	0	0			0			0	0
Spillback Cap Reductn	0	0	0	0	0			0			0	0
Storage Cap Reductn	0	0	0	0	0			0			0	0
Reduced v/c Ratio	0.81	0.58	0.03	0.10	1.79			0.38			1.31	0.56

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.79

Intersection Signal Delay: 263.6

Intersection LOS: F

Intersection Capacity Utilization 123.8%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/4/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	194	1432	751	164	158	361
Future Volume (vph)	194	1432	751	164	158	361
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250			0	0	300
Storage Lanes	1			0	1	1
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1504	3252	3167	0	1583	1482
Flt Permitted	0.162				0.950	
Satd. Flow (perm)	257	3252	3167	0	1583	1482
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			41			120
Link Speed (mph)		45	45		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		16.0	34.5		20.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	20%	11%	12%	6%	14%	9%
Adj. Flow (vph)	216	1591	834	182	176	401
Shared Lane Traffic (%)						
Lane Group Flow (vph)	216	1591	1016	0	176	401
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases	2					4
Detector Phase	5	2	6		4	5
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		4.0	10.0
Minimum Split (s)	16.0	22.0	50.0		22.0	16.0
Total Split (s)	17.0	68.0	51.0		22.0	17.0
Total Split (%)	18.9%	75.6%	56.7%		24.4%	18.9%
Maximum Green (s)	11.0	62.0	45.0		16.0	11.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.0	3.5
Recall Mode	None	Min	Min		None	None

CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/4/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effect Green (s)	51.2	51.2	34.3		12.2	29.1
Actuated g/C Ratio	0.68	0.68	0.45		0.16	0.38
v/c Ratio	0.62	0.72	0.70		0.69	0.62
Control Delay	16.0	10.3	18.6		47.3	19.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	16.0	10.3	18.6		47.3	19.5
LOS	B	B	B		D	B
Approach Delay		11.0	18.6		28.0	
Approach LOS		B	B		C	
Queue Length 50th (ft)	34	218	183		82	109
Queue Length 95th (ft)	#101	326	269		#164	233
Internal Link Dist (ft)		976	2198		992	
Turn Bay Length (ft)	250					300
Base Capacity (vph)	361	2678	1964		346	655
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.60	0.59	0.52		0.51	0.61

Intersection Summary














Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 75.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 16.2
 Intersection LOS: B
 Intersection Capacity Utilization 60.5%
 ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
31: Clements Ferry Road & SC 41

2/4/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (vph)	264	4	663	127	1	1461
Future Volume (vph)	264	4	663	127	1	1461
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1538	1770	3539
Flt Permitted	0.950				0.255	
Satd. Flow (perm)	1770	1583	1863	1538	475	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		4		141		
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%
Adj. Flow (vph)	293	4	737	141	1	1623
Shared Lane Traffic (%)						
Lane Group Flow (vph)	293	4	737	141	1	1623
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	10		10			10
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	custom	custom	NA
Protected Phases	4			6		
Permitted Phases		4	6		2	2
Detector Phase	4	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	22.0	22.0	38.0	38.0	38.0	38.0
Total Split (%)	36.7%	36.7%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	16.0	16.0	32.0	32.0	32.0	32.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	C-Min	C-Min

CLEMENTS FERRY RD WIDENING
 31: Clements Ferry Road & SC 41

2/4/2017

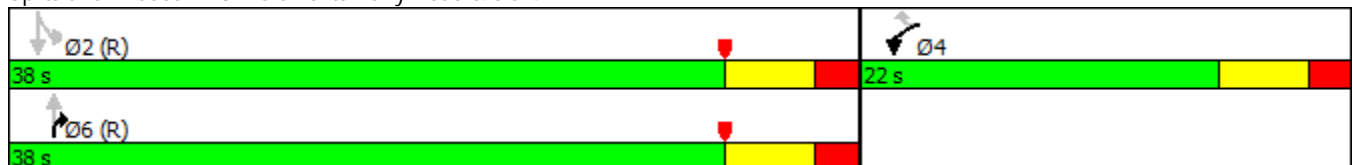


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	13.5	13.5	34.5	34.5	34.5	34.5
Actuated g/C Ratio	0.22	0.22	0.58	0.58	0.58	0.58
v/c Ratio	0.74	0.01	0.69	0.15	0.00	0.80
Control Delay	33.0	11.5	14.1	2.0	7.0	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	11.5	14.1	2.0	7.0	15.0
LOS	C	B	B	A	A	B
Approach Delay	32.8		12.2			14.9
Approach LOS	C		B			B
Queue Length 50th (ft)	97	0	173	0	0	223
Queue Length 95th (ft)	164	6	313	20	2	#352
Internal Link Dist (ft)	1466		2411			2489
Turn Bay Length (ft)		200		240	200	
Base Capacity (vph)	472	425	1072	945	273	2037
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.01	0.69	0.15	0.00	0.80

Intersection Summary

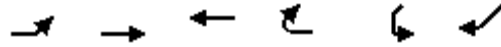
Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 32 (53%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 16.0
 Intersection LOS: B
 Intersection Capacity Utilization 65.0%
 ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 31: Clements Ferry Road & SC 41



CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/4/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (vph)	139	1456	673	1	3	231
Future Volume (vph)	139	1456	673	1	3	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt					0.867	
Flt Protected		0.996			0.999	
Satd. Flow (prot)	0	3409	3539	0	1309	0
Flt Permitted		0.996			0.999	
Satd. Flow (perm)	0	3409	3539	0	1309	0
Link Speed (mph)		45	45		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		34.5	38.9		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	42%	2%	2%	2%	2%	26%
Adj. Flow (vph)	154	1618	748	1	3	257
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1772	749	0	260	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	87.4%
ICU Level of Service	E
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	8	1047	0	0	3135	1	2	0	0	1	0	0	
Future Volume (vph)	8	1047	0	0	3135	1	2	0	0	1	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	200		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	100			100			100			100			
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt													
Flt Protected	0.950							0.950		0.950			
Satd. Flow (prot)	986	3167	0	0	3437	0	0	1770	0	0	1770	0	
Flt Permitted	0.950							0.950		0.950			
Satd. Flow (perm)	986	3167	0	0	3437	0	0	1770	0	0	1770	0	
Link Speed (mph)					45			30			30		
Link Distance (ft)					1211			4642			1450		
Travel Time (s)					18.3			70.3			33.0		
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	
Heavy Vehicles (%)	83%	14%	2%	2%	5%	100%	2%	2%	2%	2%	2%	2%	
Adj. Flow (vph)	9	1163	0	0	3483	1	2	0	0	1	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	9	1163	0	0	3484	0	0	2	0	0	1	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(ft)					12			0			0		
Link Offset(ft)					0			0			0		
Crosswalk Width(ft)					10			10			10		
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		9		15		9		15		9		
Sign Control	Free				Free			Stop			Stop		

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	96.7%
Analysis Period (min)	15
	ICU Level of Service F

CLEMENTS FERRY RD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	1411	0	3	1359	10	4	5	4	175	30	375
Future Volume (vph)	95	1411	0	3	1359	10	4	5	4	175	30	375
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	0		0	0		0	0		325
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999			0.961				0.850
Flt Protected	0.950							0.986			0.959	
Satd. Flow (prot)	1770	3195	0	0	3341	0	0	1765	0	0	1786	1583
Flt Permitted	0.079				0.952			0.899			0.747	
Satd. Flow (perm)	147	3195	0	0	3181	0	0	1609	0	0	1391	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1			4				36
Link Speed (mph)		45			45			30				30
Link Distance (ft)		1977			2220			351				1076
Travel Time (s)		30.0			33.6			8.0				24.5
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
Heavy Vehicles (%)	2%	13%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	106	1568	0	3	1510	11	4	6	4	194	33	417
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	1568	0	0	1524	0	0	14	0	0	227	417
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		6	6		8	8		4	4	5
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	15.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	15.0
Total Split (s)	15.0	68.0		53.0	53.0		22.0	22.0		22.0	22.0	15.0
Total Split (%)	16.7%	75.6%		58.9%	58.9%		24.4%	24.4%		24.4%	24.4%	16.7%
Maximum Green (s)	9.0	62.0		47.0	47.0		16.0	16.0		16.0	16.0	9.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0			6.0			6.0			6.0	6.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min		Min	Min		Min	Min		Min	Min	None

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

2/4/2017

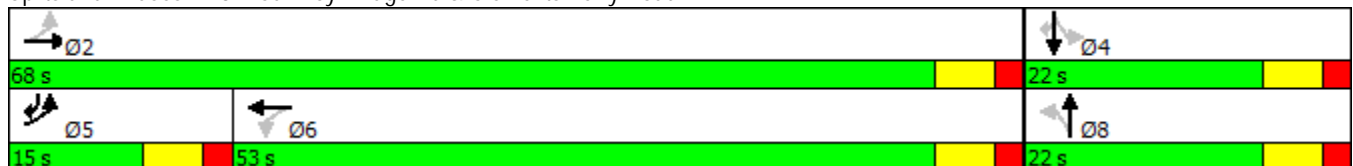


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	58.5	58.5			44.5			15.1			15.1	29.1
Actuated g/C Ratio	0.68	0.68			0.52			0.18			0.18	0.34
v/c Ratio	0.42	0.72			0.92			0.05			0.93	0.74
Control Delay	12.7	10.9			30.2			26.5			79.7	32.8
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	12.7	10.9			30.2			26.5			79.7	32.8
LOS	B	B			C			C			E	C
Approach Delay		11.0			30.2			26.5			49.4	
Approach LOS		B			C			C			D	
Queue Length 50th (ft)	17	247			395			5			128	188
Queue Length 95th (ft)	52	325			#571			21			#266	302
Internal Link Dist (ft)		1897			2140			271			996	
Turn Bay Length (ft)	350											325
Base Capacity (vph)	272	2334			1762			306			262	581
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.39	0.67			0.86			0.05			0.87	0.72

Intersection Summary

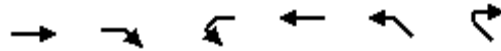
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 85.7
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 25.0
 Intersection LOS: C
 Intersection Capacity Utilization 106.9%
 ICU Level of Service G
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 37: Cainhoy Village Rd & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/4/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (vph)	1217	20	10	1582	139	51
Future Volume (vph)	1217	20	10	1582	139	51
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		250	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3085	1583	1770	3406	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3085	1583	1770	3406	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	3159			595	912	
Travel Time (s)	47.9			9.0	20.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	17%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1352	22	11	1758	154	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1352	22	11	1758	154	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.1%
Analysis Period (min)	15
	ICU Level of Service B

CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	1268	5	6	1432	10	146	5	24	75	5	15
Future Volume (vph)	15	1268	5	6	1432	10	146	5	24	75	5	15
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		275	320		0	200		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999			0.877				0.978
Flt Protected	0.950			0.950			0.950					0.962
Satd. Flow (prot)	1770	3112	1583	1770	3372	0	1770	1634	0	0	1753	0
Flt Permitted	0.100			0.101			0.744				0.750	
Satd. Flow (perm)	186	3112	1583	188	3372	0	1386	1634	0	0	1366	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		1			14				9
Link Speed (mph)		45			45			30				30
Link Distance (ft)		595			2028			1332				1546
Travel Time (s)		9.0			30.7			30.3				35.1
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
Heavy Vehicles (%)	2%	16%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	17	1409	6	7	1591	11	162	6	27	83	6	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	1409	6	7	1602	0	162	33	0	0	106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8				4
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	6	6		3	8		4		4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0		4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0		22.0	22.0		22.0		22.0
Total Split (s)	46.0	46.0	46.0	46.0	46.0		22.0	44.0		22.0		22.0
Total Split (%)	51.1%	51.1%	51.1%	51.1%	51.1%		24.4%	48.9%		24.4%		24.4%
Maximum Green (s)	40.0	40.0	40.0	40.0	40.0		16.0	38.0		16.0		16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0				6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min		Min

CLEMENTS FERRY RD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

2/4/2017

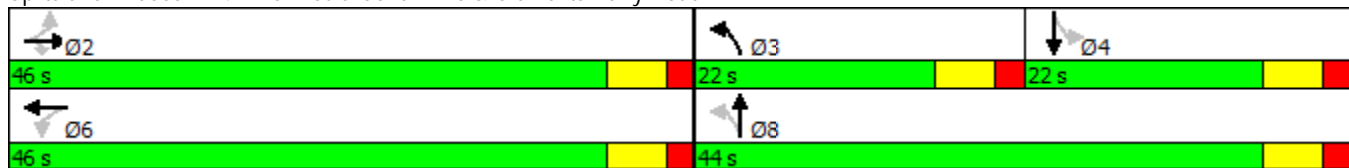


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)	40.2	40.2	40.2	40.2	40.2		23.6	23.6				8.0
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53		0.31	0.31				0.11
v/c Ratio	0.17	0.85	0.01	0.07	0.90		0.34	0.06				0.70
Control Delay	17.3	23.6	0.0	13.7	25.9		21.3	12.2				54.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	17.3	23.6	0.0	13.7	25.9		21.3	12.2				54.1
LOS	B	C	A	B	C		C	B				D
Approach Delay		23.4			25.9			19.7				54.1
Approach LOS		C			C			B				D
Queue Length 50th (ft)	4	276	0	2	326		57	6				45
Queue Length 95th (ft)	21	#533	0	11	#618		101	24				98
Internal Link Dist (ft)		515			1948			1252				1466
Turn Bay Length (ft)	200		275	320			200					
Base Capacity (vph)	98	1649	890	99	1788		512	829				296
Starvation Cap Reductn	0	0	0	0	0		0	0				0
Spillback Cap Reductn	0	0	0	0	0		0	0				0
Storage Cap Reductn	0	0	0	0	0		0	0				0
Reduced v/c Ratio	0.17	0.85	0.01	0.07	0.90		0.32	0.04				0.36

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 75.9
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 25.3
 Intersection LOS: C
 Intersection Capacity Utilization 61.9%
 ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 41: Peninsula Cove Drive & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖		↖	↗			↗	
Traffic Volume (vph)	15	827	11	30	1510	10	74	5	82	75	5	15
Future Volume (vph)	15	827	11	30	1510	10	74	5	82	75	5	15
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.999			0.859			0.978	
Flt Protected	0.950				0.999		0.950				0.962	
Satd. Flow (prot)	1770	3111	0	0	3341	0	1770	1600	0	0	1753	0
Flt Permitted	0.104				0.923		0.816				0.709	
Satd. Flow (perm)	194	3111	0	0	3087	0	1520	1600	0	0	1292	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			2			91			13	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2028			1977			1280			1228	
Travel Time (s)		30.7			30.0			29.1			27.9	
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
Heavy Vehicles (%)	2%	16%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	17	919	12	33	1678	11	82	6	91	83	6	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	931	0	0	1722	0	82	97	0	0	106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	48.0	48.0		48.0	48.0		22.0	22.0		22.0	22.0	
Total Split (%)	68.6%	68.6%		68.6%	68.6%		31.4%	31.4%		31.4%	31.4%	
Maximum Green (s)	42.0	42.0		42.0	42.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0			6.0		6.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	

CLEMENTS FERRY RD WIDENING
 43: Rivers Reach Dr & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	38.7	38.7		38.7	38.7		7.1	7.1			7.1	
Actuated g/C Ratio	0.67	0.67		0.67	0.67		0.12	0.12			0.12	
v/c Ratio	0.13	0.45		0.84	0.84		0.44	0.35			0.63	
Control Delay	7.2	5.7		13.0	13.0		32.3	10.9			39.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	7.2	5.7		13.0	13.0		32.3	10.9			39.4	
LOS	A	A		B	B		C	B			D	
Approach Delay		5.7		13.0	13.0			20.7			39.4	
Approach LOS		A		B	B			C			D	
Queue Length 50th (ft)	2	62		182	182		29	2			33	
Queue Length 95th (ft)	11	124		#406	#406		65	37			77	
Internal Link Dist (ft)		1948		1897	1897			1200			1148	
Turn Bay Length (ft)	200						200					
Base Capacity (vph)	143	2298		2280	2280		427	515			372	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.12	0.41		0.76	0.76		0.19	0.19			0.28	

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 58
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 12.1
 Intersection LOS: B
 Intersection Capacity Utilization 85.4%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 43: Rivers Reach Dr & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
4: Main Entrance Site & Clements Ferry Road

2/28/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	1274	495	297	907	56	288	126	196	24	230	104
Future Volume (vph)	182	1274	495	297	907	56	288	126	196	24	230	104
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		400	350		0	500		250	0		200
Storage Lanes	1		1	1		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.991				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.995	
Satd. Flow (prot)	1770	3539	1583	1770	3507	0	1770	1863	1583	0	1853	1583
Flt Permitted	0.170			0.060			0.138				0.954	
Satd. Flow (perm)	317	3539	1583	112	3507	0	257	1863	1583	0	1777	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			423		5				218			65
Link Speed (mph)		45			55			35				30
Link Distance (ft)		4642			1391			1347				1355
Travel Time (s)		70.3			17.2			26.2				30.8
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
Adj. Flow (vph)	202	1416	550	330	1008	62	320	140	218	27	256	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	1416	550	330	1070	0	320	140	218	0	283	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	80	391	20	80	391		80	391	20	80	391	20
Trailing Detector (ft)	50	255	0	50	255		50	255	0	50	255	0
Detector 1 Position(ft)	50	255	0	50	255		50	255	0	50	255	0
Detector 1 Size(ft)	30	6	20	30	6		30	6	20	30	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		385			385			385				385
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6		3	8			4	5
Permitted Phases	2		2	6			8		8	4		4

CLEMENTS FERRY RD WIDENING
4: Main Entrance Site & Clements Ferry Road

2/28/2017

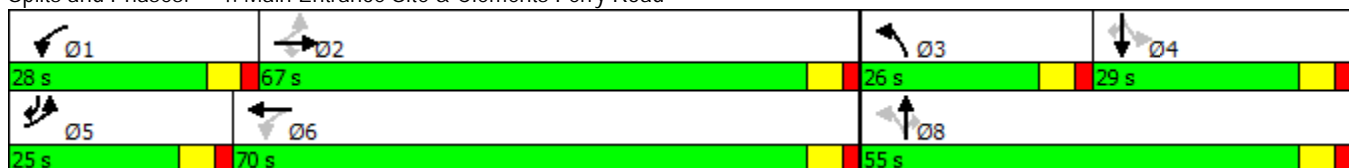


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0		15.0	22.0	22.0	22.0	22.0	15.0
Total Split (s)	25.0	67.0	67.0	28.0	70.0		26.0	55.0	55.0	29.0	29.0	25.0
Total Split (%)	16.7%	44.7%	44.7%	18.7%	46.7%		17.3%	36.7%	36.7%	19.3%	19.3%	16.7%
Maximum Green (s)	19.0	61.0	61.0	22.0	64.0		20.0	49.0	49.0	23.0	23.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	Min	Min	Min	Min	None
Walk Time (s)		5.0	5.0		5.0			5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0			0	0	0	0	
Act Effct Green (s)	74.6	61.0	61.0	88.4	69.4		49.0	49.0	49.0		23.0	42.6
Actuated g/C Ratio	0.50	0.41	0.41	0.59	0.46		0.33	0.33	0.33		0.15	0.28
v/c Ratio	0.70	0.98	0.62	1.07	0.66		1.12	0.23	0.33		1.04	0.23
Control Delay	30.1	64.0	10.8	114.9	34.0		130.6	38.1	5.7		125.4	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	30.1	64.0	10.8	114.9	34.0		130.6	38.1	5.7		125.4	19.2
LOS	C	E	B	F	C		F	D	A		F	B
Approach Delay		47.3			53.1			71.3			94.5	
Approach LOS		D			D			E			F	

Intersection Summary

Area Type:	Other
Cycle Length:	150
Actuated Cycle Length:	150
Natural Cycle:	110
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.12
Intersection Signal Delay:	56.6
Intersection LOS:	E
Intersection Capacity Utilization:	101.1%
ICU Level of Service:	G
Analysis Period (min):	15

Splits and Phases: 4: Main Entrance Site & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
8: Future Site Road & Clements Ferry Road

2/28/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	1494	212	128	735	40	120	57	84	12	101	52
Future Volume (vph)	91	1494	212	128	735	40	120	57	84	12	101	52
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		275	200		0	300		100	0		100
Storage Lanes	1		1	1		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.995	
Satd. Flow (prot)	1770	3539	1583	1770	3511	0	1770	1863	1583	0	1853	1583
Flt Permitted	0.274			0.068			0.367				0.955	
Satd. Flow (perm)	510	3539	1583	127	3511	0	684	1863	1583	0	1779	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			201		7				93			82
Link Speed (mph)		45			55			30				30
Link Distance (ft)		1391			3159			1306				1258
Travel Time (s)		21.1			39.2			29.7				28.6
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
Adj. Flow (vph)	101	1660	236	142	817	44	133	63	93	13	112	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	1660	236	142	861	0	133	63	93	0	125	58
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	80	391	20	80	391		80	391	20	80	391	20
Trailing Detector (ft)	50	255	0	50	255		50	255	0	50	255	0
Detector 1 Position(ft)	50	255	0	50	255		50	255	0	50	255	0
Detector 1 Size(ft)	30	6	20	30	6		30	6	20	30	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		385			385			385				385
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6		3	8			4	5
Permitted Phases	2		2	6			8		8	4		4

CLEMENTS FERRY RD WIDENING
 8: Future Site Road & Clements Ferry Road

2/28/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0		15.0	22.0	22.0	22.0	22.0	15.0
Total Split (s)	15.0	68.0	68.0	15.0	68.0		15.0	37.0	37.0	22.0	22.0	15.0
Total Split (%)	12.5%	56.7%	56.7%	12.5%	56.7%		12.5%	30.8%	30.8%	18.3%	18.3%	12.5%
Maximum Green (s)	9.0	62.0	62.0	9.0	62.0		9.0	31.0	31.0	16.0	16.0	9.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	Min	Min	Min	Min	None
Walk Time (s)		5.0	5.0		5.0			5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0			0	0	0	0	
Act Effct Green (s)	65.0	58.0	58.0	67.3	59.1		24.7	24.7	24.7		10.1	23.3
Actuated g/C Ratio	0.60	0.53	0.53	0.62	0.54		0.23	0.23	0.23		0.09	0.21
v/c Ratio	0.26	0.88	0.25	0.70	0.45		0.56	0.15	0.22		0.76	0.14
Control Delay	9.2	30.0	3.9	39.9	16.4		46.1	36.1	8.5		77.8	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	9.2	30.0	3.9	39.9	16.4		46.1	36.1	8.5		77.8	4.2
LOS	A	C	A	D	B		D	D	A		E	A
Approach Delay		25.9			19.8			31.8			54.4	
Approach LOS		C			B			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 109.1
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 26.1
 Intersection Capacity Utilization 76.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 8: Future Site Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/28/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	1001	11	23	1262	71	27	5	89	115	11	154
Future Volume (vph)	284	1001	11	23	1262	71	27	5	89	115	11	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		125	200		0	0		0	0		200
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.992			0.901				0.850
Flt Protected	0.950			0.950				0.989			0.956	
Satd. Flow (prot)	1770	3059	1583	1770	3416	0	0	1660	0	0	1634	1583
Flt Permitted	0.066			0.256				0.833			0.540	
Satd. Flow (perm)	123	3059	1583	477	3416	0	0	1398	0	0	923	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72		5			86				27
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1021			1211			1115				1147
Travel Time (s)		15.5			18.3			21.7				22.3
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
Heavy Vehicles (%)	2%	18%	2%	2%	5%	2%	2%	2%	2%	12%	2%	2%
Adj. Flow (vph)	316	1112	12	26	1402	79	30	6	99	128	12	171
Shared Lane Traffic (%)												
Lane Group Flow (vph)	316	1112	12	26	1481	0	0	135	0	0	140	171
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template		Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	30	391	20	80	391		80	391		80	391	20
Trailing Detector (ft)	0	255	0	50	255		50	255		50	255	0
Detector 1 Position(ft)	0	255	0	50	255		50	255		50	255	0
Detector 1 Size(ft)	30	6	20	30	6		30	6		30	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		385			385			385				385
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/28/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6			8			4		4
Detector Phase	5	2	2	1	6		8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	15.0	25.7	25.7	15.0	40.8		32.6	32.6		40.0	40.0	15.0
Total Split (s)	31.0	94.0	94.0	15.0	78.0		41.0	41.0		41.0	41.0	31.0
Total Split (%)	20.7%	62.7%	62.7%	10.0%	52.0%		27.3%	27.3%		27.3%	27.3%	20.7%
Maximum Green (s)	24.4	87.3	87.3	8.3	71.3		34.8	34.8		34.8	34.8	24.4
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4		4.0	4.0		4.0	4.0	4.4
All-Red Time (s)	2.2	2.3	2.3	2.3	2.3		2.2	2.2		2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.6	6.7	6.7	6.7	6.7		6.2	6.2		6.2	6.2	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag							Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min		None	None		None	None	None
Walk Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)		15.0	15.0		28.0		22.0	22.0		26.0	26.0	
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	
Act Effct Green (s)	100.4	92.0	92.0	77.7	69.6		21.2	21.2		21.2	21.2	51.5
Actuated g/C Ratio	0.75	0.68	0.68	0.58	0.52		0.16	0.16		0.16	0.16	0.38
v/c Ratio	0.82	0.53	0.01	0.07	0.84		0.46	0.46		0.97	0.97	0.27
Control Delay	53.8	14.2	0.0	8.4	34.0		25.3	25.3		122.9	122.9	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	53.8	14.2	0.0	8.4	34.0		25.3	25.3		122.9	122.9	24.9
LOS	D	B	A	A	C		C	C		F	F	C
Approach Delay		22.8			33.5		25.3	25.3		69.0	69.0	
Approach LOS		C			C		C	C		E	E	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 134.5
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 31.9
 Intersection LOS: C
 Intersection Capacity Utilization 83.0%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/28/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	246	1348	381	104	228	286
Future Volume (vph)	246	1348	381	104	228	286
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			0	0	325
Storage Lanes	1			0	1	1
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.968			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1504	3252	3156	0	1583	1482
Flt Permitted	0.360				0.950	
Satd. Flow (perm)	570	3252	3156	0	1583	1482
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			54			318
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	20%	11%	12%	6%	14%	9%
Adj. Flow (vph)	273	1498	423	116	253	318
Shared Lane Traffic (%)						
Lane Group Flow (vph)	273	1498	539	0	253	318
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template						Right
Leading Detector (ft)	80	166	166		80	20
Trailing Detector (ft)	50	0	0		50	0
Detector 1 Position(ft)	50	160	160		50	0
Detector 1 Size(ft)	30	6	6		30	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		0	0			
Detector 2 Size(ft)		0	0			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	

CLEMENTS FERRY RD WIDENING
19: Clements Ferry Road & Cainhoy Road

2/28/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases	2				4	
Detector Phase	5	2	6		4	4
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		4.0	4.0
Minimum Split (s)	16.0	22.0	50.0		22.0	22.0
Total Split (s)	16.0	66.0	50.0		24.0	24.0
Total Split (%)	17.8%	73.3%	55.6%		26.7%	26.7%
Maximum Green (s)	10.0	60.0	44.0		18.0	18.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.0	3.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)	51.1	51.1	34.5		15.6	15.6
Actuated g/C Ratio	0.65	0.65	0.44		0.20	0.20
v/c Ratio	0.56	0.71	0.38		0.81	0.58
Control Delay	10.8	11.5	13.8		54.2	8.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	10.8	11.5	13.8		54.2	8.7
LOS	B	B	B		D	A
Approach Delay		11.4	13.8		28.9	
Approach LOS		B	B		C	

Intersection Summary













Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 79.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 15.3
 Intersection LOS: B
 Intersection Capacity Utilization 59.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

2/28/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	148	2	368	271	1	1360
Future Volume (vph)	148	2	368	271	1	1360
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1538	1770	3539
Flt Permitted	0.950				0.514	
Satd. Flow (perm)	1770	1583	1863	1538	957	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		2		301		
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%
Adj. Flow (vph)	164	2	409	301	1	1511
Shared Lane Traffic (%)						
Lane Group Flow (vph)	164	2	409	301	1	1511
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	10		10			10
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	80	20	391	20	80	391
Trailing Detector (ft)	50	0	255	0	50	255
Detector 1 Position(ft)	50	0	255	0	50	255
Detector 1 Size(ft)	30	20	6	20	30	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			385			385
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	custom	custom	NA
Protected Phases	4			6		

CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

2/28/2017

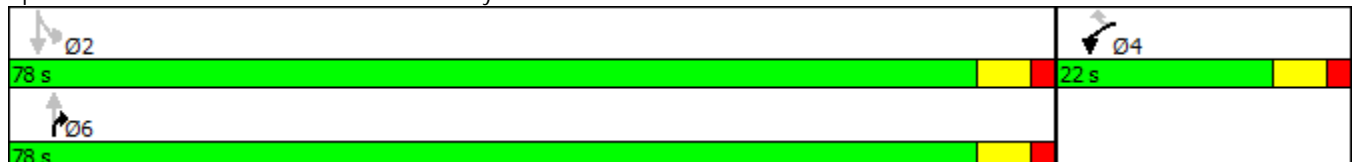


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4	6		2	2
Detector Phase	4	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	22.0	22.0	78.0	78.0	78.0	78.0
Total Split (%)	22.0%	22.0%	78.0%	78.0%	78.0%	78.0%
Maximum Green (s)	16.0	16.0	72.0	72.0	72.0	72.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	10.6	10.6	41.0	41.0	41.0	41.0
Actuated g/C Ratio	0.17	0.17	0.64	0.64	0.64	0.64
v/c Ratio	0.56	0.01	0.34	0.27	0.00	0.67
Control Delay	33.5	18.5	6.5	1.4	5.0	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	18.5	6.5	1.4	5.0	9.2
LOS	C	B	A	A	A	A
Approach Delay	33.3		4.3			9.2
Approach LOS	C		A			A

Intersection Summary

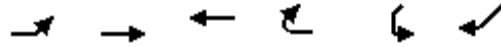
Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 63.9
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 9.4
 Intersection Capacity Utilization 55.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 31: SC 41 & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/28/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (vph)	238	1342	372	5	5	70
Future Volume (vph)	238	1342	372	5	5	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.875	
Flt Protected		0.993			0.996	
Satd. Flow (prot)	0	3319	3532	0	1332	0
Flt Permitted		0.993			0.996	
Satd. Flow (perm)	0	3319	3532	0	1332	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		44.4	50.0		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	42%	2%	2%	2%	2%	26%
Adj. Flow (vph)	264	1491	413	6	6	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1755	419	0	84	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	69.1%
Analysis Period (min)	15
	ICU Level of Service C

CLEMENTS FERRY RD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/28/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	4	1217	1	0	1327	1	3	0	0	1	0	0	
Future Volume (vph)	4	1217	1	0	1327	1	3	0	0	1	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	200		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	100			100			100			100			
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt													
Flt Protected	0.950							0.950			0.950		
Satd. Flow (prot)	986	3167	0	0	3436	0	0	1770	0	0	1770	0	
Flt Permitted	0.950							0.950			0.950		
Satd. Flow (perm)	986	3167	0	0	3436	0	0	1770	0	0	1770	0	
Link Speed (mph)					55			30			30		
Link Distance (ft)					1211			4642			1450		
Travel Time (s)					15.0			57.5			33.0		
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	
Heavy Vehicles (%)	83%	14%	2%	2%	5%	100%	2%	2%	2%	2%	2%	2%	
Adj. Flow (vph)	4	1352	1	0	1474	1	3	0	0	1	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	4	1353	0	0	1475	0	0	3	0	0	1	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(ft)	12					12		0			0		
Link Offset(ft)	0					0		0			0		
Crosswalk Width(ft)	10					10		10			10		
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Sign Control	Free			Free				Stop			Stop		

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.7%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY RD WIDENING

37: Cainhoy Village Rd/Cainhoy Village Road & Clements Ferry Road

2/28/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	1389	5	1	654	148	4	5	0	132	12	96
Future Volume (vph)	255	1389	5	1	654	148	4	5	0	132	12	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	0		0	0		0	0		325
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.972							0.850
Flt Protected	0.950							0.980			0.956	
Satd. Flow (prot)	1770	3193	0	0	3283	0	0	1825	0	0	1781	1583
Flt Permitted	0.166				0.953			0.848			0.736	
Satd. Flow (perm)	309	3193	0	0	3128	0	0	1580	0	0	1371	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			40							123
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1977			2220			351			1076	
Travel Time (s)		30.0			33.6			8.0			24.5	
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
Heavy Vehicles (%)	2%	13%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	283	1543	6	1	727	164	4	6	0	147	13	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	283	1549	0	0	892	0	0	10	0	0	160	107
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	80	391		80	391		80	391		80	391	20
Trailing Detector (ft)	50	255		50	255		50	255		50	255	0
Detector 1 Position(ft)	50	255		50	255		50	255		50	255	0
Detector 1 Size(ft)	30	6		30	6		30	6		30	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		385			385			385			385	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	

CLEMENTS FERRY RD WIDENING

37: Cainhoy Village Rd/Cainhoy Village Road & Clements Ferry Road

2/28/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	15.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	22.0
Total Split (s)	20.0	57.0		37.0	37.0		23.0	23.0		23.0	23.0	23.0
Total Split (%)	25.0%	71.3%		46.3%	46.3%		28.8%	28.8%		28.8%	28.8%	28.8%
Maximum Green (s)	14.0	51.0		31.0	31.0		17.0	17.0		17.0	17.0	17.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0			6.0			6.0			6.0	6.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min		Min	Min		Min	Min		Min	Min	Min
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)	38.5	38.5			21.7			9.8			9.8	9.8
Actuated g/C Ratio	0.63	0.63			0.36			0.16			0.16	0.16
v/c Ratio	0.64	0.77			0.79			0.04			0.73	0.30
Control Delay	15.4	11.7			22.8			25.0			46.2	7.0
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	15.4	11.7			22.8			25.0			46.2	7.0
LOS	B	B			C			C			D	A
Approach Delay		12.2			22.8			25.0			30.5	
Approach LOS		B			C			C			C	

Intersection Summary

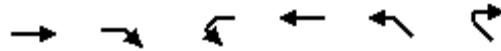
Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 61.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 17.0
 Intersection LOS: B
 Intersection Capacity Utilization 91.0%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 37: Cainhoy Village Rd/Cainhoy Village Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/28/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (vph)	1426	106	58	735	31	25
Future Volume (vph)	1426	106	58	735	31	25
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		250	300		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3085	1583	1770	3406	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3085	1583	1770	3406	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	3159			595	912	
Travel Time (s)	47.9			9.0	20.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	17%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1584	118	64	817	34	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1584	118	64	817	34	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	56.1%
Analysis Period (min)	15
	ICU Level of Service B

CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

2/28/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	1391	64	23	742	25	19	4	14	8	4	28
Future Volume (vph)	42	1391	64	23	742	25	19	4	14	8	4	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		275	320		0	200		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995			0.880			0.905	
Flt Protected	0.950			0.950			0.950				0.990	
Satd. Flow (prot)	1770	3112	1583	1770	3362	0	1770	1639	0	0	1669	0
Flt Permitted	0.306			0.100			0.544				0.924	
Satd. Flow (perm)	570	3112	1583	186	3362	0	1013	1639	0	0	1558	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		5			9			31	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		595			2028			1332			1546	
Travel Time (s)		9.0			30.7			30.3			35.1	
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
Heavy Vehicles (%)	2%	16%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	47	1546	71	26	824	28	21	4	16	9	4	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1546	71	26	852	0	21	20	0	0	44	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	80	391	20	80	391		80	391		80	391	
Trailing Detector (ft)	50	255	0	50	255		50	255		50	255	
Detector 1 Position(ft)	50	255	0	50	255		50	255		50	255	
Detector 1 Size(ft)	30	6	20	30	6		30	6		30	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		385			385			385			385	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	

CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

2/28/2017

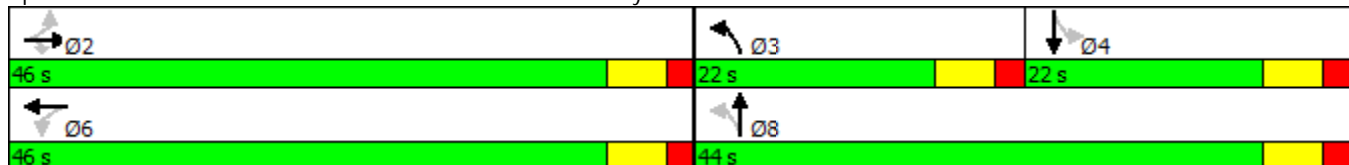


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	6	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	46.0	46.0	46.0	46.0	46.0		22.0	44.0		22.0	22.0	
Total Split (%)	51.1%	51.1%	51.1%	51.1%	51.1%		24.4%	48.9%		24.4%	24.4%	
Maximum Green (s)	40.0	40.0	40.0	40.0	40.0		16.0	38.0		16.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effect Green (s)	40.0	40.0	40.0	40.0	40.0		15.3	15.3			4.3	
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.59		0.23	0.23			0.06	
v/c Ratio	0.14	0.84	0.07	0.24	0.43		0.07	0.05			0.35	
Control Delay	7.7	16.9	0.8	13.5	8.3		20.8	15.4			23.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	7.7	16.9	0.8	13.5	8.3		20.8	15.4			23.7	
LOS	A	B	A	B	A		C	B			C	
Approach Delay		15.9			8.5			18.2			23.7	
Approach LOS		B			A			B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 67.3
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 13.6
 Intersection LOS: B
 Intersection Capacity Utilization 57.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 41: Peninsula Cove Drive & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/28/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	1331	85	81	710	25	29	4	50	12	2	26
Future Volume (vph)	42	1331	85	81	710	25	29	4	50	12	2	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.995			0.860			0.911	
Flt Protected	0.950				0.995		0.950				0.985	
Satd. Flow (prot)	1770	3106	0	0	3333	0	1770	1602	0	0	1672	0
Flt Permitted	0.314				0.668		0.833				0.879	
Satd. Flow (perm)	585	3106	0	0	2238	0	1552	1602	0	0	1492	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			8			52			29	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2028			1977			1280			1228	
Travel Time (s)		30.7			30.0			29.1			27.9	
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
Heavy Vehicles (%)	2%	16%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	47	1479	94	90	789	28	32	4	56	13	2	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1573	0	0	907	0	32	60	0	0	44	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	80	391		80	391		80	391		80	391	
Trailing Detector (ft)	50	255		50	255		50	255		50	255	
Detector 1 Position(ft)	50	255		50	255		50	255		50	255	
Detector 1 Size(ft)	30	6		30	6		30	6		30	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		385			385			385			385	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/28/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	58.0	58.0		58.0	58.0		22.0	22.0		22.0	22.0	
Total Split (%)	72.5%	72.5%		72.5%	72.5%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	52.0	52.0		52.0	52.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0			6.0		6.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	35.1	35.1			35.1		4.8	4.8			4.8	
Actuated g/C Ratio	0.67	0.67			0.67		0.09	0.09			0.09	
v/c Ratio	0.12	0.76			0.61		0.23	0.31			0.27	
Control Delay	3.5	8.1			6.4		30.9	15.9			20.1	
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	
Total Delay	3.5	8.1			6.4		30.9	15.9			20.1	
LOS	A	A			A		C	B			C	
Approach Delay		8.0			6.4			21.1			20.1	
Approach LOS		A			A			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 52.5
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 8.1
 Intersection LOS: A
 Intersection Capacity Utilization 86.3%
 ICU Level of Service E
 Analysis Period (min) 15

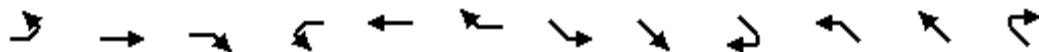
Splits and Phases: 43: Rivers Reach Dr & Clements Ferry Road



CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017

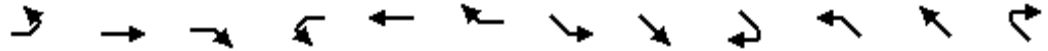


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	149	662	34	41	4852	149	410	9	339	32	7	125
Future Volume (vph)	149	662	34	41	4852	149	410	9	339	32	7	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	175		175	175		175	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	1610	1583	1770	1810	1583	0	1620	1583	0	1654	0
Flt Permitted	0.062			0.291				0.458			0.150	
Satd. Flow (perm)	115	1610	1583	542	1810	1583	0	778	1583	0	251	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			98			149			135
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1021			1211			1133				1015
Travel Time (s)		15.5			18.3			22.1				19.8
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	18%	2%	2%	5%	2%	12%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	166	736	38	46	5391	166	456	10	377	36	8	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	736	38	46	5391	166	0	466	377	0	183	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4				8
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	15.0	63.0	63.0	15.0	63.0	63.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	15.0%	63.0%	63.0%	15.0%	63.0%	63.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	70.2	64.8	64.8	62.6	57.0	57.0		16.0	16.0		16.0	
Actuated g/C Ratio	0.70	0.65	0.65	0.63	0.57	0.57		0.16	0.16		0.16	
v/c Ratio	0.72	0.70	0.04	0.11	5.23	0.18		3.76	1.00		1.20	
Control Delay	39.2	17.6	0.1	5.1	1915.2	4.9		1275.3	72.6		150.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Total Delay	39.2	17.6	0.1	5.1	1915.2	4.9		1275.3	72.6		150.3	
LOS	D	B	A	A	F	A		F	E		F	
Approach Delay		20.7			1842.9			737.4			150.3	
Approach LOS		C			F			F			F	
Queue Length 50th (ft)	55	316	0	7	-6504	18		-539	154		-64	
Queue Length 95th (ft)	#154	493	0	17	#6654	48		#732	#347		#182	
Internal Link Dist (ft)		941			1131			1053			935	
Turn Bay Length (ft)	175		175	175		175						
Base Capacity (vph)	229	1044	1061	468	1031	944		124	378		153	
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	
Reduced v/c Ratio	0.72	0.70	0.04	0.10	5.23	0.18		3.76	1.00		1.20	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 5.23

Intersection Signal Delay: 1452.6 Intersection LOS: F

Intersection Capacity Utilization 303.4% ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	277	2056	1878	231	225	523
Future Volume (vph)	277	2056	1878	231	225	523
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Satd. Flow (prot)	1504	1712	1681	0	1534	0
Flt Permitted	0.075				0.985	
Satd. Flow (perm)	119	1712	1681	0	1534	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			10		113	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	20%	11%	12%	6%	14%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	308	2284	2087	257	250	581
Shared Lane Traffic (%)						
Lane Group Flow (vph)	308	2284	2344	0	831	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		20.0	
Total Split (s)	15.0	68.0	53.0		22.0	
Total Split (%)	16.7%	75.6%	58.9%		24.4%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Recall Mode	None	Min	Min		None	
Act Effct Green (s)	62.0	62.0	47.0		16.0	
Actuated g/C Ratio	0.69	0.69	0.52		0.18	
v/c Ratio	1.40	1.94	2.66		2.28	
Control Delay	228.9	443.6	766.3		602.9	
Queue Delay	0.0	0.0	0.0		0.0	

CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Delay	228.9	443.6	766.3		602.9	
LOS	F	F	F		F	
Approach Delay		418.1	766.3		602.9	
Approach LOS		F	F		F	
Queue Length 50th (ft)	~195	~2025	~2311		~729	
Queue Length 95th (ft)	#359	#2287	#2579		#958	
Internal Link Dist (ft)		976	2198		992	
Turn Bay Length (ft)	120					
Base Capacity (vph)	220	1179	882		365	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	1.40	1.94	2.66		2.28	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.66
 Intersection Signal Delay: 586.2
 Intersection LOS: F
 Intersection Capacity Utilization 187.9%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

2/2/2017



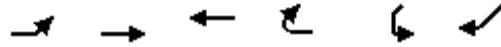
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	376	5	940	181	2	2097
Future Volume (vph)	376	5	940	181	2	2097
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Satd. Flow (prot)	1770	1583	1863	1538	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1538	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	418	6	1044	201	2	2330
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	6	1044	201	2	2330
Sign Control	Free		Free			Yield

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	137.9%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	199	2089	956	2	4	329
Future Volume (vph)	199	2089	956	2	4	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	1794	1863	0	1307	0
Flt Permitted		0.996			0.999	
Satd. Flow (perm)	0	1794	1863	0	1307	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		44.4	50.0		27.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	42%	2%	2%	2%	2%	26%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	221	2321	1062	2	4	366
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2542	1064	0	370	0
Sign Control		Free	Free		Stop	

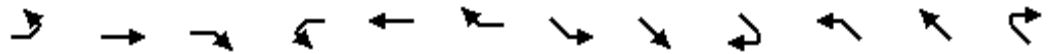
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	202.0%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	11	1165	0	0	4848	2	2	0	0	4	0	0
Future Volume (vph)	11	1165	0	0	4848	2	2	0	0	4	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	986	1667	0	0	1809	0	0	1770	0	0	1770	0
Flt Permitted	0.950							0.950			0.950	
Satd. Flow (perm)	986	1667	0	0	1809	0	0	1770	0	0	1770	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1211			9191			1111			1229	
Travel Time (s)		15.0			113.9			25.3			27.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	83%	14%	2%	2%	5%	100%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	12	1294	0	0	5387	2	2	0	0	4	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1294	0	0	5389	0	0	2	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 265.3% ICU Level of Service H

Analysis Period (min) 15

CLEMENTS FERRY RD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

2/2/2017



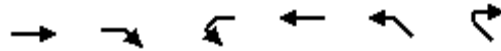
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1840	20	23	2127	132	147
Future Volume (vph)	1840	20	23	2127	132	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			100		100	
Satd. Flow (prot)	1681	0	0	1759	1691	0
Flt Permitted				0.999	0.977	
Satd. Flow (perm)	1681	0	0	1759	1691	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	13%	2%	2%	8%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	2044	22	26	2363	147	163
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2066	0	0	2389	310	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	153.3%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/2/2017



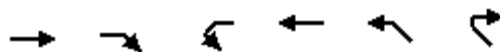
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	1752	29	14	2639	199	73
Future Volume (vph)	1752	29	14	2639	199	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Satd. Flow (prot)	1624	1583	1770	1792	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1624	1583	1770	1792	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	2%	2%	6%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1947	32	16	2932	221	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1947	32	16	2932	221	81
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	156.6%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	1825	7	9	2341	208	34
Future Volume (vph)	1825	7	9	2341	208	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Satd. Flow (prot)	1638	1583	1770	1776	1752	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	1638	1583	1770	1776	1752	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	2%	2%	7%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	2028	8	10	2601	231	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2028	8	10	2601	269	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	143.5%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
 43: Rivers Reach Dr & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1840	20	23	2127	132	147
Future Volume (vph)	1840	20	23	2127	132	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			100		100	
Satd. Flow (prot)	1638	0	0	1759	1691	0
Flt Permitted				0.999	0.977	
Satd. Flow (perm)	1638	0	0	1759	1691	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1280	
Travel Time (s)	30.7			30.0	29.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	2%	2%	8%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	2044	22	26	2363	147	163
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2066	0	0	2389	310	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	153.3%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	587	1585	18	36	4279	148	43	9	141	218	25	307
Future Volume (vph)	587	1585	18	36	4279	148	43	9	141	218	25	307
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		175	175		175	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.901				0.850
Flt Protected	0.950			0.950				0.989			0.957	
Satd. Flow (prot)	1656	1845	1583	1736	1759	1583	0	1660	0	0	1737	1468
Flt Permitted	0.064			0.069				0.153			0.279	
Satd. Flow (perm)	112	1845	1583	126	1759	1583	0	257	0	0	506	1468
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			98		116				149
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1693			1211			1391				1347
Travel Time (s)		25.7			18.3			27.1				26.2
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
Growth Factor	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	9%	3%	2%	4%	8%	2%	2%	2%	2%	5%	2%	10%
Adj. Flow (vph)	1050	2835	32	64	7655	265	77	16	252	390	45	549
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1050	2835	32	64	7655	265	0	345	0	0	435	549
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0	22.0	22.0	22.0		22.0	22.0	22.0
Total Split (s)	15.0	63.0	63.0	15.0	63.0	63.0	22.0	22.0		22.0	22.0	22.0
Total Split (%)	15.0%	63.0%	63.0%	15.0%	63.0%	63.0%	22.0%	22.0%		22.0%	22.0%	22.0%
Maximum Green (s)	9.0	57.0	57.0	9.0	57.0	57.0	16.0	16.0		16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	None
Act Effect Green (s)	69.4	62.2	62.2	63.0	57.0	57.0		16.0			16.0	16.0
Actuated g/C Ratio	0.69	0.62	0.62	0.63	0.57	0.57		0.16			0.16	0.16
v/c Ratio	4.86	2.47	0.03	0.36	7.64	0.28		2.50			5.44	1.52
Control Delay	1758.8	683.0	0.1	13.1	2997.1	7.5		711.5			2034.5	274.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	1758.8	683.0	0.1	13.1	2997.1	7.5		711.5			2034.5	274.1
LOS	F	F	A	B	F	A		F			F	F

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017

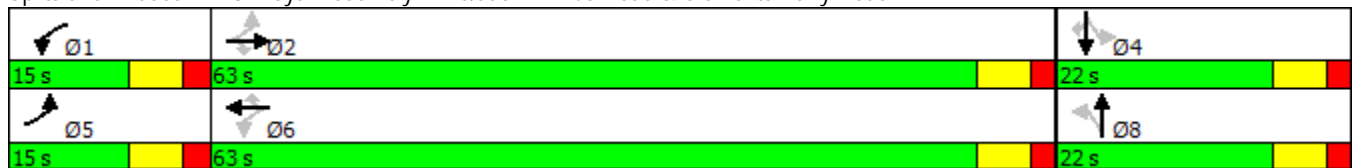


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		965.8			2874.0			711.5			1052.3	
Approach LOS		F			F			F			F	
Stops (vph)	878	1728	0	20	10171	71		128			429	256
Fuel Used(gal)	360	404	0	1	4385	3		49			169	34
CO Emissions (g/hr)	25142	28265	22	60	306490	218		3424			11841	2397
NOx Emissions (g/hr)	4892	5499	4	12	59632	42		666			2304	466
VOC Emissions (g/hr)	5827	6551	5	14	71032	51		794			2744	556
Dilemma Vehicles (#)	0	3	0	0	45	0		6			4	0
Queue Length 50th (ft)	~1232	~3041	0	10	~9543	48		~284			~526	~411
Queue Length 95th (ft)	#1484	#3318	0	30	#9559	91		#461			#687	#619
Internal Link Dist (ft)		1613			1131			1311			1267	
Turn Bay Length (ft)	175		175	175		175						
Base Capacity (vph)	216	1146	1020	228	1002	944		138			80	360
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	4.86	2.47	0.03	0.28	7.64	0.28		2.50			5.44	1.52

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 7.64
 Intersection Signal Delay: 2117.1
 Intersection LOS: F
 Intersection Capacity Utilization 475.1%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY ROAD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	449	2326	693	188	364	483
Future Volume (vph)	449	2326	693	188	364	483
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.971		0.923	
Flt Protected	0.950				0.979	
Satd. Flow (prot)	1671	1810	1801	0	1605	0
Flt Permitted	0.078				0.979	
Satd. Flow (perm)	137	1810	1801	0	1605	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			22		65	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		990	
Travel Time (s)		20.6	44.4		19.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	8%	5%	2%	4%	3%	10%
Adj. Flow (vph)	803	4161	1240	336	651	864
Shared Lane Traffic (%)						
Lane Group Flow (vph)	803	4161	1576	0	1515	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		20.0	
Total Split (s)	16.0	67.0	51.0		23.0	
Total Split (%)	17.8%	74.4%	56.7%		25.6%	
Maximum Green (s)	10.0	61.0	45.0		17.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.5	
Recall Mode	None	Min	Min		None	
Act Effct Green (s)	61.0	61.0	45.0		17.0	
Actuated g/C Ratio	0.68	0.68	0.50		0.19	
v/c Ratio	3.05	3.39	1.73		4.27	
Control Delay	949.6	1093.1	355.1		1489.4	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	949.6	1093.1	355.1		1489.4	
LOS	F	F	F		F	

CLEMENTS FERRY ROAD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017

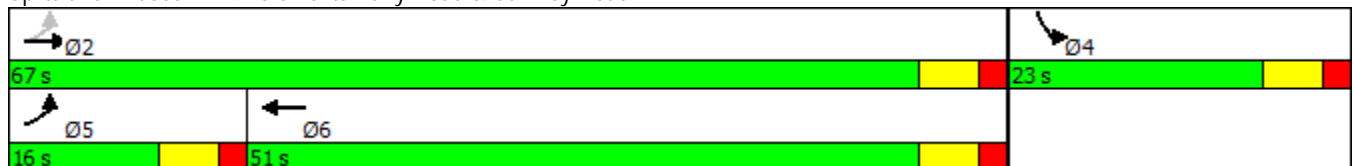


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		1069.9	355.1		1489.4	
Approach LOS		F	F		F	
Stops (vph)	501	3042	998		1278	
Fuel Used(gal)	161	945	133		433	
CO Emissions (g/hr)	11247	66086	9320		30264	
NOx Emissions (g/hr)	2188	12858	1813		5888	
VOC Emissions (g/hr)	2607	15316	2160		7014	
Dilemma Vehicles (#)	0	61	46		0	
Queue Length 50th (ft)	~769	~4240	~1350		~1597	
Queue Length 95th (ft)	#995	#4465	#1612		#1857	
Internal Link Dist (ft)		976	2198		910	
Turn Bay Length (ft)	120					
Base Capacity (vph)	263	1226	911		355	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	3.05	3.39	1.73		4.27	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 4.27
 Intersection Signal Delay: 1008.9
 Intersection LOS: F
 Intersection Capacity Utilization 287.3%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY ROAD WIDENING

31: SC 41 & Clements Ferry Road

2/2/2017



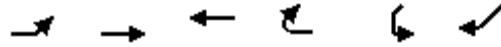
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	234	4	673	429	2	2369
Future Volume (vph)	234	4	673	429	2	2369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1237		2480			2655
Travel Time (s)	18.7		37.6			40.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Adj. Flow (vph)	419	7	1204	767	4	4238
Shared Lane Traffic (%)						
Lane Group Flow (vph)	419	7	1204	767	4	4238
Sign Control	Yield		Free			Yield

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	228.3%
Analysis Period (min)	15
	ICU Level of Service H

CLEMENTS FERRY ROAD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	377	2340	679	7	7	111
Future Volume (vph)	377	2340	679	7	7	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.999		0.873	
Flt Protected		0.993			0.997	
Satd. Flow (prot)	0	1808	1861	0	1472	0
Flt Permitted		0.993			0.997	
Satd. Flow (perm)	0	1808	1861	0	1472	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2655		1587	
Travel Time (s)		44.4	51.7		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	19%	2%	2%	2%	2%	13%
Adj. Flow (vph)	674	4186	1215	13	13	199
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4860	1228	0	212	0
Sign Control		Free	Free		Stop	

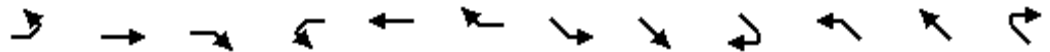
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	311.7%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	5	1962	2	0	4264	2	2	0	11	4	0	0
Future Volume (vph)	5	1962	2	0	4264	2	2	0	11	4	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.887				
Flt Protected	0.950							0.992			0.950	
Satd. Flow (prot)	1003	1827	0	0	1792	0	0	1460	0	0	1770	0
Flt Permitted	0.950							0.992			0.950	
Satd. Flow (perm)	1003	1827	0	0	1792	0	0	1460	0	0	1770	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1211			9191			1383			1484	
Travel Time (s)		15.0			113.9			31.4			33.7	
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
Growth Factor	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	80%	4%	2%	2%	6%	2%	2%	2%	17%	2%	2%	2%
Adj. Flow (vph)	9	3510	4	0	7628	4	4	0	20	7	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	3514	0	0	7632	0	0	24	0	0	7	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	371.5%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

2/2/2017



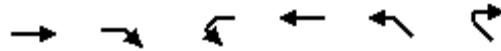
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2328	7	4	1066	5	0
Future Volume (vph)	2328	7	4	1066	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1827	0	0	1760	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1827	0	0	1760	1770	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	4%	2%	2%	8%	2%	2%
Adj. Flow (vph)	4165	13	7	1907	9	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4178	0	0	1914	9	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	207.9%
Analysis Period (min)	15
	ICU Level of Service H

CLEMENTS FERRY ROAD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/2/2017



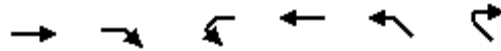
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	2369	168	91	3159	45	36
Future Volume (vph)	2369	168	91	3159	45	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1810	1583	1770	1792	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1810	1583	1770	1792	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	4238	301	163	5651	81	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4238	301	163	5651	81	64
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	278.4%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	2314	91	32	1315	47	20
Future Volume (vph)	2314	91	32	1315	47	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.959	
Flt Protected			0.950		0.966	
Satd. Flow (prot)	1792	1583	1770	1792	1726	0
Flt Permitted			0.950		0.966	
Satd. Flow (perm)	1792	1583	1770	1792	1726	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	6%	2%	2%	6%	2%	2%
Adj. Flow (vph)	4139	163	57	2352	84	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4139	163	57	2352	120	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	208.9%
	ICU Level of Service H
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2226	134	129	1246	47	79
Future Volume (vph)	2226	134	129	1246	47	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.992			0.915		
Flt Protected				0.995	0.982	
Satd. Flow (prot)	1798	0	0	1790	1674	0
Flt Permitted				0.995	0.982	
Satd. Flow (perm)	1798	0	0	1790	1674	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1581	
Travel Time (s)	30.7			30.0	35.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	3982	240	231	2229	84	141
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4222	0	0	2460	225	0
Sign Control	Free			Free	Stop	

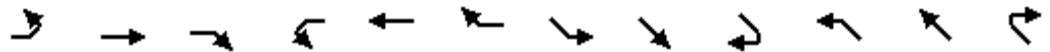
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	297.2%
Analysis Period (min)	15
	ICU Level of Service H

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017

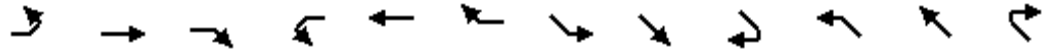


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	33	370	19	23	876	33	14	5	97	18	4	70
Future Volume (vph)	33	370	19	23	876	33	14	5	97	18	4	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	175		175	175		175	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	1610	1583	1770	1810	1583	0	1677	1583	0	1654	0
Flt Permitted	0.064			0.347				0.491			0.923	
Satd. Flow (perm)	119	1610	1583	646	1810	1583	0	853	1583	0	1542	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			98			171			125
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1021			1211			1133				1015
Travel Time (s)		15.5			18.3			22.1				19.8
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	2%	18%	2%	2%	5%	2%	12%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	59	662	34	41	1567	59	25	9	174	32	7	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	662	34	41	1567	59	0	34	174	0	164	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4				8
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	15.0	63.0	63.0	15.0	63.0	63.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	15.0%	63.0%	63.0%	15.0%	63.0%	63.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	66.8	62.5	62.5	63.1	58.8	58.8		9.6	9.6		9.6	
Actuated g/C Ratio	0.73	0.69	0.69	0.69	0.65	0.65		0.11	0.11		0.11	
v/c Ratio	0.28	0.60	0.03	0.08	1.34	0.06		0.38	0.54		0.60	
Control Delay	8.3	12.5	0.1	3.9	178.8	0.7		50.2	13.2		21.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Total Delay	8.3	12.5	0.1	3.9	178.8	0.7		50.2	13.2		21.5	
LOS	A	B	A	A	F	A		D	B		C	
Approach Delay		11.6			168.2			19.2			21.5	
Approach LOS		B			F			B			C	
Queue Length 50th (ft)	6	203	0	4	~1207	0		19	2		21	
Queue Length 95th (ft)	25	399	0	15	#1623	6		49	59		82	
Internal Link Dist (ft)		941			1131			1053			935	
Turn Bay Length (ft)	175		175	175		175						
Base Capacity (vph)	252	1106	1119	579	1171	1058		150	420		375	
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	
Reduced v/c Ratio	0.23	0.60	0.03	0.07	1.34	0.06		0.23	0.41		0.44	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 90.9

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.34

Intersection Signal Delay: 106.2

Intersection LOS: F

Intersection Capacity Utilization 107.8%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	127	411	598	107	78	186
Future Volume (vph)	127	411	598	107	78	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Satd. Flow (prot)	1504	1712	1676	0	1533	0
Flt Permitted	0.075				0.985	
Satd. Flow (perm)	119	1712	1676	0	1533	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			15		116	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	20%	11%	12%	6%	14%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	227	735	1070	191	140	333
Shared Lane Traffic (%)						
Lane Group Flow (vph)	227	735	1261	0	473	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		20.0	
Total Split (s)	15.0	68.0	53.0		22.0	
Total Split (%)	16.7%	75.6%	58.9%		24.4%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Recall Mode	None	Min	Min		None	
Act Effct Green (s)	62.0	62.0	47.0		16.0	
Actuated g/C Ratio	0.69	0.69	0.52		0.18	
v/c Ratio	1.03	0.62	1.43		1.29	
Control Delay	94.2	10.6	222.9		175.1	
Queue Delay	0.0	0.0	0.0		0.0	

CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Delay	94.2	10.6	222.9		175.1	
LOS	F	B	F		F	
Approach Delay		30.3	222.9		175.1	
Approach LOS		C	F		F	
Queue Length 50th (ft)	~96	197	~986		~289	
Queue Length 95th (ft)	#241	301	#1238		#479	
Internal Link Dist (ft)		976	2198		992	
Turn Bay Length (ft)	120					
Base Capacity (vph)	220	1179	882		367	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	1.03	0.62	1.43		1.29	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.43
 Intersection Signal Delay: 145.8
 Intersection LOS: F
 Intersection Capacity Utilization 112.8%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

2/2/2017



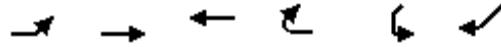
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	210	3	503	101	1	386
Future Volume (vph)	210	3	503	101	1	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Satd. Flow (prot)	1770	1583	1863	1538	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1538	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	376	5	900	181	2	691
Shared Lane Traffic (%)						
Lane Group Flow (vph)	376	5	900	181	2	691
Sign Control	Free		Free			Yield

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	68.0%
	ICU Level of Service C
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↕	↕		↕	
Traffic Volume (vph)	111	382	512	1	2	184
Future Volume (vph)	111	382	512	1	2	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	1693	1863	0	1309	0
Flt Permitted		0.989			0.999	
Satd. Flow (perm)	0	1693	1863	0	1309	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		44.4	50.0		27.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	42%	2%	2%	2%	2%	26%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	199	683	916	2	4	329
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	882	918	0	333	0
Sign Control		Free	Free		Stop	

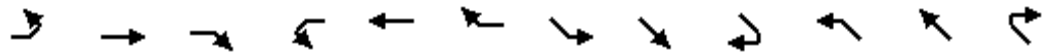
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	114.3%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	6	436	0	0	988	1	1	0	0	2	0	0
Future Volume (vph)	6	436	0	0	988	1	1	0	0	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	986	1667	0	0	1808	0	0	1770	0	0	1770	0
Flt Permitted	0.950							0.950			0.950	
Satd. Flow (perm)	986	1667	0	0	1808	0	0	1770	0	0	1770	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1211			9191			1111			1229	
Travel Time (s)		15.0			113.9			25.3			27.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	83%	14%	2%	2%	5%	100%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	780	0	0	1767	2	2	0	0	4	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	780	0	0	1769	0	0	2	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	93.8%
ICU Level of Service	F
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

2/2/2017



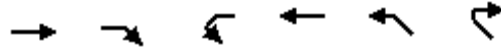
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	534	0	2	792	3	3
Future Volume (vph)	534	0	2	792	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			100		100	
Satd. Flow (prot)	1681	0	0	1760	1694	0
Flt Permitted					0.976	
Satd. Flow (perm)	1681	0	0	1760	1694	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	13%	2%	2%	8%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	955	0	4	1417	5	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	955	0	0	1421	10	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	79.7%
ICU Level of Service	D
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/2/2017



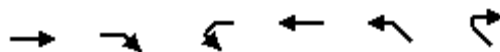
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	403	16	8	947	111	41
Future Volume (vph)	403	16	8	947	111	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%		0%	
Storage Length (ft)	240		300		150	150
Storage Lanes	1		1		1	0
Taper Length (ft)			100		100	
Satd. Flow (prot)	1624	1583	1770	1792	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1624	1583	1770	1792	1770	1583
Link Speed (mph)	45		45		30	
Link Distance (ft)	9191		595		792	
Travel Time (s)	139.3		9.0		18.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	17%	2%	2%	6%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%		0%	
Adj. Flow (vph)	721	29	14	1694	199	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	721	29	14	1694	199	73
Sign Control	Free		Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	96.8%
ICU Level of Service	F
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	444	4	5	842	116	19
Future Volume (vph)	444	4	5	842	116	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Satd. Flow (prot)	1638	1583	1770	1776	1752	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	1638	1583	1770	1776	1752	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	16%	2%	2%	7%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	794	7	9	1506	208	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	794	7	9	1506	242	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	90.2%
Analysis Period (min)	15
	ICU Level of Service E

CLEMENTS FERRY RD WIDENING
 43: Rivers Reach Dr & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	452	11	13	784	74	82
Future Volume (vph)	452	11	13	784	74	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			100		100	
Satd. Flow (prot)	1638	0	0	1759	1691	0
Flt Permitted				0.999	0.977	
Satd. Flow (perm)	1638	0	0	1759	1691	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1280	
Travel Time (s)	30.7			30.0	29.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	16%	2%	2%	8%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	809	20	23	1402	132	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	829	0	0	1425	279	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	104.5%
ICU Level of Service	G
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	886	10	20	421	13	24	5	79	52	3	51
Future Volume (vph)	53	886	10	20	421	13	24	5	79	52	3	51
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		175	175		175	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.901				0.850
Flt Protected	0.950			0.950				0.989			0.955	
Satd. Flow (prot)	1656	1845	1583	1736	1759	1583	0	1660	0	0	1731	1468
Flt Permitted	0.233			0.071				0.895			0.436	
Satd. Flow (perm)	406	1845	1583	130	1759	1583	0	1502	0	0	790	1468
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			98		116				98
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1693			1211			1391				1347
Travel Time (s)		25.7			18.3			27.1				26.2
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
Growth Factor	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	9%	3%	2%	4%	8%	2%	2%	2%	2%	5%	2%	10%
Adj. Flow (vph)	95	1585	18	36	753	23	43	9	141	93	5	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	1585	18	36	753	23	0	193	0	0	98	91
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0	22.0	22.0	22.0		22.0	22.0	22.0
Total Split (s)	15.0	63.0	63.0	15.0	63.0	63.0	22.0	22.0		22.0	22.0	22.0
Total Split (%)	15.0%	63.0%	63.0%	15.0%	63.0%	63.0%	22.0%	22.0%		22.0%	22.0%	22.0%
Maximum Green (s)	9.0	57.0	57.0	9.0	57.0	57.0	16.0	16.0		16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	None
Act Effct Green (s)	63.1	58.7	58.7	58.9	54.6	54.6		12.3			12.3	12.3
Actuated g/C Ratio	0.70	0.66	0.66	0.66	0.61	0.61		0.14			0.14	0.14
v/c Ratio	0.25	1.31	0.02	0.20	0.70	0.02		0.63			0.91	0.32
Control Delay	5.7	166.4	0.0	7.2	18.5	0.0		26.1			106.3	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	5.7	166.4	0.0	7.2	18.5	0.0		26.1			106.3	10.3
LOS	A	F	A	A	B	A		C			F	B

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/2/2017

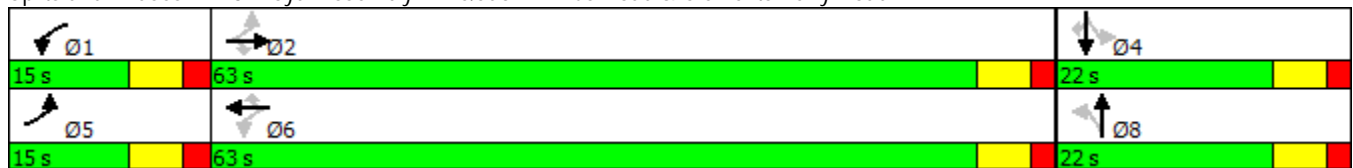


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		155.6			17.5			26.1			60.1	
Approach LOS		F			B			C			E	
Stops (vph)	24	995	0	11	466	0		71			75	14
Fuel Used(gal)	1	76	0	0	14	0		3			3	1
CO Emissions (g/hr)	94	5337	12	30	956	12		224			232	75
NOx Emissions (g/hr)	18	1038	2	6	186	2		44			45	15
VOC Emissions (g/hr)	22	1237	3	7	222	3		52			54	17
Dilemma Vehicles (#)	0	51	0	0	16	0		3			3	0
Queue Length 50th (ft)	15	~1309	0	5	311	0		42			58	0
Queue Length 95th (ft)	29	#1637	0	14	499	0		116			#150	39
Internal Link Dist (ft)		1613			1131			1311			1267	
Turn Bay Length (ft)	175		175	175		175						
Base Capacity (vph)	415	1208	1071	252	1142	1062		366			142	345
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	0.23	1.31	0.02	0.14	0.66	0.02		0.53			0.69	0.26

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 89.6
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.31
 Intersection Signal Delay: 102.0
 Intersection LOS: F
 Intersection Capacity Utilization 102.1%
 ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY ROAD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	131	761	337	55	170	214
Future Volume (vph)	131	761	337	55	170	214
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.981		0.925	
Flt Protected	0.950				0.978	
Satd. Flow (prot)	1671	1810	1822	0	1608	0
Flt Permitted	0.174				0.978	
Satd. Flow (perm)	306	1810	1822	0	1608	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			13		62	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		990	
Travel Time (s)		20.6	44.4		19.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	8%	5%	2%	4%	3%	10%
Adj. Flow (vph)	234	1361	603	98	304	383
Shared Lane Traffic (%)						
Lane Group Flow (vph)	234	1361	701	0	687	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		20.0	
Total Split (s)	16.0	67.0	51.0		23.0	
Total Split (%)	17.8%	74.4%	56.7%		25.6%	
Maximum Green (s)	10.0	61.0	45.0		17.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.5	
Recall Mode	None	Min	Min		None	
Act Effct Green (s)	61.0	61.0	45.0		17.0	
Actuated g/C Ratio	0.68	0.68	0.50		0.19	
v/c Ratio	0.65	1.11	0.76		1.94	
Control Delay	16.0	79.1	24.7		456.5	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	16.0	79.1	24.7		456.5	
LOS	B	E	C		F	

CLEMENTS FERRY ROAD WIDENING
19: Clements Ferry Road & Cainhoy Road

2/2/2017

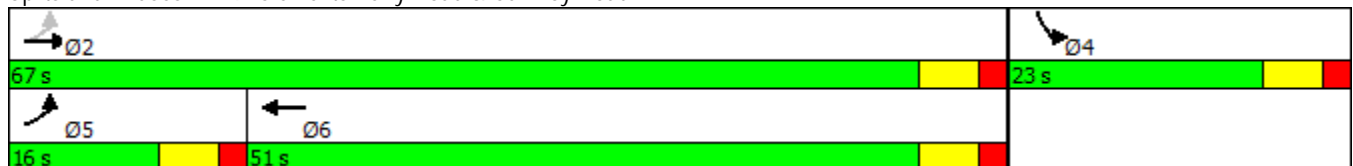


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		69.9	24.7		456.5	
Approach LOS		E	C		F	
Stops (vph)	81	967	493		397	
Fuel Used(gal)	6	56	17		65	
CO Emissions (g/hr)	452	3930	1206		4532	
NOx Emissions (g/hr)	88	765	235		882	
VOC Emissions (g/hr)	105	911	280		1050	
Dilemma Vehicles (#)	0	60	25		0	
Queue Length 50th (ft)	44	-894	302		-587	
Queue Length 95th (ft)	93	#1145	452		#804	
Internal Link Dist (ft)		976	2198		910	
Turn Bay Length (ft)	120					
Base Capacity (vph)	359	1226	917		354	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.65	1.11	0.76		1.94	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.94
 Intersection Signal Delay: 148.3
 Intersection LOS: F
 Intersection Capacity Utilization 110.8%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY ROAD WIDENING

31: SC 41 & Clements Ferry Road

2/2/2017



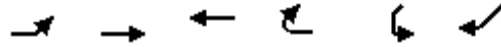
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	131	2	326	240	1	740
Future Volume (vph)	131	2	326	240	1	740
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1237		2480			2655
Travel Time (s)	18.7		37.6			40.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Adj. Flow (vph)	234	4	583	429	2	1324
Shared Lane Traffic (%)						
Lane Group Flow (vph)	234	4	583	429	2	1324
Sign Control	Free		Free			Yield

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	81.1% ICU Level of Service D
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/2/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	211	724	329	4	4	62
Future Volume (vph)	211	724	329	4	4	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.873	
Flt Protected		0.989			0.997	
Satd. Flow (prot)	0	1776	1859	0	1472	0
Flt Permitted		0.989			0.997	
Satd. Flow (perm)	0	1776	1859	0	1472	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2655		1587	
Travel Time (s)		44.4	51.7		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	19%	2%	2%	2%	2%	13%
Adj. Flow (vph)	377	1295	589	7	7	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1672	596	0	118	0
Sign Control		Free	Free		Stop	

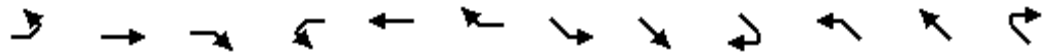
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	124.9%
Analysis Period (min)	15
	ICU Level of Service H

CLEMENTS FERRY ROAD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	3	1027	1	0	479	1	1	0	6	2	0	0
Future Volume (vph)	3	1027	1	0	479	1	1	0	6	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.886				
Flt Protected	0.950							0.992			0.950	
Satd. Flow (prot)	1003	1827	0	0	1793	0	0	1456	0	0	1770	0
Flt Permitted	0.950							0.992			0.950	
Satd. Flow (perm)	1003	1827	0	0	1793	0	0	1456	0	0	1770	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1211			9191			1383			1484	
Travel Time (s)		15.0			113.9			31.4			33.7	
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
Growth Factor	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	80%	4%	2%	2%	6%	2%	2%	2%	17%	2%	2%	2%
Adj. Flow (vph)	5	1837	2	0	857	2	2	0	11	4	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	1839	0	0	859	0	0	13	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	97.1%
ICU Level of Service	F
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

2/2/2017



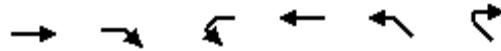
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Volume (vph)	882	4	1	540	3	0
Future Volume (vph)	882	4	1	540	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999					
Flt Protected					0.950	
Satd. Flow (prot)	1825	0	0	1759	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1825	0	0	1759	1770	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	4%	2%	2%	8%	2%	2%
Adj. Flow (vph)	1578	7	2	966	5	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1585	0	0	968	5	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	85.1% ICU Level of Service E
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/2/2017



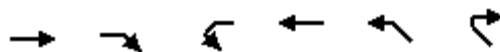
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	933	94	51	447	25	20
Future Volume (vph)	933	94	51	447	25	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1810	1583	1770	1792	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1810	1583	1770	1792	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1669	168	91	800	45	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1669	168	91	800	45	36
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	89.1% ICU Level of Service E
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	902	51	18	478	15	11
Future Volume (vph)	902	51	18	478	15	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.943	
Flt Protected			0.950		0.972	
Satd. Flow (prot)	1792	1583	1770	1792	1707	0
Flt Permitted			0.950		0.972	
Satd. Flow (perm)	1792	1583	1770	1792	1707	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	6%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1614	91	32	855	27	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1614	91	32	855	47	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	86.4%
ICU Level of Service	E
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 43: Rivers Reach Dr & Clements Ferry Road

2/2/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	842	75	72	473	26	44
Future Volume (vph)	842	75	72	473	26	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989			0.915		
Flt Protected				0.993	0.982	
Satd. Flow (prot)	1794	0	0	1789	1674	0
Flt Permitted				0.993	0.982	
Satd. Flow (perm)	1794	0	0	1789	1674	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1581	
Travel Time (s)	30.7			30.0	35.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1506	134	129	846	47	79
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1640	0	0	975	126	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	141.8%
Analysis Period (min)	15
	ICU Level of Service H

CLEMENTS FERRY RD WIDENING PHASE II

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/6/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	370	19	23	876	33	18	4	70	14	5	97
Future Volume (vph)	33	370	19	23	876	33	18	4	70	14	5	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		175	200		0	0		0	200		200
Storage Lanes	1		1	1		0	0		0	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995			0.897				0.850
Flt Protected	0.950			0.950				0.990		0.950		
Satd. Flow (prot)	1770	3059	1583	1770	3424	0	0	1654	0	1612	1863	1583
Flt Permitted	0.103			0.390				0.930		0.579		
Satd. Flow (perm)	192	3059	1583	726	3424	0	0	1554	0	982	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			108		4			125				174
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1021			1211			932				1012
Travel Time (s)		15.5			18.3			18.2				19.7
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
Growth Factor	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	2%	18%	2%	2%	5%	2%	2%	2%	2%	12%	2%	2%
Adj. Flow (vph)	59	662	34	41	1567	59	32	7	125	25	9	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	662	34	41	1626	0	0	164	0	25	9	174
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		4
Detector Phase	5	2	2	1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	15.0	25.7	25.7	15.0	38.7		35.0	35.0		40.0	40.0	40.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	15.0%	45.0%	45.0%	15.0%	45.0%		40.0%	40.0%		40.0%	40.0%	40.0%
Maximum Green (s)	8.3	38.3	38.3	8.3	38.3		33.8	33.8		33.8	33.8	33.8
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.3	2.3	2.3	2.3	2.3		2.2	2.2		2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	6.7	6.7	6.7			6.2		6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	1.8	1.8	3.0	1.8		4.0	4.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	None		None	None	None
Walk Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Flash Dont Walk (s)		15.0	15.0		28.0		22.0	22.0		26.0	26.0	26.0
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	0
Act Effect Green (s)	43.3	38.9	38.9	43.2	38.8			8.4		8.4	8.4	8.4
Actuated g/C Ratio	0.63	0.57	0.57	0.63	0.57			0.12		0.12	0.12	0.12
v/c Ratio	0.19	0.38	0.04	0.07	0.84			0.55		0.21	0.04	0.50
Control Delay	5.3	10.2	0.1	3.9	19.5			18.0		34.5	29.9	11.2

CLEMENTS FERRY RD WIDENING PHASE II

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/6/2017

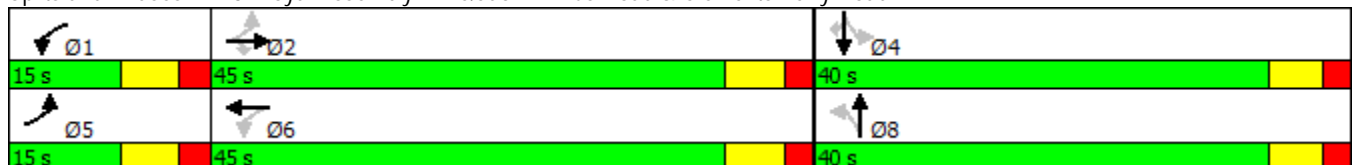


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	5.3	10.2	0.1	3.9	19.5			18.0		34.5	29.9	11.2
LOS	A	B	A	A	B			B		C	C	B
Approach Delay		9.4			19.1			18.0			14.8	
Approach LOS		A			B			B			B	
Stops (vph)	17	312	0	12	1073			49		22	10	29
Fuel Used(gal)	2	26	1	0	31			2		0	0	2
CO Emissions (g/hr)	145	1818	70	33	2143			133		34	13	120
NOx Emissions (g/hr)	28	354	14	6	417			26		7	2	23
VOC Emissions (g/hr)	34	421	16	8	497			31		8	3	28
Dilemma Vehicles (#)	0	13	0	0	104			1		0	0	0
Queue Length 50th (ft)	6	91	0	4	334			17		11	4	0
Queue Length 95th (ft)	16	135	0	12	#530			72		33	17	53
Internal Link Dist (ft)		941			1131			852			932	
Turn Bay Length (ft)	200		175	200						200		200
Base Capacity (vph)	315	1737	946	589	1944			840		491	932	879
Starvation Cap Reductn	0	0	0	0	0			0		0	0	0
Spillback Cap Reductn	0	0	0	0	0			0		0	0	0
Storage Cap Reductn	0	0	0	0	0			0		0	0	0
Reduced v/c Ratio	0.19	0.38	0.04	0.07	0.84			0.20		0.05	0.01	0.20

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 68.4
 Natural Cycle: 115
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 16.1
 Intersection LOS: B
 Intersection Capacity Utilization 75.1%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING PHASE II

19: Clements Ferry Road & Cainhoy Road

2/6/2017

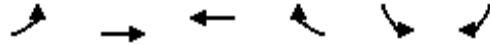


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	127	411	598	107	78	186
Future Volume (vph)	127	411	598	107	78	186
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.977		0.905	
Flt Protected	0.950				0.985	
Satd. Flow (prot)	1504	3252	3175	0	1533	0
Flt Permitted	0.097				0.985	
Satd. Flow (perm)	154	3252	3175	0	1533	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			32		119	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	20%	11%	12%	6%	14%	9%
Adj. Flow (vph)	227	735	1070	191	140	333
Shared Lane Traffic (%)						
Lane Group Flow (vph)	227	735	1261	0	473	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		22.0	
Total Split (s)	16.0	66.0	50.0		24.0	
Total Split (%)	17.8%	73.3%	55.6%		26.7%	
Maximum Green (s)	10.0	60.0	44.0		18.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.5	
Recall Mode	None	Min	Min		None	
Walk Time (s)		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	58.0	58.0	41.9		18.0	
Actuated g/C Ratio	0.66	0.66	0.48		0.20	
v/c Ratio	0.89	0.34	0.82		1.16	
Control Delay	54.9	7.1	24.8		122.5	

CLEMENTS FERRY RD WIDENING PHASE II

19: Clements Ferry Road & Cainhoy Road

2/6/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	54.9	7.1	24.8		122.5	
LOS	D	A	C		F	
Approach Delay		18.4	24.8		122.5	
Approach LOS		B	C		F	
Stops (vph)	103	264	915		256	
Fuel Used(gal)	8	19	31		16	
CO Emissions (g/hr)	560	1338	2187		1107	
NOx Emissions (g/hr)	109	260	425		215	
VOC Emissions (g/hr)	130	310	507		257	
Dilemma Vehicles (#)	0	17	52		0	
Queue Length 50th (ft)	74	83	297		-268	
Queue Length 95th (ft)	#212	112	388		#458	
Internal Link Dist (ft)		976	2198		992	
Turn Bay Length (ft)	120					
Base Capacity (vph)	255	2220	1605		408	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.89	0.33	0.79		1.16	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 88
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 39.6
 Intersection LOS: D
 Intersection Capacity Utilization 83.8%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING PHASE II
 31: SC 41 & Clements Ferry Road

2/6/2017



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	210	3	503	101	1	386
Future Volume (vph)	210	3	503	101	1	386
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1538	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1538	1770	3539
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%
Adj. Flow (vph)	376	5	900	181	2	691
Shared Lane Traffic (%)						
Lane Group Flow (vph)	376	5	900	181	2	691
Sign Control	Stop		Free			Free

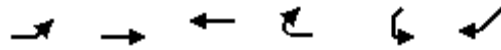
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	68.0%
ICU Level of Service	C
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING PHASE II

33: Clements Ferry Road & Reflectance Rd

2/6/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	111	382	512	1	2	184
Future Volume (vph)	111	382	512	1	2	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt					0.867	
Flt Protected	0.950				0.999	
Satd. Flow (prot)	1271	3539	3539	0	1309	0
Flt Permitted	0.950				0.999	
Satd. Flow (perm)	1271	3539	3539	0	1309	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		44.4	50.0		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	42%	2%	2%	2%	2%	26%
Adj. Flow (vph)	199	683	916	2	4	329
Shared Lane Traffic (%)						
Lane Group Flow (vph)	199	683	918	0	333	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	61.3%
ICU Level of Service	B
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING PHASE II
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/6/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	6	436	0	0	988	1	2	0	0	1	0	0	
Future Volume (vph)	6	436	0	0	988	1	2	0	0	1	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	200		0	150		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	100			100			100			100			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt													
Flt Protected	0.950							0.950		0.950			
Satd. Flow (prot)	986	3167	0	1863	3435	0	0	1770	0	0	1770	0	
Flt Permitted	0.950							0.950		0.950			
Satd. Flow (perm)	986	3167	0	1863	3435	0	0	1770	0	0	1770	0	
Link Speed (mph)					55			30			30		
Link Distance (ft)					1211			9191			1393		
Travel Time (s)					15.0			113.9			31.7		
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	
Growth Factor	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	
Heavy Vehicles (%)	83%	14%	2%	2%	5%	100%	2%	2%	2%	2%	2%	2%	
Adj. Flow (vph)	11	780	0	0	1767	2	4	0	0	2	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	11	780	0	0	1769	0	0	4	0	0	2	0	
Sign Control					Free			Free			Stop		

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.0%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY RD WIDENING PHASE II
 37: Cainhoy Village Rd & Clements Ferry Road

2/6/2017



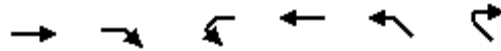
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (vph)	534	0	2	792	3	3
Future Volume (vph)	534	0	2	792	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt					0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	3195	0	1770	3343	1694	0
Flt Permitted			0.950		0.976	
Satd. Flow (perm)	3195	0	1770	3343	1694	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	13%	2%	2%	8%	2%	2%
Adj. Flow (vph)	955	0	4	1417	5	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	955	0	4	1417	10	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.2% ICU Level of Service A
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING PHASE II
 39: Nelliefield Creek Drive & Clements Ferry Road

2/6/2017



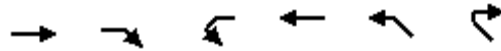
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (vph)	403	16	8	947	111	41
Future Volume (vph)	403	16	8	947	111	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3085	1583	1770	3406	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3085	1583	1770	3406	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	17%	2%	2%	6%	2%	2%
Adj. Flow (vph)	721	29	14	1694	199	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	721	29	14	1694	199	73
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.7% ICU Level of Service B
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING PHASE II
 41: Peninsula Cove Drive & Clements Ferry Road

2/6/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑↑	
Traffic Volume (vph)	444	4	5	842	116	19
Future Volume (vph)	444	4	5	842	116	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850			0.981	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	3112	1583	1770	3374	1752	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	3112	1583	1770	3374	1752	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	16%	2%	2%	7%	2%	2%
Adj. Flow (vph)	794	7	9	1506	208	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	794	7	9	1506	242	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	56.4% ICU Level of Service B
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING PHASE II
 43: Rivers Reach Dr & Clements Ferry Road

2/6/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	452	11	13	784	74	82
Future Volume (vph)	452	11	13	784	74	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996				0.929	
Flt Protected			0.950		0.977	
Satd. Flow (prot)	3109	0	1770	3343	1691	0
Flt Permitted			0.950		0.977	
Satd. Flow (perm)	3109	0	1770	3343	1691	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1280	
Travel Time (s)	30.7			30.0	29.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	16%	2%	2%	8%	2%	2%
Adj. Flow (vph)	809	20	23	1402	132	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	829	0	23	1402	279	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	56.3% ICU Level of Service B
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/6/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	886	10	20	421	13	24	5	79	52	3	51
Future Volume (vph)	53	886	10	20	421	13	24	5	79	52	3	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		175	200		0	0		0	200		200
Storage Lanes	1		1	1		0	0		0	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996			0.901				0.850
Flt Protected	0.950			0.950				0.989		0.950		
Satd. Flow (prot)	1656	3505	1583	1736	3335	0	0	1660	0	1719	1863	1468
Flt Permitted	0.282			0.128				0.921		0.558		
Satd. Flow (perm)	492	3505	1583	234	3335	0	0	1546	0	1010	1863	1468
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			108		3			141				113
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1693			1211			1391				1347
Travel Time (s)		25.7			18.3			27.1				26.2
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
Growth Factor	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	9%	3%	2%	4%	8%	2%	2%	2%	2%	5%	2%	10%
Adj. Flow (vph)	95	1585	18	36	753	23	43	9	141	93	5	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	1585	18	36	776	0	0	193	0	93	5	91
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		4
Detector Phase	5	2	2	1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	15.0	25.7	25.7	15.0	38.7		32.2	32.2		40.0	40.0	40.0
Total Split (s)	17.0	41.0	41.0	17.0	41.0		42.0	42.0		42.0	42.0	42.0
Total Split (%)	17.0%	41.0%	41.0%	17.0%	41.0%		42.0%	42.0%		42.0%	42.0%	42.0%
Maximum Green (s)	10.4	34.3	34.3	10.3	34.3		35.8	35.8		35.8	35.8	35.8
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.2	2.3	2.3	2.3	2.3		2.2	2.2		2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	0.0
Total Lost Time (s)	6.6	6.7	6.7	6.7	6.7			6.2		6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	None		None	None	None
Walk Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Flash Dont Walk (s)		15.0	15.0		28.0		22.0	22.0		26.0	26.0	26.0
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	0
Act Effect Green (s)	38.0	35.0	35.0	34.6	28.3			9.6		9.6	9.6	9.6
Actuated g/C Ratio	0.61	0.56	0.56	0.55	0.45			0.15		0.15	0.15	0.15
v/c Ratio	0.21	0.81	0.02	0.11	0.52			0.54		0.60	0.02	0.28
Control Delay	5.9	18.8	0.1	5.7	14.9			15.5		43.8	25.2	6.7

CLEMENTS FERRY ROAD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/6/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	5.9	18.8	0.1	5.7	14.9			15.5		43.8	25.2	6.7
LOS	A	B	A	A	B			B		D	C	A
Approach Delay		17.9			14.5			15.5			25.5	
Approach LOS		B			B			B			C	
Stops (vph)	32	959	0	13	469			56		76	6	11
Fuel Used(gal)	1	33	0	0	13			3		2	0	1
CO Emissions (g/hr)	101	2311	12	31	940			190		149	7	69
NOx Emissions (g/hr)	20	450	2	6	183			37		29	1	13
VOC Emissions (g/hr)	23	536	3	7	218			44		35	2	16
Dilemma Vehicles (#)	0	108	0	0	3			4		0	0	0
Queue Length 50th (ft)	11	160	0	4	109			15		29	2	0
Queue Length 95th (ft)	30	#548	0	15	184			78		86	11	27
Internal Link Dist (ft)		1613			1131			1311			1267	
Turn Bay Length (ft)	200		175	200						200		200
Base Capacity (vph)	499	1953	930	387	1861			958		587	1084	901
Starvation Cap Reductn	0	0	0	0	0			0		0	0	0
Spillback Cap Reductn	0	0	0	0	0			0		0	0	0
Storage Cap Reductn	0	0	0	0	0			0		0	0	0
Reduced v/c Ratio	0.19	0.81	0.02	0.09	0.42			0.20		0.16	0.00	0.10

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 62.8
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 17.3
 Intersection LOS: B
 Intersection Capacity Utilization 79.5%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY ROAD WIDENING
 19: Clements Ferry Road & Cainhoy Road

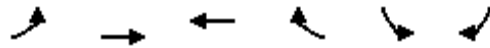
2/6/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	131	761	337	55	170	214
Future Volume (vph)	131	761	337	55	170	214
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.979		0.925	
Flt Protected	0.950				0.978	
Satd. Flow (prot)	1671	3438	3455	0	1608	0
Flt Permitted	0.252				0.978	
Satd. Flow (perm)	443	3438	3455	0	1608	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			28		63	
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		990	
Travel Time (s)		20.6	44.4		19.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	8%	5%	2%	4%	3%	10%
Adj. Flow (vph)	234	1361	603	98	304	383
Shared Lane Traffic (%)						
Lane Group Flow (vph)	234	1361	701	0	687	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Detector Phase	5	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		10.0	
Minimum Split (s)	16.0	22.0	50.0		22.0	
Total Split (s)	16.0	66.0	50.0		24.0	
Total Split (%)	17.8%	73.3%	55.6%		26.7%	
Maximum Green (s)	10.0	60.0	44.0		18.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.5	
Recall Mode	None	Min	Min		None	
Walk Time (s)		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	45.0	45.0	28.7		18.3	
Actuated g/C Ratio	0.60	0.60	0.38		0.24	
v/c Ratio	0.55	0.66	0.53		1.57	
Control Delay	11.7	11.6	18.0		291.6	

CLEMENTS FERRY ROAD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/6/2017

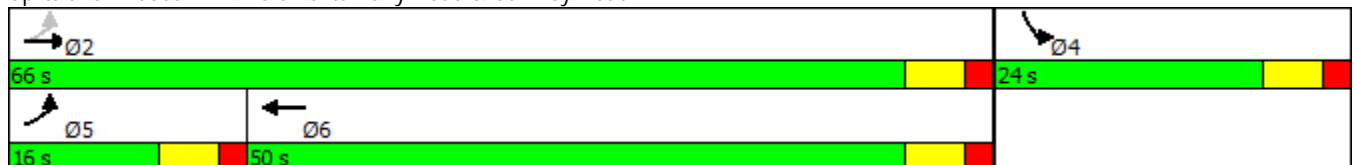


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	11.7	11.6	18.0		291.6	
LOS	B	B	B		F	
Approach Delay		11.6	18.0		291.6	
Approach LOS		B	B		F	
Stops (vph)	85	721	420		408	
Fuel Used(gal)	6	38	16		44	
CO Emissions (g/hr)	441	2651	1108		3087	
NOx Emissions (g/hr)	86	516	216		601	
VOC Emissions (g/hr)	102	614	257		716	
Dilemma Vehicles (#)	0	46	19		0	
Queue Length 50th (ft)	45	197	122		-448	
Queue Length 95th (ft)	75	254	165		#792	
Internal Link Dist (ft)		976	2198		910	
Turn Bay Length (ft)	120					
Base Capacity (vph)	429	2781	2060		437	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.55	0.49	0.34		1.57	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 75.6
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.57
 Intersection Signal Delay: 77.6
 Intersection LOS: E
 Intersection Capacity Utilization 80.8%
 ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY ROAD WIDENING
 31: SC 41 & Clements Ferry Road

2/6/2017



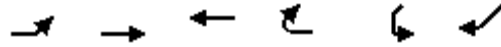
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	131	2	326	240	1	740
Future Volume (vph)	131	2	326	240	1	740
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	3539
Link Speed (mph)	45		45			45
Link Distance (ft)	1237		2480			2655
Travel Time (s)	18.7		37.6			40.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Adj. Flow (vph)	234	4	583	429	2	1324
Shared Lane Traffic (%)						
Lane Group Flow (vph)	234	4	583	429	2	1324
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.3%
Analysis Period (min)	15
	ICU Level of Service A

CLEMENTS FERRY ROAD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/6/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	211	724	329	4	4	62
Future Volume (vph)	211	724	329	4	4	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.873	
Flt Protected	0.950				0.997	
Satd. Flow (prot)	1517	3539	3532	0	1472	0
Flt Permitted	0.950				0.997	
Satd. Flow (perm)	1517	3539	3532	0	1472	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2655		1587	
Travel Time (s)		44.4	51.7		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	19%	2%	2%	2%	2%	13%
Adj. Flow (vph)	377	1295	589	7	7	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	377	1295	596	0	118	0
Sign Control		Free	Free		Stop	

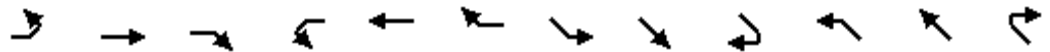
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.2%
	ICU Level of Service A
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/6/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	3	1027	1	0	479	1	1	0	6	2	0	0
Future Volume (vph)	3	1027	1	0	479	1	1	0	6	2	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.886				
Flt Protected	0.950							0.992			0.950	
Satd. Flow (prot)	1003	3471	0	1863	3406	0	0	1456	0	0	1770	0
Flt Permitted	0.950							0.992			0.950	
Satd. Flow (perm)	1003	3471	0	1863	3406	0	0	1456	0	0	1770	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1211			9191			1383			1484	
Travel Time (s)		15.0			113.9			31.4			33.7	
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
Growth Factor	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	80%	4%	2%	2%	6%	2%	2%	2%	17%	2%	2%	2%
Adj. Flow (vph)	5	1837	2	0	857	2	2	0	11	4	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	1839	0	0	859	0	0	13	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	55.8%
ICU Level of Service	B
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

2/6/2017



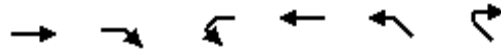
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (vph)	882	4	1	540	3	0
Future Volume (vph)	882	4	1	540	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999					
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3468	0	1770	3343	1770	0
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3468	0	1770	3343	1770	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	1977			2220	351	
Travel Time (s)	30.0			33.6	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	4%	2%	2%	8%	2%	2%
Adj. Flow (vph)	1578	7	2	966	5	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1585	0	2	966	5	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.5%
ICU Level of Service	A
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/6/2017



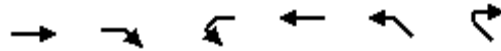
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (vph)	933	94	51	447	25	20
Future Volume (vph)	933	94	51	447	25	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	150
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3438	1583	1770	3406	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3438	1583	1770	3406	1770	1583
Link Speed (mph)	45			45	30	
Link Distance (ft)	9191			595	792	
Travel Time (s)	139.3			9.0	18.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1669	168	91	800	45	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1669	168	91	800	45	36
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	59.4% ICU Level of Service B
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

2/6/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑↑	
Traffic Volume (vph)	902	51	18	478	15	11
Future Volume (vph)	902	51	18	478	15	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		275	320		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850			0.943	
Flt Protected			0.950		0.972	
Satd. Flow (prot)	3406	1583	1770	3406	1707	0
Flt Permitted			0.950		0.972	
Satd. Flow (perm)	3406	1583	1770	3406	1707	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	595			2028	1240	
Travel Time (s)	9.0			30.7	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	6%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1614	91	32	855	27	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1614	91	32	855	47	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.1% ICU Level of Service A
Analysis Period (min)	15

CLEMENTS FERRY ROAD WIDENING
 43: Rivers Reach Dr & Clements Ferry Road

2/6/2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (vph)	842	75	72	473	26	44
Future Volume (vph)	842	75	72	473	26	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.988				0.915	
Flt Protected			0.950		0.982	
Satd. Flow (prot)	3405	0	1770	3406	1674	0
Flt Permitted			0.950		0.982	
Satd. Flow (perm)	3405	0	1770	3406	1674	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2028			1977	1581	
Travel Time (s)	30.7			30.0	35.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	161%	161%	161%	161%	161%	161%
Heavy Vehicles (%)	5%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1506	134	129	846	47	79
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1640	0	129	846	126	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	64.4%
	ICU Level of Service C
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
4: Main Entrance Site & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1167	256	190	3553	40	965	55	386	55	335	330
Future Volume (vph)	90	1167	256	190	3553	40	965	55	386	55	335	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		550	225		0	550		325	0		325
Storage Lanes	1		1	2		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.998				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.993	
Satd. Flow (prot)	1770	3539	1583	3433	3532	0	1770	1863	1583	0	1850	1583
Flt Permitted	0.063			0.062			0.143				0.938	
Satd. Flow (perm)	117	3539	1583	224	3532	0	266	1863	1583	0	1747	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			65		1				150			65
Link Speed (mph)		45			55			35				30
Link Distance (ft)		4642			1391			1347				1355
Travel Time (s)		70.3			17.2			26.2				30.8
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
Adj. Flow (vph)	100	1297	284	211	3948	44	1072	61	429	61	372	367
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	1297	284	211	3992	0	1072	61	429	0	433	367
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8			4	5
Permitted Phases	2		2	6			8		8	4		4
Detector Phase	5	2	3	1	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	15.0	15.0	22.0		15.0	22.0	22.0	22.0	22.0	15.0
Total Split (s)	15.0	70.0	37.0	15.0	70.0		37.0	65.0	65.0	28.0	28.0	15.0
Total Split (%)	10.0%	46.7%	24.7%	10.0%	46.7%		24.7%	43.3%	43.3%	18.7%	18.7%	10.0%
Maximum Green (s)	9.0	64.0	31.0	9.0	64.0		31.0	59.0	59.0	22.0	22.0	9.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead			Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min		None	Min	Min	Min	Min	None
Walk Time (s)		5.0			5.0			5.0	5.0	5.0	5.0	

CLEMENTS FERRY RD WIDENING
 4: Main Entrance Site & Clements Ferry Road

2/4/2017

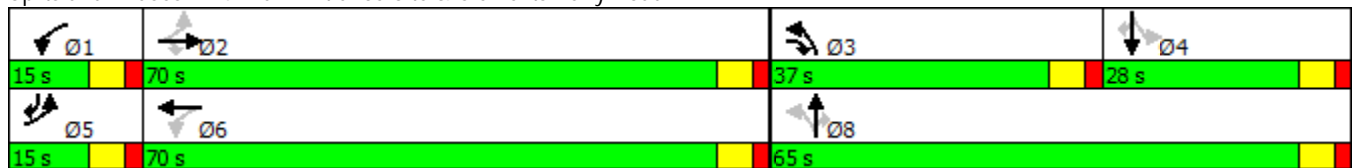


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		11.0			11.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0			0			0	0	0	0	
Act Effct Green (s)	72.3	63.9	100.9	72.6	64.0		59.0	59.0	59.0		22.0	36.5
Actuated g/C Ratio	0.48	0.43	0.67	0.49	0.43		0.39	0.39	0.39		0.15	0.24
v/c Ratio	0.67	0.86	0.26	0.72	2.64		2.58	0.08	0.60		1.68	0.84
Control Delay	47.7	45.8	7.9	40.5	760.1		736.5	29.0	26.6		362.0	62.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	47.7	45.8	7.9	40.5	760.1		736.5	29.0	26.6		362.0	62.1
LOS	D	D	A	D	F		F	C	C		F	E
Approach Delay		39.5			724.0			513.9			224.4	
Approach LOS		D			F			F			F	
Queue Length 50th (ft)	48	598	76	53	~3492		~1719	37	218		~619	289
Queue Length 95th (ft)	#121	700	119	100	#3556		#1987	70	335		#838	#455
Internal Link Dist (ft)		4562			1311			1267			1275	
Turn Bay Length (ft)	350		550	225			550		325			325
Base Capacity (vph)	156	1515	1089	302	1512		416	735	715		257	440
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.64	0.86	0.26	0.70	2.64		2.58	0.08	0.60		1.68	0.83

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 149.5
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.64
 Intersection Signal Delay: 496.2
 Intersection LOS: F
 Intersection Capacity Utilization 188.6%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Main Entrance Site & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
8: Future Site Road & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1608	110	80	2838	20	495	190	165	40	100	220
Future Volume (vph)	55	1608	110	80	2838	20	495	190	165	40	100	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		400	200		0	400		100	0		100
Storage Lanes	1		1	1		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.986	
Satd. Flow (prot)	1770	3539	1583	1770	3536	0	1770	1863	1583	0	1837	1583
Flt Permitted	0.051			0.050			0.276				0.831	
Satd. Flow (perm)	95	3539	1583	93	3536	0	514	1863	1583	0	1548	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112		1				121			109
Link Speed (mph)		45			55			30				30
Link Distance (ft)		1391			3159			1306				1258
Travel Time (s)		21.1			39.2			29.7				28.6
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
Adj. Flow (vph)	61	1787	122	89	3153	22	550	211	183	44	111	244
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	1787	122	89	3175	0	550	211	183	0	155	244
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8				4
Permitted Phases	2		2	6			8		8	4		4
Detector Phase	5	2	2	1	6		3	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0		15.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	15.0	85.0	85.0	15.0	85.0		28.0	50.0	50.0	22.0	22.0	22.0
Total Split (%)	10.0%	56.7%	56.7%	10.0%	56.7%		18.7%	33.3%	33.3%	14.7%	14.7%	14.7%
Maximum Green (s)	9.0	79.0	79.0	9.0	79.0		22.0	44.0	44.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	Min	Min	Min	Min	Min
Walk Time (s)		5.0	5.0		5.0			5.0	5.0	5.0	5.0	5.0

CLEMENTS FERRY RD WIDENING
 8: Future Site Road & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0	0	0	0
Act Effct Green (s)	84.3	77.4	77.4	87.1	80.7		43.5	43.5	43.5		15.4	15.4
Actuated g/C Ratio	0.58	0.53	0.53	0.59	0.55		0.30	0.30	0.30		0.11	0.11
v/c Ratio	0.46	0.96	0.14	0.62	1.63		1.62	0.38	0.33		0.95	0.92
Control Delay	27.2	46.1	4.0	42.5	313.3		321.9	44.0	16.3		123.8	74.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	27.2	46.1	4.0	42.5	313.3		321.9	44.0	16.3		123.8	74.8
LOS	C	D	A	D	F		F	D	B		F	E
Approach Delay		42.9			306.0			200.5			93.8	
Approach LOS		D			F			F			F	
Queue Length 50th (ft)	22	843	4	33	-2374		-695	163	44		152	135
Queue Length 95th (ft)	56	#1049	37	97	#2512		#940	244	112		#299	#306
Internal Link Dist (ft)		1311			3079			1226			1178	
Turn Bay Length (ft)	200		400	200			400		100			100
Base Capacity (vph)	159	1909	905	158	1945		340	559	560		169	270
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.38	0.94	0.13	0.56	1.63		1.62	0.38	0.33		0.92	0.90

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 146.6
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.63
 Intersection Signal Delay: 199.2
 Intersection LOS: F
 Intersection Capacity Utilization 135.1%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 8: Future Site Road & Clements Ferry Road

Ø1	Ø2	Ø3	Ø4
15 s	85 s	28 s	22 s
Ø5	Ø6	Ø8	
15 s	85 s	50 s	

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	662	34	41	4852	149	32	7	125	410	9	339
Future Volume (vph)	149	662	34	41	4852	149	32	7	125	410	9	339
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		125	200		175	0		0	0		275
Storage Lanes	2		1	1		1	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.897				0.850
Flt Protected	0.950			0.950				0.990			0.953	
Satd. Flow (prot)	3433	3059	1583	1770	3438	1583	0	1654	0	0	1620	1583
Flt Permitted	0.950			0.319				0.459			0.541	
Satd. Flow (perm)	3433	3059	1583	594	3438	1583	0	767	0	0	920	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			72		109				27
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1021			1211			1115				1147
Travel Time (s)		15.5			18.3			21.7				22.3
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
Heavy Vehicles (%)	2%	18%	2%	2%	5%	2%	2%	2%	2%	12%	2%	2%
Adj. Flow (vph)	166	736	38	46	5391	166	36	8	139	456	10	377
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	736	38	46	5391	166	0	183	0	0	466	377
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases			2	6		6	8		4			4
Detector Phase	5	2	2	1	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	15.0	25.7	25.7	15.0	40.8	40.8	32.6	32.6		40.0	40.0	15.0
Total Split (s)	15.0	83.0	83.0	15.0	83.0	83.0	52.0	52.0		52.0	52.0	15.0
Total Split (%)	10.0%	55.3%	55.3%	10.0%	55.3%	55.3%	34.7%	34.7%		34.7%	34.7%	10.0%
Maximum Green (s)	8.4	76.3	76.3	8.3	76.3	76.3	45.8	45.8		45.8	45.8	8.4
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	4.0	4.0		4.0	4.0	4.4
All-Red Time (s)	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.2		2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.6	6.7	6.7	6.7	6.7	6.7		6.2			6.2	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	None

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Flash Dont Walk (s)		15.0	15.0		28.0	28.0	22.0	22.0		26.0	26.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	8.4	79.5	79.5	84.3	76.3	76.3		45.8			45.8	60.4
Actuated g/C Ratio	0.06	0.53	0.53	0.56	0.51	0.51		0.31			0.31	0.40
v/c Ratio	0.86	0.45	0.04	0.12	3.08	0.20		0.59			1.66	0.58
Control Delay	106.6	23.6	0.6	12.7	956.4	11.7		26.5			347.4	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	106.6	23.6	0.6	12.7	956.4	11.7		26.5			347.4	36.4
LOS	F	C	A	B	F	B		C			F	D
Approach Delay		37.3			920.6			26.5			208.3	
Approach LOS		D			F			C			F	
Queue Length 50th (ft)	84	238	0	17	-4822	47		60			-660	265
Queue Length 95th (ft)	#153	295	3	35	#4815	92		153			#883	376
Internal Link Dist (ft)		941			1131			1035			1067	
Turn Bay Length (ft)	150		125	200		175						275
Base Capacity (vph)	192	1622	873	400	1748	840		309			280	653
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	0.86	0.45	0.04	0.12	3.08	0.20		0.59			1.66	0.58

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 3.08
 Intersection Signal Delay: 710.0
 Intersection LOS: F
 Intersection Capacity Utilization 183.1%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/4/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	277	2056	1878	231	225	523
Future Volume (vph)	277	2056	1878	231	225	523
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400			0	0	450
Storage Lanes	1			0	1	1
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.984			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1504	3252	3190	0	1583	1482
Flt Permitted	0.043				0.950	
Satd. Flow (perm)	68	3252	3190	0	1583	1482
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			16			9
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	20%	11%	12%	6%	14%	9%
Adj. Flow (vph)	308	2284	2087	257	250	581
Shared Lane Traffic (%)						
Lane Group Flow (vph)	308	2284	2344	0	250	581
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		7	5
Permitted Phases	2					7
Detector Phase	5	2	6		7	5
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		4.0	10.0
Minimum Split (s)	16.0	22.0	50.0		15.0	16.0
Total Split (s)	28.0	121.0	93.0		24.0	28.0
Total Split (%)	19.3%	83.4%	64.1%		16.6%	19.3%
Maximum Green (s)	22.0	115.0	87.0		18.0	22.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.0	3.5
Recall Mode	None	Min	Min		None	None

CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/4/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)		5.0	5.0			
Flash Dont Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	115.0	115.0	87.0		18.0	46.0
Actuated g/C Ratio	0.79	0.79	0.60		0.12	0.32
v/c Ratio	1.14	0.89	1.22		1.28	1.22
Control Delay	139.2	16.1	132.5		206.3	158.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	139.2	16.1	132.5		206.3	158.3
LOS	F	B	F		F	F
Approach Delay		30.7	132.5		172.8	
Approach LOS		C	F		F	
Queue Length 50th (ft)	~294	674	~1429		~297	~668
Queue Length 95th (ft)	#491	816	#1557		#478	#907
Internal Link Dist (ft)		976	2198		992	
Turn Bay Length (ft)	400					450
Base Capacity (vph)	271	2579	1920		196	476
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	1.14	0.89	1.22		1.28	1.22

Intersection Summary














Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 145
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.28
 Intersection Signal Delay: 92.6
 Intersection LOS: F
 Intersection Capacity Utilization 102.1%
 ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

2/4/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (vph)	376	5	940	181	2	2097
Future Volume (vph)	376	5	940	181	2	2097
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1538	1770	3539
Flt Permitted	0.950				0.088	
Satd. Flow (perm)	1770	1583	1863	1538	164	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		6		201		
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%
Adj. Flow (vph)	418	6	1044	201	2	2330
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	6	1044	201	2	2330
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	10		10			10
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	custom	custom	NA
Protected Phases	4			6		
Permitted Phases		4	6		2	2
Detector Phase	4	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	27.0	27.0	63.0	63.0	63.0	63.0
Total Split (%)	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Maximum Green (s)	21.0	21.0	57.0	57.0	57.0	57.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min

CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

2/4/2017



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	21.0	21.0	57.0	57.0	57.0	57.0
Actuated g/C Ratio	0.23	0.23	0.63	0.63	0.63	0.63
v/c Ratio	1.01	0.02	0.89	0.19	0.02	1.04
Control Delay	83.8	16.4	25.1	1.5	7.0	48.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.8	16.4	25.1	1.5	7.0	48.4
LOS	F	B	C	A	A	D
Approach Delay	82.8		21.3			48.4
Approach LOS	F		C			D
Queue Length 50th (ft)	~243	0	446	0	0	~760
Queue Length 95th (ft)	#432	10	#779	23	3	#898
Internal Link Dist (ft)	1466		2411			2489
Turn Bay Length (ft)		200		240	200	
Base Capacity (vph)	413	373	1179	1047	103	2241
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.02	0.89	0.19	0.02	1.04

Intersection Summary

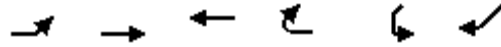
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 43.6
 Intersection LOS: D
 Intersection Capacity Utilization 88.8%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 31: SC 41 & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/4/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	199	2089	956	2	4	329
Future Volume (vph)	199	2089	956	2	4	329
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt					0.866	
Flt Protected	0.950				0.999	
Satd. Flow (prot)	1271	3539	3539	0	1307	0
Flt Permitted	0.950				0.999	
Satd. Flow (perm)	1271	3539	3539	0	1307	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		44.4	50.0		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	42%	2%	2%	2%	2%	26%
Adj. Flow (vph)	221	2321	1062	2	4	366
Shared Lane Traffic (%)						
Lane Group Flow (vph)	221	2321	1064	0	370	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	85.0%			ICU Level of Service E		
Analysis Period (min)	15					

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1165	0	0	4848	2	4	0	0	2	0	0
Future Volume (vph)	11	1165	0	0	4848	2	4	0	0	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected	0.950							0.950			0.950	
Satd. Flow (prot)	986	3167	0	0	3437	0	0	1770	0	0	1770	0
Flt Permitted	0.950							0.950			0.950	
Satd. Flow (perm)	986	3167	0	0	3437	0	0	1770	0	0	1770	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1211			4642			1450			987	
Travel Time (s)		15.0			57.5			33.0			22.4	
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
Heavy Vehicles (%)	83%	14%	2%	2%	5%	100%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	12	1294	0	0	5387	2	4	0	0	2	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1294	0	0	5389	0	0	4	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	144.1%
ICU Level of Service	H
Analysis Period (min)	15

CLEMENTS FERRY RD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	2026	0	4	1607	125	5	15	5	250	40	535
Future Volume (vph)	135	2026	0	4	1607	125	5	15	5	250	40	535
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	0		0	0		0	0		450
Storage Lanes	2		0	0		0	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.989			0.972				0.850
Flt Protected	0.950							0.990			0.959	
Satd. Flow (prot)	3433	3195	0	0	3319	0	0	1792	0	0	1786	1583
Flt Permitted	0.950				0.947			0.758			0.735	
Satd. Flow (perm)	3433	3195	0	0	3144	0	0	1372	0	0	1369	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11			6				27
Link Speed (mph)		45			45			30				30
Link Distance (ft)		1977			2220			351				1076
Travel Time (s)		30.0			33.6			8.0				24.5
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
Heavy Vehicles (%)	2%	13%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	150	2251	0	4	1786	139	6	17	6	278	44	594
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	2251	0	0	1929	0	0	29	0	0	322	594
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6			8			4		4
Detector Phase	5	2		6	6		8	8		4	4	5
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	15.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	15.0
Total Split (s)	17.0	91.0		74.0	74.0		29.0	29.0		29.0	29.0	17.0
Total Split (%)	14.2%	75.8%		61.7%	61.7%		24.2%	24.2%		24.2%	24.2%	14.2%
Maximum Green (s)	11.0	85.0		68.0	68.0		23.0	23.0		23.0	23.0	11.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0			6.0			6.0			6.0	6.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min		Min	Min		Min	Min		Min	Min	None

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

2/4/2017

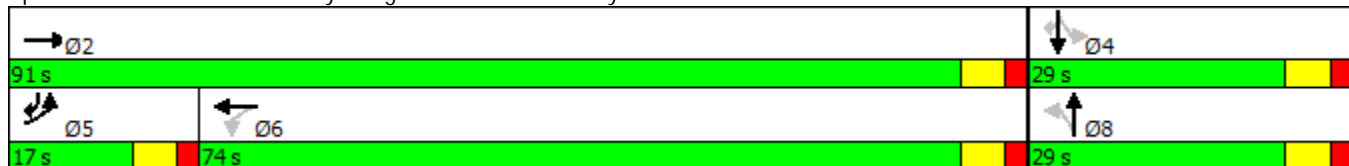


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	11.0	85.0			68.0			23.0			23.0	40.0
Actuated g/C Ratio	0.09	0.71			0.57			0.19			0.19	0.33
v/c Ratio	0.48	0.99			1.08			0.11			1.23	1.09
Control Delay	57.3	35.6			72.9			35.0			173.2	102.0
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	57.3	35.6			72.9			35.0			173.2	102.0
LOS	E	D			E			C			F	F
Approach Delay		36.9			72.9			35.0			127.0	
Approach LOS		D			E			C			F	
Queue Length 50th (ft)	57	808			-878			15			~308	~504
Queue Length 95th (ft)	92	#1084			#1020			42			#491	#732
Internal Link Dist (ft)		1897			2140			271			996	
Turn Bay Length (ft)	225											450
Base Capacity (vph)	314	2263			1786			267			262	545
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.48	0.99			1.08			0.11			1.23	1.09

Intersection Summary

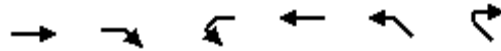
Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.23
 Intersection Signal Delay: 65.7
 Intersection LOS: E
 Intersection Capacity Utilization 100.0%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 37: Cainhoy Village Rd & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

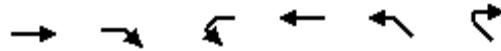
2/4/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓
Traffic Volume (vph)	1752	29	14	2639	199	73
Future Volume (vph)	1752	29	14	2639	199	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3085	1583	1770	3406	1770	1583
Flt Permitted			0.079		0.950	
Satd. Flow (perm)	3085	1583	147	3406	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		32				41
Link Speed (mph)	45			45	30	
Link Distance (ft)	3159			595	912	
Travel Time (s)	47.9			9.0	20.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	17%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1947	32	16	2932	221	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1947	32	16	2932	221	81
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2	6			4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	118.0	118.0	118.0	118.0	22.0	22.0
Total Split (%)	84.3%	84.3%	84.3%	84.3%	15.7%	15.7%
Maximum Green (s)	112.0	112.0	112.0	112.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/4/2017

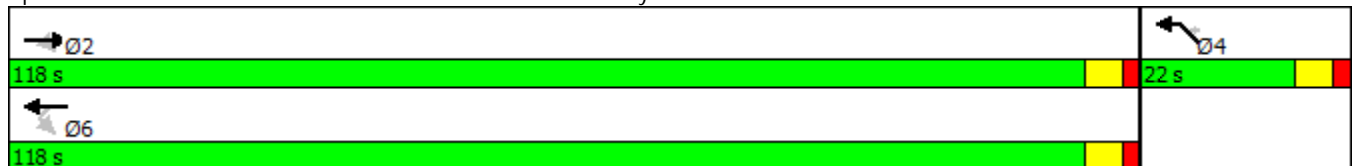


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	112.0	112.0	112.0	112.0	16.0	16.0
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.11	0.11
v/c Ratio	0.79	0.03	0.14	1.08	1.09	0.37
Control Delay	10.6	0.9	6.0	58.0	146.6	36.0
Queue Delay	0.0	0.0	0.0	10.3	0.0	0.0
Total Delay	10.6	0.9	6.0	68.3	146.6	36.0
LOS	B	A	A	E	F	D
Approach Delay	10.5			68.0	116.9	
Approach LOS	B			E	F	
Queue Length 50th (ft)	425	0	3	~1561	~227	34
Queue Length 95th (ft)	516	6	10	#1674	#397	87
Internal Link Dist (ft)	3079			515	832	
Turn Bay Length (ft)		240	300		150	
Base Capacity (vph)	2468	1272	117	2724	202	217
Starvation Cap Reductn	0	0	0	177	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.03	0.14	1.15	1.09	0.37

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 49.0
 Intersection LOS: D
 Intersection Capacity Utilization 94.0%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 39: Nelliefield Creek Drive & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	1825	7	9	2341	20	208	5	34	20	5	110
Future Volume (vph)	20	1825	7	9	2341	20	208	5	34	20	5	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		275	320		0	200		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999			0.870				0.890
Flt Protected	0.950			0.950			0.950					0.993
Satd. Flow (prot)	1770	3112	1583	1770	3372	0	1770	1621	0	0	1646	0
Flt Permitted	0.047			0.050			0.315					0.939
Satd. Flow (perm)	88	3112	1583	93	3372	0	587	1621	0	0	1557	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113		1			38				120
Link Speed (mph)		45			45			30				30
Link Distance (ft)		595			2028			1332				1546
Travel Time (s)		9.0			30.7			30.3				35.1
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
Heavy Vehicles (%)	2%	16%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	22	2028	8	10	2601	22	231	6	38	22	6	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	2028	8	10	2623	0	231	44	0	0	150	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8				4
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		4		4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0		4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0		22.0	22.0		22.0		22.0
Total Split (s)	15.0	86.0	86.0	15.0	86.0		22.0	44.0		22.0		22.0
Total Split (%)	10.3%	59.3%	59.3%	10.3%	59.3%		15.2%	30.3%		15.2%		15.2%
Maximum Green (s)	9.0	80.0	80.0	9.0	80.0		16.0	38.0		16.0		16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0				6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	None	Min	Min	None	Min		Min	Min		Min		Min

CLEMENTS FERRY RD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

2/4/2017

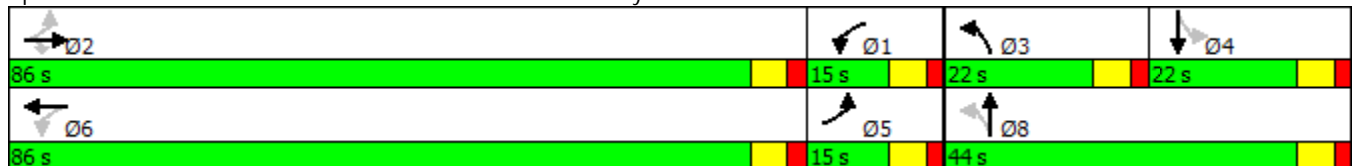


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	
Act Effct Green (s)	87.5	84.5	84.5	85.2	80.4		28.1	28.1				6.6
Actuated g/C Ratio	0.69	0.67	0.67	0.67	0.63		0.22	0.22				0.05
v/c Ratio	0.18	0.98	0.01	0.08	1.23		0.84	0.11				0.77
Control Delay	17.1	36.1	0.0	11.1	130.6		71.6	15.1				41.9
Queue Delay	0.0	41.5	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	17.1	77.6	0.0	11.1	130.6		71.6	15.1				41.9
LOS	B	E	A	B	F		E	B				D
Approach Delay		76.6			130.1			62.5				41.9
Approach LOS		E			F			E				D
Queue Length 50th (ft)	5	705	0	2	~1466		179	4				25
Queue Length 95th (ft)	16	#1232	0	10	#1738		#259	36				99
Internal Link Dist (ft)		515			1948			1252				1466
Turn Bay Length (ft)	200		275	320			200					
Base Capacity (vph)	183	2076	1093	185	2139		280	514				302
Starvation Cap Reductn	0	312	0	0	0		0	0				0
Spillback Cap Reductn	0	0	0	0	0		0	0				0
Storage Cap Reductn	0	0	0	0	0		0	0				0
Reduced v/c Ratio	0.12	1.15	0.01	0.05	1.23		0.82	0.09				0.50

Intersection Summary

Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 126.7
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.23
 Intersection Signal Delay: 102.4
 Intersection LOS: F
 Intersection Capacity Utilization 93.5%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 41: Peninsula Cove Drive & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	1840	20	23	2127	20	132	5	147	20	5	110
Future Volume (vph)	20	1840	20	23	2127	20	132	5	147	20	5	110
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	200		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.999			0.855				0.890
Flt Protected	0.950			0.950			0.950					0.993
Satd. Flow (prot)	1770	3110	0	1770	3341	0	1770	1593	0	0	1646	0
Flt Permitted	0.041			0.042			0.249					0.914
Satd. Flow (perm)	76	3110	0	78	3341	0	464	1593	0	0	1515	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			20				24
Link Speed (mph)		45			45			30				30
Link Distance (ft)		2028			1977			1280				1228
Travel Time (s)		30.7			30.0			29.1				27.9
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
Heavy Vehicles (%)	2%	16%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	22	2044	22	26	2363	22	147	6	163	22	6	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	2066	0	26	2385	0	147	169	0	0	150	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8				4
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		3	8		4		4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		15.0	22.0		22.0		22.0
Total Split (s)	103.0	103.0		103.0	103.0		15.0	37.0		22.0		22.0
Total Split (%)	73.6%	73.6%		73.6%	73.6%		10.7%	26.4%		15.7%		15.7%
Maximum Green (s)	97.0	97.0		97.0	97.0		9.0	31.0		16.0		16.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0				6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	Min	Min		Min	Min		None	Min		Min		Min

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/4/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	97.0	97.0		97.0	97.0		27.8	27.8			12.8	
Actuated g/C Ratio	0.71	0.71		0.71	0.71		0.20	0.20			0.09	
v/c Ratio	0.42	0.94		0.47	1.01		0.82	0.50			0.92	
Control Delay	36.7	27.7		43.6	40.7		81.1	47.7			102.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	36.7	27.7		43.6	40.7		81.1	47.7			102.8	
LOS	D	C		D	D		F	D			F	
Approach Delay		27.8			40.8			63.2			102.8	
Approach LOS		C			D			E			F	
Queue Length 50th (ft)	8	798		10	~1195		115	118			114	
Queue Length 95th (ft)	#54	#1117		#66	#1350		#221	193			#226	
Internal Link Dist (ft)		1948			1897			1200			1148	
Turn Bay Length (ft)	200			200			200					
Base Capacity (vph)	53	2205		55	2369		180	376			198	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.42	0.94		0.47	1.01		0.82	0.45			0.76	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 136.9
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 38.6
 Intersection LOS: D
 Intersection Capacity Utilization 91.9%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 43: Rivers Reach Dr & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 4: Main Entrance Site & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	1718	677	406	1584	77	380	171	266	33	315	143
Future Volume (vph)	250	1718	677	406	1584	77	380	171	266	33	315	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		550	350		0	550		325	0		325
Storage Lanes	1		1	2		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.995	
Satd. Flow (prot)	1770	3539	1583	3433	3514	0	1770	1863	1583	0	1853	1583
Flt Permitted	0.065			0.950			0.125				0.945	
Satd. Flow (perm)	121	3539	1583	3433	3514	0	233	1863	1583	0	1760	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			65		4				214			159
Link Speed (mph)		45			55			35				30
Link Distance (ft)		4642			1391			1347				1355
Travel Time (s)		70.3			17.2			26.2				30.8
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
Adj. Flow (vph)	278	1909	752	451	1760	86	422	190	296	37	350	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	278	1909	752	451	1846	0	422	190	296	0	387	159
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	pm+ov	Prot	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	3	1	6		3	8			4	
Permitted Phases	2		2				8		8	4		4
Detector Phase	5	2	3	1	6		3	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	15.0	15.0	22.0		15.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	21.0	68.0	29.0	21.0	68.0		29.0	61.0	61.0	32.0	32.0	32.0
Total Split (%)	14.0%	45.3%	19.3%	14.0%	45.3%		19.3%	40.7%	40.7%	21.3%	21.3%	21.3%
Maximum Green (s)	15.0	62.0	23.0	15.0	62.0		23.0	55.0	55.0	26.0	26.0	26.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min		None	Min	Min	Min	Min	Min
Walk Time (s)		5.0			5.0			5.0	5.0	5.0	5.0	5.0

CLEMENTS FERRY RD WIDENING
 4: Main Entrance Site & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		11.0			11.0			11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effect Green (s)	77.0	62.0	91.0	15.0	62.0		55.0	55.0	55.0		26.0	26.0
Actuated g/C Ratio	0.51	0.41	0.61	0.10	0.41		0.37	0.37	0.37		0.17	0.17
v/c Ratio	1.22	1.31	0.76	1.31	1.27		1.31	0.28	0.41		1.27	0.39
Control Delay	171.8	179.2	25.8	210.8	164.1		198.6	34.9	11.6		192.6	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	171.8	179.2	25.8	210.8	164.1		198.6	34.9	11.6		192.6	10.3
LOS	F	F	C	F	F		F	C	B		F	B
Approach Delay		139.3			173.3			103.4			139.5	
Approach LOS		F			F			F			F	
Queue Length 50th (ft)	~283	~1257	477	~292	~1198		~481	131	53		~476	0
Queue Length 95th (ft)	#474	#1391	662	#406	#1335		#701	196	134		#687	65
Internal Link Dist (ft)		4562			1311			1267			1275	
Turn Bay Length (ft)	350		550	350			550		325			325
Base Capacity (vph)	227	1462	985	343	1454		321	683	715		305	405
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	1.22	1.31	0.76	1.31	1.27		1.31	0.28	0.41		1.27	0.39

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.31
 Intersection Signal Delay: 146.1
 Intersection LOS: F
 Intersection Capacity Utilization 119.5%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Main Entrance Site & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
8: Future Site Road & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	2616	290	174	1350	39	162	78	114	16	138	72
Future Volume (vph)	127	2616	290	174	1350	39	162	78	114	16	138	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		400	200		0	400		100	0		100
Storage Lanes	1		1	1		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996					0.850		0.850
Flt Protected	0.950			0.950			0.950				0.995	
Satd. Flow (prot)	1770	3539	1583	1770	3525	0	1770	1863	1583	0	1853	1583
Flt Permitted	0.089			0.044			0.218				0.954	
Satd. Flow (perm)	166	3539	1583	82	3525	0	406	1863	1583	0	1777	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			222		3				104			109
Link Speed (mph)		45			55			30				30
Link Distance (ft)		1391			3159			1306				1258
Travel Time (s)		21.1			39.2			29.7				28.6
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
Adj. Flow (vph)	141	2907	322	193	1500	43	180	87	127	18	153	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	2907	322	193	1543	0	180	87	127	0	171	80
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8				4
Permitted Phases	2		2	6			8		8	4		4
Detector Phase	5	2	2	1	6		3	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0		15.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	20.0	98.0	98.0	15.0	93.0		15.0	37.0	37.0	22.0	22.0	22.0
Total Split (%)	13.3%	65.3%	65.3%	10.0%	62.0%		10.0%	24.7%	24.7%	14.7%	14.7%	14.7%
Maximum Green (s)	14.0	92.0	92.0	9.0	87.0		9.0	31.0	31.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	Min	Min	Min	Min	Min
Walk Time (s)		5.0	5.0		5.0			5.0	5.0	5.0	5.0	5.0

CLEMENTS FERRY RD WIDENING
 8: Future Site Road & Clements Ferry Road

3/2/2017

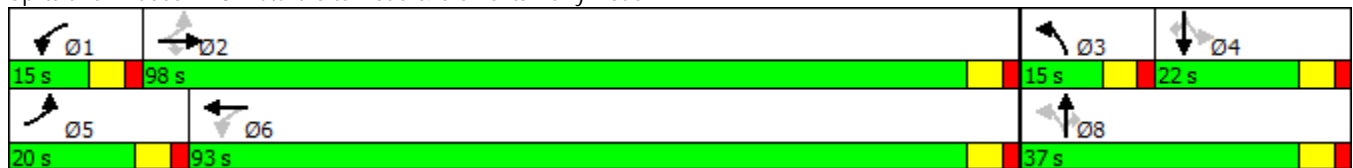


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0	0	0	0
Act Effct Green (s)	101.9	92.0	92.0	100.2	91.2		30.3	30.3	30.3		15.3	15.3
Actuated g/C Ratio	0.68	0.62	0.62	0.67	0.61		0.20	0.20	0.20		0.10	0.10
v/c Ratio	0.64	1.33	0.30	1.24	0.72		1.10	0.23	0.32		0.94	0.31
Control Delay	26.4	180.4	4.8	184.3	23.0		148.8	51.6	15.3		119.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	26.4	180.4	4.8	184.3	23.0		148.8	51.6	15.3		119.3	7.2
LOS	C	F	A	F	C		F	D	B		F	A
Approach Delay		157.1			41.0			84.3			83.6	
Approach LOS		F			D			F			F	
Queue Length 50th (ft)	39	~1944	39	~182	524		~173	72	18		168	0
Queue Length 95th (ft)	98	#2052	85	#356	663		#296	124	77		#311	25
Internal Link Dist (ft)		1311			3079			1226			1178	
Turn Bay Length (ft)	200		400	200			400		100			100
Base Capacity (vph)	268	2181	1060	156	2154		164	387	411		190	267
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.53	1.33	0.30	1.24	0.72		1.10	0.22	0.31		0.90	0.30

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 149.3
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.33
 Intersection Signal Delay: 113.9 Intersection LOS: F
 Intersection Capacity Utilization 119.1% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 8: Future Site Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	1426	18	32	1435	98	39	8	127	161	16	214
Future Volume (vph)	393	1426	18	32	1435	98	39	8	127	161	16	214
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		125	200		175	0		0	0		275
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.901				0.850
Flt Protected	0.950			0.950				0.989			0.957	
Satd. Flow (prot)	1770	3059	1583	1770	3438	1583	0	1660	0	0	1637	1583
Flt Permitted	0.950			0.113				0.759			0.500	
Satd. Flow (perm)	1770	3059	1583	210	3438	1583	0	1274	0	0	855	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			120		84				238
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1021			1211			1115				1147
Travel Time (s)		15.5			18.3			21.7				22.3
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
Heavy Vehicles (%)	2%	18%	2%	2%	5%	2%	2%	2%	2%	12%	2%	2%
Adj. Flow (vph)	437	1584	20	36	1594	109	43	9	141	179	18	238
Shared Lane Traffic (%)												
Lane Group Flow (vph)	437	1584	20	36	1594	109	0	193	0	0	197	238
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases			2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	15.0	25.7	25.7	15.0	40.8	40.8	32.6	32.6		40.0	40.0	40.0
Total Split (s)	39.0	95.0	95.0	15.0	71.0	71.0	40.0	40.0		40.0	40.0	40.0
Total Split (%)	26.0%	63.3%	63.3%	10.0%	47.3%	47.3%	26.7%	26.7%		26.7%	26.7%	26.7%
Maximum Green (s)	32.4	88.3	88.3	8.3	64.3	64.3	33.8	33.8		33.8	33.8	33.8
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.2		2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.6	6.7	6.7	6.7	6.7	6.7		6.2			6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	None

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Flash Dont Walk (s)		15.0	15.0		28.0	28.0	22.0	22.0		26.0	26.0	26.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	0
Act Effct Green (s)	32.4	91.5	91.5	72.3	64.3	64.3		33.8			33.8	33.8
Actuated g/C Ratio	0.22	0.61	0.61	0.48	0.43	0.43		0.23			0.23	0.23
v/c Ratio	1.14	0.85	0.02	0.20	1.08	0.15		0.55			1.03	0.44
Control Delay	142.5	30.1	0.1	14.2	89.7	3.7		34.9			127.6	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	142.5	30.1	0.1	14.2	89.7	3.7		34.9			127.6	8.1
LOS	F	C	A	B	F	A		C			F	A
Approach Delay		53.9			82.8			34.9			62.2	
Approach LOS		D			F			C			E	
Queue Length 50th (ft)	~499	665	0	10	-915	0		94			~204	0
Queue Length 95th (ft)	#718	790	0	22	#1053	31		182			#371	73
Internal Link Dist (ft)		941			1131			1035			1067	
Turn Bay Length (ft)	300		125	200		175						275
Base Capacity (vph)	382	1866	994	187	1473	747		352			192	541
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	1.14	0.85	0.02	0.19	1.08	0.15		0.55			1.03	0.44

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.14

Intersection Signal Delay: 65.3

Intersection LOS: E

Intersection Capacity Utilization 103.0%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

3/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	348	1889	543	148	324	406
Future Volume (vph)	348	1889	543	148	324	406
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400			0	0	450
Storage Lanes	1			0	1	1
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.968			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1504	3252	3156	0	1583	1482
Flt Permitted	0.240				0.950	
Satd. Flow (perm)	380	3252	3156	0	1583	1482
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			28			110
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	20%	11%	12%	6%	14%	9%
Adj. Flow (vph)	387	2099	603	164	360	451
Shared Lane Traffic (%)						
Lane Group Flow (vph)	387	2099	767	0	360	451
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		7	5
Permitted Phases	2					7
Detector Phase	5	2	6		7	5
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		4.0	10.0
Minimum Split (s)	16.0	22.0	50.0		15.0	16.0
Total Split (s)	45.0	98.0	53.0		37.0	45.0
Total Split (%)	33.3%	72.6%	39.3%		27.4%	33.3%
Maximum Green (s)	39.0	92.0	47.0		31.0	39.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.0	3.5
Recall Mode	None	Min	Min		None	None

CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

3/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)		5.0	5.0			
Flash Dont Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	92.0	92.0	59.3		31.0	63.7
Actuated g/C Ratio	0.68	0.68	0.44		0.23	0.47
v/c Ratio	0.80	0.95	0.55		0.99	0.60
Control Delay	26.9	30.1	30.4		96.9	21.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	26.9	30.1	30.4		96.9	21.5
LOS	C	C	C		F	C
Approach Delay		29.6	30.4		55.0	
Approach LOS		C	C		D	
Queue Length 50th (ft)	138	801	250		317	214
Queue Length 95th (ft)	257	#1006	365		#523	266
Internal Link Dist (ft)		976	2198		992	
Turn Bay Length (ft)	400					450
Base Capacity (vph)	583	2216	1401		363	882
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.66	0.95	0.55		0.99	0.51

Intersection Summary














Area Type: Other
 Cycle Length: 135
 Actuated Cycle Length: 135
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 34.8
 Intersection LOS: C
 Intersection Capacity Utilization 80.2%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

3/2/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (vph)	211	3	584	386	2	1905
Future Volume (vph)	211	3	584	386	2	1905
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1538	1770	3539
Flt Permitted	0.950				0.361	
Satd. Flow (perm)	1770	1583	1863	1538	672	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		3		252		
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%
Adj. Flow (vph)	234	3	649	429	2	2117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	234	3	649	429	2	2117
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	10		10			10
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Free	custom	NA
Protected Phases	4					
Permitted Phases		4	6	Free	2	2
Detector Phase	4	4	6		2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0
Total Split (s)	22.0	22.0	78.0		78.0	78.0
Total Split (%)	22.0%	22.0%	78.0%		78.0%	78.0%
Maximum Green (s)	16.0	16.0	72.0		72.0	72.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		Min	Min

CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

3/2/2017

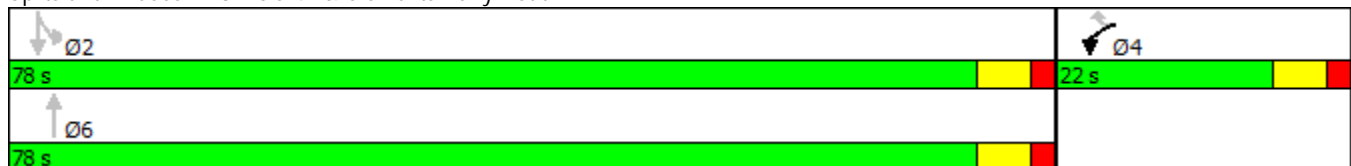


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	14.9	14.9	67.6	94.6	67.6	67.6
Actuated g/C Ratio	0.16	0.16	0.71	1.00	0.71	0.71
v/c Ratio	0.84	0.01	0.49	0.28	0.00	0.84
Control Delay	65.8	23.7	7.5	0.5	4.0	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	23.7	7.5	0.5	4.0	13.6
LOS	E	C	A	A	A	B
Approach Delay	65.3		4.7			13.6
Approach LOS	E		A			B
Queue Length 50th (ft)	146	0	152	0	0	423
Queue Length 95th (ft)	#274	8	219	0	2	538
Internal Link Dist (ft)	1466		2411			2489
Turn Bay Length (ft)		200		240	200	
Base Capacity (vph)	302	272	1430	1538	515	2716
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.01	0.45	0.28	0.00	0.78

Intersection Summary

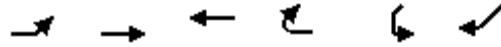
Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 94.6
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 14.4
 Intersection LOS: B
 Intersection Capacity Utilization 74.3%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 31: SC 41 & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/2/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	340	1880	589	6	6	100
Future Volume (vph)	340	1880	589	6	6	100
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.873	
Flt Protected	0.950				0.997	
Satd. Flow (prot)	1271	3539	3532	0	1327	0
Flt Permitted	0.950				0.997	
Satd. Flow (perm)	1271	3539	3532	0	1327	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		44.4	50.0		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	42%	2%	2%	2%	2%	26%
Adj. Flow (vph)	378	2089	654	7	7	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	378	2089	661	0	118	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	65.2%			ICU Level of Service C		
Analysis Period (min)	15					

CLEMENTS FERRY RD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1962	2	0	1843	2	3	0	0	2	0	10
Future Volume (vph)	5	1962	2	0	1843	2	3	0	0	2	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt												0.886
Flt Protected	0.950							0.950				0.992
Satd. Flow (prot)	986	3167	0	0	3435	0	0	1770	0	0	1637	0
Flt Permitted	0.950							0.950				0.992
Satd. Flow (perm)	986	3167	0	0	3435	0	0	1770	0	0	1637	0
Link Speed (mph)		55			55			30				30
Link Distance (ft)		1211			4642			1450				987
Travel Time (s)		15.0			57.5			33.0				22.4
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
Heavy Vehicles (%)	83%	14%	2%	2%	5%	100%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	6	2180	2	0	2048	2	3	0	0	2	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	2182	0	0	2050	0	0	3	0	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	64.3%
Analysis Period (min)	15
	ICU Level of Service C

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	348	1954	7	2	930	203	5	29	0	130	16	179
Future Volume (vph)	348	1954	7	2	930	203	5	29	0	130	16	179
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	0		0	0		0	0		450
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.973							0.850
Flt Protected	0.950							0.992			0.957	
Satd. Flow (prot)	1770	3193	0	0	3285	0	0	1848	0	0	1783	1583
Flt Permitted	0.950				0.951			0.942			0.722	
Satd. Flow (perm)	1770	3193	0	0	3124	0	0	1755	0	0	1345	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			30							109
Link Speed (mph)		45			45			30				30
Link Distance (ft)		1977			2220			351				1076
Travel Time (s)		30.0			33.6			8.0				24.5
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
Heavy Vehicles (%)	2%	13%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	387	2171	8	2	1033	226	6	32	0	144	18	199
Shared Lane Traffic (%)												
Lane Group Flow (vph)	387	2179	0	0	1261	0	0	38	0	0	162	199
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6			8			4		4
Detector Phase	5	2		6	6		8	8		4	4	5
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	15.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	15.0
Total Split (s)	33.0	128.0		95.0	95.0		22.0	22.0		22.0	22.0	33.0
Total Split (%)	22.0%	85.3%		63.3%	63.3%		14.7%	14.7%		14.7%	14.7%	22.0%
Maximum Green (s)	27.0	122.0		89.0	89.0		16.0	16.0		16.0	16.0	27.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0			6.0			6.0			6.0	6.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min		Min	Min		Min	Min		Min	Min	None

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/2/2017

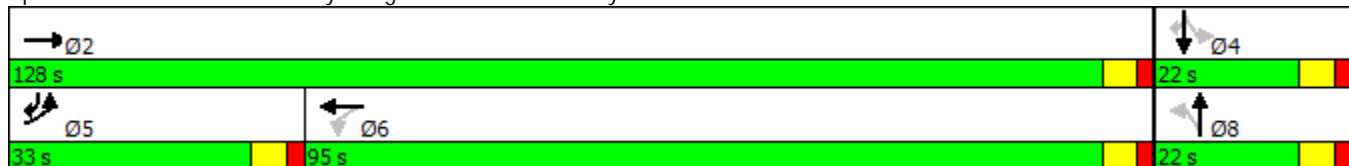


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	27.7	98.4		64.5			16.4			16.4	50.3	
Actuated g/C Ratio	0.22	0.77		0.51			0.13			0.13	0.40	
v/c Ratio	1.01	0.88		0.79			0.17			0.94	0.29	
Control Delay	97.8	15.0		27.8			58.7			110.3	16.2	
Queue Delay	0.0	0.0		0.0			0.0			0.0	0.0	
Total Delay	97.8	15.0		27.8			58.7			110.3	16.2	
LOS	F	B		C			E			F	B	
Approach Delay		27.5		27.8			58.7			58.4		
Approach LOS		C		C			E			E		
Queue Length 50th (ft)	~345	552		414			29			136	48	
Queue Length 95th (ft)	#673	662		493			74			#339	133	
Internal Link Dist (ft)		1897		2140			271			996		
Turn Bay Length (ft)	225											450
Base Capacity (vph)	385	2937		2253			226			173	692	
Starvation Cap Reductn	0	0		0			0			0	0	
Spillback Cap Reductn	0	0		0			0			0	0	
Storage Cap Reductn	0	0		0			0			0	0	
Reduced v/c Ratio	1.01	0.74		0.56			0.17			0.94	0.29	

Intersection Summary

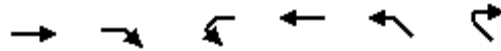
Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 127.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 30.5 Intersection LOS: C
 Intersection Capacity Utilization 116.2% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 37: Cainhoy Village Rd & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

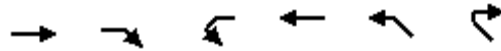
3/2/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓
Traffic Volume (vph)	2008	151	82	1035	49	32
Future Volume (vph)	2008	151	82	1035	49	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3085	1583	1770	3406	1770	1583
Flt Permitted			0.060		0.000	
Satd. Flow (perm)	3085	1583	112	3406	0	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		168				26
Link Speed (mph)	45			45	30	
Link Distance (ft)	3159			595	912	
Travel Time (s)	47.9			9.0	20.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	17%	2%	2%	6%	2%	2%
Adj. Flow (vph)	2231	168	91	1150	54	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2231	168	91	1150	54	36
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA	Perm	Perm	NA	pm+pt	Perm
Protected Phases	2			6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	6	6	7	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	128.0	128.0	128.0	128.0	22.0	22.0
Total Split (%)	85.3%	85.3%	85.3%	85.3%	14.7%	14.7%
Maximum Green (s)	122.0	122.0	122.0	122.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

3/2/2017

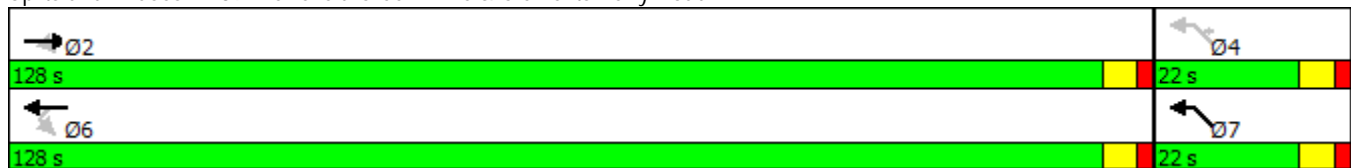


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	122.1	122.1	122.1	122.1	8.7	8.7
Actuated g/C Ratio	0.86	0.86	0.86	0.86	0.06	0.06
v/c Ratio	0.85	0.12	0.96	0.40	0.50	0.30
Control Delay	10.0	0.5	98.9	2.8	80.5	35.4
Queue Delay	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	10.0	0.5	98.9	3.4	80.5	35.4
LOS	B	A	F	A	F	D
Approach Delay	9.4			10.4	62.5	
Approach LOS	A			B	E	
Queue Length 50th (ft)	431	0	49	92	50	9
Queue Length 95th (ft)	673	11	#118	139	97	47
Internal Link Dist (ft)	3079			515	832	
Turn Bay Length (ft)		240	300		150	
Base Capacity (vph)	2636	1377	95	2910	198	200
Starvation Cap Reductn	0	0	0	1210	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.12	0.96	0.68	0.27	0.18

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 142.8
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 11.0
 Intersection LOS: B
 Intersection Capacity Utilization 78.4%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 39: Nelliefield Creek Drive & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1958	82	29	1046	33	24	5	18	11	6	39
Future Volume (vph)	57	1958	82	29	1046	33	24	5	18	11	6	39
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		275	320		0	200		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995			0.885			0.906	
Flt Protected	0.950			0.950			0.950				0.990	
Satd. Flow (prot)	1770	3112	1583	1770	3362	0	1770	1649	0	0	1671	0
Flt Permitted	0.136			0.069			0.432				0.926	
Satd. Flow (perm)	253	3112	1583	129	3362	0	805	1649	0	0	1563	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113		3			20			43	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		595			2028			1332			1546	
Travel Time (s)		9.0			30.7			30.3			35.1	
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
Heavy Vehicles (%)	2%	16%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	63	2176	91	32	1162	37	27	6	20	12	7	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	2176	91	32	1199	0	27	26	0	0	62	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	15.0	86.0	86.0	15.0	86.0		22.0	44.0		22.0	22.0	
Total Split (%)	10.3%	59.3%	59.3%	10.3%	59.3%		15.2%	30.3%		15.2%	15.2%	
Maximum Green (s)	9.0	80.0	80.0	9.0	80.0		16.0	38.0		16.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		Min	Min		Min	Min	

CLEMENTS FERRY RD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	
Act Effct Green (s)	87.1	80.4	80.4	63.3	57.8		16.8	16.8			5.0	
Actuated g/C Ratio	0.75	0.69	0.69	0.55	0.50		0.14	0.14			0.04	
v/c Ratio	0.12	1.01	0.08	0.22	0.71		0.16	0.10			0.57	
Control Delay	6.6	41.4	1.0	14.4	28.5		46.9	22.7			45.3	
Queue Delay	0.0	34.9	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	6.6	76.3	1.0	14.4	28.5		46.9	22.7			45.3	
LOS	A	E	A	B	C		D	C			D	
Approach Delay		71.5			28.2			35.0			45.3	
Approach LOS		E			C			D			D	
Queue Length 50th (ft)	10	-952	0	7	427		19	4			15	
Queue Length 95th (ft)	25	#1196	13	15	486		47	31			61	
Internal Link Dist (ft)		515			1948			1252			1466	
Turn Bay Length (ft)	200		275	320			200					
Base Capacity (vph)	537	2156	1131	202	2330		254	555			253	
Starvation Cap Reductn	0	231	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.12	1.13	0.08	0.16	0.51		0.11	0.05			0.25	

Intersection Summary

Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 116
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 56.0
 Intersection LOS: E
 Intersection Capacity Utilization 74.1%
 ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 41: Peninsula Cove Drive & Clements Ferry Road

Ø2	Ø1	Ø3	Ø4
86 s	15 s	22 s	22 s
Ø6	Ø5	Ø8	
86 s	15 s	44 s	

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1873	121	116	1002	33	42	5	71	17	3	36
Future Volume (vph)	57	1873	121	116	1002	33	42	5	71	17	3	36
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.995			0.861			0.913	
Flt Protected	0.950			0.950			0.950				0.985	
Satd. Flow (prot)	1770	3107	0	1770	3332	0	1770	1604	0	0	1675	0
Flt Permitted	0.239			0.063			0.706				0.792	
Satd. Flow (perm)	445	3107	0	117	3332	0	1315	1604	0	0	1347	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			8			34			40	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2028			1977			1280			1228	
Travel Time (s)		30.7			30.0			29.1			27.9	
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
Heavy Vehicles (%)	2%	16%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	63	2081	134	129	1113	37	47	6	79	19	3	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	2215	0	129	1150	0	47	85	0	0	62	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	128.0	128.0		128.0	128.0		22.0	22.0		22.0	22.0	
Total Split (%)	85.3%	85.3%		85.3%	85.3%		14.7%	14.7%		14.7%	14.7%	
Maximum Green (s)	122.0	122.0		122.0	122.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	

CLEMENTS FERRY RD WIDENING
 43: Rivers Reach Dr & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	122.1	122.1		122.1	122.1		7.6	7.6				7.6
Actuated g/C Ratio	0.86	0.86		0.86	0.86		0.05	0.05				0.05
v/c Ratio	0.16	0.83		1.29	0.40		0.67	0.72				0.56
Control Delay	2.9	8.8		203.1	2.7		106.3	72.2				48.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				0.0
Total Delay	2.9	8.8		203.1	2.7		106.3	72.2				48.4
LOS	A	A		F	A		F	E				D
Approach Delay		8.6			22.9			84.3				48.4
Approach LOS		A			C			F				D
Queue Length 50th (ft)	7	372		-55	84		43	47				20
Queue Length 95th (ft)	20	634		#206	140		89	106				69
Internal Link Dist (ft)		1948			1897			1200				1148
Turn Bay Length (ft)	200						200					
Base Capacity (vph)	383	2678		100	2871		148	211				187
Starvation Cap Reductn	0	0		0	0		0	0				0
Spillback Cap Reductn	0	0		0	0		0	0				0
Storage Cap Reductn	0	0		0	0		0	0				0
Reduced v/c Ratio	0.16	0.83		1.29	0.40		0.32	0.40				0.33

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 141.7
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.29
 Intersection Signal Delay: 16.8
 Intersection LOS: B
 Intersection Capacity Utilization 87.0%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 43: Rivers Reach Dr & Clements Ferry Road

	Ø2	128 s		Ø4	22 s
	Ø6	128 s		Ø8	22 s

CLEMENTS FERRY RD WIDENING
4: Main Entrance Site & Clements Ferry Road

2/7/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1167	256	190	3553	40	965	55	386	55	335	330
Future Volume (vph)	90	1167	256	190	3553	40	965	55	386	55	335	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		550	550		0	550		325	0		325
Storage Lanes	1		1	1		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.998				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.993	
Satd. Flow (prot)	1770	3539	1583	1770	3532	0	1770	1863	1583	0	1850	1583
Flt Permitted	0.067			0.062			0.143				0.938	
Satd. Flow (perm)	125	3539	1583	115	3532	0	266	1863	1583	0	1747	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			65		1				153			65
Link Speed (mph)		45			55			35				30
Link Distance (ft)		4642			1391			1347				1355
Travel Time (s)		70.3			17.2			26.2				30.8
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
Adj. Flow (vph)	100	1297	284	211	3948	44	1072	61	429	61	372	367
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	1297	284	211	3992	0	1072	61	429	0	433	367
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8			4	5
Permitted Phases	2		2	6			8		8	4		4
Detector Phase	5	2	3	1	6		3	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	15.0	15.0	22.0		15.0	22.0	22.0	22.0	22.0	15.0
Total Split (s)	15.0	66.0	37.0	19.0	70.0		37.0	65.0	65.0	28.0	28.0	15.0
Total Split (%)	10.0%	44.0%	24.7%	12.7%	46.7%		24.7%	43.3%	43.3%	18.7%	18.7%	10.0%
Maximum Green (s)	9.0	60.0	31.0	13.0	64.0		31.0	59.0	59.0	22.0	22.0	9.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead			Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min		None	Min	Min	Min	Min	None
Walk Time (s)		5.0			5.0			5.0	5.0	5.0	5.0	

CLEMENTS FERRY RD WIDENING
 4: Main Entrance Site & Clements Ferry Road

2/7/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		11.0			11.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0			0			0	0	0	0	
Act Effect Green (s)	68.0	59.5	96.5	77.0	64.0		59.0	59.0	59.0		22.0	36.5
Actuated g/C Ratio	0.45	0.40	0.65	0.52	0.43		0.39	0.39	0.39		0.15	0.24
v/c Ratio	0.67	0.92	0.27	1.04	2.64		2.58	0.08	0.60		1.68	0.84
Control Delay	48.4	54.3	9.3	113.7	760.1		736.5	29.0	26.2		362.0	62.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	48.4	54.3	9.3	113.7	760.1		736.5	29.0	26.2		362.0	62.1
LOS	D	D	A	F	F		F	C	C		F	E
Approach Delay		46.4			727.6			513.8			224.4	
Approach LOS		D			F			F			F	
Queue Length 50th (ft)	48	628	84	~172	~3492		~1719	37	215		~619	289
Queue Length 95th (ft)	#120	#746	131	#345	#3556		#1987	70	332		#838	#455
Internal Link Dist (ft)		4562			1311			1267			1275	
Turn Bay Length (ft)	350		550	550			550		325			325
Base Capacity (vph)	156	1420	1044	203	1512		416	735	717		257	440
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.64	0.91	0.27	1.04	2.64		2.58	0.08	0.60		1.68	0.83

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 149.5
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.64
 Intersection Signal Delay: 499.4
 Intersection LOS: F
 Intersection Capacity Utilization 198.6%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Main Entrance Site & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
8: Future Site Road & Clements Ferry Road

2/7/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1608	110	80	2838	20	495	190	165	40	100	220
Future Volume (vph)	55	1608	110	80	2838	20	495	190	165	40	100	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		400	200		0	400		100	0		100
Storage Lanes	1		1	1		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.986	
Satd. Flow (prot)	1770	3539	1583	1770	3536	0	1770	1863	1583	0	1837	1583
Flt Permitted	0.051			0.050			0.276				0.831	
Satd. Flow (perm)	95	3539	1583	93	3536	0	514	1863	1583	0	1548	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112		1				121			109
Link Speed (mph)		45			55			30				30
Link Distance (ft)		1391			3159			1306				1258
Travel Time (s)		21.1			39.2			29.7				28.6
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
Adj. Flow (vph)	61	1787	122	89	3153	22	550	211	183	44	111	244
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	1787	122	89	3175	0	550	211	183	0	155	244
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8				4
Permitted Phases	2		2	6			8		8	4		4
Detector Phase	5	2	2	1	6		3	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0		15.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	15.0	85.0	85.0	15.0	85.0		28.0	50.0	50.0	22.0	22.0	22.0
Total Split (%)	10.0%	56.7%	56.7%	10.0%	56.7%		18.7%	33.3%	33.3%	14.7%	14.7%	14.7%
Maximum Green (s)	9.0	79.0	79.0	9.0	79.0		22.0	44.0	44.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	Min	Min	Min	Min	Min
Walk Time (s)		5.0	5.0		5.0			5.0	5.0	5.0	5.0	5.0

CLEMENTS FERRY RD WIDENING
 8: Future Site Road & Clements Ferry Road

2/7/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0	0	0	0
Act Effct Green (s)	84.3	77.4	77.4	87.1	80.7		43.5	43.5	43.5		15.4	15.4
Actuated g/C Ratio	0.58	0.53	0.53	0.59	0.55		0.30	0.30	0.30		0.11	0.11
v/c Ratio	0.46	0.96	0.14	0.62	1.63		1.62	0.38	0.33		0.95	0.92
Control Delay	27.2	46.1	4.0	42.5	313.3		321.9	44.0	16.3		123.8	74.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	27.2	46.1	4.0	42.5	313.3		321.9	44.0	16.3		123.8	74.8
LOS	C	D	A	D	F		F	D	B		F	E
Approach Delay		42.9			306.0			200.5			93.8	
Approach LOS		D			F			F			F	
Queue Length 50th (ft)	22	843	4	33	~2374		~695	163	44		152	135
Queue Length 95th (ft)	56	#1049	37	97	#2512		#940	244	112		#299	#306
Internal Link Dist (ft)		1311			3079			1226			1178	
Turn Bay Length (ft)	200		400	200			400		100			100
Base Capacity (vph)	159	1909	905	158	1945		340	559	560		169	270
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.38	0.94	0.13	0.56	1.63		1.62	0.38	0.33		0.92	0.90

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 146.6
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.63
 Intersection Signal Delay: 199.2
 Intersection LOS: F
 Intersection Capacity Utilization 135.1%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 8: Future Site Road & Clements Ferry Road

15 s	85 s	28 s	22 s
15 s	85 s	50 s	

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/7/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	662	34	41	4852	149	32	7	125	410	9	339
Future Volume (vph)	149	662	34	41	4852	149	32	7	125	410	9	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		125	200		175	0		0	0		275
Storage Lanes	2		1	1		1	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.897				0.850
Flt Protected	0.950			0.950				0.990				0.953
Satd. Flow (prot)	3433	3059	1583	1770	3438	1583	0	1654	0	0	1620	1583
Flt Permitted	0.950			0.319				0.459				0.541
Satd. Flow (perm)	3433	3059	1583	594	3438	1583	0	767	0	0	920	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			72		109				27
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1021			1211			1115				1147
Travel Time (s)		15.5			18.3			21.7				22.3
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
Heavy Vehicles (%)	2%	18%	2%	2%	5%	2%	2%	2%	2%	12%	2%	2%
Adj. Flow (vph)	166	736	38	46	5391	166	36	8	139	456	10	377
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	736	38	46	5391	166	0	183	0	0	466	377
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases			2	6		6	8		4			4
Detector Phase	5	2	2	1	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	15.0	25.7	25.7	15.0	40.8	40.8	32.6	32.6		40.0	40.0	15.0
Total Split (s)	15.0	83.0	83.0	15.0	83.0	83.0	52.0	52.0		52.0	52.0	15.0
Total Split (%)	10.0%	55.3%	55.3%	10.0%	55.3%	55.3%	34.7%	34.7%		34.7%	34.7%	10.0%
Maximum Green (s)	8.4	76.3	76.3	8.3	76.3	76.3	45.8	45.8		45.8	45.8	8.4
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	4.0	4.0		4.0	4.0	4.4
All-Red Time (s)	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.2		2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.6	6.7	6.7	6.7	6.7	6.7		6.2			6.2	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	None

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

2/7/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Flash Dont Walk (s)		15.0	15.0		28.0	28.0	22.0	22.0		26.0	26.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	8.4	79.5	79.5	84.3	76.3	76.3		45.8			45.8	60.4
Actuated g/C Ratio	0.06	0.53	0.53	0.56	0.51	0.51		0.31			0.31	0.40
v/c Ratio	0.86	0.45	0.04	0.12	3.08	0.20		0.59			1.66	0.58
Control Delay	106.6	23.6	0.6	12.7	956.4	11.7		26.5			347.4	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	106.6	23.6	0.6	12.7	956.4	11.7		26.5			347.4	36.4
LOS	F	C	A	B	F	B		C			F	D
Approach Delay		37.3			920.6			26.5			208.3	
Approach LOS		D			F			C			F	
Queue Length 50th (ft)	84	238	0	17	-4822	47		60			-660	265
Queue Length 95th (ft)	#153	295	3	35	#4815	92		153			#883	376
Internal Link Dist (ft)		941			1131			1035			1067	
Turn Bay Length (ft)	150		125	200		175						275
Base Capacity (vph)	192	1622	873	400	1748	840		309			280	653
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	0.86	0.45	0.04	0.12	3.08	0.20		0.59			1.66	0.58

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 3.08
 Intersection Signal Delay: 710.0
 Intersection Capacity Utilization 183.1%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/7/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	277	2056	1878	231	225	523
Future Volume (vph)	277	2056	1878	231	225	523
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400			0	0	450
Storage Lanes	1			0	1	1
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.984			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1504	3252	3190	0	1583	1482
Flt Permitted	0.043				0.950	
Satd. Flow (perm)	68	3252	3190	0	1583	1482
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			16			9
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	20%	11%	12%	6%	14%	9%
Adj. Flow (vph)	308	2284	2087	257	250	581
Shared Lane Traffic (%)						
Lane Group Flow (vph)	308	2284	2344	0	250	581
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		7	5
Permitted Phases	2					7
Detector Phase	5	2	6		7	5
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		4.0	10.0
Minimum Split (s)	16.0	22.0	50.0		15.0	16.0
Total Split (s)	28.0	121.0	93.0		24.0	28.0
Total Split (%)	19.3%	83.4%	64.1%		16.6%	19.3%
Maximum Green (s)	22.0	115.0	87.0		18.0	22.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.0	3.5
Recall Mode	None	Min	Min		None	None

CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

2/7/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)		5.0	5.0			
Flash Dont Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	115.0	115.0	87.0		18.0	46.0
Actuated g/C Ratio	0.79	0.79	0.60		0.12	0.32
v/c Ratio	1.14	0.89	1.22		1.28	1.22
Control Delay	139.2	16.1	132.5		206.3	158.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	139.2	16.1	132.5		206.3	158.3
LOS	F	B	F		F	F
Approach Delay		30.7	132.5		172.8	
Approach LOS		C	F		F	
Queue Length 50th (ft)	~294	674	~1429		~297	~668
Queue Length 95th (ft)	#491	816	#1557		#478	#907
Internal Link Dist (ft)		976	2198		992	
Turn Bay Length (ft)	400					450
Base Capacity (vph)	271	2579	1920		196	476
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	1.14	0.89	1.22		1.28	1.22

Intersection Summary













Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 145
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.28
 Intersection Signal Delay: 92.6
 Intersection LOS: F
 Intersection Capacity Utilization 102.1%
 ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

2/7/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	376	5	940	181	2	2097
Future Volume (vph)	376	5	940	181	2	2097
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1538	1770	3539
Flt Permitted	0.950				0.088	
Satd. Flow (perm)	1770	1583	1863	1538	164	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		6		201		
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%
Adj. Flow (vph)	418	6	1044	201	2	2330
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	6	1044	201	2	2330
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	10		10			10
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	custom	custom	NA
Protected Phases	4			6		
Permitted Phases		4	6		2	2
Detector Phase	4	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	27.0	27.0	63.0	63.0	63.0	63.0
Total Split (%)	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Maximum Green (s)	21.0	21.0	57.0	57.0	57.0	57.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min

CLEMENTS FERRY RD WIDENING
 31: SC 41 & Clements Ferry Road

2/7/2017



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	21.0	21.0	57.0	57.0	57.0	57.0
Actuated g/C Ratio	0.23	0.23	0.63	0.63	0.63	0.63
v/c Ratio	1.01	0.02	0.89	0.19	0.02	1.04
Control Delay	83.8	16.4	25.1	1.5	7.0	48.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.8	16.4	25.1	1.5	7.0	48.4
LOS	F	B	C	A	A	D
Approach Delay	82.8		21.3			48.4
Approach LOS	F		C			D
Queue Length 50th (ft)	~243	0	446	0	0	~760
Queue Length 95th (ft)	#432	10	#779	23	3	#898
Internal Link Dist (ft)	1466		2411			2489
Turn Bay Length (ft)		200		240	200	
Base Capacity (vph)	413	373	1179	1047	103	2241
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.02	0.89	0.19	0.02	1.04

Intersection Summary

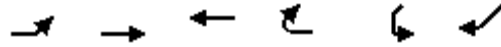
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 43.6
 Intersection LOS: D
 Intersection Capacity Utilization 88.8%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 31: SC 41 & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

2/7/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	199	2089	956	2	4	329
Future Volume (vph)	199	2089	956	2	4	329
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt					0.866	
Flt Protected	0.950				0.999	
Satd. Flow (prot)	1271	3539	3539	0	1307	0
Flt Permitted	0.950				0.999	
Satd. Flow (perm)	1271	3539	3539	0	1307	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		44.4	50.0		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	42%	2%	2%	2%	2%	26%
Adj. Flow (vph)	221	2321	1062	2	4	366
Shared Lane Traffic (%)						
Lane Group Flow (vph)	221	2321	1064	0	370	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	85.0%			ICU Level of Service E		
Analysis Period (min)	15					

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

2/7/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	11	1165	0	0	4848	2	4	0	0	2	0	0	
Future Volume (vph)	11	1165	0	0	4848	2	4	0	0	2	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	200		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	100			100			100			100			
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt													
Flt Protected	0.950							0.950		0.950			
Satd. Flow (prot)	986	3167	0	0	3437	0	0	1770	0	0	1770	0	
Flt Permitted	0.950							0.950		0.950			
Satd. Flow (perm)	986	3167	0	0	3437	0	0	1770	0	0	1770	0	
Link Speed (mph)	55							30		30			
Link Distance (ft)	1211							1450		987			
Travel Time (s)	15.0							33.0		22.4			
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	
Heavy Vehicles (%)	83%	14%	2%	2%	5%	100%	2%	2%	2%	2%	2%	2%	
Adj. Flow (vph)	12	1294	0	0	5387	2	4	0	0	2	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	12	1294	0	0	5389	0	0	4	0	0	2	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(ft)	12							0		0			
Link Offset(ft)	0							0		0			
Crosswalk Width(ft)	10							10		10			
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Sign Control	Free							Free		Stop		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	144.1%
Analysis Period (min)	15
	ICU Level of Service H

CLEMENTS FERRY RD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

2/7/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	2026	0	4	1607	125	5	15	5	250	40	535
Future Volume (vph)	135	2026	0	4	1607	125	5	15	5	250	40	535
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	0		0	0		0	0		450
Storage Lanes	2		0	0		0	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.989			0.972				0.850
Flt Protected	0.950							0.990			0.959	
Satd. Flow (prot)	3433	3195	0	0	3319	0	0	1792	0	0	1786	1583
Flt Permitted	0.950				0.947			0.758			0.735	
Satd. Flow (perm)	3433	3195	0	0	3144	0	0	1372	0	0	1369	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11			6				27
Link Speed (mph)		45			45			30				30
Link Distance (ft)		1977			2220			351				1076
Travel Time (s)		30.0			33.6			8.0				24.5
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
Heavy Vehicles (%)	2%	13%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	150	2251	0	4	1786	139	6	17	6	278	44	594
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	2251	0	0	1929	0	0	29	0	0	322	594
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		8			4			4
Detector Phase	5	2		6	6		8	8		4	4	5
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	15.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	15.0
Total Split (s)	17.0	91.0		74.0	74.0		29.0	29.0		29.0	29.0	17.0
Total Split (%)	14.2%	75.8%		61.7%	61.7%		24.2%	24.2%		24.2%	24.2%	14.2%
Maximum Green (s)	11.0	85.0		68.0	68.0		23.0	23.0		23.0	23.0	11.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0			6.0			6.0			6.0	6.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min		Min	Min		Min	Min		Min	Min	None

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

2/7/2017

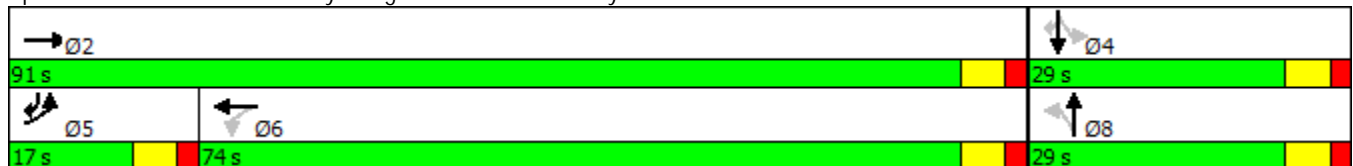


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	11.0	85.0			68.0			23.0			23.0	40.0
Actuated g/C Ratio	0.09	0.71			0.57			0.19			0.19	0.33
v/c Ratio	0.48	0.99			1.08			0.11			1.23	1.09
Control Delay	57.3	35.6			72.9			35.0			173.2	102.0
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	57.3	35.6			72.9			35.0			173.2	102.0
LOS	E	D			E			C			F	F
Approach Delay		36.9			72.9			35.0			127.0	
Approach LOS		D			E			C			F	
Queue Length 50th (ft)	57	808			-878			15			~308	~504
Queue Length 95th (ft)	92	#1084			#1020			42			#491	#732
Internal Link Dist (ft)		1897			2140			271			996	
Turn Bay Length (ft)	225											450
Base Capacity (vph)	314	2263			1786			267			262	545
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.48	0.99			1.08			0.11			1.23	1.09

Intersection Summary

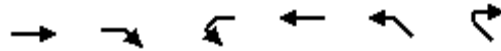
Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.23
 Intersection Signal Delay: 65.7
 Intersection LOS: E
 Intersection Capacity Utilization 100.0%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 37: Cainhoy Village Rd & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

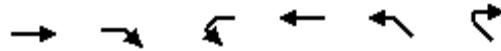
2/7/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓
Traffic Volume (vph)	1752	29	14	2639	199	73
Future Volume (vph)	1752	29	14	2639	199	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3085	1583	1770	3406	1770	1583
Flt Permitted			0.079		0.950	
Satd. Flow (perm)	3085	1583	147	3406	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		32				41
Link Speed (mph)	45			45	30	
Link Distance (ft)	3159			595	912	
Travel Time (s)	47.9			9.0	20.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	17%	2%	2%	6%	2%	2%
Adj. Flow (vph)	1947	32	16	2932	221	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1947	32	16	2932	221	81
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	4	
Permitted Phases		2	6			4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	118.0	118.0	118.0	118.0	22.0	22.0
Total Split (%)	84.3%	84.3%	84.3%	84.3%	15.7%	15.7%
Maximum Green (s)	112.0	112.0	112.0	112.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

2/7/2017

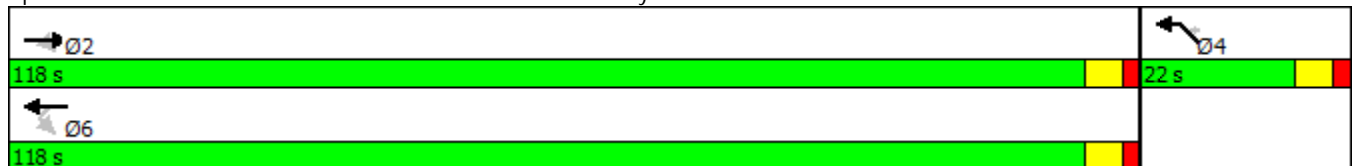


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	112.0	112.0	112.0	112.0	16.0	16.0
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.11	0.11
v/c Ratio	0.79	0.03	0.14	1.08	1.09	0.37
Control Delay	10.6	0.9	6.0	58.0	146.6	36.0
Queue Delay	0.0	0.0	0.0	10.3	0.0	0.0
Total Delay	10.6	0.9	6.0	68.3	146.6	36.0
LOS	B	A	A	E	F	D
Approach Delay	10.5			68.0	116.9	
Approach LOS	B			E	F	
Queue Length 50th (ft)	425	0	3	~1561	~227	34
Queue Length 95th (ft)	516	6	10	#1674	#397	87
Internal Link Dist (ft)	3079			515	832	
Turn Bay Length (ft)		240	300		150	
Base Capacity (vph)	2468	1272	117	2724	202	217
Starvation Cap Reductn	0	0	0	177	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.03	0.14	1.15	1.09	0.37

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 49.0
 Intersection LOS: D
 Intersection Capacity Utilization 94.0%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 39: Nelliefield Creek Drive & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

2/7/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	1825	7	9	2341	20	208	5	34	20	5	110
Future Volume (vph)	20	1825	7	9	2341	20	208	5	34	20	5	110
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		275	320		0	200		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999			0.870			0.890	
Flt Protected	0.950			0.950			0.950				0.993	
Satd. Flow (prot)	1770	3112	1583	1770	3372	0	1770	1621	0	0	1646	0
Flt Permitted	0.047			0.050			0.315				0.939	
Satd. Flow (perm)	88	3112	1583	93	3372	0	587	1621	0	0	1557	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113		1			38			120	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		595			2028			1332			1546	
Travel Time (s)		9.0			30.7			30.3			35.1	
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
Heavy Vehicles (%)	2%	16%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	22	2028	8	10	2601	22	231	6	38	22	6	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	2028	8	10	2623	0	231	44	0	0	150	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	15.0	86.0	86.0	15.0	86.0		22.0	44.0		22.0	22.0	
Total Split (%)	10.3%	59.3%	59.3%	10.3%	59.3%		15.2%	30.3%		15.2%	15.2%	
Maximum Green (s)	9.0	80.0	80.0	9.0	80.0		16.0	38.0		16.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		Min	Min		Min	Min	

CLEMENTS FERRY RD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

2/7/2017

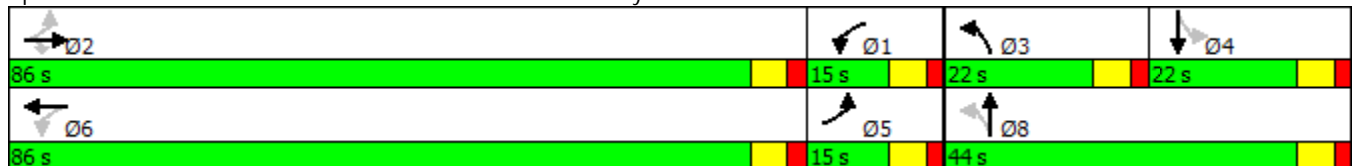


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	
Act Effct Green (s)	87.5	84.5	84.5	85.2	80.4		28.1	28.1				6.6
Actuated g/C Ratio	0.69	0.67	0.67	0.67	0.63		0.22	0.22				0.05
v/c Ratio	0.18	0.98	0.01	0.08	1.23		0.84	0.11				0.77
Control Delay	17.1	36.1	0.0	11.1	130.6		71.6	15.1				41.9
Queue Delay	0.0	41.5	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	17.1	77.6	0.0	11.1	130.6		71.6	15.1				41.9
LOS	B	E	A	B	F		E	B				D
Approach Delay		76.6			130.1			62.5				41.9
Approach LOS		E			F			E				D
Queue Length 50th (ft)	5	705	0	2	~1466		179	4				25
Queue Length 95th (ft)	16	#1232	0	10	#1738		#259	36				99
Internal Link Dist (ft)		515			1948			1252				1466
Turn Bay Length (ft)	200		275	320			200					
Base Capacity (vph)	183	2076	1093	185	2139		280	514				302
Starvation Cap Reductn	0	312	0	0	0		0	0				0
Spillback Cap Reductn	0	0	0	0	0		0	0				0
Storage Cap Reductn	0	0	0	0	0		0	0				0
Reduced v/c Ratio	0.12	1.15	0.01	0.05	1.23		0.82	0.09				0.50

Intersection Summary

Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 126.7
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.23
 Intersection Signal Delay: 102.4
 Intersection LOS: F
 Intersection Capacity Utilization 93.5%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 41: Peninsula Cove Drive & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/7/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	1840	20	23	2127	20	132	5	147	20	5	110
Future Volume (vph)	20	1840	20	23	2127	20	132	5	147	20	5	110
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	200		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.999			0.855				0.890
Flt Protected	0.950			0.950			0.950					0.993
Satd. Flow (prot)	1770	3110	0	1770	3341	0	1770	1593	0	0	1646	0
Flt Permitted	0.041			0.042			0.249					0.914
Satd. Flow (perm)	76	3110	0	78	3341	0	464	1593	0	0	1515	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			20				24
Link Speed (mph)		45			45			30				30
Link Distance (ft)		2028			1977			1280				1228
Travel Time (s)		30.7			30.0			29.1				27.9
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
Heavy Vehicles (%)	2%	16%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	22	2044	22	26	2363	22	147	6	163	22	6	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	2066	0	26	2385	0	147	169	0	0	150	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8				4
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		3	8		4		4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		15.0	22.0		22.0		22.0
Total Split (s)	103.0	103.0		103.0	103.0		15.0	37.0		22.0		22.0
Total Split (%)	73.6%	73.6%		73.6%	73.6%		10.7%	26.4%		15.7%		15.7%
Maximum Green (s)	97.0	97.0		97.0	97.0		9.0	31.0		16.0		16.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0				6.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	Min	Min		Min	Min		None	Min		Min		Min

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

2/7/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	97.0	97.0		97.0	97.0		27.8	27.8			12.8	
Actuated g/C Ratio	0.71	0.71		0.71	0.71		0.20	0.20			0.09	
v/c Ratio	0.42	0.94		0.47	1.01		0.82	0.50			0.92	
Control Delay	36.7	27.7		43.6	40.7		81.1	47.7			102.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	36.7	27.7		43.6	40.7		81.1	47.7			102.8	
LOS	D	C		D	D		F	D			F	
Approach Delay		27.8			40.8			63.2			102.8	
Approach LOS		C			D			E			F	
Queue Length 50th (ft)	8	798		10	~1195		115	118			114	
Queue Length 95th (ft)	#54	#1117		#66	#1350		#221	193			#226	
Internal Link Dist (ft)		1948			1897			1200			1148	
Turn Bay Length (ft)	200			200			200					
Base Capacity (vph)	53	2205		55	2369		180	376			198	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.42	0.94		0.47	1.01		0.82	0.45			0.76	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 136.9
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 38.6
 Intersection LOS: D
 Intersection Capacity Utilization 91.9%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 43: Rivers Reach Dr & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 4: Main Entrance Site & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	1718	677	406	1584	77	380	171	266	33	315	143
Future Volume (vph)	250	1718	677	406	1584	77	380	171	266	33	315	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		550	350		0	550		325	0		325
Storage Lanes	1		1	1		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.995	
Satd. Flow (prot)	1770	3539	1583	1770	3514	0	1770	1863	1583	0	1853	1583
Flt Permitted	0.069			0.062			0.133				0.943	
Satd. Flow (perm)	129	3539	1583	115	3514	0	248	1863	1583	0	1757	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		4				237			159
Link Speed (mph)		45			55			35				30
Link Distance (ft)		4642			1391			1347				1355
Travel Time (s)		70.3			17.2			26.2				30.8
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
Adj. Flow (vph)	278	1909	752	451	1760	86	422	190	296	37	350	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	278	1909	752	451	1846	0	422	190	296	0	387	159
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	3	1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Detector Phase	5	2	3	1	6		3	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	15.0	15.0	22.0		15.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	19.0	64.0	28.0	28.0	73.0		28.0	58.0	58.0	30.0	30.0	30.0
Total Split (%)	12.7%	42.7%	18.7%	18.7%	48.7%		18.7%	38.7%	38.7%	20.0%	20.0%	20.0%
Maximum Green (s)	13.0	58.0	22.0	22.0	67.0		22.0	52.0	52.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min		None	Min	Min	Min	Min	Min
Walk Time (s)		5.0			5.0			5.0	5.0	5.0	5.0	5.0

CLEMENTS FERRY RD WIDENING
 4: Main Entrance Site & Clements Ferry Road

3/2/2017

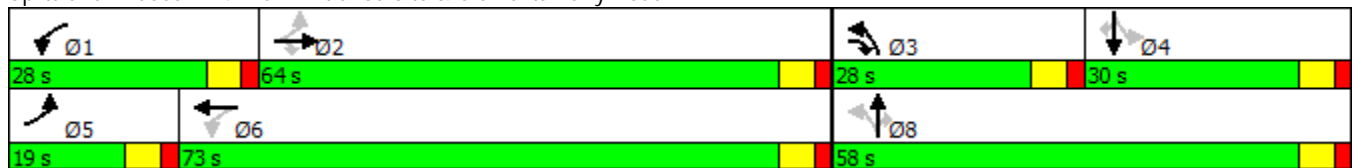


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		11.0			11.0			11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	71.0	58.0	86.0	86.0	67.0		52.0	52.0	52.0		24.0	24.0
Actuated g/C Ratio	0.47	0.39	0.57	0.57	0.45		0.35	0.35	0.35		0.16	0.16
v/c Ratio	1.37	1.40	0.79	1.46	1.18		1.37	0.29	0.42		1.38	0.41
Control Delay	229.4	218.3	28.3	260.8	123.4		219.3	37.2	10.0		235.6	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	229.4	218.3	28.3	260.8	123.4		219.3	37.2	10.0		235.6	11.0
LOS	F	F	C	F	F		F	D	B		F	B
Approach Delay		170.7			150.4			113.0			170.2	
Approach LOS		F			F			F			F	
Queue Length 50th (ft)	~308	~1307	485	~555	~1134		~494	135	39		~500	0
Queue Length 95th (ft)	#499	#1442	682	#779	#1272		#714	203	118		#711	67
Internal Link Dist (ft)		4562			1311			1267			1275	
Turn Bay Length (ft)	350		550	350			550		325			325
Base Capacity (vph)	203	1368	954	308	1571		309	645	703		281	386
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	1.37	1.40	0.79	1.46	1.18		1.37	0.29	0.42		1.38	0.41

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.46
 Intersection Signal Delay: 155.9
 Intersection LOS: F
 Intersection Capacity Utilization 129.4%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Main Entrance Site & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
8: Future Site Road & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	2616	290	174	1350	39	162	78	114	16	138	72
Future Volume (vph)	127	2616	290	174	1350	39	162	78	114	16	138	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		400	200		0	400		100	0		100
Storage Lanes	1		1	1		0	1		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.995	
Satd. Flow (prot)	1770	3539	1583	1770	3525	0	1770	1863	1583	0	1853	1583
Flt Permitted	0.089			0.044			0.218				0.954	
Satd. Flow (perm)	166	3539	1583	82	3525	0	406	1863	1583	0	1777	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			222		3				104			109
Link Speed (mph)		45			55			30				30
Link Distance (ft)		1391			3159			1306				1258
Travel Time (s)		21.1			39.2			29.7				28.6
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
Adj. Flow (vph)	141	2907	322	193	1500	43	180	87	127	18	153	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	2907	322	193	1543	0	180	87	127	0	171	80
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8				4
Permitted Phases	2		2	6			8		8	4		4
Detector Phase	5	2	2	1	6		3	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0		15.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	20.0	98.0	98.0	15.0	93.0		15.0	37.0	37.0	22.0	22.0	22.0
Total Split (%)	13.3%	65.3%	65.3%	10.0%	62.0%		10.0%	24.7%	24.7%	14.7%	14.7%	14.7%
Maximum Green (s)	14.0	92.0	92.0	9.0	87.0		9.0	31.0	31.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min		None	Min	Min	Min	Min	Min
Walk Time (s)		5.0	5.0		5.0			5.0	5.0	5.0	5.0	5.0

CLEMENTS FERRY RD WIDENING
 8: Future Site Road & Clements Ferry Road

3/2/2017

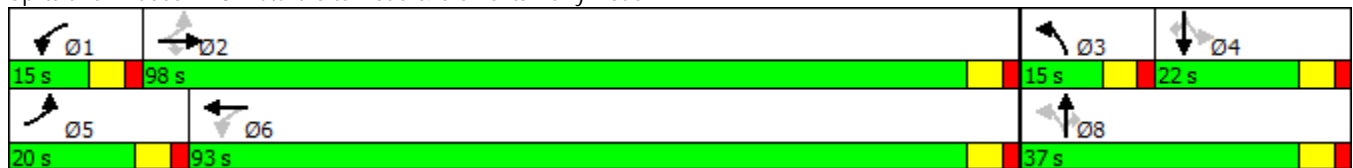


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0	0	0	0
Act Effct Green (s)	101.9	92.0	92.0	100.2	91.2		30.3	30.3	30.3		15.3	15.3
Actuated g/C Ratio	0.68	0.62	0.62	0.67	0.61		0.20	0.20	0.20		0.10	0.10
v/c Ratio	0.64	1.33	0.30	1.24	0.72		1.10	0.23	0.32		0.94	0.31
Control Delay	26.4	180.4	4.8	184.3	23.0		148.8	51.6	15.3		119.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	26.4	180.4	4.8	184.3	23.0		148.8	51.6	15.3		119.3	7.2
LOS	C	F	A	F	C		F	D	B		F	A
Approach Delay		157.1			41.0			84.3			83.6	
Approach LOS		F			D			F			F	
Queue Length 50th (ft)	39	~1944	39	~182	524		~173	72	18		168	0
Queue Length 95th (ft)	98	#2052	85	#356	663		#296	124	77		#311	25
Internal Link Dist (ft)		1311			3079			1226			1178	
Turn Bay Length (ft)	200		400	200			400		100			100
Base Capacity (vph)	268	2181	1060	156	2154		164	387	411		190	267
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.53	1.33	0.30	1.24	0.72		1.10	0.22	0.31		0.90	0.30

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 149.3
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.33
 Intersection Signal Delay: 113.9 Intersection LOS: F
 Intersection Capacity Utilization 119.1% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

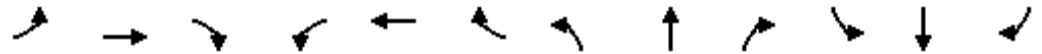
Splits and Phases: 8: Future Site Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	1426	18	32	1435	98	39	8	127	161	16	214
Future Volume (vph)	393	1426	18	32	1435	98	39	8	127	161	16	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		125	200		175	0		0	0		275
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.901				0.850
Flt Protected	0.950			0.950				0.989			0.957	
Satd. Flow (prot)	1770	3059	1583	1770	3438	1583	0	1660	0	0	1637	1583
Flt Permitted	0.950			0.113				0.759			0.500	
Satd. Flow (perm)	1770	3059	1583	210	3438	1583	0	1274	0	0	855	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			120		84				238
Link Speed (mph)		45			45			35				35
Link Distance (ft)		1021			1211			1115				1147
Travel Time (s)		15.5			18.3			21.7				22.3
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
Heavy Vehicles (%)	2%	18%	2%	2%	5%	2%	2%	2%	2%	12%	2%	2%
Adj. Flow (vph)	437	1584	20	36	1594	109	43	9	141	179	18	238
Shared Lane Traffic (%)												
Lane Group Flow (vph)	437	1584	20	36	1594	109	0	193	0	0	197	238
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases			2	6		6	8			4		4
Detector Phase	5	2	2	1	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	15.0	25.7	25.7	15.0	40.8	40.8	32.6	32.6		40.0	40.0	40.0
Total Split (s)	39.0	95.0	95.0	15.0	71.0	71.0	40.0	40.0		40.0	40.0	40.0
Total Split (%)	26.0%	63.3%	63.3%	10.0%	47.3%	47.3%	26.7%	26.7%		26.7%	26.7%	26.7%
Maximum Green (s)	32.4	88.3	88.3	8.3	64.3	64.3	33.8	33.8		33.8	33.8	33.8
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.2		2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	6.6	6.7	6.7	6.7	6.7	6.7		6.2			6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	None

CLEMENTS FERRY RD WIDENING

13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Flash Dont Walk (s)		15.0	15.0		28.0	28.0	22.0	22.0		26.0	26.0	26.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	0
Act Effct Green (s)	32.4	91.5	91.5	72.3	64.3	64.3		33.8			33.8	33.8
Actuated g/C Ratio	0.22	0.61	0.61	0.48	0.43	0.43		0.23			0.23	0.23
v/c Ratio	1.14	0.85	0.02	0.20	1.08	0.15		0.55			1.03	0.44
Control Delay	142.5	30.1	0.1	14.2	89.7	3.7		34.9			127.6	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	142.5	30.1	0.1	14.2	89.7	3.7		34.9			127.6	8.1
LOS	F	C	A	B	F	A		C			F	A
Approach Delay		53.9			82.8			34.9			62.2	
Approach LOS		D			F			C			E	
Queue Length 50th (ft)	~499	665	0	10	-915	0		94			~204	0
Queue Length 95th (ft)	#718	790	0	22	#1053	31		182			#371	73
Internal Link Dist (ft)		941			1131			1035			1067	
Turn Bay Length (ft)	300		125	200		175						275
Base Capacity (vph)	382	1866	994	187	1473	747		352			192	541
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	1.14	0.85	0.02	0.19	1.08	0.15		0.55			1.03	0.44

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.14
 Intersection Signal Delay: 65.3
 Intersection LOS: E
 Intersection Capacity Utilization 103.0%
 ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Royal Assembly Drive/Jack Primus Road & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

3/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	348	1889	543	148	324	406
Future Volume (vph)	348	1889	543	148	324	406
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400			0	0	450
Storage Lanes	1			0	1	1
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.968			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1504	3252	3156	0	1583	1482
Flt Permitted	0.212				0.950	
Satd. Flow (perm)	336	3252	3156	0	1583	1482
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			28			110
Link Speed (mph)		35	35		35	
Link Distance (ft)		1056	2278		1072	
Travel Time (s)		20.6	44.4		20.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	20%	11%	12%	6%	14%	9%
Adj. Flow (vph)	387	2099	603	164	360	451
Shared Lane Traffic (%)						
Lane Group Flow (vph)	387	2099	767	0	360	451
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		7	5
Permitted Phases	2					7
Detector Phase	5	2	6		7	5
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0		4.0	10.0
Minimum Split (s)	16.0	22.0	50.0		15.0	16.0
Total Split (s)	45.0	98.0	53.0		37.0	45.0
Total Split (%)	33.3%	72.6%	39.3%		27.4%	33.3%
Maximum Green (s)	39.0	92.0	47.0		31.0	39.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.5	3.5	3.5		3.0	3.5
Recall Mode	None	Min	Min		None	None

CLEMENTS FERRY RD WIDENING
 19: Clements Ferry Road & Cainhoy Road

3/2/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)		5.0	5.0			
Flash Dont Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	92.0	92.0	52.2		31.0	70.8
Actuated g/C Ratio	0.68	0.68	0.39		0.23	0.52
v/c Ratio	0.74	0.95	0.62		0.99	0.54
Control Delay	25.1	30.1	35.8		96.9	17.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	25.1	30.1	35.8		96.9	17.6
LOS	C	C	D		F	B
Approach Delay		29.3	35.8		52.8	
Approach LOS		C	D		D	
Queue Length 50th (ft)	160	801	284		317	181
Queue Length 95th (ft)	282	#1006	365		#523	266
Internal Link Dist (ft)		976	2198		992	
Turn Bay Length (ft)	400					450
Base Capacity (vph)	566	2216	1237		363	882
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.68	0.95	0.62		0.99	0.51

Intersection Summary













Area Type: Other
 Cycle Length: 135
 Actuated Cycle Length: 135
 Natural Cycle: 85
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 35.2
 Intersection LOS: D
 Intersection Capacity Utilization 80.2%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Clements Ferry Road & Cainhoy Road



CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

3/2/2017

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	211	3	584	386	2	1905
Future Volume (vph)	211	3	584	386	2	1905
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		240	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1538	1770	3539
Flt Permitted	0.950				0.361	
Satd. Flow (perm)	1770	1583	1863	1538	672	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		3		252		
Link Speed (mph)	45		45			45
Link Distance (ft)	1546		2491			2569
Travel Time (s)	23.4		37.7			38.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%
Adj. Flow (vph)	234	3	649	429	2	2117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	234	3	649	429	2	2117
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	10		10			10
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA	Free	custom	NA
Protected Phases	4					
Permitted Phases		4	6	Free	2	2
Detector Phase	4	4	6		2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0
Total Split (s)	22.0	22.0	78.0		78.0	78.0
Total Split (%)	22.0%	22.0%	78.0%		78.0%	78.0%
Maximum Green (s)	16.0	16.0	72.0		72.0	72.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		Min	Min

CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

3/2/2017

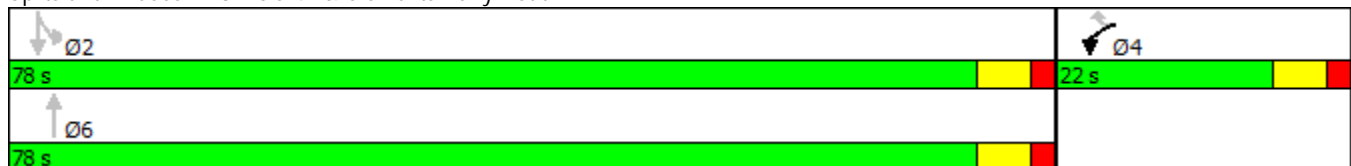


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	14.9	14.9	67.6	94.6	67.6	67.6
Actuated g/C Ratio	0.16	0.16	0.71	1.00	0.71	0.71
v/c Ratio	0.84	0.01	0.49	0.28	0.00	0.84
Control Delay	65.8	23.7	7.5	0.5	4.0	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	23.7	7.5	0.5	4.0	13.6
LOS	E	C	A	A	A	B
Approach Delay	65.3		4.7			13.6
Approach LOS	E		A			B
Queue Length 50th (ft)	146	0	152	0	0	423
Queue Length 95th (ft)	#274	8	219	0	2	538
Internal Link Dist (ft)	1466		2411			2489
Turn Bay Length (ft)		200		240	200	
Base Capacity (vph)	302	272	1430	1538	515	2716
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.01	0.45	0.28	0.00	0.78

Intersection Summary

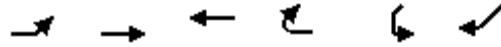
Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 94.6
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 14.4
 Intersection LOS: B
 Intersection Capacity Utilization 74.3%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 31: SC 41 & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/2/2017



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	340	1880	589	6	6	100
Future Volume (vph)	340	1880	589	6	6	100
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.873	
Flt Protected	0.950				0.997	
Satd. Flow (prot)	1271	3539	3532	0	1327	0
Flt Permitted	0.950				0.997	
Satd. Flow (perm)	1271	3539	3532	0	1327	0
Link Speed (mph)		35	35		40	
Link Distance (ft)		2278	2569		1587	
Travel Time (s)		44.4	50.0		27.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	42%	2%	2%	2%	2%	26%
Adj. Flow (vph)	378	2089	654	7	7	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	378	2089	661	0	118	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	65.2%			ICU Level of Service C		
Analysis Period (min)	15					

CLEMENTS FERRY RD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1962	2	0	1843	2	3	0	0	2	0	10
Future Volume (vph)	5	1962	2	0	1843	2	3	0	0	2	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt												0.886
Flt Protected	0.950							0.950				0.992
Satd. Flow (prot)	986	3167	0	0	3435	0	0	1770	0	0	1637	0
Flt Permitted	0.950							0.950				0.992
Satd. Flow (perm)	986	3167	0	0	3435	0	0	1770	0	0	1637	0
Link Speed (mph)		55			55			30				30
Link Distance (ft)		1211			4642			1450				987
Travel Time (s)		15.0			57.5			33.0				22.4
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
Heavy Vehicles (%)	83%	14%	2%	2%	5%	100%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	6	2180	2	0	2048	2	3	0	0	2	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	2182	0	0	2050	0	0	3	0	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	64.3%
Analysis Period (min)	15
	ICU Level of Service C

CLEMENTS FERRY RD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	348	1954	7	2	930	203	5	29	0	130	16	179
Future Volume (vph)	348	1954	7	2	930	203	5	29	0	130	16	179
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	0		0	0		0	0		450
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.973							0.850
Flt Protected	0.950							0.992			0.957	
Satd. Flow (prot)	1770	3193	0	0	3285	0	0	1848	0	0	1783	1583
Flt Permitted	0.950				0.951			0.942			0.722	
Satd. Flow (perm)	1770	3193	0	0	3124	0	0	1755	0	0	1345	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			30							109
Link Speed (mph)		45			45			30				30
Link Distance (ft)		1977			2220			351				1076
Travel Time (s)		30.0			33.6			8.0				24.5
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
Heavy Vehicles (%)	2%	13%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	387	2171	8	2	1033	226	6	32	0	144	18	199
Shared Lane Traffic (%)												
Lane Group Flow (vph)	387	2179	0	0	1261	0	0	38	0	0	162	199
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		10			10			10				10
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6			8			4		4
Detector Phase	5	2		6	6		8	8		4	4	5
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	15.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	15.0
Total Split (s)	33.0	128.0		95.0	95.0		22.0	22.0		22.0	22.0	33.0
Total Split (%)	22.0%	85.3%		63.3%	63.3%		14.7%	14.7%		14.7%	14.7%	22.0%
Maximum Green (s)	27.0	122.0		89.0	89.0		16.0	16.0		16.0	16.0	27.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0			6.0			6.0			6.0	6.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min		Min	Min		Min	Min		Min	Min	None

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/2/2017

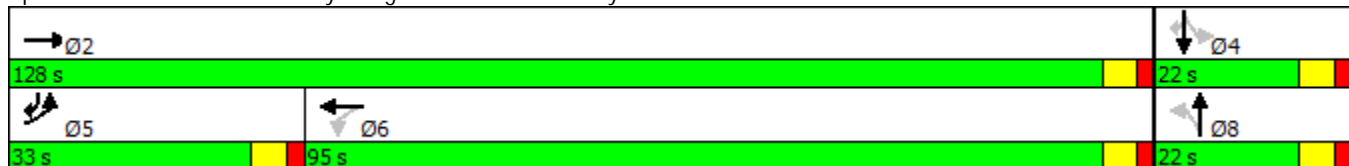


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	27.7	98.4		64.5			16.4			16.4	50.3	
Actuated g/C Ratio	0.22	0.77		0.51			0.13			0.13	0.40	
v/c Ratio	1.01	0.88		0.79			0.17			0.94	0.29	
Control Delay	97.8	15.0		27.8			58.7			110.3	16.2	
Queue Delay	0.0	0.0		0.0			0.0			0.0	0.0	
Total Delay	97.8	15.0		27.8			58.7			110.3	16.2	
LOS	F	B		C			E			F	B	
Approach Delay		27.5		27.8			58.7			58.4		
Approach LOS		C		C			E			E		
Queue Length 50th (ft)	~345	552		414			29			136	48	
Queue Length 95th (ft)	#673	662		493			74			#339	133	
Internal Link Dist (ft)		1897		2140			271			996		
Turn Bay Length (ft)	225											450
Base Capacity (vph)	385	2937		2253			226			173	692	
Starvation Cap Reductn	0	0		0			0			0	0	
Spillback Cap Reductn	0	0		0			0			0	0	
Storage Cap Reductn	0	0		0			0			0	0	
Reduced v/c Ratio	1.01	0.74		0.56			0.17			0.94	0.29	

Intersection Summary

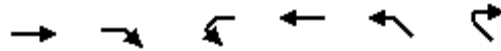
Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 127.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 30.5
 Intersection LOS: C
 Intersection Capacity Utilization 116.2%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 37: Cainhoy Village Rd & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
39: Nelliefield Creek Drive & Clements Ferry Road

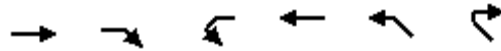
3/2/2017



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓
Traffic Volume (vph)	2008	151	82	1035	49	32
Future Volume (vph)	2008	151	82	1035	49	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		240	300		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3085	1583	1770	3406	1770	1583
Flt Permitted			0.060		0.000	
Satd. Flow (perm)	3085	1583	112	3406	0	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		168				26
Link Speed (mph)	45			45	30	
Link Distance (ft)	3159			595	912	
Travel Time (s)	47.9			9.0	20.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	17%	2%	2%	6%	2%	2%
Adj. Flow (vph)	2231	168	91	1150	54	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2231	168	91	1150	54	36
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA	Perm	Perm	NA	pm+pt	Perm
Protected Phases	2			6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	6	6	7	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	128.0	128.0	128.0	128.0	22.0	22.0
Total Split (%)	85.3%	85.3%	85.3%	85.3%	14.7%	14.7%
Maximum Green (s)	122.0	122.0	122.0	122.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

3/2/2017

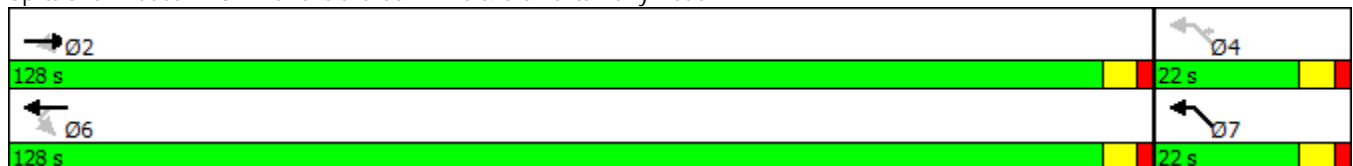


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	122.1	122.1	122.1	122.1	8.7	8.7
Actuated g/C Ratio	0.86	0.86	0.86	0.86	0.06	0.06
v/c Ratio	0.85	0.12	0.96	0.40	0.50	0.30
Control Delay	10.0	0.5	98.9	2.8	80.5	35.4
Queue Delay	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	10.0	0.5	98.9	3.4	80.5	35.4
LOS	B	A	F	A	F	D
Approach Delay	9.4			10.4	62.5	
Approach LOS	A			B	E	
Queue Length 50th (ft)	431	0	49	92	50	9
Queue Length 95th (ft)	673	11	#118	139	97	47
Internal Link Dist (ft)	3079			515	832	
Turn Bay Length (ft)		240	300		150	
Base Capacity (vph)	2636	1377	95	2910	198	200
Starvation Cap Reductn	0	0	0	1210	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.12	0.96	0.68	0.27	0.18

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 142.8
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 11.0
 Intersection LOS: B
 Intersection Capacity Utilization 78.4%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 39: Nelliefield Creek Drive & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1958	82	29	1046	33	24	5	18	11	6	39
Future Volume (vph)	57	1958	82	29	1046	33	24	5	18	11	6	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		275	320		0	200		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995			0.885			0.906	
Flt Protected	0.950			0.950			0.950				0.990	
Satd. Flow (prot)	1770	3112	1583	1770	3362	0	1770	1649	0	0	1671	0
Flt Permitted	0.136			0.069			0.432				0.926	
Satd. Flow (perm)	253	3112	1583	129	3362	0	805	1649	0	0	1563	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113		3			20			43	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		595			2028			1332			1546	
Travel Time (s)		9.0			30.7			30.3			35.1	
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
Heavy Vehicles (%)	2%	16%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	63	2176	91	32	1162	37	27	6	20	12	7	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	2176	91	32	1199	0	27	26	0	0	62	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	15.0	22.0	22.0	15.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	15.0	86.0	86.0	15.0	86.0		22.0	44.0		22.0	22.0	
Total Split (%)	10.3%	59.3%	59.3%	10.3%	59.3%		15.2%	30.3%		15.2%	15.2%	
Maximum Green (s)	9.0	80.0	80.0	9.0	80.0		16.0	38.0		16.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		Min	Min		Min	Min	

CLEMENTS FERRY RD WIDENING
 41: Peninsula Cove Drive & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	
Act Effct Green (s)	87.1	80.4	80.4	63.3	57.8		16.8	16.8				5.0
Actuated g/C Ratio	0.75	0.69	0.69	0.55	0.50		0.14	0.14				0.04
v/c Ratio	0.12	1.01	0.08	0.22	0.71		0.16	0.10				0.57
Control Delay	6.6	41.4	1.0	14.4	28.5		46.9	22.7				45.3
Queue Delay	0.0	34.9	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	6.6	76.3	1.0	14.4	28.5		46.9	22.7				45.3
LOS	A	E	A	B	C		D	C				D
Approach Delay		71.5			28.2			35.0				45.3
Approach LOS		E			C			D				D
Queue Length 50th (ft)	10	-952	0	7	427		19	4				15
Queue Length 95th (ft)	25	#1196	13	15	486		47	31				61
Internal Link Dist (ft)		515			1948			1252				1466
Turn Bay Length (ft)	200		275	320			200					
Base Capacity (vph)	537	2156	1131	202	2330		254	555				253
Starvation Cap Reductn	0	231	0	0	0		0	0				0
Spillback Cap Reductn	0	0	0	0	0		0	0				0
Storage Cap Reductn	0	0	0	0	0		0	0				0
Reduced v/c Ratio	0.12	1.13	0.08	0.16	0.51		0.11	0.05				0.25

Intersection Summary

Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 116
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 56.0
 Intersection LOS: E
 Intersection Capacity Utilization 74.1%
 ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 41: Peninsula Cove Drive & Clements Ferry Road

86 s	15 s	22 s	22 s
86 s	15 s	44 s	

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1873	121	116	1002	33	42	5	71	17	3	36
Future Volume (vph)	57	1873	121	116	1002	33	42	5	71	17	3	36
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.995			0.861			0.913	
Flt Protected	0.950			0.950			0.950				0.985	
Satd. Flow (prot)	1770	3107	0	1770	3332	0	1770	1604	0	0	1675	0
Flt Permitted	0.239			0.063			0.706				0.792	
Satd. Flow (perm)	445	3107	0	117	3332	0	1315	1604	0	0	1347	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			8			34			40	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2028			1977			1280			1228	
Travel Time (s)		30.7			30.0			29.1			27.9	
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
Heavy Vehicles (%)	2%	16%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	63	2081	134	129	1113	37	47	6	79	19	3	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	2215	0	129	1150	0	47	85	0	0	62	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	128.0	128.0		128.0	128.0		22.0	22.0		22.0	22.0	
Total Split (%)	85.3%	85.3%		85.3%	85.3%		14.7%	14.7%		14.7%	14.7%	
Maximum Green (s)	122.0	122.0		122.0	122.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/2/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	122.1	122.1		122.1	122.1		7.6	7.6			7.6	
Actuated g/C Ratio	0.86	0.86		0.86	0.86		0.05	0.05			0.05	
v/c Ratio	0.16	0.83		1.29	0.40		0.67	0.72			0.56	
Control Delay	2.9	8.8		203.1	2.7		106.3	72.2			48.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	2.9	8.8		203.1	2.7		106.3	72.2			48.4	
LOS	A	A		F	A		F	E			D	
Approach Delay		8.6			22.9			84.3			48.4	
Approach LOS		A			C			F			D	
Queue Length 50th (ft)	7	372		-55	84		43	47			20	
Queue Length 95th (ft)	20	634		#206	140		89	106			69	
Internal Link Dist (ft)		1948			1897			1200			1148	
Turn Bay Length (ft)	200						200					
Base Capacity (vph)	383	2678		100	2871		148	211			187	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.16	0.83		1.29	0.40		0.32	0.40			0.33	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 141.7
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.29
 Intersection Signal Delay: 16.8
 Intersection LOS: B
 Intersection Capacity Utilization 87.0%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 43: Rivers Reach Dr & Clements Ferry Road



CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 3.9

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	111	382	512	1	2	184
Future Vol, veh/h	111	382	512	1	2	184
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, %	42	2	2	2	2	26
Mvmt Flow	123	424	569	1	2	204

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	570	0	569
Stage 1	-	-	569
Stage 2	-	-	671
Critical Hdwy	4.52	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.578	-	3.518
Pot Cap-1 Maneuver	831	-	479
Stage 1	-	-	566
Stage 2	-	-	508
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	831	-	479
Mov Cap-2 Maneuver	-	-	156
Stage 1	-	-	566
Stage 2	-	-	409

Approach	EB	WB	SW
HCM Control Delay, s	2.3	0	18.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	831	-	-	469
HCM Lane V/C Ratio	0.148	-	-	0.441
HCM Control Delay (s)	10.1	0	-	18.6
HCM Lane LOS	B	A	-	C
HCM 95th %tile Q(veh)	0.5	-	-	2.2

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	6	436	0	0	988	1	1	0	0	2	0	0
Future Vol, veh/h	6	436	0	0	988	1	1	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	7	484	0	0	1098	1	1	0	0	2	0	0

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	1099	0	0	484	0	0	1596	1596	1098	1596	1597	484
Stage 1	-	-	-	-	-	-	1098	1098	-	498	498	-
Stage 2	-	-	-	-	-	-	498	498	-	1098	1099	-
Critical Hdwy	4.93	-	-	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	2.947	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	411	-	-	1079	-	-	86	107	259	86	106	583
Stage 1	-	-	-	-	-	-	258	289	-	554	544	-
Stage 2	-	-	-	-	-	-	554	544	-	258	288	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	411	-	-	1079	-	-	85	105	259	85	104	583
Mov Cap-2 Maneuver	-	-	-	-	-	-	85	105	-	85	104	-
Stage 1	-	-	-	-	-	-	254	289	-	545	535	-
Stage 2	-	-	-	-	-	-	545	535	-	258	288	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	0.2	0	47.9	48.5
HCM LOS			E	E

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	85	411	-	-	1079	-	-	85
HCM Lane V/C Ratio	0.026	0.016	-	-	-	-	-	0.013
HCM Control Delay (s)	48.5	13.9	-	-	0	-	-	47.9
HCM Lane LOS	E	B	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	534	0	2	792	3	3
Future Vol, veh/h	534	0	2	792	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	13	2	2	8	2	2
Mvmt Flow	593	0	2	880	3	3

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	593	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	983	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	983	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	217	-	-	983	-
HCM Lane V/C Ratio	0.031	-	-	0.002	-
HCM Control Delay (s)	22.1	-	-	8.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

CLEMENTS FERRY RD WIDENING
39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 9.9

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	403	16	8	947	111	41
Future Vol, veh/h	403	16	8	947	111	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	17	2	2	6	2	2
Mvmt Flow	448	18	9	1052	123	46

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	448
Stage 1	-	-	448
Stage 2	-	-	1070
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1112
Stage 1	-	-	644
Stage 2	-	-	329
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1112
Mov Cap-2 Maneuver	-	-	130
Stage 1	-	-	644
Stage 2	-	-	326

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	98.4
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	130	611	-	-	1112	-
HCM Lane V/C Ratio	0.949	0.075	-	-	0.008	-
HCM Control Delay (s)	130.5	11.4	-	-	8.3	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	6.4	0.2	-	-	0	-

CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 10.2

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Vol, veh/h	444	4	5	842	116	19
Future Vol, veh/h	444	4	5	842	116	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	2	2	7	2	2
Mvmt Flow	493	4	6	936	129	21

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	493	1440
Stage 1	-	-	493
Stage 2	-	-	947
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	1071	146
Stage 1	-	-	614
Stage 2	-	-	377
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1071	145
Mov Cap-2 Maneuver	-	-	145
Stage 1	-	-	614
Stage 2	-	-	375

Approach	EB	WB	NW
HCM Control Delay, s	0	0	108.2
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	162	-	-	1071	-
HCM Lane V/C Ratio	0.926	-	-	0.005	-
HCM Control Delay (s)	108.2	-	-	8.4	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	6.8	-	-	0	-

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	452	11	13	784	74	82
Future Vol, veh/h	452	11	13	784	74	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, %	16	2	2	8	2	2
Mvmt Flow	502	12	14	871	82	91

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	514	0	1408	508
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	900	-
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	-	-	1052	-	153	565
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	397	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1052	-	149	565
Mov Cap-2 Maneuver	-	-	-	-	149	-
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	387	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	49.7
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	243	-	-	1052	-
HCM Lane V/C Ratio	0.713	-	-	0.014	-
HCM Control Delay (s)	49.7	-	-	8.5	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	4.8	-	-	0	-

CLEMENTS FERRY RD WIDENING
51: SC 41

3/12/2017

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖			↗	↖	
Traffic Vol, veh/h	1	0	0	101	210	3
Future Vol, veh/h	1	0	0	101	210	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	0	112	233	3

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	347	-	-	0	0
Stage 1	235	-	-	-	-
Stage 2	112	-	-	-	-
Critical Hdwy	6.42	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	-	-	-	-
Pot Cap-1 Maneuver	650	0	0	-	-
Stage 1	804	0	0	-	-
Stage 2	913	0	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	650	-	-	-	-
Mov Cap-2 Maneuver	650	-	-	-	-
Stage 1	804	-	-	-	-
Stage 2	913	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	650	-	-
HCM Lane V/C Ratio	-	0.002	-	-
HCM Control Delay (s)	-	10.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

2016 Existing PM
33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 2.3

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	211	724	329	4	4	62
Future Vol, veh/h	211	724	329	4	4	62
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, %	19	2	2	2	2	13
Mvmt Flow	249	853	387	5	5	73

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	392	0	390
Stage 1	-	-	390
Stage 2	-	-	-
Critical Hdwy	4.29	-	6.33
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.371	-	3.417
Pot Cap-1 Maneuver	1080	-	635
Stage 1	-	-	684
Stage 2	-	-	241
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1080	-	635
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	684
Stage 2	-	-	135

Approach	EB	WB	SW
HCM Control Delay, s	2.1	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	1080	-	-	384
HCM Lane V/C Ratio	0.23	-	-	0.202
HCM Control Delay (s)	9.3	0	-	16.7
HCM Lane LOS	A	A	-	C
HCM 95th %tile Q(veh)	0.9	-	-	0.7

2016 Existing PM
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	3	1027	1	0	479	1	1	0	6	2	0	0
Future Vol, veh/h	3	1027	1	0	479	1	1	0	6	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	80	4	2	2	6	2	2	2	17	2	2	2
Mvmt Flow	4	1210	1	0	564	1	1	0	7	2	0	0

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	565	0	0	1211	0	0	1782	1783	565	1785	1782	1210
Stage 1	-	-	-	-	-	-	565	565	-	1217	1217	-
Stage 2	-	-	-	-	-	-	1217	1218	-	568	565	-
Critical Hdwy	4.9	-	-	4.12	-	-	7.12	6.52	6.37	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	2.92	-	-	2.218	-	-	3.518	4.018	3.453	3.518	4.018	3.318
Pot Cap-1 Maneuver	712	-	-	576	-	-	64	82	497	63	82	223
Stage 1	-	-	-	-	-	-	510	508	-	221	253	-
Stage 2	-	-	-	-	-	-	221	253	-	508	508	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	712	-	-	576	-	-	64	82	497	62	82	223
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	82	-	62	82	-
Stage 1	-	-	-	-	-	-	507	508	-	220	252	-
Stage 2	-	-	-	-	-	-	220	252	-	501	508	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	0	0	19.7	65.3
HCM LOS			C	F

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	62	712	-	-	576	-	-	253
HCM Lane V/C Ratio	0.038	0.005	-	-	-	-	-	0.033
HCM Control Delay (s)	65.3	10.1	-	-	0	-	-	19.7
HCM Lane LOS	F	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

2016 Existing PM
37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	882	4	1	540	3	0
Future Vol, veh/h	882	4	1	540	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	2	2	8	2	2
Mvmt Flow	1039	5	1	636	4	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1044	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	666	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	666	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	40.8
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	104	-	-	666	-
HCM Lane V/C Ratio	0.034	-	-	0.002	-
HCM Control Delay (s)	40.8	-	-	10.4	0
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

2016 Existing PM
 39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 1.7

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	933	94	51	447	25	20
Future Vol, veh/h	933	94	51	447	25	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	1099	111	60	526	29	24

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1746
Stage 1	-	-	1099
Stage 2	-	-	647
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	635	95
Stage 1	-	-	319
Stage 2	-	-	521
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	635	86
Mov Cap-2 Maneuver	-	-	86
Stage 1	-	-	319
Stage 2	-	-	472

Approach	EB	WB	NW
HCM Control Delay, s	0	1.2	46.4
HCM LOS			E

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	86	258	-	-	635	-
HCM Lane V/C Ratio	0.342	0.091	-	-	0.095	-
HCM Control Delay (s)	67.2	20.4	-	-	11.3	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	1.3	0.3	-	-	0.3	-

2016 Existing PM
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.8

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Vol, veh/h	902	51	18	478	15	11
Future Vol, veh/h	902	51	18	478	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	2	2	6	2	2
Mvmt Flow	1062	60	21	563	18	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1062
Stage 1	-	-	1062
Stage 2	-	-	605
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	656
Stage 1	-	-	332
Stage 2	-	-	545
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	656
Mov Cap-2 Maneuver	-	-	103
Stage 1	-	-	332
Stage 2	-	-	528

Approach	EB	WB	NW
HCM Control Delay, s	0	0.4	37.8
HCM LOS			E

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	140	-	-	656	-
HCM Lane V/C Ratio	0.219	-	-	0.032	-
HCM Control Delay (s)	37.8	-	-	10.7	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-

Intersection

Int Delay, s/veh 3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	842	75	72	473	26	44
Future Vol, veh/h	842	75	72	473	26	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	992	88	85	557	31	52

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	1080	1763
Stage 1	-	-	1036
Stage 2	-	-	727
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	646	93
Stage 1	-	-	342
Stage 2	-	-	478
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	646	75
Mov Cap-2 Maneuver	-	-	75
Stage 1	-	-	342
Stage 2	-	-	387

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	63
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	139	-	-	646	-
HCM Lane V/C Ratio	0.593	-	-	0.131	-
HCM Control Delay (s)	63	-	-	11.4	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	3.1	-	-	0.5	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖			↗	↖	
Traffic Vol, veh/h	1	0	0	240	131	2
Future Vol, veh/h	1	0	0	240	131	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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	0	283	154	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	438	-	-	0	0
Stage 1	155	-	-	-	-
Stage 2	283	-	-	-	-
Critical Hdwy	6.42	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	-	-	-	-
Pot Cap-1 Maneuver	576	0	0	-	-
Stage 1	873	0	0	-	-
Stage 2	765	0	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	576	-	-	-	-
Mov Cap-2 Maneuver	576	-	-	-	-
Stage 1	873	-	-	-	-
Stage 2	765	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	576	-	-
HCM Lane V/C Ratio	-	0.002	-	-
HCM Control Delay (s)	-	11.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 328.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	264	4	662	127	1	1461
Future Vol, veh/h	264	4	662	127	1	1461
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	200	-	240	200	-
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	5	2	2
Mvmt Flow	293	4	736	141	1	1623

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2362	736	0
Stage 1	736	-	-
Stage 2	1626	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	~ 39	419	-
Stage 1	474	-	-
Stage 2	~ 177	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 39	419	-
Mov Cap-2 Maneuver	~ 39	-	-
Stage 1	474	-	-
Stage 2	~ 177	-	-

Approach	WB	NB	SB
HCM Control Delay, s	\$ 3088.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	39	419	870	-
HCM Lane V/C Ratio	-	-	7.521	0.011	0.001	-
HCM Control Delay (s)	-	-	\$ 3134.8	13.7	9.1	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	34.9	0	0	-

Notes

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

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	139	1456	673	1	3	78
Future Vol, veh/h	139	1456	673	1	3	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	42	2	2	2	2	26
Mvmt Flow	154	1618	748	1	3	87

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	749	0	748
Stage 1	-	-	748
Stage 2	-	-	1927
Critical Hdwy	4.52	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.578	-	3.518
Pot Cap-1 Maneuver	705	-	376
Stage 1	-	-	468
Stage 2	-	-	125
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	705	-	376
Mov Cap-2 Maneuver	-	-	0
Stage 1	-	-	468
Stage 2	-	-	0

Approach	EB	WB	SW
HCM Control Delay, s	1	0	17.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	705	-	-	376
HCM Lane V/C Ratio	0.219	-	-	0.239
HCM Control Delay (s)	11.5	0	-	17.6
HCM Lane LOS	B	A	-	C
HCM 95th %tile Q(veh)	0.8	-	-	0.9

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	↖	↗			↕			↕			↕	
Traffic Vol, veh/h	8	1047	0	0	3135	1	1	0	0	2	0	0
Future Vol, veh/h	8	1047	0	0	3135	1	1	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	9	1163	0	0	3483	1	1	0	0	2	0	0

Major/Minor	Major1	Major2	Minor2	Minor1								
Conflicting Flow All	3484	0	0	1163	0	0	4665	4665	3484	4665	4665	1163
Stage 1	-	-	-	-	-	-	3484	3484	-	1181	1181	-
Stage 2	-	-	-	-	-	-	1181	1181	-	3484	3484	-
Critical Hdwy	4.93	-	-	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	2.947	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	31	-	-	601	-	-	0	1	9	0	1	237
Stage 1	-	-	-	-	-	-	10	17	-	232	264	-
Stage 2	-	-	-	-	-	-	232	264	-	10	17	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	31	-	-	601	-	-	0	1	9	0	1	237
Mov Cap-2 Maneuver	-	-	-	-	-	-	0	1	-	0	1	-
Stage 1	-	-	-	-	-	-	7	17	-	165	187	-
Stage 2	-	-	-	-	-	-	165	187	-	10	17	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	1.2	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	-	31	-	-	601	-	-	-
HCM Lane V/C Ratio	-	0.287	-	-	-	-	-	-
HCM Control Delay (s)	-	162.5	-	-	0	-	-	-
HCM Lane LOS	-	F	-	-	A	-	-	-
HCM 95th %tile Q(veh)	-	0.9	-	-	0	-	-	-

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	1411	0	3	1359	4	4
Future Vol, veh/h	1411	0	3	1359	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	13	2	2	8	2	2
Mvmt Flow	1568	0	3	1510	4	4

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1568	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	421	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	421	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	253
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	22	-	-	421	-
HCM Lane V/C Ratio	0.404	-	-	0.008	-
HCM Control Delay (s)	253	-	-	13.6	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	1.2	-	-	0	-

CLEMENTS FERRY RD WIDENING
39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 274.8

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	1217	20	10	1582	139	51
Future Vol, veh/h	1217	20	10	1582	139	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	17	2	2	6	2	2
Mvmt Flow	1352	22	11	1758	154	57

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1352
Stage 1	-	-	1352
Stage 2	-	-	1780
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	509
Stage 1	-	-	241
Stage 2	-	-	~ 148
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	509
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	241
Stage 2	-	-	~ 145

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	\$ 4364.8
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	12	184	-	-	509	-
HCM Lane V/C Ratio	12.87	0.308	-	-	0.022	-
HCM Control Delay (s)	\$ 5954.2	33	-	-	12.2	-
HCM Lane LOS	F	D	-	-	B	-
HCM 95th %tile Q(veh)	20.6	1.2	-	-	0.1	-

Notes

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

CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 294.4

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Vol, veh/h	1268	5	6	1432	146	24
Future Vol, veh/h	1268	5	6	1432	146	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	2	2	7	2	2
Mvmt Flow	1409	6	7	1591	162	27

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1409	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	484	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	484	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	\$ 4988.7
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	17	-	-	484	-
HCM Lane V/C Ratio	11.111	-	-	0.014	-
HCM Control Delay (s)	\$ 4988.7	-	-	12.5	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	24.4	-	-	0	-

Notes

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

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 301.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	827	11	30	1510	74	82
Future Vol, veh/h	827	11	30	1510	74	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, %	16	2	2	8	2	2
Mvmt Flow	919	12	33	1678	82	91

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	931
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	735
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	735
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	\$ 4890.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	16	-	-	735	-
HCM Lane V/C Ratio	10.833	-	-	0.045	-
HCM Control Delay (s)	\$ 4890.4	-	-	10.1	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	22.5	-	-	0.1	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
31: SC 41 & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 131.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	164	3	439	301	1	1744
Future Vol, veh/h	164	3	439	301	1	1744
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	200	-	240	200	-
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	182	3	488	334	1	1938

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2428	488	0
Stage 1	488	-	-
Stage 2	1940	-	-
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	~ 35	580	1075
Stage 1	617	-	-
Stage 2	~ 123	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 35	580	1075
Mov Cap-2 Maneuver	~ 35	-	-
Stage 1	617	-	-
Stage 2	~ 123	-	-

Approach	WB	NB	SB
HCM Control Delay, s	\$ 2082.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	35	580	1075	-
HCM Lane V/C Ratio	-	-	5.206	0.006	0.001	-
HCM Control Delay (s)	-	-	\$ 2120.5	11.2	8.4	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	21.6	0	0	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/13/2017

Intersection

Int Delay, s/veh 2.8

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	265	1724	478	5	5	78
Future Vol, veh/h	265	1724	478	5	5	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	19	2	2	2	2	13
Mvmt Flow	294	1916	531	6	6	87

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	537	0	534
Stage 1	-	-	534
Stage 2	-	-	2504
Critical Hdwy	4.29	-	6.33
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.371	-	3.417
Pot Cap-1 Maneuver	951	-	525
Stage 1	-	-	588
Stage 2	-	-	63
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	951	-	525
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	588
Stage 2	-	-	63

Approach	EB	WB	SW
HCM Control Delay, s	1.4	0	52
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	951	-	-	164
HCM Lane V/C Ratio	0.31	-	-	0.562
HCM Control Delay (s)	10.5	0	-	52
HCM Lane LOS	B	A	-	F
HCM 95th %tile Q(veh)	1.3	-	-	2.9

CLEMENTS FERRY ROAD WIDENING
36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	4	2414	1	3	1851	1	1	0	8	3	0	0
Future Vol, veh/h	4	2414	1	3	1851	1	1	0	8	3	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	80	4	2	2	6	2	2	2	17	2	2	2
Mvmt Flow	4	2682	1	3	2057	1	1	0	9	3	0	0

Major/Minor	Major1	Major2	Minor2	Minor1								
Conflicting Flow All	2058	0	0	2683	0	0	4756	4756	2057	4760	4756	2683
Stage 1	-	-	-	-	-	-	2064	2064	-	2692	2692	-
Stage 2	-	-	-	-	-	-	2692	2692	-	2068	2064	-
Critical Hdwy	4.9	-	-	4.12	-	-	7.12	6.52	6.37	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	2.92	-	-	2.218	-	-	3.518	4.018	3.453	3.518	4.018	3.318
Pot Cap-1 Maneuver	154	-	-	154	-	-	0	1	63	0	1	28
Stage 1	-	-	-	-	-	-	71	97	-	30	46	-
Stage 2	-	-	-	-	-	-	30	46	-	71	97	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	154	-	-	154	-	-	0	1	63	0	1	28
Mov Cap-2 Maneuver	-	-	-	-	-	-	0	1	-	0	1	-
Stage 1	-	-	-	-	-	-	69	97	-	29	45	-
Stage 2	-	-	-	-	-	-	29	45	-	61	97	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	0	0	72.6	
HCM LOS			F	-

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	-	154	-	-	154	-	-	63
HCM Lane V/C Ratio	-	0.029	-	-	0.022	-	-	0.159
HCM Control Delay (s)	-	29.1	-	-	28.9	0	-	72.6
HCM Lane LOS	-	D	-	-	D	A	-	F
HCM 95th %tile Q(veh)	-	0.1	-	-	0.1	-	-	0.5

CLEMENTS FERRY ROAD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1717	5	1	748	4	0
Future Vol, veh/h	1717	5	1	748	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	2	2	8	2	2
Mvmt Flow	1908	6	1	831	4	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1913	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	309	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	309	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	206.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	22	-	-	309	-
HCM Lane V/C Ratio	0.202	-	-	0.004	-
HCM Control Delay (s)	206.1	-	-	16.7	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

CLEMENTS FERRY ROAD WIDENING
39: Nelliefield Creek Drive & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 23.1

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	1761	118	64	931	31	25
Future Vol, veh/h	1761	118	64	931	31	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	1957	131	71	1034	34	28

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1957
Stage 1	-	-	1957
Stage 2	-	-	1177
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	297	~ 12
Stage 1	-	-	121
Stage 2	-	-	293
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	297	~ 9
Mov Cap-2 Maneuver	-	-	~ 9
Stage 1	-	-	121
Stage 2	-	-	223

Approach	EB	WB	NW
HCM Control Delay, s	0	1.3	\$ 1187.5
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	9	80	-	-	297	-
HCM Lane V/C Ratio	3.827	0.347	-	-	0.239	-
HCM Control Delay (s)	\$ 2086.8	72.3	-	-	20.9	-
HCM Lane LOS	F	F	-	-	C	-
HCM 95th %tile Q(veh)	5.5	1.3	-	-	0.9	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 2.6

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Vol, veh/h	1193	64	23	925	19	14
Future Vol, veh/h	1193	64	23	925	19	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	2	2	6	2	2
Mvmt Flow	1326	71	26	1028	21	16

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1326
Stage 1	-	-	1326
Stage 2	-	-	1079
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	521
Stage 1	-	-	248
Stage 2	-	-	326
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	521
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	248
Stage 2	-	-	310

Approach	EB	WB	NW
HCM Control Delay, s	0	0.3	170.3
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	52	-	-	521	-
HCM Lane V/C Ratio	0.705	-	-	0.049	-
HCM Control Delay (s)	170.3	-	-	12.3	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	2.9	-	-	0.2	-

CLEMENTS FERRY ROAD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 187.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1657	94	95	874	33	55
Future Vol, veh/h	1657	94	95	874	33	55
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, %	5	2	2	6	2	2
Mvmt Flow	1841	104	106	971	37	61

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1946	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	300	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	300	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	\$ 5955
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	8	-	-	300	-
HCM Lane V/C Ratio	12.222	-	-	0.352	-
HCM Control Delay (s)	\$ 5955	-	-	23.4	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	13.9	-	-	1.5	-

Notes

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

CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 26.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	210	3	503	101	1	386
Future Vol, veh/h	210	3	503	101	1	386
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	200	-	240	200	-
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	5	2	2
Mvmt Flow	264	4	632	127	1	485

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1119	632	0
Stage 1	632	-	-
Stage 2	487	-	-
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	~ 229	480	951
Stage 1	530	-	-
Stage 2	618	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 229	480	951
Mov Cap-2 Maneuver	~ 229	-	-
Stage 1	530	-	-
Stage 2	617	-	-

Approach	WB	NB	SB
HCM Control Delay, s	149.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	229	480	951	-
HCM Lane V/C Ratio	-	-	1.151	0.008	0.001	-
HCM Control Delay (s)	-	-	151.2	12.6	8.8	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	12.3	0	0	-

Notes

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

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 4.7

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	111	382	512	1	2	184
Future Vol, veh/h	111	382	512	1	2	184
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, %	42	2	2	2	2	26
Mvmt Flow	139	480	643	1	3	231

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	644	0	643
Stage 1	-	-	643
Stage 2	-	-	758
Critical Hdwy	4.52	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.578	-	3.518
Pot Cap-1 Maneuver	777	-	433
Stage 1	-	-	523
Stage 2	-	-	463
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	777	-	433
Mov Cap-2 Maneuver	-	-	116
Stage 1	-	-	523
Stage 2	-	-	350

Approach	EB	WB	SW
HCM Control Delay, s	2.4	0	23.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	777	-	-	421
HCM Lane V/C Ratio	0.179	-	-	0.555
HCM Control Delay (s)	10.6	0	-	23.7
HCM Lane LOS	B	A	-	C
HCM 95th %tile Q(veh)	0.7	-	-	3.3

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	6	436	0	0	988	1	1	0	0	2	0	0
Future Vol, veh/h	6	436	0	0	988	1	1	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	8	547	0	0	1240	1	1	0	0	3	0	0

Major/Minor	Major1	Major2	Minor2	Minor1								
Conflicting Flow All	1242	0	0	547	0	0	1803	1803	1241	1803	1804	547
Stage 1	-	-	-	-	-	-	1241	1241	-	562	562	-
Stage 2	-	-	-	-	-	-	562	562	-	1241	1242	-
Critical Hdwy	4.93	-	-	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	2.947	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	355	-	-	1022	-	-	62	79	213	62	79	537
Stage 1	-	-	-	-	-	-	214	247	-	512	510	-
Stage 2	-	-	-	-	-	-	512	510	-	214	247	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	355	-	-	1022	-	-	61	77	213	61	77	537
Mov Cap-2 Maneuver	-	-	-	-	-	-	61	77	-	61	77	-
Stage 1	-	-	-	-	-	-	209	247	-	500	499	-
Stage 2	-	-	-	-	-	-	500	499	-	214	247	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	0.2	0	65.3	66.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	61	355	-	-	1022	-	-	61
HCM Lane V/C Ratio	0.041	0.021	-	-	-	-	-	0.021
HCM Control Delay (s)	66.5	15.4	-	-	0	-	-	65.3
HCM Lane LOS	F	C	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	534	0	2	792	3	3
Future Vol, veh/h	534	0	2	792	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	13	2	2	8	2	2
Mvmt Flow	670	0	3	994	4	4

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	670
Stage 1	-	-	670
Stage 2	-	-	999
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	920
Stage 1	-	-	509
Stage 2	-	-	356
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	920
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	509
Stage 2	-	-	354

Approach	EB	WB	NB
HCM Control Delay, s	0	0	27
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	171	-	-	920	-
HCM Lane V/C Ratio	0.044	-	-	0.003	-
HCM Control Delay (s)	27	-	-	8.9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 23.5

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	403	16	8	947	111	41
Future Vol, veh/h	403	16	8	947	111	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	17	2	2	6	2	2
Mvmt Flow	506	20	10	1189	139	51

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	506
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1059
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1059
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	234.8
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	98	566	-	-	1059	-
HCM Lane V/C Ratio	1.422	0.091	-	-	0.009	-
HCM Control Delay (s)	\$ 317.1	12	-	-	8.4	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	10.3	0.3	-	-	0	-

Notes

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

CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 25.4

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Vol, veh/h	444	4	5	842	116	19
Future Vol, veh/h	444	4	5	842	116	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	2	2	7	2	2
Mvmt Flow	557	5	6	1057	146	24

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	557
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1014
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1014
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	268.8
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	125	-	-	1014	-
HCM Lane V/C Ratio	1.356	-	-	0.006	-
HCM Control Delay (s)	268.8	-	-	8.6	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	11.2	-	-	0	-

Notes

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

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 25.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	452	11	13	784	74	82
Future Vol, veh/h	452	11	13	784	74	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, %	16	2	2	8	2	2
Mvmt Flow	568	14	16	984	93	103

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	581
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	993
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	993
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	227.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	152	-	-	993	-
HCM Lane V/C Ratio	1.289	-	-	0.016	-
HCM Control Delay (s)	227.6	-	-	8.7	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	11.7	-	-	0.1	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
31: SC 41 & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 10.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	131	2	326	240	1	740
Future Vol, veh/h	131	2	326	240	1	740
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	200	-	240	200	-
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	164	3	409	301	1	929

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1341	409	0
Stage 1	409	-	-
Stage 2	932	-	-
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	168	642	1150
Stage 1	671	-	-
Stage 2	383	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	168	642	1150
Mov Cap-2 Maneuver	168	-	-
Stage 1	671	-	-
Stage 2	383	-	-

Approach	WB	NB	SB
HCM Control Delay, s	117.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	168	642	1150	-
HCM Lane V/C Ratio	-	-	0.979	0.004	0.001	-
HCM Control Delay (s)	-	-	119	10.6	8.1	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	7.6	0	0	-

CLEMENTS FERRY ROAD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 2.5

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	211	724	329	4	4	62
Future Vol, veh/h	211	724	329	4	4	62
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, %	19	2	2	2	2	13
Mvmt Flow	265	909	413	5	5	78

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	418	0	1855
Stage 1	-	-	416
Stage 2	-	-	1439
Critical Hdwy	4.29	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.371	-	3.518
Pot Cap-1 Maneuver	1055	-	81
Stage 1	-	-	666
Stage 2	-	-	218
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1055	-	40
Mov Cap-2 Maneuver	-	-	40
Stage 1	-	-	666
Stage 2	-	-	107

Approach	EB	WB	SW
HCM Control Delay, s	2.2	0	19.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	1055	-	-	328
HCM Lane V/C Ratio	0.251	-	-	0.253
HCM Control Delay (s)	9.6	0	-	19.6
HCM Lane LOS	A	A	-	C
HCM 95th %tile Q(veh)	1	-	-	1

CLEMENTS FERRY ROAD WIDENING
36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	3	1027	1	0	479	1	1	0	6	2	0	0
Future Vol, veh/h	3	1027	1	0	479	1	1	0	6	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	80	4	2	2	6	2	2	2	17	2	2	2
Mvmt Flow	4	1289	1	0	601	1	1	0	8	3	0	0

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	603	0	0	1291	0	0	1900	1900	602	1904	1901	1290
Stage 1	-	-	-	-	-	-	602	602	-	1298	1298	-
Stage 2	-	-	-	-	-	-	1298	1298	-	606	603	-
Critical Hdwy	4.9	-	-	4.12	-	-	7.12	6.52	6.37	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	2.92	-	-	2.218	-	-	3.518	4.018	3.453	3.518	4.018	3.318
Pot Cap-1 Maneuver	686	-	-	537	-	-	53	69	473	52	69	200
Stage 1	-	-	-	-	-	-	486	489	-	199	232	-
Stage 2	-	-	-	-	-	-	199	232	-	484	488	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	686	-	-	537	-	-	53	69	473	51	69	200
Mov Cap-2 Maneuver	-	-	-	-	-	-	53	69	-	51	69	-
Stage 1	-	-	-	-	-	-	483	489	-	198	231	-
Stage 2	-	-	-	-	-	-	198	231	-	476	488	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	0	0	21.9	79.2
HCM LOS			C	F

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	51	686	-	-	537	-	-	222
HCM Lane V/C Ratio	0.049	0.005	-	-	-	-	-	0.04
HCM Control Delay (s)	79.2	10.3	-	-	0	-	-	21.9
HCM Lane LOS	F	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

CLEMENTS FERRY ROAD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	882	4	1	540	3	0
Future Vol, veh/h	882	4	1	540	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	2	2	8	2	2
Mvmt Flow	1107	5	1	678	4	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1112	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	628	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	628	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	47.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	89	-	-	628	-
HCM Lane V/C Ratio	0.042	-	-	0.002	-
HCM Control Delay (s)	47.2	-	-	10.7	0
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

CLEMENTS FERRY ROAD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 2.1

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	933	94	51	447	25	20
Future Vol, veh/h	933	94	51	447	25	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	1171	118	64	561	31	25

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1171
Stage 1	-	-	1171
Stage 2	-	-	689
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	596
Stage 1	-	-	295
Stage 2	-	-	498
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	596
Mov Cap-2 Maneuver	-	-	72
Stage 1	-	-	295
Stage 2	-	-	445

Approach	EB	WB	NW
HCM Control Delay, s	0	1.2	59.3
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	72	235	-	-	596	-
HCM Lane V/C Ratio	0.436	0.107	-	-	0.107	-
HCM Control Delay (s)	89.1	22.1	-	-	11.8	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	1.7	0.4	-	-	0.4	-

CLEMENTS FERRY ROAD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.9

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Vol, veh/h	902	51	18	478	15	11
Future Vol, veh/h	902	51	18	478	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	2	2	6	2	2
Mvmt Flow	1133	64	23	600	19	14

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1133
Stage 1	-	-	1133
Stage 2	-	-	645
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	617
Stage 1	-	-	307
Stage 2	-	-	522
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	617
Mov Cap-2 Maneuver	-	-	88
Stage 1	-	-	307
Stage 2	-	-	503

Approach	EB	WB	NW
HCM Control Delay, s	0	0.4	45.4
HCM LOS			E

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	121	-	-	617	-
HCM Lane V/C Ratio	0.27	-	-	0.037	-
HCM Control Delay (s)	45.4	-	-	11.1	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	1	-	-	0.1	-

CLEMENTS FERRY ROAD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	842	75	72	473	26	44
Future Vol, veh/h	842	75	72	473	26	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	1057	94	90	594	33	55

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1151
Stage 1	-	-	1104
Stage 2	-	-	775
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	607	78
Stage 1	-	-	317
Stage 2	-	-	454
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	607	61
Mov Cap-2 Maneuver	-	-	61
Stage 1	-	-	317
Stage 2	-	-	354

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	96.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	117	-	-	607	-
HCM Lane V/C Ratio	0.751	-	-	0.149	-
HCM Control Delay (s)	96.1	-	-	12	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	4.2	-	-	0.5	-

CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 10.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑↑
Traffic Vol, veh/h	210	3	503	101	1	386
Future Vol, veh/h	210	3	503	101	1	386
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	200	-	240	200	-
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	5	2	2
Mvmt Flow	264	4	632	127	1	485

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	877	632	0
Stage 1	632	-	-
Stage 2	245	-	-
Critical Hdwy	6.63	6.23	4.13
Critical Hdwy Stg 1	5.43	-	-
Critical Hdwy Stg 2	5.83	-	-
Follow-up Hdwy	3.519	3.319	2.219
Pot Cap-1 Maneuver	303	479	949
Stage 1	529	-	-
Stage 2	774	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	303	479	949
Mov Cap-2 Maneuver	303	-	-
Stage 1	529	-	-
Stage 2	773	-	-

Approach	WB	NB	SB
HCM Control Delay, s	61.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	303	479	949	-
HCM Lane V/C Ratio	-	-	0.87	0.008	0.001	-
HCM Control Delay (s)	-	-	61.9	12.6	8.8	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	7.8	0	0	-

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 3.7

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↔↑	↑↔		↔	
Traffic Vol, veh/h	111	382	512	1	2	184
Future Vol, veh/h	111	382	512	1	2	184
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, %	42	2	2	2	2	26
Mvmt Flow	139	480	643	1	3	231

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	644	0	1162
Stage 1	-	-	643
Stage 2	-	-	519
Critical Hdwy	4.94	-	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.62	-	3.52
Pot Cap-1 Maneuver	711	-	188
Stage 1	-	-	485
Stage 2	-	-	562
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	711	-	138
Mov Cap-2 Maneuver	-	-	138
Stage 1	-	-	485
Stage 2	-	-	412

Approach	EB	WB	SW
HCM Control Delay, s	3.3	0	15.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	711	-	-	587
HCM Lane V/C Ratio	0.196	-	-	0.398
HCM Control Delay (s)	11.3	1	-	15.1
HCM Lane LOS	B	A	-	C
HCM 95th %tile Q(veh)	0.7	-	-	1.9

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↑↑			↔↑↑			↔↑			↔↑		
Traffic Vol, veh/h	6	436	0	0	988	1	2	0	0	1	0	0
Future Vol, veh/h	6	436	0	0	988	1	2	0	0	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	8	547	0	0	1240	1	3	0	0	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1242	0	0	547	0	0	1182	1804	274	1530	1803	621
Stage 1	-	-	-	-	-	-	562	562	-	1241	1241	-
Stage 2	-	-	-	-	-	-	620	1242	-	289	562	-
Critical Hdwy	5.76	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	3.03	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	263	-	-	1018	-	-	145	79	724	80	79	430
Stage 1	-	-	-	-	-	-	479	508	-	185	245	-
Stage 2	-	-	-	-	-	-	442	245	-	694	508	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	263	-	-	1018	-	-	142	77	724	78	77	430
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	77	-	78	77	-
Stage 1	-	-	-	-	-	-	464	493	-	179	245	-
Stage 2	-	-	-	-	-	-	442	245	-	673	493	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	30.8	51.9
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	142	263	-	-	1018	-	-	78
HCM Lane V/C Ratio	0.018	0.029	-	-	-	-	-	0.016
HCM Control Delay (s)	30.8	19.1	-	-	0	-	-	51.9
HCM Lane LOS	D	C	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	Y	
Traffic Vol, veh/h	534	0	2	792	3	3
Future Vol, veh/h	534	0	2	792	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	13	2	2	8	2	2
Mvmt Flow	670	0	3	994	4	4

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1172
Stage 1	-	-	670
Stage 2	-	-	502
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	916	185
Stage 1	-	-	470
Stage 2	-	-	573
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	916	184
Mov Cap-2 Maneuver	-	-	184
Stage 1	-	-	470
Stage 2	-	-	569

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	288	-	-	916	-
HCM Lane V/C Ratio	0.026	-	-	0.003	-
HCM Control Delay (s)	17.8	-	-	8.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 4.5

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	403	16	8	947	111	41
Future Vol, veh/h	403	16	8	947	111	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	17	2	2	6	2	2
Mvmt Flow	506	20	10	1189	139	51

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	506
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	1055
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1055
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	44.7
HCM LOS			E

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	198	746	-	-	1055	-
HCM Lane V/C Ratio	0.704	0.069	-	-	0.01	-
HCM Control Delay (s)	57.5	10.2	-	-	8.4	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	4.4	0.2	-	-	0	-

CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 5.3

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	444	4	5	842	116	19
Future Vol, veh/h	444	4	5	842	116	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	2	2	7	2	2
Mvmt Flow	557	5	6	1057	146	24

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1098
Stage 1	-	-	557
Stage 2	-	-	541
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	1010	207
Stage 1	-	-	537
Stage 2	-	-	548
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1010	206
Mov Cap-2 Maneuver	-	-	206
Stage 1	-	-	537
Stage 2	-	-	545

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	55.3
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	229	-	-	1010	-
HCM Lane V/C Ratio	0.74	-	-	0.006	-
HCM Control Delay (s)	55.3	-	-	8.6	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	5.1	-	-	0	-

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑↑		↑	
Traffic Vol, veh/h	452	11	13	784	74	82
Future Vol, veh/h	452	11	13	784	74	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, %	16	2	2	8	2	2
Mvmt Flow	568	14	16	984	93	103

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	581	0	1099	291
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	989	-	207	706
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	558	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	989	-	200	706
Mov Cap-2 Maneuver	-	-	-	-	200	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	538	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	32.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	321	-	-	989	-
HCM Lane V/C Ratio	0.61	-	-	0.017	-
HCM Control Delay (s)	32.3	-	-	8.7	0.2
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	3.8	-	-	0.1	-

CLEMENTS FERRY ROAD WIDENING
31: SC 41 & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑↑
Traffic Vol, veh/h	131	2	326	240	1	740
Future Vol, veh/h	131	2	326	240	1	740
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	200	-	240	200	-
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	164	3	409	301	1	929

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	876	409	0	0	409	0
Stage 1	409	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	7.33	6.23	-	-	4.13	-
Critical Hdwy Stg 1	6.13	-	-	-	-	-
Critical Hdwy Stg 2	6.53	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	256	642	-	-	1148	-
Stage 1	619	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	256	642	-	-	1148	-
Mov Cap-2 Maneuver	256	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	40.8		0		0
HCM LOS	E				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	256	642	1148	-
HCM Lane V/C Ratio	-	-	0.642	0.004	0.001	-
HCM Control Delay (s)	-	-	41.3	10.6	8.1	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	4	0	0	-

CLEMENTS FERRY ROAD WIDENING
33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 3.1

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↔↔	↕↕		↕	
Traffic Vol, veh/h	211	724	329	4	4	62
Future Vol, veh/h	211	724	329	4	4	62
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, %	19	2	2	2	2	13
Mvmt Flow	265	909	413	5	5	78

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	418	0	209
Stage 1	-	-	416
Stage 2	-	-	984
Critical Hdwy	4.48	-	7.16
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.39	-	3.43
Pot Cap-1 Maneuver	1025	-	764
Stage 1	-	-	634
Stage 2	-	-	323
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1025	-	764
Mov Cap-2 Maneuver	-	-	63
Stage 1	-	-	634
Stage 2	-	-	154

Approach	EB	WB	SW
HCM Control Delay, s	3.4	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	1025	-	-	456
HCM Lane V/C Ratio	0.258	-	-	0.182
HCM Control Delay (s)	9.7	1.6	-	14.6
HCM Lane LOS	A	A	-	B
HCM 95th %tile Q(veh)	1	-	-	0.7

CLEMENTS FERRY ROAD WIDENING

36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	↔ ↕			↔ ↕			↕ ↔			↕ ↔		
Traffic Vol, veh/h	3	1027	1	0	479	1	1	0	6	2	0	0
Future Vol, veh/h	3	1027	1	0	479	1	1	0	6	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	150	-	-	-	-	-	-	-	-
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, %	80	4	2	2	6	2	2	2	17	2	2	2
Mvmt Flow	4	1289	1	0	601	1	1	0	8	3	0	0
Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	603	0	0	1291	0	0	1254	1900	301	1599	1901	645
Stage 1	-	-	-	-	-	-	602	602	-	1298	1298	-
Stage 2	-	-	-	-	-	-	652	1298	-	301	603	-
Critical Hdwy	5.7	-	-	4.14	-	-	7.54	6.54	7.24	7.54	6.54	6.94
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	-	-	2.22	-	-	3.52	4.02	3.47	3.52	4.02	3.32
Pot Cap-1 Maneuver	588	-	-	533	-	-	128	68	652	71	68	415
Stage 1	-	-	-	-	-	-	453	487	-	171	230	-
Stage 2	-	-	-	-	-	-	423	230	-	683	487	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	588	-	-	533	-	-	127	68	652	70	68	415
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	68	-	70	68	-
Stage 1	-	-	-	-	-	-	450	487	-	170	228	-
Stage 2	-	-	-	-	-	-	420	228	-	675	487	-
Approach	EB			WB			SE			NW		
HCM Control Delay, s	0			0			14			58.3		
HCM LOS							B			F		
Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1				
Capacity (veh/h)	70	588	-	-	533	-	-	410				
HCM Lane V/C Ratio	0.036	0.006	-	-	-	-	-	0.021				
HCM Control Delay (s)	58.3	11.2	-	-	0	-	-	14				
HCM Lane LOS	F	B	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

CLEMENTS FERRY ROAD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑↑		↑	
Traffic Vol, veh/h	882	4	1	540	3	0
Future Vol, veh/h	882	4	1	540	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	2	2	8	2	2
Mvmt Flow	1107	5	1	678	4	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1452
Stage 1	-	-	1110
Stage 2	-	-	342
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	624	121
Stage 1	-	-	277
Stage 2	-	-	691
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	624	121
Mov Cap-2 Maneuver	-	-	121
Stage 1	-	-	277
Stage 2	-	-	689

Approach	EB	WB	NB
HCM Control Delay, s	0	0	35.7
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	121	-	-	624	-
HCM Lane V/C Ratio	0.031	-	-	0.002	-
HCM Control Delay (s)	35.7	-	-	10.8	0
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

CLEMENTS FERRY ROAD WIDENING
39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 1.6

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	933	94	51	447	25	20
Future Vol, veh/h	933	94	51	447	25	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	1171	118	64	561	31	25

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1580
Stage 1	-	-	1171
Stage 2	-	-	409
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	592	100
Stage 1	-	-	257
Stage 2	-	-	639
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	592	89
Mov Cap-2 Maneuver	-	-	89
Stage 1	-	-	257
Stage 2	-	-	570

Approach	EB	WB	NW
HCM Control Delay, s	0	1.2	42.6
HCM LOS			E

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	89	454	-	-	592	-
HCM Lane V/C Ratio	0.353	0.055	-	-	0.108	-
HCM Control Delay (s)	66	13.4	-	-	11.8	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	1.4	0.2	-	-	0.4	-

CLEMENTS FERRY ROAD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.9

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	902	51	18	478	15	11
Future Vol, veh/h	902	51	18	478	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	2	2	6	2	2
Mvmt Flow	1133	64	23	600	19	14

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1133
Stage 1	-	-	1133
Stage 2	-	-	345
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	6.54
Critical Hdwy Stg 2	-	-	6.54
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	612
Stage 1	-	-	216
Stage 2	-	-	644
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	612
Mov Cap-2 Maneuver	-	-	85
Stage 1	-	-	216
Stage 2	-	-	620

Approach	EB	WB	NW
HCM Control Delay, s	0	0.4	41.7
HCM LOS			E

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	130	-	-	612	-
HCM Lane V/C Ratio	0.251	-	-	0.037	-
HCM Control Delay (s)	41.7	-	-	11.1	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

CLEMENTS FERRY ROAD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	842	75	72	473	26	44
Future Vol, veh/h	842	75	72	473	26	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	1057	94	90	594	33	55

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1151
Stage 1	-	-	1104
Stage 2	-	-	478
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	603	99
Stage 1	-	-	279
Stage 2	-	-	590
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	603	77
Mov Cap-2 Maneuver	-	-	77
Stage 1	-	-	279
Stage 2	-	-	458

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	50.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	162	-	-	603	-
HCM Lane V/C Ratio	0.543	-	-	0.15	-
HCM Control Delay (s)	50.9	-	-	12	1
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	2.7	-	-	0.5	-

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 5.3

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↔↔	↕↕		↕	
Traffic Vol, veh/h	139	1456	673	1	3	231
Future Vol, veh/h	139	1456	673	1	3	231
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, %	42	2	2	2	2	26
Mvmt Flow	154	1618	748	1	3	257

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	749	0	1866
Stage 1	-	-	748
Stage 2	-	-	1118
Critical Hdwy	4.94	-	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.62	-	3.52
Pot Cap-1 Maneuver	638	-	64
Stage 1	-	-	429
Stage 2	-	-	274
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	638	-	0
Mov Cap-2 Maneuver	-	-	0
Stage 1	-	-	429
Stage 2	-	-	0

Approach	EB	WB	SW
HCM Control Delay, s	5.8	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	638	-	-	560
HCM Lane V/C Ratio	0.242	-	-	0.464
HCM Control Delay (s)	12.4	5.2	-	16.9
HCM Lane LOS	B	A	-	C
HCM 95th %tile Q(veh)	0.9	-	-	2.4

CLEMENTS FERRY RD WIDENING
36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗			↕			↕		
Traffic Vol, veh/h	8	1047	0	0	3135	1	2	0	0	1	0	0
Future Vol, veh/h	8	1047	0	0	3135	1	2	0	0	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	9	1163	0	0	3483	1	2	0	0	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3484	0	0	1163	0	0	2923	4665	582	4083	4665	1742
Stage 1	-	-	-	-	-	-	1181	1181	-	3484	3484	-
Stage 2	-	-	-	-	-	-	1742	3484	-	599	1181	-
Critical Hdwy	5.76	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	3.03	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	14	-	-	596	-	-	7	1	456	~ 1	1	76
Stage 1	-	-	-	-	-	-	202	262	-	6	17	-
Stage 2	-	-	-	-	-	-	90	17	-	455	262	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	14	-	-	596	-	-	3	0	456	0	0	76
Mov Cap-2 Maneuver	-	-	-	-	-	-	3	0	-	0	0	-
Stage 1	-	-	-	-	-	-	72	94	-	2	17	-
Stage 2	-	-	-	-	-	-	90	17	-	162	94	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.5	0	\$ 1781.8	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	3	14	-	-	596	-	-	-
HCM Lane V/C Ratio	0.741	0.635	-	-	-	-	-	-
HCM Control Delay (s)	\$ 1781.8	463.2	-	-	0	-	-	-
HCM Lane LOS	F	F	-	-	A	-	-	-
HCM 95th %tile Q(veh)	0.9	1.5	-	-	0	-	-	-

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

CLEMENTS FERRY RD WIDENING
39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 84.6

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	1217	20	10	1582	139	51
Future Vol, veh/h	1217	20	10	1582	139	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	17	2	2	6	2	2
Mvmt Flow	1352	22	11	1758	154	57

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	2253
Stage 1	-	-	1352
Stage 2	-	-	901
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	505	~ 35
Stage 1	-	-	206
Stage 2	-	-	357
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	505	~ 34
Mov Cap-2 Maneuver	-	-	~ 34
Stage 1	-	-	206
Stage 2	-	-	349

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	\$ 1343.6
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	34	396	-	-	505	-
HCM Lane V/C Ratio	4.542	0.143	-	-	0.022	-
HCM Control Delay (s)	\$ 1830.8	15.6	-	-	12.3	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	18.2	0.5	-	-	0.1	-

Notes

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

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 4.2

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↔↑	↑↔		↔	
Traffic Vol, veh/h	238	1342	372	5	5	70
Future Vol, veh/h	238	1342	372	5	5	70
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, %	42	2	2	2	2	26
Mvmt Flow	264	1491	413	6	6	78

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	419	0	209
Stage 1	-	-	416
Stage 2	-	-	1274
Critical Hdwy	4.94	-	7.42
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.62	-	3.56
Pot Cap-1 Maneuver	897	-	728
Stage 1	-	-	634
Stage 2	-	-	226
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	897	-	728
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	634
Stage 2	-	-	0

Approach	EB	WB	SW
HCM Control Delay, s	4.9	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	897	-	-	728
HCM Lane V/C Ratio	0.295	-	-	0.114
HCM Control Delay (s)	10.7	3.9	-	10.6
HCM Lane LOS	B	A	-	B
HCM 95th %tile Q(veh)	1.2	-	-	0.4

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗			↕			↕		
Traffic Vol, veh/h	4	1217	1	0	1327	1	3	0	0	1	0	0
Future Vol, veh/h	4	1217	1	0	1327	1	3	0	0	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	4	1352	1	0	1474	1	3	0	0	1	0	0

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	1476	0	0	1353	0	0	2099	2838	677	2160	2837	738
Stage 1	-	-	-	-	-	-	1362	1362	-	1475	1475	-
Stage 2	-	-	-	-	-	-	737	1476	-	685	1362	-
Critical Hdwy	5.76	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	3.03	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	196	-	-	504	-	-	30	17	395	27	17	360
Stage 1	-	-	-	-	-	-	156	214	-	132	189	-
Stage 2	-	-	-	-	-	-	376	189	-	404	214	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	196	-	-	504	-	-	30	17	395	27	17	360
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	17	-	27	17	-
Stage 1	-	-	-	-	-	-	153	210	-	129	189	-
Stage 2	-	-	-	-	-	-	376	189	-	396	210	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	139.5	144
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	30	196	-	-	504	-	-	27
HCM Lane V/C Ratio	0.111	0.023	-	-	-	-	-	0.041
HCM Control Delay (s)	139.5	23.8	-	-	0	-	-	144
HCM Lane LOS	F	C	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.1

CLEMENTS FERRY RD WIDENING
39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 4.5

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	1426	106	58	735	31	25
Future Vol, veh/h	1426	106	58	735	31	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	300	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	17	2	2	6	2	2
Mvmt Flow	1584	118	64	817	34	28

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1584
Stage 1	-	-	1584
Stage 2	-	-	537
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	411
Stage 1	-	-	154
Stage 2	-	-	550
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	411
Mov Cap-2 Maneuver	-	-	36
Stage 1	-	-	154
Stage 2	-	-	464

Approach	EB	WB	NW
HCM Control Delay, s	0	1.1	175.2
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	36	332	-	-	411	-
HCM Lane V/C Ratio	0.957	0.084	-	-	0.157	-
HCM Control Delay (s)	\$ 303	16.8	-	-	15.4	-
HCM Lane LOS	F	C	-	-	C	-
HCM 95th %tile Q(veh)	3.5	0.3	-	-	0.6	-

CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 2501.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	376	5	940	181	2	2097
Future Vol, veh/h	376	5	940	181	2	2097
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	200	-	240	200	-
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	5	2	2
Mvmt Flow	418	6	1044	201	2	2330

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	3378	1044	0
Stage 1	1044	-	-
Stage 2	2334	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	~ 8	278	-
Stage 1	~ 339	-	-
Stage 2	~ 77	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 8	278	-
Mov Cap-2 Maneuver	~ 8	-	-
Stage 1	~ 339	-	-
Stage 2	~ 77	-	-

Approach	WB	NB	SB
HCM Control Delay, s	\$ 23640.9	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	8 278	666	-
HCM Lane V/C Ratio	-	-52.222	0.02 0.003	-	-
HCM Control Delay (s)	-	\$ 23955	18.2 10.4	-	-
HCM Lane LOS	-	-	F C B	-	-
HCM 95th %tile Q(veh)	-	-	54.1 0.1 0	-	-

Notes

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

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 74.6

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	199	2089	956	2	4	329
Future Vol, veh/h	199	2089	956	2	4	329
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, %	42	2	2	2	2	26
Mvmt Flow	221	2321	1062	2	4	366

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1064	0	3826
Stage 1	-	-	1063
Stage 2	-	-	2763
Critical Hdwy	4.52	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.578	-	3.518
Pot Cap-1 Maneuver	525	-	~ 4
Stage 1	-	-	332
Stage 2	-	-	46
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	525	-	~ 4
Mov Cap-2 Maneuver	-	-	~ 4
Stage 1	-	-	332
Stage 2	-	-	46

Approach	EB	WB	SW
HCM Control Delay, s	1.5	0	\$ 791.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	525	-	-	142
HCM Lane V/C Ratio	0.421	-	-	2.606
HCM Control Delay (s)	16.8	0	-	\$ 791.9
HCM Lane LOS	C	A	-	F
HCM 95th %tile Q(veh)	2.1	-	-	32.7

Notes

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

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	↔			↕			↕			↕		
Traffic Vol, veh/h	11	1165	0	0	4848	2	2	0	0	4	0	0
Future Vol, veh/h	11	1165	0	0	4848	2	2	0	0	4	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	12	1294	0	0	5387	2	2	0	0	4	0	0

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	5389	0	0	1294	0	0	6707	6707	5388	6707	6708	1294
Stage 1	-	-	-	-	-	-	5388	5388	-	1319	1319	-
Stage 2	-	-	-	-	-	-	1319	1319	-	5388	5389	-
Critical Hdwy	4.93	-	-	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	2.947	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	~ 3	-	-	536	-	-	0	0	0	0	0	199
Stage 1	-	-	-	-	-	-	~ 1	1	-	193	227	-
Stage 2	-	-	-	-	-	-	193	227	-	~ 1	1	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 3	-	-	536	-	-	-	0	0	-	0	199
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 1	1	-	193	0	-
Stage 2	-	-	-	-	-	-	-	0	-	~ 1	1	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	33	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	-	~ 3	-	-	536	-	-	-
HCM Lane V/C Ratio	-	4.074	-	-	-	-	-	-
HCM Control Delay (s)	\$	3533.2	-	-	0	-	-	-
HCM Lane LOS	-	F	-	-	A	-	-	-
HCM 95th %tile Q(veh)	-	2.8	-	-	0	-	-	-

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

CLEMENTS FERRY RD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 2356.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1840	20	23	2127	132	147
Future Vol, veh/h	1840	20	23	2127	132	147
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, %	13	2	2	8	2	2
Mvmt Flow	2044	22	26	2363	147	163

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	2067	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	270	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	270	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	\$ 36218.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	4	-	-	270	-
HCM Lane V/C Ratio	77.5	-	-	0.095	-
HCM Control Delay (s)	\$ 36218.8	-	-	19.7	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	41.1	-	-	0.3	-

Notes

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

CLEMENTS FERRY RD WIDENING
39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	1752	29	14	2639	199	73
Future Vol, veh/h	1752	29	14	2639	199	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	17	2	2	6	2	2
Mvmt Flow	1947	32	16	2932	221	81

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1947
Stage 1	-	-	1947
Stage 2	-	-	2963
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	6.12
Critical Hdwy Stg 2	-	-	6.12
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	300
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	300
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	-
HCM LOS	-	-	-

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	81	-	-	300	-
HCM Lane V/C Ratio	-	1.001	-	-	0.052	-
HCM Control Delay (s)	-	191.3	-	-	17.7	-
HCM Lane LOS	-	F	-	-	C	-
HCM 95th %tile Q(veh)	-	5.5	-	-	0.2	-

Notes

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

CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 6983.6

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Vol, veh/h	1825	7	9	2341	208	34
Future Vol, veh/h	1825	7	9	2341	208	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	2	2	7	2	2
Mvmt Flow	2028	8	10	2601	231	38

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	2028
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	279
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	279
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	\$ 127666.2
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1	-	-	279	-
HCM Lane V/C Ratio	268.889	-	-	0.036	-
HCM Control Delay (s)	\$ 127666.2	-	-	18.4	-
HCM Lane LOS	F	-	-	C	-
HCM 95th %tile Q(veh)	36.3	-	-	0.1	-

Notes

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

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 2356.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↳			↶	↷	
Traffic Vol, veh/h	1840	20	23	2127	132	147
Future Vol, veh/h	1840	20	23	2127	132	147
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, %	16	2	2	8	2	2
Mvmt Flow	2044	22	26	2363	147	163

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	2067	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	270	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	270	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	\$ 36218.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	4	-	-	270	-
HCM Lane V/C Ratio	77.5	-	-	0.095	-
HCM Control Delay (s)	\$ 36218.8	-	-	19.7	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	41.1	-	-	0.3	-

Notes

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

CLEMENTS FERRY RD WIDENING
31: SC 41 & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 185.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	210	3	503	101	1	386
Future Vol, veh/h	210	3	503	101	1	386
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	200	-	240	200	-
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	5	2	2
Mvmt Flow	376	5	900	181	2	691

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1594	900	0
Stage 1	900	-	-
Stage 2	694	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	~ 118	337	-
Stage 1	397	-	-
Stage 2	496	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 118	337	-
Mov Cap-2 Maneuver	~ 118	-	-
Stage 1	397	-	-
Stage 2	495	-	-

Approach	WB	NB	SB
HCM Control Delay, s	\$ 1046.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	118	337	755	-
HCM Lane V/C Ratio	-	-	3.184	0.016	0.002	-
HCM Control Delay (s)	-	\$	1060.8	15.9	9.8	-
HCM Lane LOS	-	-	F	C	A	-
HCM 95th %tile Q(veh)	-	-	36.1	0	0	-

Notes

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

CLEMENTS FERRY RD WIDENING
33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 27.1

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	111	382	512	1	2	184
Future Vol, veh/h	111	382	512	1	2	184
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, %	42	2	2	2	2	26
Mvmt Flow	199	683	916	2	4	329

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	918	0	1997
Stage 1	-	-	917
Stage 2	-	-	1080
Critical Hdwy	4.52	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.578	-	3.518
Pot Cap-1 Maneuver	602	-	66
Stage 1	-	-	390
Stage 2	-	-	326
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	602	-	31
Mov Cap-2 Maneuver	-	-	31
Stage 1	-	-	390
Stage 2	-	-	152

Approach	EB	WB	SW
HCM Control Delay, s	3.1	0	165.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	602	-	-	273
HCM Lane V/C Ratio	0.33	-	-	1.219
HCM Control Delay (s)	13.9	0	-	165.7
HCM Lane LOS	B	A	-	F
HCM 95th %tile Q(veh)	1.4	-	-	15.5

Notes

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

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	6	436	0	0	988	1	1	0	0	2	0	0
Future Vol, veh/h	6	436	0	0	988	1	1	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	11	780	0	0	1767	2	2	0	0	4	0	0

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	1769	0	0	780	0	0	2569	2569	1768	2569	2570	780
Stage 1	-	-	-	-	-	-	1768	1768	-	801	801	-
Stage 2	-	-	-	-	-	-	801	801	-	1768	1769	-
Critical Hdwy	4.93	-	-	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	2.947	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	205	-	-	837	-	-	17	26	104	17	26	395
Stage 1	-	-	-	-	-	-	106	137	-	378	397	-
Stage 2	-	-	-	-	-	-	378	397	-	106	136	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	205	-	-	837	-	-	16	25	104	16	25	395
Mov Cap-2 Maneuver	-	-	-	-	-	-	16	25	-	16	25	-
Stage 1	-	-	-	-	-	-	100	137	-	358	376	-
Stage 2	-	-	-	-	-	-	358	376	-	106	136	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	0.3	0	256.6	285.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	16	205	-	-	837	-	-	16
HCM Lane V/C Ratio	0.224	0.052	-	-	-	-	-	0.112
HCM Control Delay (s)	285.9	23.5	-	-	0	-	-	256.6
HCM Lane LOS	F	C	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	0.3

CLEMENTS FERRY RD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	534	0	2	792	3	3
Future Vol, veh/h	534	0	2	792	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	13	2	2	8	2	2
Mvmt Flow	955	0	4	1417	5	5

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	955	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	720	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	720	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	69.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	66	-	-	720	-
HCM Lane V/C Ratio	0.163	-	-	0.005	-
HCM Control Delay (s)	69.9	-	-	10	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

CLEMENTS FERRY RD WIDENING
 39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 182

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	403	16	8	947	111	41
Future Vol, veh/h	403	16	8	947	111	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	17	2	2	6	2	2
Mvmt Flow	721	29	14	1694	199	73

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	721
Stage 1	-	-	721
Stage 2	-	-	1723
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	881
Stage 1	-	-	482
Stage 2	-	-	~ 158
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	881
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	482
Stage 2	-	-	~ 155

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	\$ 1826.7
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	33	427	-	-	881	-
HCM Lane V/C Ratio	6.017	0.172	-	-	0.016	-
HCM Control Delay (s)	\$ 2495.8	15.2	-	-	9.2	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	23.8	0.6	-	-	0.1	-

Notes

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

CLEMENTS FERRY RD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 192.1

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Vol, veh/h	444	4	5	842	116	19
Future Vol, veh/h	444	4	5	842	116	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	2	2	7	2	2
Mvmt Flow	794	7	9	1506	208	34

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	794
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	827
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	827
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	\$ 2034.5
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	47	-	-	827	-
HCM Lane V/C Ratio	5.138	-	-	0.011	-
HCM Control Delay (s)	\$ 2034.5	-	-	9.4	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	27.6	-	-	0	-

Notes

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

CLEMENTS FERRY RD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 150.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	452	11	13	784	74	82
Future Vol, veh/h	452	11	13	784	74	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, %	16	2	2	8	2	2
Mvmt Flow	809	20	23	1402	132	147

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	828
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	803
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	803
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	\$ 1363.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	74	-	-	803	-
HCM Lane V/C Ratio	3.771	-	-	0.029	-
HCM Control Delay (s)	\$ 1363.7	-	-	9.6	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	29.2	-	-	0.1	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
31: SC 41 & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↖	↗	↖	↖	↗
Traffic Vol, veh/h	234	4	673	429	2	2369
Future Vol, veh/h	234	4	673	429	2	2369
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	Free
Storage Length	0	200	-	240	200	-
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	419	7	1204	767	4	4238

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	5449	1204	0
Stage 1	1204	-	-
Stage 2	4245	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	0	224	-
Stage 1	~ 284	-	-
Stage 2	~ 7	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	0	224	-
Mov Cap-2 Maneuver	0	-	-
Stage 1	~ 284	-	-
Stage 2	~ 7	-	-

Approach	WB	NB	SB
HCM Control Delay, s		0	0
HCM LOS	-		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	224	580
HCM Lane V/C Ratio	-	-	0.032	0.006
HCM Control Delay (s)	-	-	21.6	11.2
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.1	0

Notes

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

CLEMENTS FERRY ROAD WIDENING
33: Clements Ferry Road & Reflectance Rd

3/13/2017

Intersection

Int Delay, s/veh 23

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	377	2340	679	7	7	111
Future Vol, veh/h	377	2340	679	7	7	111
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, %	19	2	2	2	2	13
Mvmt Flow	674	4186	1215	13	13	199

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1227	0	1221
Stage 1	-	-	1221
Stage 2	-	-	5535
Critical Hdwy	4.29	-	6.33
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.371	-	3.417
Pot Cap-1 Maneuver	~ 513	-	208
Stage 1	-	-	279
Stage 2	-	-	~ 1
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	~ 513	-	208
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	279
Stage 2	-	-	0

Approach	EB	WB	SW
HCM Control Delay, s	24.8	0	114.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	~ 513	-	-	208
HCM Lane V/C Ratio	1.315	-	-	1.015
HCM Control Delay (s)	178.5	0	-	114.6
HCM Lane LOS	F	A	-	F
HCM 95th %tile Q(veh)	28.9	-	-	9.1

Notes

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

CLEMENTS FERRY ROAD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	5	1962	2	0	4264	2	2	0	11	4	0	0
Future Vol, veh/h	5	1962	2	0	4264	2	2	0	11	4	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	80	4	2	2	6	2	2	2	17	2	2	2
Mvmt Flow	9	3510	4	0	7628	4	4	0	20	7	0	0

Major/Minor	Major1	Major2	Minor2	Minor1								
Conflicting Flow All	7631	0	0	3513	0	0	11159	11161	7630	11168	11160	3512
Stage 1	-	-	-	-	-	-	7630	7630	-	3529	3529	-
Stage 2	-	-	-	-	-	-	3529	3531	-	7639	7631	-
Critical Hdwy	4.9	-	-	4.12	-	-	7.12	6.52	6.37	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	2.92	-	-	2.218	-	-	3.518	4.018	3.453	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	71	-	-	0	0	0	0	0	8
Stage 1	-	-	-	-	-	-	0	0	-	9	16	-
Stage 2	-	-	-	-	-	-	9	16	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	0	-	-	71	-	-	0	0	0	-	0	8
Mov Cap-2 Maneuver	-	-	-	-	-	-	0	0	-	-	0	-
Stage 1	-	-	-	-	-	-	0	0	-	9	16	-
Stage 2	-	-	-	-	-	-	9	16	-	0	0	-

Approach	EB	WB	SE	NW
HCM Control Delay, s		0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	-	-	-	-	71	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	-	-	-	-	0	-	-	-
HCM Lane LOS	-	-	-	-	A	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

CLEMENTS FERRY ROAD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2328	7	4	1066	5	0
Future Vol, veh/h	2328	7	4	1066	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	2	2	8	2	2
Mvmt Flow	4165	13	7	1907	9	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	4177	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	38	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	38	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	
HCM LOS			-

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	38	-
HCM Lane V/C Ratio	-	-	-	0.188	-
HCM Control Delay (s)	-	-	-	120.5	0
HCM Lane LOS	-	-	-	F	A
HCM 95th %tile Q(veh)	-	-	-	0.6	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
39: Nelliefield Creek Drive & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 28.1

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	2369	168	91	3159	45	36
Future Vol, veh/h	2369	168	91	3159	45	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	4238	301	163	5651	81	64

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	4238
Stage 1	-	-	4238
Stage 2	-	-	5977
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	~ 36
Stage 1	-	-	~ 7
Stage 2	-	-	~ 1
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ 36
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	~ 7
Stage 2	-	-	0

Approach	EB	WB	NW
HCM Control Delay, s	0	50.7	-
HCM LOS	-	-	-

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	3	-	-	~ 36	-
HCM Lane V/C Ratio	-	21.467	-	-	4.522	-
HCM Control Delay (s)	-	\$ 11537	-	-	\$ 1809.3	-
HCM Lane LOS	-	F	-	-	F	-
HCM 95th %tile Q(veh)	-	10.1	-	-	19.1	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 352.9

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Vol, veh/h	2314	91	32	1315	47	20
Future Vol, veh/h	2314	91	32	1315	47	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	2	2	6	2	2
Mvmt Flow	4139	163	57	2352	84	36

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	4139
Stage 1	-	-	4139
Stage 2	-	-	2467
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	~ 39
Stage 1	-	-	~ 8
Stage 2	-	-	~ 66
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ 39
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	~ 8
Stage 2	-	-	0

Approach	EB	WB	NW
HCM Control Delay, s	0	11.2	\$ 19888.1
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	3	-	-	~ 39	-
HCM Lane V/C Ratio	39.952	-	-	1.468	-
HCM Control Delay (s)	\$ 19888.1	-	-	\$ 471	-
HCM Lane LOS	F	-	-	F	-
HCM 95th %tile Q(veh)	17.2	-	-	5.9	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/13/2017

Intersection

Int Delay, s/veh 959.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	2226	134	129	1246	47	79
Future Vol, veh/h	2226	134	129	1246	47	79
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, %	5	2	2	6	2	2
Mvmt Flow	3982	240	231	2229	84	141

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	4222
Stage 1	-	-	4102
Stage 2	-	-	2690
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	~ 36
Stage 1	-	-	~ 9
Stage 2	-	-	~ 51
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ 36
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	~ 9
Stage 2	-	-	0

Approach	EB	WB	NB
HCM Control Delay, s	0	248.9	\$ 26697.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	4	-	-	~ 36	-
HCM Lane V/C Ratio	56.35	-	-	6.41	-
HCM Control Delay (s)	\$ 26697.3	-	-	\$ 2652.8	0
HCM Lane LOS	F	-	-	F	A
HCM 95th %tile Q(veh)	30.5	-	-	27.5	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
31: SC 41 & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 97.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	131	2	326	240	1	740
Future Vol, veh/h	131	2	326	240	1	740
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	200	-	240	200	-
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	234	4	583	429	2	1324

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1910	583	0
Stage 1	583	-	-
Stage 2	1327	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	~ 75	512	-
Stage 1	558	-	-
Stage 2	248	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 75	512	-
Mov Cap-2 Maneuver	~ 75	-	-
Stage 1	558	-	-
Stage 2	247	-	-

Approach	WB	NB	SB
HCM Control Delay, s	\$ 1059.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	75	512	991	-
HCM Lane V/C Ratio	-	-	3.125	0.007	0.002	-
HCM Control Delay (s)	-	\$	1075.1	12.1	8.6	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	23.6	0	0	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	211	724	329	4	4	62
Future Vol, veh/h	211	724	329	4	4	62
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, %	19	2	2	2	2	13
Mvmt Flow	377	1295	589	7	7	111

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	596	0	2642
Stage 1	-	-	592
Stage 2	-	-	2050
Critical Hdwy	4.29	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.371	-	3.518
Pot Cap-1 Maneuver	902	-	26
Stage 1	-	-	553
Stage 2	-	-	108
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	902	-	0
Mov Cap-2 Maneuver	-	-	0
Stage 1	-	-	553
Stage 2	-	-	0

Approach	EB	WB	SW
HCM Control Delay, s	2.7	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	902	-	-	486
HCM Lane V/C Ratio	0.418	-	-	0.243
HCM Control Delay (s)	11.8	0	-	14.8
HCM Lane LOS	B	A	-	B
HCM 95th %tile Q(veh)	2.1	-	-	0.9

CLEMENTS FERRY ROAD WIDENING
36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	3	1027	1	0	479	1	1	0	6	2	0	0
Future Vol, veh/h	3	1027	1	0	479	1	1	0	6	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	80	4	2	2	6	2	2	2	17	2	2	2
Mvmt Flow	5	1837	2	0	857	2	2	0	11	4	0	0

Major/Minor	Major1	Major2	Minor2	Minor1
Conflicting Flow All	859	0	0	1839
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.9	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.92	-	-	2.218
Pot Cap-1 Maneuver	532	-	-	331
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	532	-	-	331
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	0	0	59.8	\$ 365.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	13	532	-	-	331	-	-	78
HCM Lane V/C Ratio	0.275	0.01	-	-	-	-	-	0.161
HCM Control Delay (s)	\$ 365.6	11.8	-	-	0	-	-	59.8
HCM Lane LOS	F	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.5

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

CLEMENTS FERRY ROAD WIDENING
 37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	882	4	1	540	3	0
Future Vol, veh/h	882	4	1	540	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	2	2	8	2	2
Mvmt Flow	1578	7	2	966	5	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1585
Stage 1	-	-	1581
Stage 2	-	-	970
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	414
Stage 1	-	-	186
Stage 2	-	-	368
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	414
Mov Cap-2 Maneuver	-	-	29
Stage 1	-	-	186
Stage 2	-	-	364

Approach	EB	WB	NB
HCM Control Delay, s	0	0	155.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	29	-	-	414	-
HCM Lane V/C Ratio	0.185	-	-	0.004	-
HCM Control Delay (s)	155.4	-	-	13.7	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

CLEMENTS FERRY ROAD WIDENING
39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 17.8

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	933	94	51	447	25	20
Future Vol, veh/h	933	94	51	447	25	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	1669	168	91	800	45	36

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1669
Stage 1	-	-	1669
Stage 2	-	-	982
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	385
Stage 1	-	-	168
Stage 2	-	-	363
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	385
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	168
Stage 2	-	-	277

Approach	EB	WB	NW
HCM Control Delay, s	0	1.8	\$ 599.5
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	19	119	-	-	385	-
HCM Lane V/C Ratio	2.354	0.301	-	-	0.237	-
HCM Control Delay (s)	\$ 1040.8	47.8	-	-	17.2	-
HCM Lane LOS	F	E	-	-	C	-
HCM 95th %tile Q(veh)	6	1.2	-	-	0.9	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 5.9

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Vol, veh/h	902	51	18	478	15	11
Future Vol, veh/h	902	51	18	478	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	2	2	6	2	2
Mvmt Flow	1614	91	32	855	27	20

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1614
Stage 1	-	-	1614
Stage 2	-	-	919
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	404
Stage 1	-	-	179
Stage 2	-	-	389
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	404
Mov Cap-2 Maneuver	-	-	28
Stage 1	-	-	179
Stage 2	-	-	358

Approach	EB	WB	NW
HCM Control Delay, s	0	0.5	\$ 323
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	42	-	-	404	-
HCM Lane V/C Ratio	1.107	-	-	0.08	-
HCM Control Delay (s)	\$ 323	-	-	14.7	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	4.5	-	-	0.3	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 152

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	842	75	72	473	26	44
Future Vol, veh/h	842	75	72	473	26	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	1506	134	129	846	47	79

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1640	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	-	-	395	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	395	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	\$ 3308.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	17	-	-	395	-
HCM Lane V/C Ratio	7.366	-	-	0.326	-
HCM Control Delay (s)	\$ 3308.5	-	-	18.5	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	16.4	-	-	1.4	-

Notes

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

CLEMENTS FERRY RD WIDENING PHASE II
 31: SC 41 & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 97.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑↑
Traffic Vol, veh/h	210	3	503	101	1	386
Future Vol, veh/h	210	3	503	101	1	386
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	200	-	240	200	-
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	5	2	2
Mvmt Flow	376	5	900	181	2	691

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1249	900	0
Stage 1	900	-	-
Stage 2	349	-	-
Critical Hdwy	6.63	6.23	4.13
Critical Hdwy Stg 1	5.43	-	-
Critical Hdwy Stg 2	5.83	-	-
Follow-up Hdwy	3.519	3.319	2.219
Pot Cap-1 Maneuver	~ 178	336	753
Stage 1	396	-	-
Stage 2	686	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 178	336	753
Mov Cap-2 Maneuver	~ 178	-	-
Stage 1	396	-	-
Stage 2	684	-	-

Approach	WB	NB	SB
HCM Control Delay, s	\$ 553.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	178	336	753	-
HCM Lane V/C Ratio	-	-	2.11	0.016	0.002	-
HCM Control Delay (s)	-	-	\$ 560.8	15.9	9.8	-
HCM Lane LOS	-	-	F	C	A	-
HCM 95th %tile Q(veh)	-	-	29.5	0	0	-

Notes

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

CLEMENTS FERRY RD WIDENING PHASE II
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 6.5

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	111	382	512	1	2	184
Future Vol, veh/h	111	382	512	1	2	184
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	325	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	42	2	2	2	2	26
Mvmt Flow	199	683	916	2	4	329

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	918	0	459
Stage 1	-	-	917
Stage 2	-	-	739
Critical Hdwy	4.94	-	7.42
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.62	-	3.56
Pot Cap-1 Maneuver	535	-	488
Stage 1	-	-	350
Stage 2	-	-	433
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	535	-	488
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	350
Stage 2	-	-	272

Approach	EB	WB	SW
HCM Control Delay, s	3.5	0	32.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	535	-	-	451
HCM Lane V/C Ratio	0.371	-	-	0.738
HCM Control Delay (s)	15.6	-	-	32.3
HCM Lane LOS	C	-	-	D
HCM 95th %tile Q(veh)	1.7	-	-	6

CLEMENTS FERRY RD WIDENING PHASE II
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕			↕			↕	
Traffic Vol, veh/h	6	436	0	0	988	1	2	0	0	1	0	0
Future Vol, veh/h	6	436	0	0	988	1	2	0	0	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	150	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	11	780	0	0	1767	2	4	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1769	0	0	780	0	0	1685	2570	390	2179	2569	885
Stage 1	-	-	-	-	-	-	801	801	-	1768	1768	-
Stage 2	-	-	-	-	-	-	884	1769	-	411	801	-
Critical Hdwy	5.76	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	3.03	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	135	-	-	833	-	-	61	26	609	26	26	288
Stage 1	-	-	-	-	-	-	344	395	-	87	135	-
Stage 2	-	-	-	-	-	-	307	135	-	589	395	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	135	-	-	833	-	-	57	24	609	24	24	288
Mov Cap-2 Maneuver	-	-	-	-	-	-	57	24	-	24	24	-
Stage 1	-	-	-	-	-	-	316	363	-	80	135	-
Stage 2	-	-	-	-	-	-	307	135	-	541	363	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	72.3	166.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	57	135	-	-	833	-	-	24
HCM Lane V/C Ratio	0.063	0.08	-	-	-	-	-	0.075
HCM Control Delay (s)	72.3	34	-	-	0	-	-	166.8
HCM Lane LOS	F	D	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.2	0.3	-	-	0	-	-	0.2

CLEMENTS FERRY RD WIDENING PHASE II
 37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	534	0	2	792	3	3
Future Vol, veh/h	534	0	2	792	3	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	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	13	2	2	8	2	2
Mvmt Flow	955	0	4	1417	5	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	955	1671
Stage 1	-	-	955
Stage 2	-	-	716
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	715	87
Stage 1	-	-	334
Stage 2	-	-	445
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	715	87
Mov Cap-2 Maneuver	-	-	87
Stage 1	-	-	334
Stage 2	-	-	443

Approach	EB	WB	NB
HCM Control Delay, s	0	0	30.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	150	-	-	715	-
HCM Lane V/C Ratio	0.072	-	-	0.005	-
HCM Control Delay (s)	30.8	-	-	10.1	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

CLEMENTS FERRY RD WIDENING PHASE II
 39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 43.8

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	403	16	8	947	111	41
Future Vol, veh/h	403	16	8	947	111	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	17	2	2	6	2	2
Mvmt Flow	721	29	14	1694	199	73

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	721
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	877
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	877
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	\$ 439.6
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	95	637	-	-	877	-
HCM Lane V/C Ratio	2.09	0.115	-	-	0.016	-
HCM Control Delay (s)	\$ 597.7	11.4	-	-	9.2	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	17.3	0.4	-	-	0.1	-

Notes

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

CLEMENTS FERRY RD WIDENING PHASE II
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 56.1

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	444	4	5	842	116	19
Future Vol, veh/h	444	4	5	842	116	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	2	2	7	2	2
Mvmt Flow	794	7	9	1506	208	34

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	794
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	823
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	823
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	\$ 593.9
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	114	-	-	823	-
HCM Lane V/C Ratio	2.118	-	-	0.011	-
HCM Control Delay (s)	\$ 593.9	-	-	9.4	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	20.4	-	-	0	-

Notes

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

CLEMENTS FERRY RD WIDENING PHASE II
43: Rivers Reach Dr & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 37.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	452	11	13	784	74	82
Future Vol, veh/h	452	11	13	784	74	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	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	2	2	8	2	2
Mvmt Flow	809	20	23	1402	132	147

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	828	1566
Stage 1	-	-	818
Stage 2	-	-	748
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	799	~ 102
Stage 1	-	-	394
Stage 2	-	-	429
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	799	~ 99
Mov Cap-2 Maneuver	-	-	~ 99
Stage 1	-	-	394
Stage 2	-	-	417

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	\$ 336
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	176	-	-	799	-
HCM Lane V/C Ratio	1.586	-	-	0.029	-
HCM Control Delay (s)	\$ 336	-	-	9.6	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	18.5	-	-	0.1	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
31: SC 41 & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 20.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑↑
Traffic Vol, veh/h	131	2	326	240	1	740
Future Vol, veh/h	131	2	326	240	1	740
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	200	-	240	200	-
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	234	4	583	429	2	1324

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1248	583	0
Stage 1	583	-	-
Stage 2	665	-	-
Critical Hdwy	6.63	6.23	4.13
Critical Hdwy Stg 1	5.43	-	-
Critical Hdwy Stg 2	5.83	-	-
Follow-up Hdwy	3.519	3.319	2.219
Pot Cap-1 Maneuver	~ 178	511	989
Stage 1	557	-	-
Stage 2	474	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	~ 178	511	989
Mov Cap-2 Maneuver	~ 178	-	-
Stage 1	557	-	-
Stage 2	473	-	-

Approach	WB	NB	SB
HCM Control Delay, s	223.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	178	511	989	-
HCM Lane V/C Ratio	-	-	1.317	0.007	0.002	-
HCM Control Delay (s)	-	-	227	12.1	8.6	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	13.5	0	0	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 3.2

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations	↖ ↗	↗ ↗	↖ ↗		↖ ↗	
Traffic Vol, veh/h	211	724	329	4	4	62
Future Vol, veh/h	211	724	329	4	4	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	325	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	19	2	2	2	2	13
Mvmt Flow	377	1295	589	7	7	111

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	596	0	298
Stage 1	-	-	592
Stage 2	-	-	1402
Critical Hdwy	4.48	-	7.16
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.39	-	3.43
Pot Cap-1 Maneuver	869	-	667
Stage 1	-	-	516
Stage 2	-	-	193
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	869	-	667
Mov Cap-2 Maneuver	-	-	30
Stage 1	-	-	516
Stage 2	-	-	109

Approach	EB	WB	SW
HCM Control Delay, s	2.8	0	25.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	869	-	-	292
HCM Lane V/C Ratio	0.434	-	-	0.404
HCM Control Delay (s)	12.3	-	-	25.5
HCM Lane LOS	B	-	-	D
HCM 95th %tile Q(veh)	2.2	-	-	1.9

CLEMENTS FERRY ROAD WIDENING
36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗			↕			↕	
Traffic Vol, veh/h	3	1027	1	0	479	1	1	0	6	2	0	0
Future Vol, veh/h	3	1027	1	0	479	1	1	0	6	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	150	-	-	-	-	-	-	-	-
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, %	80	4	2	2	6	2	2	2	17	2	2	2
Mvmt Flow	5	1837	2	0	857	2	2	0	11	4	0	0

Major/Minor	Major1	Major2	Minor2	Minor1
Conflicting Flow All	859	0	0	1839
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	5.7	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3	-	-	2.22
Pot Cap-1 Maneuver	431	-	-	327
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	431	-	-	327
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	0	0	21.8	208.8
HCM LOS			C	F

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	21	431	-	-	327	-	-	227
HCM Lane V/C Ratio	0.17	0.012	-	-	-	-	-	0.055
HCM Control Delay (s)	208.8	13.5	-	-	0	-	-	21.8
HCM Lane LOS	F	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.2

CLEMENTS FERRY ROAD WIDENING
37: Cainhoy Village Rd & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	882	4	1	540	3	0
Future Vol, veh/h	882	4	1	540	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	2	2	8	2	2
Mvmt Flow	1578	7	2	966	5	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	1585	2068
Stage 1	-	-	1581
Stage 2	-	-	487
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	411	47
Stage 1	-	-	155
Stage 2	-	-	583
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	411	47
Mov Cap-2 Maneuver	-	-	47
Stage 1	-	-	155
Stage 2	-	-	580

Approach	EB	WB	NB
HCM Control Delay, s	0	0	91.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	47	-	-	411	-
HCM Lane V/C Ratio	0.114	-	-	0.004	-
HCM Control Delay (s)	91.2	-	-	13.8	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

CLEMENTS FERRY ROAD WIDENING
39: Nelliefield Creek Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 17.4

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	933	94	51	447	25	20
Future Vol, veh/h	933	94	51	447	25	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	300	-	150	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	1669	168	91	800	45	36

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1669	0	2251	835
Stage 1	-	-	-	-	1669	-
Stage 2	-	-	-	-	582	-
Critical Hdwy	-	-	4.14	-	7.54	6.94
Critical Hdwy Stg 1	-	-	-	-	6.54	-
Critical Hdwy Stg 2	-	-	-	-	6.54	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	381	-	~ 23	311
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	466	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	381	-	~ 19	311
Mov Cap-2 Maneuver	-	-	-	-	~ 19	-
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	355	-

Approach	EB	WB	NW
HCM Control Delay, s	0	1.8	\$ 586.3
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	NWLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	19	311	-	-	381	-
HCM Lane V/C Ratio	2.354	0.115	-	-	0.239	-
HCM Control Delay (s)	\$ 1040.8	18.1	-	-	17.4	-
HCM Lane LOS	F	C	-	-	C	-
HCM 95th %tile Q(veh)	6	0.4	-	-	0.9	-

Notes

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

CLEMENTS FERRY ROAD WIDENING
41: Peninsula Cove Drive & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 2.8

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	902	51	18	478	15	11
Future Vol, veh/h	902	51	18	478	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	275	320	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	2	2	6	2	2
Mvmt Flow	1614	91	32	855	27	20

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	2106
Stage 1	-	-	1614
Stage 2	-	-	492
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	400	44
Stage 1	-	-	148
Stage 2	-	-	580
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	400	40
Mov Cap-2 Maneuver	-	-	40
Stage 1	-	-	148
Stage 2	-	-	534

Approach	EB	WB	NW
HCM Control Delay, s	0	0.5	148.7
HCM LOS			F

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	64	-	-	400	-
HCM Lane V/C Ratio	0.727	-	-	0.081	-
HCM Control Delay (s)	148.7	-	-	14.8	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	3.2	-	-	0.3	-

CLEMENTS FERRY ROAD WIDENING
43: Rivers Reach Dr & Clements Ferry Road

3/12/2017

Intersection

Int Delay, s/veh 34.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	842	75	72	473	26	44
Future Vol, veh/h	842	75	72	473	26	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	2	6	2	2
Mvmt Flow	1506	134	129	846	47	79

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	1640	2254
Stage 1	-	-	1573
Stage 2	-	-	681
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	391	~ 35
Stage 1	-	-	156
Stage 2	-	-	464
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	391	~ 23
Mov Cap-2 Maneuver	-	-	~ 23
Stage 1	-	-	156
Stage 2	-	-	311

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	\$ 744.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	55	-	-	391	-
HCM Lane V/C Ratio	2.277	-	-	0.329	-
HCM Control Delay (s)	\$ 744.5	-	-	18.7	-
HCM Lane LOS	F	-	-	C	-
HCM 95th %tile Q(veh)	12.5	-	-	1.4	-

Notes

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

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/15/2017

Intersection

Int Delay, s/veh 20.6

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations	↖ ↗	↖↖	↖↗		↖↗	
Traffic Vol, veh/h	199	2089	956	2	4	329
Future Vol, veh/h	199	2089	956	2	4	329
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	325	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	42	2	2	2	2	26
Mvmt Flow	221	2321	1062	2	4	366

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1064	0	532
Stage 1	-	-	1063
Stage 2	-	-	1603
Critical Hdwy	4.94	-	7.42
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.62	-	3.56
Pot Cap-1 Maneuver	458	-	434
Stage 1	-	-	293
Stage 2	-	-	150
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	458	-	434
Mov Cap-2 Maneuver	-	-	9
Stage 1	-	-	293
Stage 2	-	-	78

Approach	EB	WB	SW
HCM Control Delay, s	1.7	0	209.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	458	-	-	277
HCM Lane V/C Ratio	0.483	-	-	1.336
HCM Control Delay (s)	20	-	-	209.8
HCM Lane LOS	C	-	-	F
HCM 95th %tile Q(veh)	2.6	-	-	18.9

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/15/2017

Intersection												
Int Delay, s/veh	20.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗			↕			↕		
Traffic Vol, veh/h	11	1165	0	0	4848	2	4	0	0	2	0	0
Future Vol, veh/h	11	1165	0	0	4848	2	4	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	12	1294	0	0	5387	2	4	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	5389	0	0	1294	0	0	4012	6708	647	6060	6707	2694
Stage 1	-	-	-	-	-	-	1319	1319	-	5388	5388	-
Stage 2	-	-	-	-	-	-	2693	5389	-	672	1319	-
Critical Hdwy	5.76	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	3.03	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	~ 1	-	-	531	-	-	~ 1	0	414	0	0	16
Stage 1	-	-	-	-	-	-	166	225	-	0	1	-
Stage 2	-	-	-	-	-	-	22	1	-	412	225	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 1	-	-	531	-	-	-	0	414	-	0	16
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	166	0	-	0	1	-
Stage 2	-	-	-	-	-	-	22	1	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	105.2	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 1	-	-	531	-	-	-
HCM Lane V/C Ratio	-	12.222	-	-	0	-	-	-
HCM Control Delay (s)	\$	11246.2	-	-	0	-	-	-
HCM Lane LOS	-	F	-	-	A	-	-	-
HCM 95th %tile Q(veh)	-	3	-	-	0	-	-	-

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

CLEMENTS FERRY RD WIDENING
33: Clements Ferry Road & Reflectance Rd

3/15/2017

Intersection

Int Delay, s/veh 5

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	340	1880	589	6	6	100
Future Vol, veh/h	340	1880	589	6	6	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	325	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	42	2	2	2	2	26
Mvmt Flow	378	2089	654	7	7	111

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	661	0	331
Stage 1	-	-	658
Stage 2	-	-	1800
Critical Hdwy	4.94	-	7.42
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.62	-	3.56
Pot Cap-1 Maneuver	699	-	599
Stage 1	-	-	477
Stage 2	-	-	117
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	699	-	599
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	477
Stage 2	-	-	54

Approach	EB	WB	SW
HCM Control Delay, s	2.5	0	86
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	699	-	-	149
HCM Lane V/C Ratio	0.54	-	-	0.79
HCM Control Delay (s)	16	-	-	86
HCM Lane LOS	C	-	-	F
HCM 95th %tile Q(veh)	3.3	-	-	5

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/15/2017

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗			↕			↕		
Traffic Vol, veh/h	5	1962	2	0	1843	2	3	0	0	2	0	10
Future Vol, veh/h	5	1962	2	0	1843	2	3	0	0	2	0	10
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	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	6	2180	2	0	2048	2	3	0	0	2	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2050	0	0	2182	0	0	3216	4242	1091	3150	4242	1025
Stage 1	-	-	-	-	-	-	2192	2192	-	2049	2049	-
Stage 2	-	-	-	-	-	-	1024	2050	-	1101	2193	-
Critical Hdwy	5.76	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	3.03	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	94	-	-	240	-	-	4	2	210	5	2	232
Stage 1	-	-	-	-	-	-	46	82	-	57	97	-
Stage 2	-	-	-	-	-	-	252	97	-	226	82	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	94	-	-	240	-	-	4	2	210	5	2	232
Mov Cap-2 Maneuver	-	-	-	-	-	-	4	2	-	5	2	-
Stage 1	-	-	-	-	-	-	43	77	-	53	97	-
Stage 2	-	-	-	-	-	-	240	97	-	212	77	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	\$ 1449.7	230.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	4	94	-	-	240	-	-	27
HCM Lane V/C Ratio	0.833	0.059	-	-	-	-	-	0.494
HCM Control Delay (s)	\$ 1449.7	45.7	-	-	0	-	-	230.8
HCM Lane LOS	F	E	-	-	A	-	-	F
HCM 95th %tile Q(veh)	1.1	0.2	-	-	0	-	-	1.5

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

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 20.6

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations	↖ ↗	↖ ↗	↖ ↗		↖ ↗	
Traffic Vol, veh/h	199	2089	956	2	4	329
Future Vol, veh/h	199	2089	956	2	4	329
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	325	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	42	2	2	2	2	26
Mvmt Flow	221	2321	1062	2	4	366

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1064	0	532
Stage 1	-	-	1063
Stage 2	-	-	1603
Critical Hdwy	4.94	-	7.42
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.62	-	3.56
Pot Cap-1 Maneuver	458	-	434
Stage 1	-	-	293
Stage 2	-	-	150
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	458	-	434
Mov Cap-2 Maneuver	-	-	9
Stage 1	-	-	293
Stage 2	-	-	78

Approach	EB	WB	SW
HCM Control Delay, s	1.7	0	209.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	458	-	-	277
HCM Lane V/C Ratio	0.483	-	-	1.336
HCM Control Delay (s)	20	-	-	209.8
HCM Lane LOS	C	-	-	F
HCM 95th %tile Q(veh)	2.6	-	-	18.9

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection												
Int Delay, s/veh	20.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗			↕			↕		
Traffic Vol, veh/h	11	1165	0	0	4848	2	4	0	0	2	0	0
Future Vol, veh/h	11	1165	0	0	4848	2	4	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	12	1294	0	0	5387	2	4	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	5389	0	0	1294	0	0	4012	6708	647	6060	6707	2694
Stage 1	-	-	-	-	-	-	1319	1319	-	5388	5388	-
Stage 2	-	-	-	-	-	-	2693	5389	-	672	1319	-
Critical Hdwy	5.76	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	3.03	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	~ 1	-	-	531	-	-	~ 1	0	414	0	0	16
Stage 1	-	-	-	-	-	-	166	225	-	0	1	-
Stage 2	-	-	-	-	-	-	22	1	-	412	225	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 1	-	-	531	-	-	-	0	414	-	0	16
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	166	0	-	0	1	-
Stage 2	-	-	-	-	-	-	22	1	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	105.2	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 1	-	-	531	-	-	-
HCM Lane V/C Ratio	-	12.222	-	-	0	-	-	-
HCM Control Delay (s)	\$	11246.2	-	-	0	-	-	-
HCM Lane LOS	-	F	-	-	A	-	-	-
HCM 95th %tile Q(veh)	-	3	-	-	0	-	-	-

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

CLEMENTS FERRY RD WIDENING
 33: Clements Ferry Road & Reflectance Rd

3/12/2017

Intersection

Int Delay, s/veh 5

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	340	1880	589	6	6	100
Future Vol, veh/h	340	1880	589	6	6	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	325	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	42	2	2	2	2	26
Mvmt Flow	378	2089	654	7	7	111

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	661	0	331
Stage 1	-	-	658
Stage 2	-	-	1800
Critical Hdwy	4.94	-	7.42
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.62	-	3.56
Pot Cap-1 Maneuver	699	-	599
Stage 1	-	-	477
Stage 2	-	-	117
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	699	-	599
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	477
Stage 2	-	-	54

Approach	EB	WB	SW
HCM Control Delay, s	2.5	0	86
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1
Capacity (veh/h)	699	-	-	149
HCM Lane V/C Ratio	0.54	-	-	0.79
HCM Control Delay (s)	16	-	-	86
HCM Lane LOS	C	-	-	F
HCM 95th %tile Q(veh)	3.3	-	-	5

CLEMENTS FERRY RD WIDENING
 36: Bradbury Lane/N Steel Circle & Clements Ferry Road

3/12/2017

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↖ ↗			↕			↕		
Traffic Vol, veh/h	5	1962	2	0	1843	2	3	0	0	2	0	10
Future Vol, veh/h	5	1962	2	0	1843	2	3	0	0	2	0	10
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	200	-	-	-	-	-	-	-	-	-	-	-
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, %	83	14	2	2	5	100	2	2	2	2	2	2
Mvmt Flow	6	2180	2	0	2048	2	3	0	0	2	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2050	0	0	2182	0	0	3216	4242	1091	3150	4242	1025
Stage 1	-	-	-	-	-	-	2192	2192	-	2049	2049	-
Stage 2	-	-	-	-	-	-	1024	2050	-	1101	2193	-
Critical Hdwy	5.76	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	3.03	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	94	-	-	240	-	-	4	2	210	5	2	232
Stage 1	-	-	-	-	-	-	46	82	-	57	97	-
Stage 2	-	-	-	-	-	-	252	97	-	226	82	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	94	-	-	240	-	-	4	2	210	5	2	232
Mov Cap-2 Maneuver	-	-	-	-	-	-	4	2	-	5	2	-
Stage 1	-	-	-	-	-	-	43	77	-	53	97	-
Stage 2	-	-	-	-	-	-	240	97	-	212	77	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	\$ 1449.7	230.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	4	94	-	-	240	-	-	27
HCM Lane V/C Ratio	0.833	0.059	-	-	-	-	-	0.494
HCM Control Delay (s)	\$ 1449.7	45.7	-	-	0	-	-	230.8
HCM Lane LOS	F	E	-	-	A	-	-	F
HCM 95th %tile Q(veh)	1.1	0.2	-	-	0	-	-	1.5

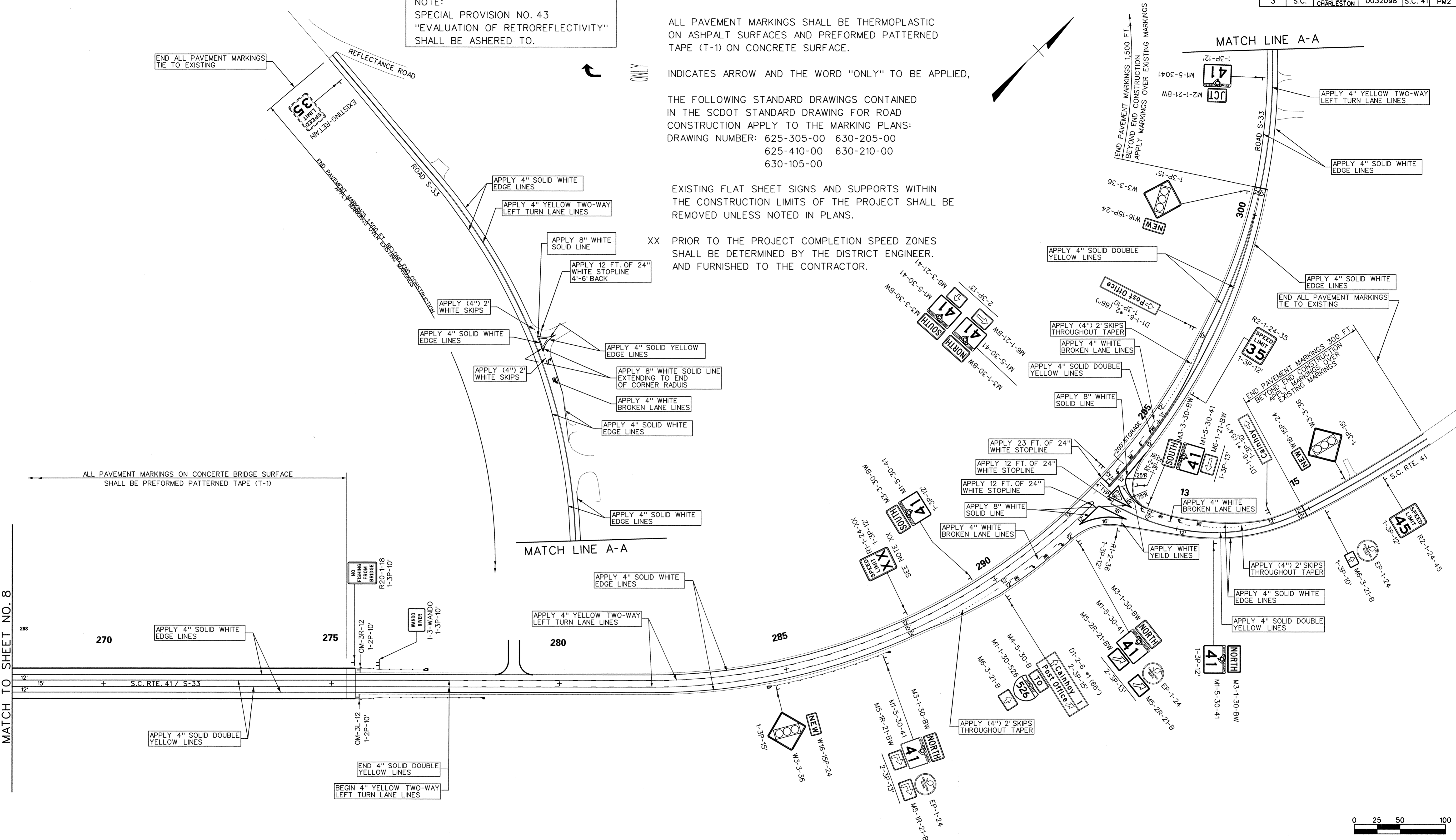
Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

APPENDIX C-
Reports & Documents
Associated with this Study

NOTE:
SPECIAL PROVISION NO. 43
"EVALUATION OF RETROREFLECTIVITY"
SHALL BE ASHERED TO.

NOTES:
ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC ON ASPHALT SURFACES AND PREFORMED PATTERNED TAPE (T-1) ON CONCRETE SURFACE.
INDICATES ARROW AND THE WORD "ONLY" TO BE APPLIED.
THE FOLLOWING STANDARD DRAWINGS CONTAINED IN THE SCDOT STANDARD DRAWING FOR ROAD CONSTRUCTION APPLY TO THE MARKING PLANS:
DRAWING NUMBER: 625-305-00 630-205-00
625-410-00 630-210-00
630-105-00

EXISTING FLAT SHEET SIGNS AND SUPPORTS WITHIN THE CONSTRUCTION LIMITS OF THE PROJECT SHALL BE REMOVED UNLESS NOTED IN PLANS.
XX PRIOR TO THE PROJECT COMPLETION SPEED ZONES SHALL BE DETERMINED BY THE DISTRICT ENGINEER, AND FURNISHED TO THE CONTRACTOR.



MATCH TO SHEET NO. 8

1/8/2015 L:\1315001 - SC 41 over Wando River\Port Mk. \Snt_PMO2.dgn

4			
3			
2			
1	DAM	01/08/15	RELEASED FOR CONSTRUCTION
REV. NO.	BY	DATE	DESCRIPTION OF REVISION
TOPO.	DATE		
DWG.	DATE		
R/W	DATE		

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

S.C. ROUTE 41 BRIDGE REPLACEMENT
OVER WANDO RIVER

PAVEMENT MARKING & SIGNING PLANS

S.C. RTE. 41 DWG. NO. PM2


APPENDIX I

Traffic Study



South Carolina
Department of Transportation

MEMORANDUM

TO: Tucker Creed, Assistant Program Manager, RPG 1
FROM: Brent S. Dillon, State Traffic Design Engineer 
DATE: September 21, 2012
RE: Clements Ferry Road (Road S-33) Widening – Phase I
Traffic Study - Berkeley County
File: 08.039390 Pin: 39390

As requested, Traffic Engineering has performed a traffic study for Phase I of the Clements Ferry Road widening project in Berkeley County. The analysis corridor begins at the interchange of Interstate 526 and Clements Ferry Road and ends at the intersection with Jack Primus Road. The improvements include roadway widening and access management. The results of the study are summarized below.

No Build Analysis

Clements Ferry Road is currently a three lane section with a two-way left turn lane (TWLTL) from near Marina Drive to Jack Primus Road. There are signals located at the I-526 westbound ramps, Charleston Regional Parkway, and at Jack Primus Road. Clements Ferry Road is land locked with waterways on both sides that limit the depth of development and precludes other intersecting highways that would shift or skew travel patterns.

New turning movement counts were conducted at the I-526 interchange and at intersections along the analysis corridor, where it was found that truck traffic averages 10 to 15 percent. Count Station 270, which is located near Joyner Lane approximately 1.5 miles from I-526, shows AADTs increased from 11,000vpd from 1997 to 22,000 in 2006. A brief drop to 20,000 occurred afterwards, before increasing to 27,400 in 2010 and again to 28,500 in 2011. Count Station 269, which is just northeast of the Jack Primus Road intersection, shows AADTs holding steady in the 15-16,000 range from 2006 to 2011. Comparing these two count stations indicates the development through the first part of the corridor is the primary factor of growth, not any increase in traffic coming from Mount Pleasant. There is considerable undeveloped land northeast of the Jack Primus Road intersection that will likely contribute to a large increase in traffic in the future.

SCDOT's Planning section provided future AADTs that were used to establish growth rates. From this data an annual growth rate of two percent was chosen for analysis. It is assumed that the project will be complete in 2015, making 2035 the design year. Table 1 below summarizes the results of the existing conditions and No Build scenarios.



Table 1: Signalized Intersection LOS, No Build Analysis (AM/PM)

Intersection	2012		2015		2035	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
I-526 WB Ramps	B/B	16/11	B/B	19/12	D/D	45/40
Charleston Regional	C/B	35/16	D/B	47/18	F/F	200+/121
Jack Primus	B/B	15/16	B/B	18/18	F/F	123/86

In addition, a two-lane segment capacity analysis was performed using existing 2012 volumes just north of the Beresford Run intersection. The results indicate that the roadway experiences LOS E conditions in the AM and LOS F conditions in the PM peak hour due to two way volumes approaching 3,000 vehicles per hour and percent-time-spent-following (PTSF) averaging over 95%.

Access Management

A priority of the project is to address the high number of access points and planned future developments. A separate review was performed and it was determined that due to truck traffic, minimal interconnecting roadways, and potential volume of redirected vehicles, a raised median along much of the first part of Phase I would not be feasible. Therefore, a TWLTL was retained from Marina Drive to Charleston Regional Parkway, where a raised median with selected openings would continue northeast along Clements Ferry Road.

A potential solution to effectively control traffic patterns in the TWLTL section is to strategically place signals where they not only create gaps in the traffic stream, but also maintain proper spacing to limit their effect on roadway level of service. As signal density along a corridor increases, the level of service of the roadway decreases due to the delays associated with the signals and corresponding decrease in average travel speeds.

The signals at Charleston Regional Parkway and Jack Primus are currently spaced at one mile. Fortunately, there are two locations south of Charleston Regional that, with some modifications, appear to be desirable for signalization at some time in the future. These locations are at Marina Drive and Sanders Farm Lane. Both locations would need some relocation of nearby access points to make the best use of the new signal. With these two intersections signalized, a one mile signal spacing will be achieved which will allow improved operations at the unsignalized intersections along the corridor with limited disturbance to the through traffic.

For this analysis, the two proposed signals will not be implemented at opening. Instead they will be assumed to be needed at some point in the future when it becomes apparent that the through volumes grow beyond the ability for the unsignalized intersections operate acceptably under free-flow conditions with the five lane section. The signal at Marina Drive will likely be the first to be installed assuming completion of the future development across the street along with relocating the Beresford Run traffic simultaneously.

Finally, it will be assumed that, going forward, the county will require all new developments and re-developments along the corridor to place interconnecting roadways between properties. This will remove some pressure off of Clements Ferry Road as fewer access points will be able to serve a larger number of properties and consolidate traffic patterns. For the raised median section going northeast of Charleston Regional Parkway, it will be assumed that one or two directional left openings will be provided with a future single full-access signalized intersection. This full-access opening will ideally be placed at the midpoint between Charleston Regional and Jack Primus Road to serve the large planned developments on both sides of the roadway.

Build Analysis

Clements Ferry Road

The build scenario assumes background growth only throughout the corridor at two percent annually. There are multiple large developments planned along this phase of the widening, however no impact studies are available to document the volumes that these sites might generate. The recommendations in the access section about signal placement and access management will be the basis for the future build analysis. Table 2 below summarizes the results with the widening to two through lanes in each direction of Clements Ferry Road.

Table 2: Signalized Intersection LOS, Build Analysis (AM/PM)

Intersection	2015		2035	
	LOS	Delay (s)	LOS	Delay (s)
I-526 WB Ramps	B/B	10/12	D/D	44/40
Charleston Regional	B/A	12/8	C/B	31/12
Jack Primus	A/B	9/10	B/B	14/14 /

A multilane segment capacity analysis of 2035 conditions indicates Clements Ferry Road will experience LOS C conditions in the AM and LOS D conditions in the PM peak hour based on passenger car densities per mile.

I-526 interchange

Traffic counts were ordered for the interchange to evaluate potential improvements. The WB I-526 on-ramp has considerable volumes (currently 1,100-1,200 AM and PM), of which 800-900 originate as SB rights from Clements Ferry Road. Since this ramp mostly consists of bridged roadway, it is assumed that improvements here would not be considered as part of this project. However, the I-526 WB on-ramp begins to reach capacity by the design year. A two lane on-ramp with a transition to one lane prior to the I-526 mainline will be needed to prevent excessive delays from the yield/merge from Clements Ferry Road.

Evaluating the NB Clements Ferry traffic volumes reveals a potential improvement for the I-526 EB loop. This loop carries 762 cars in the AM and 873 cars in the PM peak hour. The adjacent through movement (349 AM and 538 PM) mostly becomes left turns onto the I-526 WB on-ramp. A clear improvement here would be to maintain a single NB through lane on Clements Ferry Road by marking out the outside lane between the EB on-ramp and the loop. Then Clements Ferry can be restriped to create a free-flow movement for the loop traffic going into the new five lane section.

Recommendations

- Five lane section (15 foot TWLTL) from Marina Drive to Charleston Regional Parkway.
- Implement access plan to minimize new signals along corridor. Recommended future signal locations are at a reconfigured Marina Drive and also at a reconfigured Sanders Farm Lane.
- Raised median between Charleston Regional Parkway and Jack Primus Road. Include one full-access opening at the midpoint of this segment that can accommodate a future signal for the potential high-volume developments. Two other openings, equidistant to the signals, can be directional lefts to serve restricted (no left-out) driveways.
- Use minimum 200 foot left turn lanes on Clements Ferry Road due to posted speeds. Left turn lanes are currently recommended at Marina Drive (NB only), Charleston Regional Parkway, Jack Primus Road, and/or where recommended by the District Traffic Engineer.
- Maintain the NB approach of Clements Ferry Road at the EB I-526 on-ramp as a single through lane adjacent to the median. Restripe the outside lane to allow a free-flow movement from the loop onto NB Clements Ferry Road.
- Access control should be maintained to the north of I-526 along Clements Ferry Road per ARMS section 3C-4.

If you have any questions, please feel free to contact Ron Hinson or me.

BSD:ths

ec: Mark Nesbit, District Traffic Engineer – District Six
Traffic Design File (Yellow Copy)

File: TE/JAB

CAINHOY

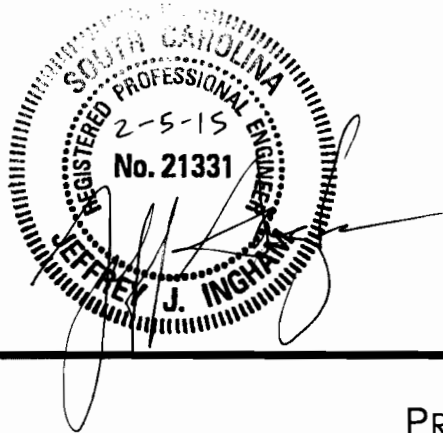
TRAFFIC IMPACT ANALYSIS

**CHARLESTON,
SOUTH CAROLINA**

**PREPARED FOR:
CHGC, INC**

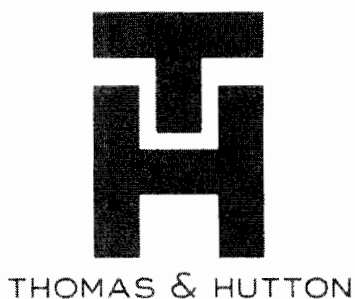
J-20028

**JULY 2014
REVISED FEBRUARY 2015**



PREPARED BY:

THOMAS & HUTTON



**CHARLESTON, SOUTH CAROLINA MYRTLE BEACH, SOUTH CAROLINA
SAVANNAH, GEORGIA BRUNSWICK, GEORGIA
COLUMBIA, SOUTH CAROLINA**

1. INTRODUCTION

The Cainhoy PUD Master Plan area consists of over 9,000 acres in Berkeley County and the City of Charleston. The overall future development plan will include new roadway connections to Clements Ferry Road, Cainhoy Road, and Jack Primus Road. Multiple internal roadways are planned to aid in the dispersion of area traffic. A preliminary roadway framework plan, as depicted in the development agreement with the City of Charleston, is shown in **Figure 1**.

The first phase of development is planned on the south side of Clement Ferry Road and is envisioned to include residential, retail, and institutional uses. **Figure 1A** conceptually shows the locations of the residential and retail areas. The master developer (Cainhoy Land & Timber), plans to sell tracts within these use areas to developers who will plan the individual neighborhoods and retail centers within phase 1. Considering that these tracts will be sold and independently planned, a detailed land plan showing lot lines or building locations is not available at this time. The K8 and High School tracts shown in **Figure 1A** have been conveyed to the Berkeley County School District and are in the permitting stage. All development within phase one will be limited to the densities proposed in this study. It is understood that additional development would require further analysis and an updated TIA.

It is expected that the first phase of development will consist of the following.

- 600 single family homes
- 150 townhomes/apartments
- 150,000 square feet of retail space
- 1,200 student high school
- 1,400 student K-8 school

This traffic impact study will assess the traffic conditions through this phase of development. The morning and afternoon peak hour traffic conditions will be evaluated at surrounding intersections, with and without the proposed development. For the purposes of this study, it is assumed that the development will be constructed over the next 8 years. The scope of the study was coordinated with SCDOT and the City of Charleston; the following intersections are included:

- Clements Ferry Road and SC 41
- Clements Ferry Road and Cainhoy Road
- Clements Ferry Road and site access
- Clements Ferry Road and Jack Primus Road
- Clements Ferry Road and Charleston Regional Parkway
- Clements Ferry Road and I-526 eastbound (EB) ramp
- Clements Ferry Road and I-526 westbound (WB) ramp
- SC 41 and US 17 (Mount Pleasant)

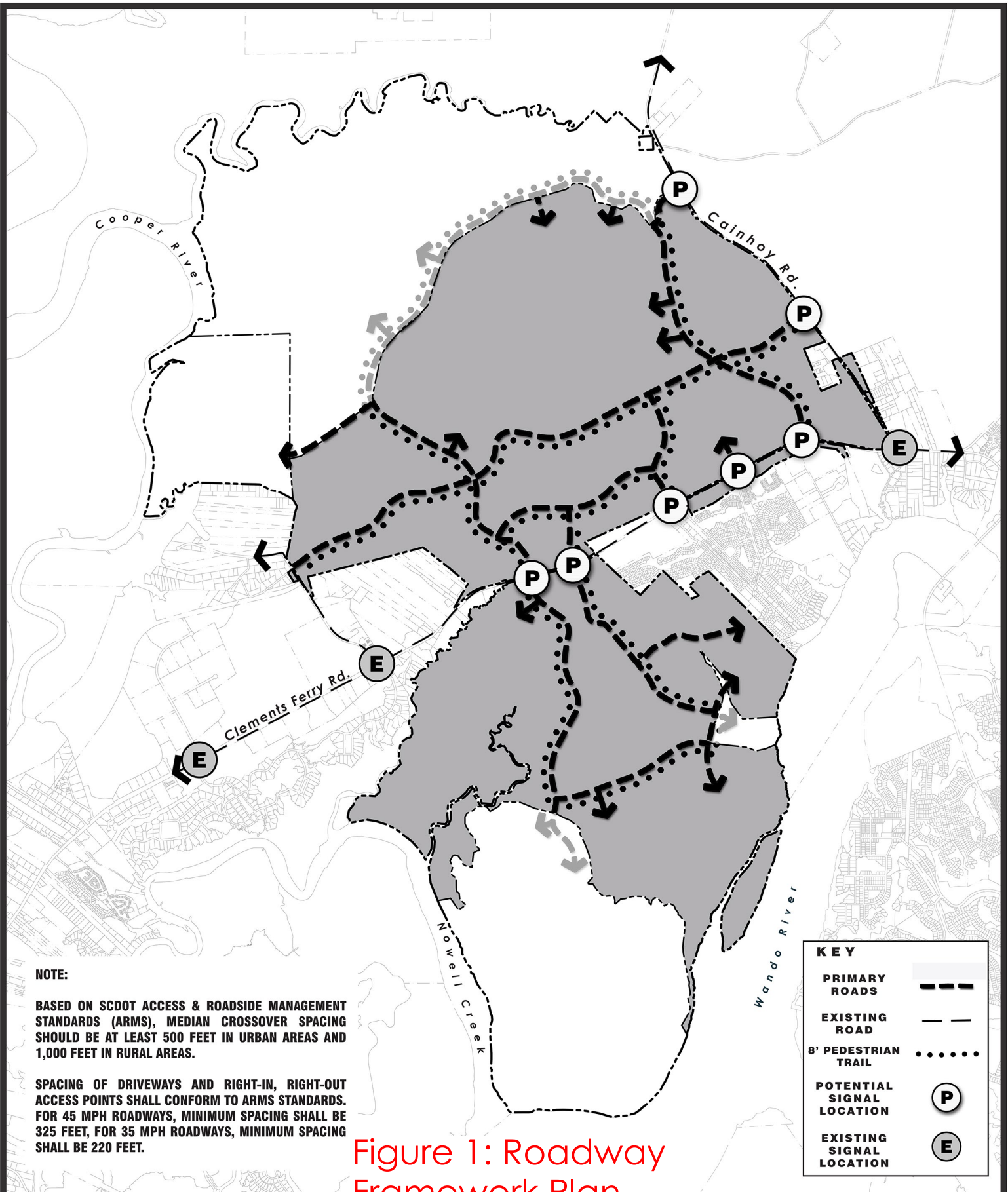
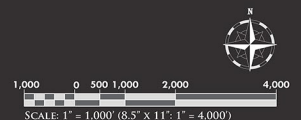


Figure 1: Roadway Framework Plan

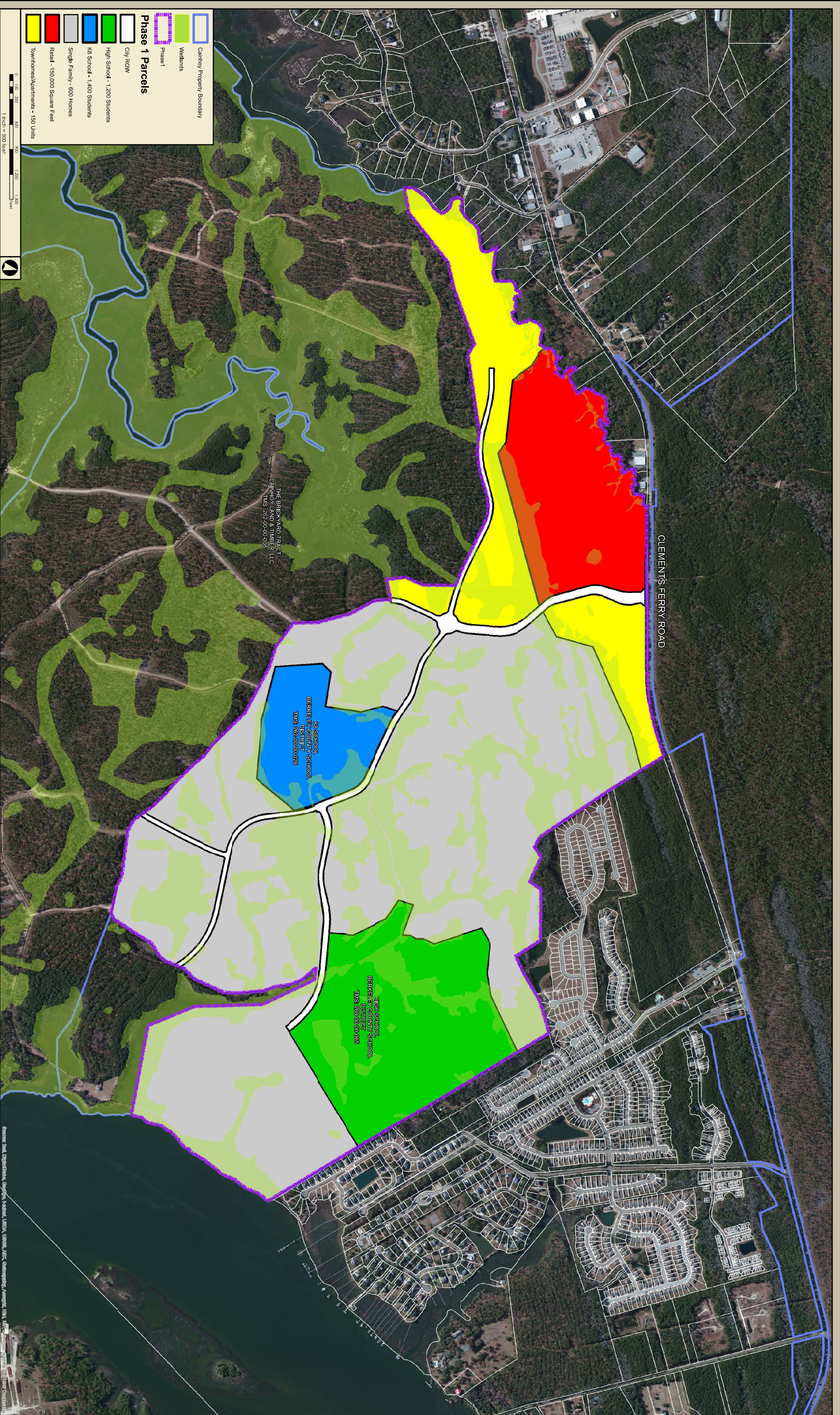
Prepared for:
Cainhoj Land & Timber, LLC.

**CAINHOJ LAND & TIMBER
DEVELOPMENT PLAN**

Berkeley County, South Carolina
January 24, 2014



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City of Charleston, Berkeley County, SC

Cainhoy

Phase 1 - Land Use Map

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Figure 1A Phase 1 - Land Use Map

2. EXISTING CONDITIONS

Roadway Conditions

Clements Ferry Road is currently a three lane section with a two-way left turn lane (TWLTL) from near Marina Drive to Jack Primus Road. North of Jack Primus Road, Clements Ferry Road tapers to a two lane cross section. There are signals located at the I-526 westbound ramp, Charleston Regional Parkway, Jack Primus Road, and at Cainhoy Road.

Numerous roadway improvement projects for the area have been discussed and evaluated. State (SCDOT), regional (MPO), County (Berkeley), and Town (Mt. Pleasant) governments have all envisioned and anticipated the need for specific roadway widening projects.

Berkeley County plans to widen Clements Ferry Road as part of their one percent sales tax initiative. On November 4, 2008, the voters of Berkeley County passed a one percent sales and use tax for "financing the costs of highways, roads, bridges, and other transportation-related project facilities, and drainage facilities related thereto." This tax will last for seven years and all the revenue generated will be used to construct roadway improvements. The widening of Clements Ferry Road is included in the list of projects associated with the approved referendum. There are signals located at the I-526 westbound ramp, Charleston Regional Parkway, Jack Primus Road, and at Cainhoy Road.

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The Clements Ferry Road widening project is split into two phases. Phase 1 will widen approximately 3.6 miles of Clements Ferry Road (S-33) from I-526 to Jack Primus Road (S-119). The typical section is planned to include two travel lanes in each direction plus center turn lane or raised planted median (where feasible). A multi-purpose trail will be located on one side of the roadway. Preliminary plans for this section of the project were provided by SCDOT.

Phase 2 of the Clements Ferry Road project will widen approximately 4.5 miles of Clements Ferry Road (S-33) from Jack Primus Road (S-119) to SC 41. The typical section is currently envisioned as a 4-lane curb and gutter section with a raised planted median with a multi-use path on one side of the roadway. A construction timeframe has not been determined; the project is in the planning stages.

South Carolina Department of Transportation (SCDOT) is currently planning a replacement and widening of the SC 41 bridge over the Wando River. The project is being funded through the Federal Highway Bridge Replacement and Rehabilitation Program.

Currently, SC-41 is a two-lane roadway with earthen shoulders and roadside ditches oriented in a north-south direction. The posted speed limit for the existing SC 41 Bridge is 35 miles per

hour (mph) and increases to 55 mph at the southern end of the project in Charleston County.

The SCDOT proposes to replace the existing SC 41 moveable-span bridge over the Wando River in Berkeley and Charleston Counties. The new bridge would be a high level fixed span structure. The project will realign the SC 41 / Clements Ferry Road intersection so that southbound SC 41 will intersect Clements Ferry Road at a signalized T-intersection.

Initially, the bridge would provide one lane in each direction. The width planned, however, could allow modifications to include two lanes in each direction. The 2010 Environmental Assessment for the project (updated in 2013 to account for further discussions regarding the bridge height) included the following statement, “the proposal to construct a bridge with four travel lanes instead of two is a proactive response the Charleston Area Transportation Study’s (CHATs) Long Range Transportation Plan that includes widening improvements to both SC-41 and Clements Ferry Road in the current project area.”

The Town of Mount Pleasant updated their Long Range Transportation Plan in 2006. It stated the following with regard to SC 41: “The widening of SC 41 from US 17 to the County line has been analyzed as part of the 2006 Plan Update... Results of the technical analysis completed as part of the 2006 Plan Update indicates that SC 41 from US 17 to Bessemer Road should be widened from 2 to 4 lanes, and the section from Bessemer Road to Dunes West Boulevard should be widening from 2 to 3 lanes. Widening from Dunes West Boulevard to the County Line is not recommended based upon the results of the technical analysis...” These projects were also mentioned in the Town’s 2011 Comprehensive Plan. No timetable for construction was established.

Traffic Conditions

Traffic operations at intersections are typically evaluated in terms of “Level of Service” or LOS. The LOS is a measurement of delay incurred at an intersection or for a particular movement. LOS is defined by the Transportation Research Board’s Highway Capacity Manual (HCM) from which LOS A represents free flow conditions with minimal delays; LOS F represents congested conditions. Generally, a LOS D or better is considered acceptable.

Table 1 shows the HCM criteria for both signalized and unsignalized intersections.

Table 1. Level of Service definitions

LEVEL OF SERVICE	Control Delay per Vehicle (seconds)	
	Unsignalized Intersection	Signalized Intersection
A	≤ 10	≤ 10
B	>10 and ≤ 15	>10 and ≤ 20
C	>15 and ≤ 25	>20 and ≤ 35
D	>25 and ≤ 35	>35 and ≤ 55
E	>35 and ≤ 50	>55 and ≤ 80
F	>50	>80

Peak hour traffic counts were taken at the study intersections in March 2014. The peak hours during the morning and afternoon are shown in **Figure 2A (AM) and 2B (PM)**; details of the count data are included in the appendix.

As mentioned, Clements Ferry Road is planned to be widened in the near future. Since the widening project is has not yet begun, the current year capacity analyses are performed based on the current road configuration. The No-build and Build out analyses will assume

that Phase 1 of the Clements Ferry Road widening is complete and the SCDOT project to replace the SC 41 bridge over the Wando River is complete.

In the initial draft report, SCDOT noted some discrepancies in the counted volumes at the I-526 intersection and the Charleston Regional Parkway/Grand Park Boulevard intersection. Volumes on Clements Ferry Road were much higher at the Interstate intersections than at the ones further north.

The differences in volume may be partially attributed to the fact that the counts were taken on different dates. The counts at both the I-526 ramps and at Cainhoy Road intersection were taken on Thursday, 3/20/14. The counts at Charleston Regional Parkway, Jack Primus Road and SC 41 were taken on Wednesday, 3/19/14.

The I-526 intersections were counted on the date that showed the higher volumes (3/20/14). The counts for this study at the I-526 intersections were also higher than counts taken by SCDOT in 2012 as part of the study to widen Clements Ferry Road. If we were to attempt to balance the volumes, the ramp intersection volumes could be lowered and/or the Charleston Regional intersection volumes could be raised. Since the ramp intersections are the more critical intersections in terms of congestion and importance to the system, the higher numbers were used (without adjustment) for the I-526 intersections. These measures were taken to ensure a conservative approach to the analysis.

The no-build volumes passing the proposed Cainhoy access were balanced between the counts taken at Cainhoy Road (on 3/20/14) and the counts taken at Jack Primus (on 3/19/14).

Capacity analyses were completed based on the 2014 counts; results are shown in Table 2.

Table 2. Current Levels of Service (2014)

Intersection	Control	2014 AM Peak Hour		2014 PM Peak Hour	
		LOS	DELAY (sec)	LOS	DELAY (sec)
I-526 EB ramp and Clements Ferry Road					
SB left (Clements Ferry to on ramp)	None	A	9	B	11
I-526 WB ramp and Clements Ferry Road	Signal				
WB approach (ramp)		C	31	D	45
NB approach (Clements Ferry)		B	10	A	7
SB approach (Clements Ferry)		B	19	C	24
Overall intersection		B	16	B	19
Charleston Regional Pkwy and Clements Ferry Road	Signal				
EB approach (Clements Ferry)		A	8	B	12
WB approach (Clements Ferry)		E	64	A	9
NB approach (Grand Park Blvd)		C	29	C	23
SB approach (Charleston Reg. Pkwy)		C	26	C	23
Overall intersection		D	44	B	12
Jack Primus Road and Clements Ferry Road	Signal				
EB approach (Clements Ferry)		A	5	B	11
WB approach (Clements Ferry)		B	17	A	7
NB approach (Royal Assembly)		C	24	C	23
SB approach (Jack Primus)		C	24	C	23
Overall intersection		B	15	B	11
Cainhoy Road and Clements Ferry Road	Signal				
EB approach (Clements Ferry)		A	6	A	9
WB approach (Clements Ferry)		B	18	B	13
SB approach (Cainhoy Road)		C	23	B	16
Overall intersection		B	15	B	12
SC 41 and Clements Ferry Road (existing configuration)	Stop				
SB approach (Clements Ferry)		B	12	D	34
US 17 and SC 41 (Mount Pleasant)	Signal				
EB approach (SC 41)		B	14	B	19
WB approach (Dingle Road)		D	49	E	63
NB approach (US 17)		B	20	C	33
SB approach (US 17)		C	25	D	51
Overall intersection		C	20	D	36

Based on the current volumes, the signalized intersections along Clements Ferry Road are currently functioning adequately. Given the high through volumes, however, it is likely that many of the driveways and unsignalized approaches to Clements Ferry experience significant delays.

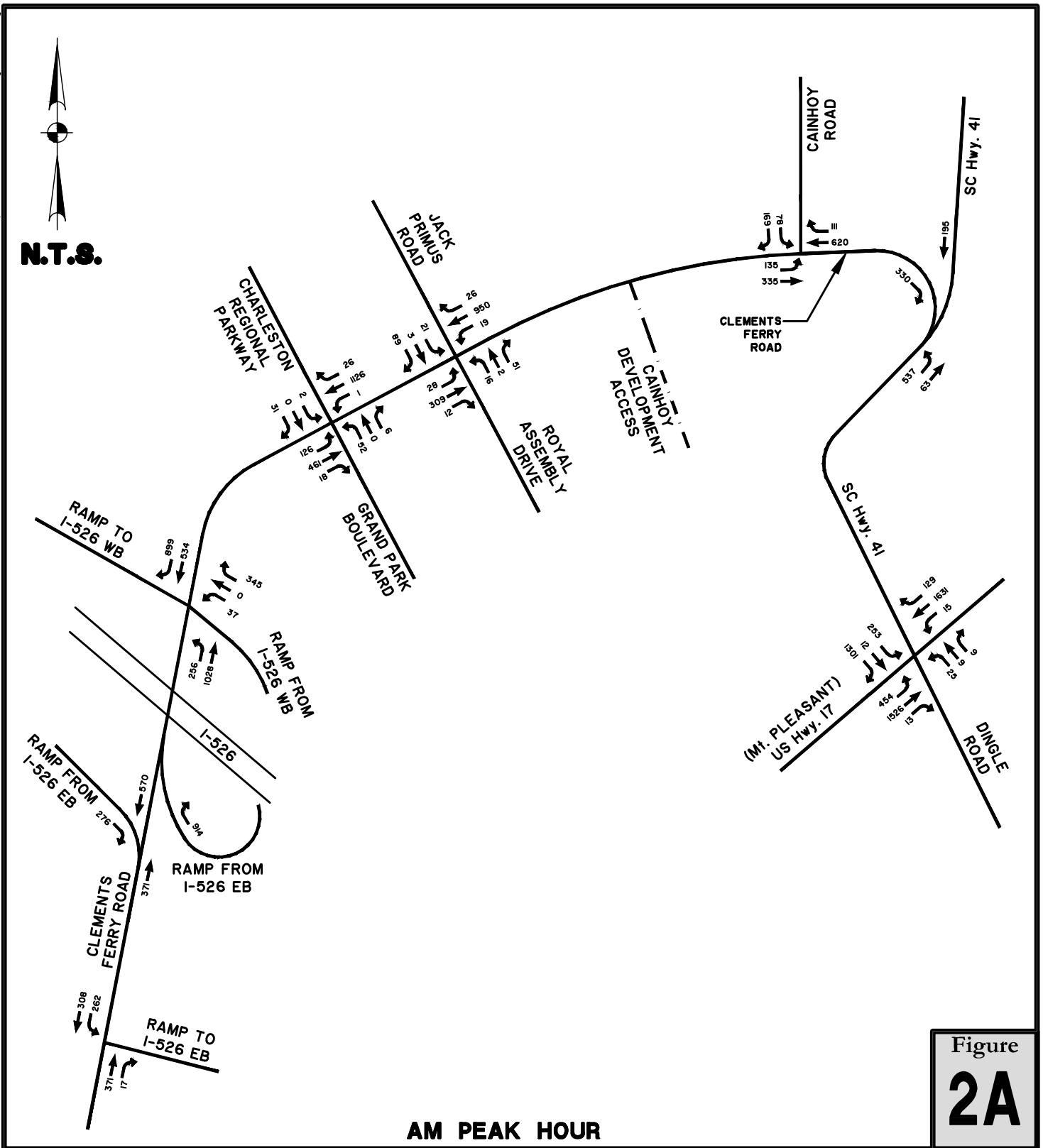
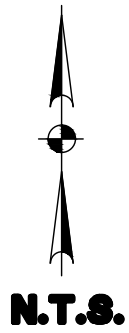


Figure
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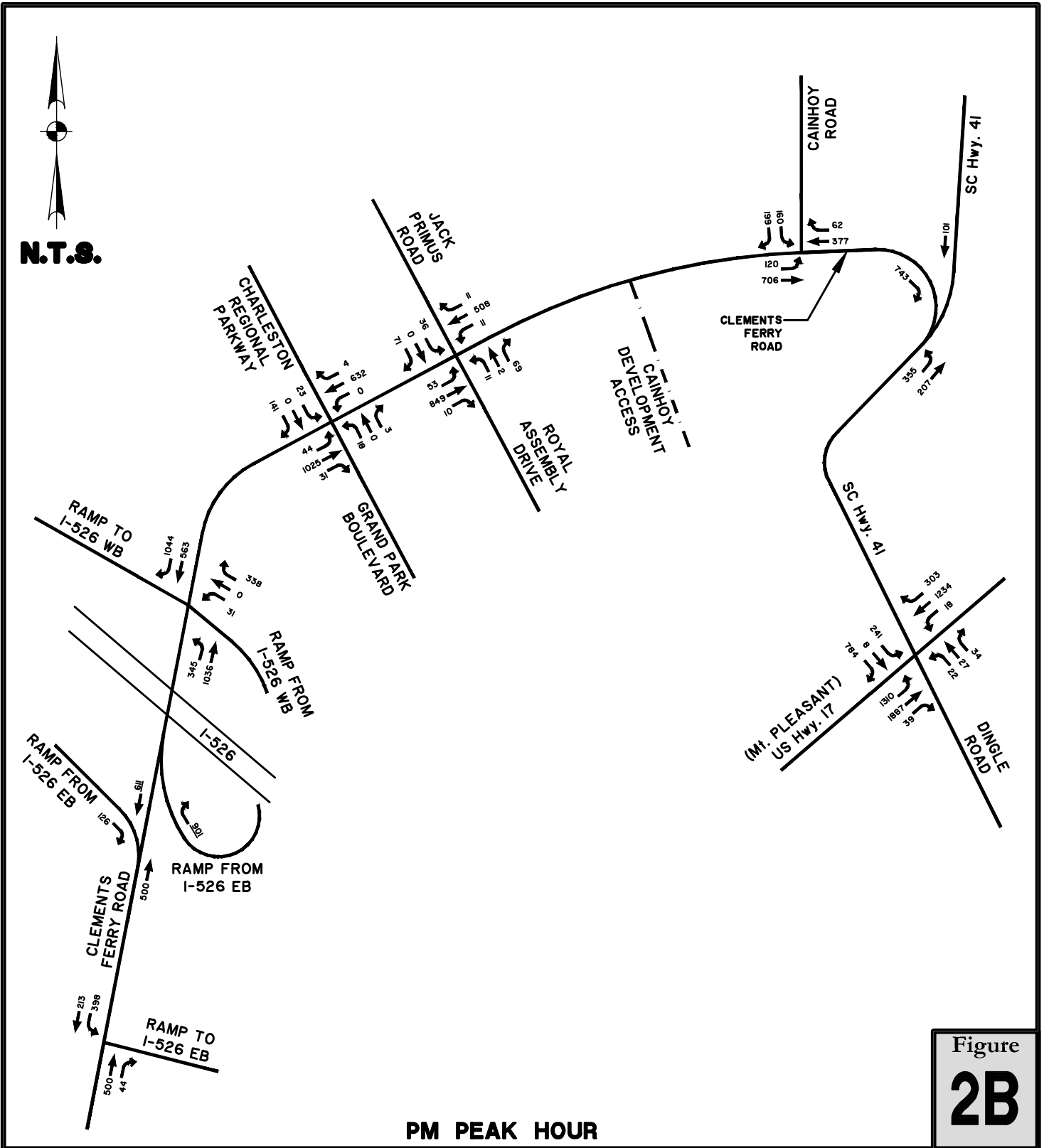
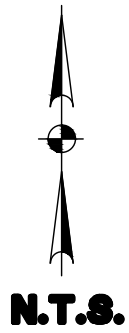
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3. NO-BUILD CONDITIONS (2022)

SCDOT count stations 269 and 270 are located on Clements Ferry Road. Count station 211 is located on Cainhoy Road. Count station 2518 is located on Interstate 526 between the Clements Ferry and the Daniel Island interchanges. The SCDOT count station data provides historical volumes for each roadway, shown in Table 3.

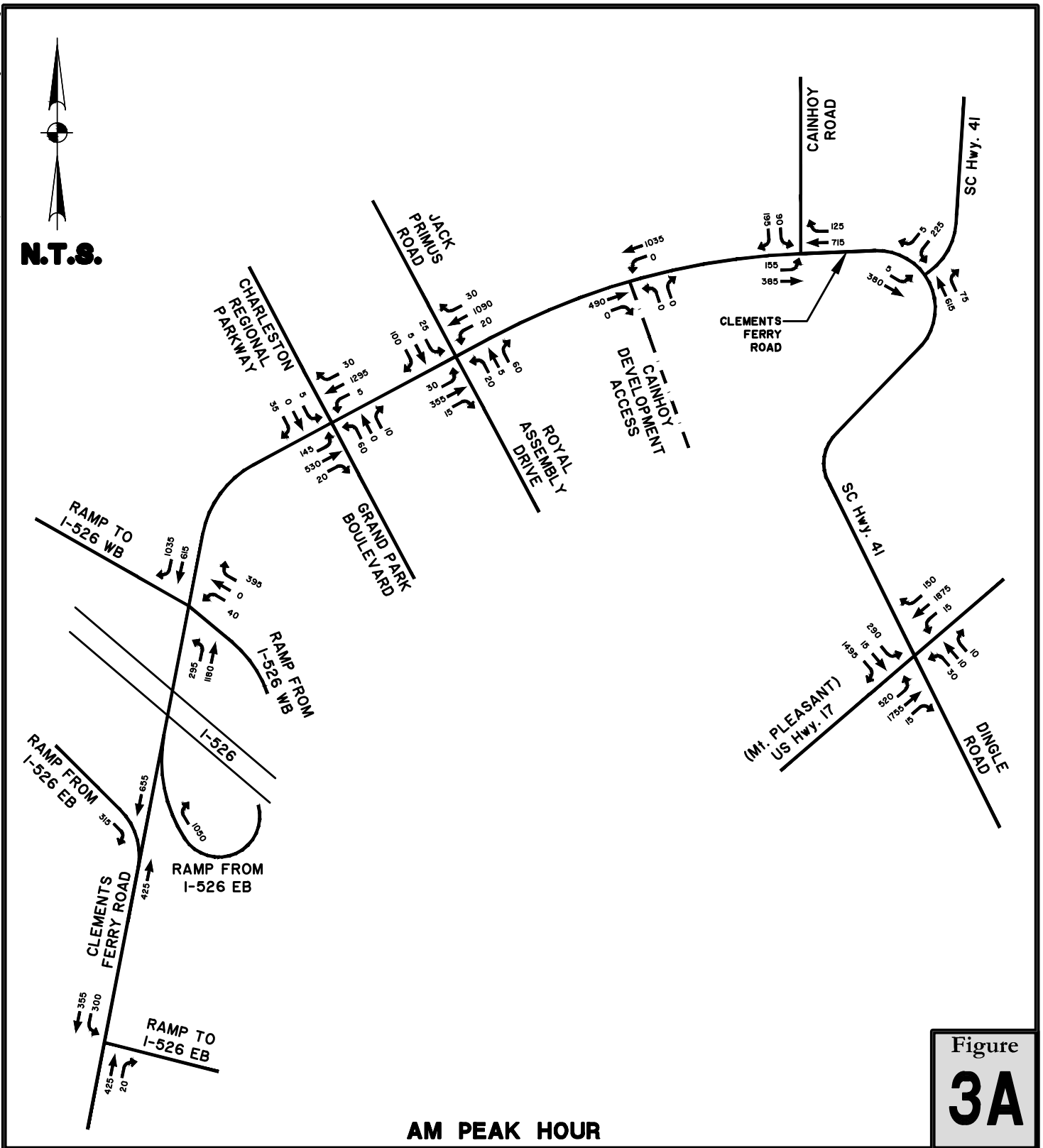
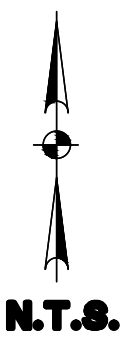
Table 3 – SCDOT Count station data

Count station	2007 ADT	2008 ADT	2009 ADT	2010 ADT	2011 ADT	2012 ADT
269 – Clements Ferry - Jack Primus to SC 41	16,700	15,400	15,300	15,200	14,800	14,800
270 – Clements Ferry - Jack Primus to St Thomas Is	22,000	20,500	20,300	27,400	28,600	28,500
211 – Cainhoy Road - Baldwin Corner to Clem. Ferry	6,400	5,600	5,900	4,500	4,300	6,300
2518 – Interstate 526 - Clements Ferry to Seven Farms	51,500	48,900	48,200	50,400	52,600	51,600

Based on the SCDOT data, traffic on the southern portion of Clements Ferry Road rose significantly from 2009 to 2010. Volumes at other count station locations have remained relatively constant over the past 6 years.

As a general assumption of traffic growth in the area, the 2014 peak hour volumes at the study intersections are raised by 2% annually to estimate the 2022 no-build conditions. The 2022 background conditions are projected and shown in **Figure 3A (AM) and 3B (PM)**.

As mentioned, the 2022 background conditions assume that Phase 1 of the Clements Ferry Road widening project is complete and the Wando River/ SC 41 bridge replacement is complete. It is assumed that Phase 2 of the Clements Ferry Road widening project (from Jack Primus Road to SC 41) will not be completed by 2022.



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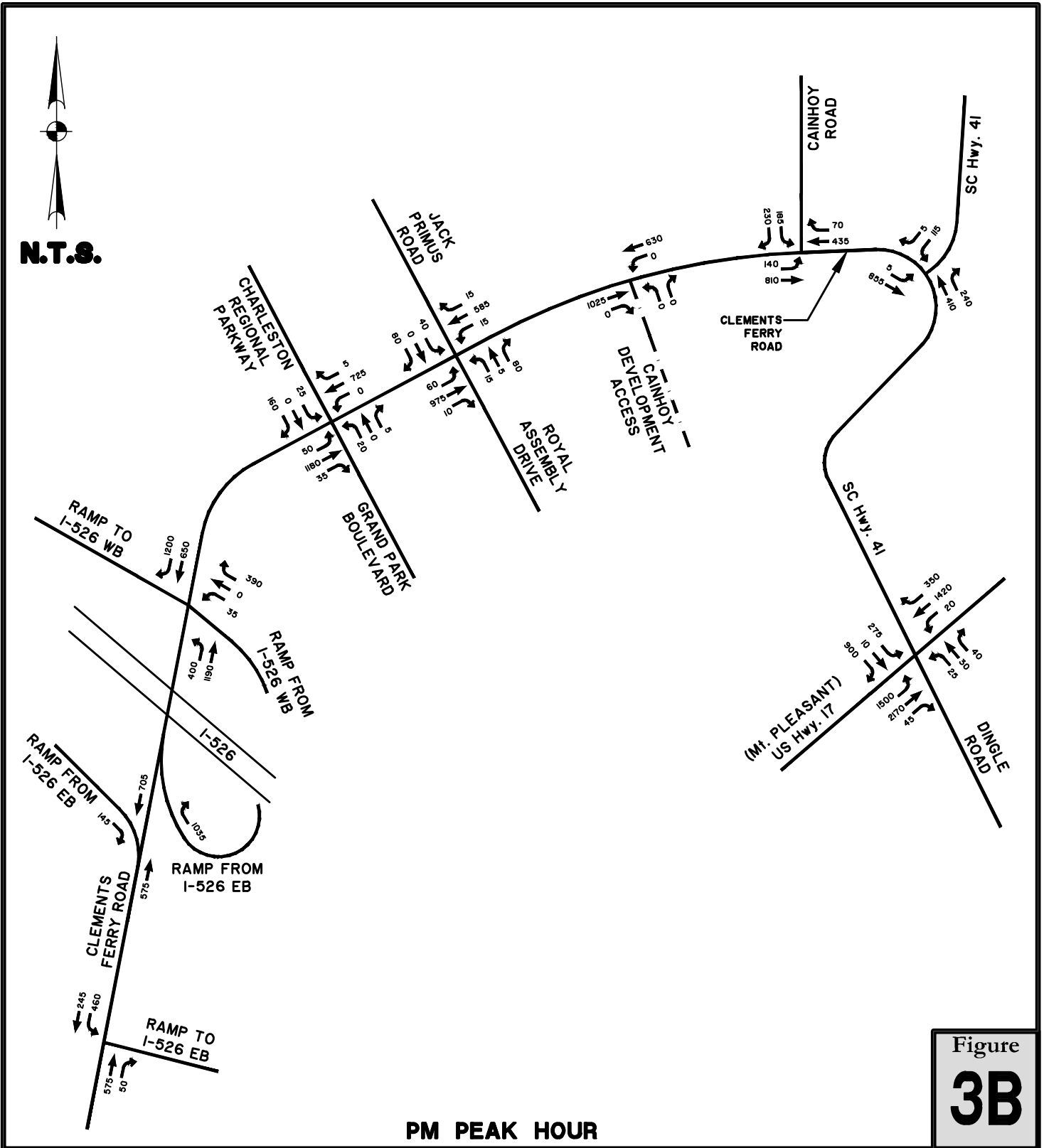
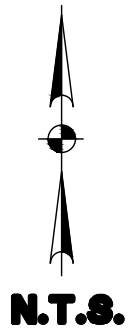


Figure
3B

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2022 NO BUILD VOLUMES

4. TRIP GENERATION AND DISTRIBUTION

The differing land uses within the site will likely have different trip distributions. Attendance zones for the high school and K-8 school will dictate the trip patterns associated with the institutional uses. Site generated trips associated with the residential and retail uses should follow existing traffic patterns. Because of the different patterns, trip generation and distribution is separated by land uses in the following sections.

Trips generated are estimated using the standard rates and equations from the Institute of Transportation Engineers, Trip Generation, 9th Edition, 2012.

Retail and residential uses

Trip generation for the retail and residential uses in Cainhoy are shown in Table 4.

Internal capture was calculated using procedures outlined in the ITE Trip Generation Manual and from the NCHRP Report 684, Enhancing Internal Trip Capture Estimation for Mixed Use Developments. Using the ITE procedure, the afternoon peak hour internal capture rate is calculated at roughly 12%. Using the NCHRP procedure, the same internal capture rate is calculated at roughly 21%.

It is noted that the location and character of the development should lead to relatively high internal capture rates. There are essentially no retail facilities in the vicinity. The closest shopping opportunities are located on Daniel Island or Mount Pleasant, more than 5 miles away in either direction. SCDOT suggests a maximum internal capture rate of 20%, which is applied to this location.

The future retail facilities in Cainhoy will also serve the immediately surrounding neighborhoods of Nellfield, Peninsula, Beresford, and others. The retail facilities in Cainhoy will likely reduce the distances these neighborhoods drive to reach some essential services. A 25% pass by rate is applied to the remaining retail trips and is associated with vehicles "passing by" on Clements Ferry Road. The applied pass by rate is slightly lower than the average rate shown in the ITE manual of 34%.

Table 4 – Trip Generation – Residential and Retail uses

Land Use Code	Land Use	Daily Trips	AM Peak Entering	AM Peak Exiting	PM Peak Entering	PM Peak Exiting
210	600 Single Family Residential Units	5,460	107	323	332	195
230	150 Attached Residential units	915	12	59	56	28
820	150,000 S.F. Shopping center	8,839	124	76	377	409
Unadjusted Total Trips		15,214	243	458	765	632
Internal trips			70	70	140	140
Total Trips at access point			173	388	625	492
Pass by trips (25% of external retail)			20	20	80	80
Primary Trips			153	368	545	412

Trips associated with the retail and residential uses within Cainhoy are assumed to be distributed in accordance with the existing travel patterns along Clements Ferry Road. The residential and retail trip distributions are as follows:

- 30% to the north/east on Clements Ferry Road
 - 5% to/from Cainhoy Road
 - 25% to/from Mount Pleasant
- 70% to the south/west on Clements Ferry Road
 - 10% to/from Jack Primus Road
 - 27% to/from I-526 Eastbound
 - 27% to/from I-526 Westbound
 - 6% to/from Daniel Island via St Thomas Island Dr

Figure 4A (AM) and 4B (PM) shows the retail and residential trips at each of the study intersections.

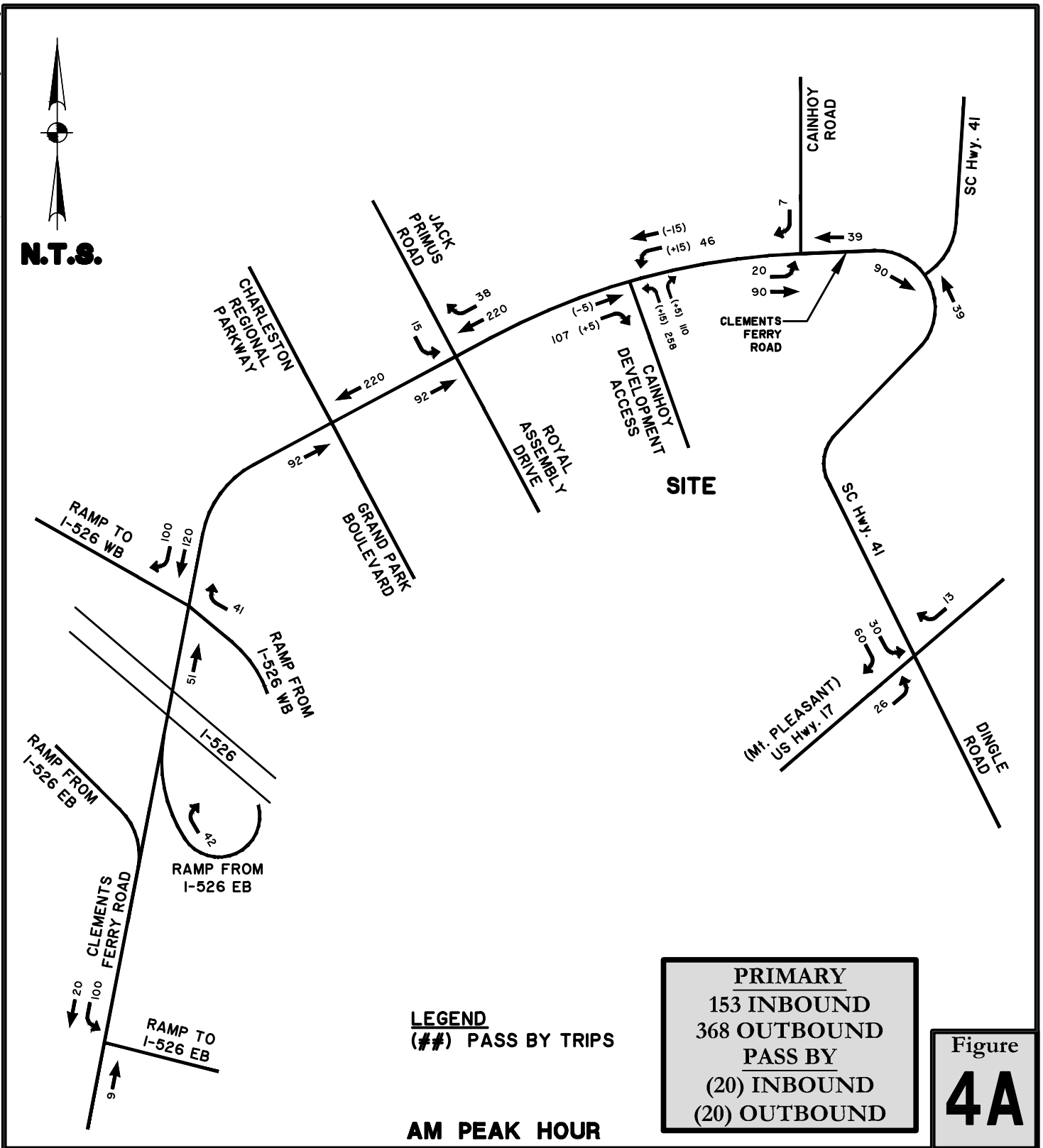
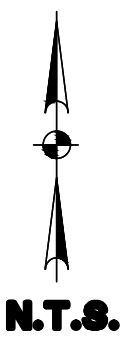


Figure
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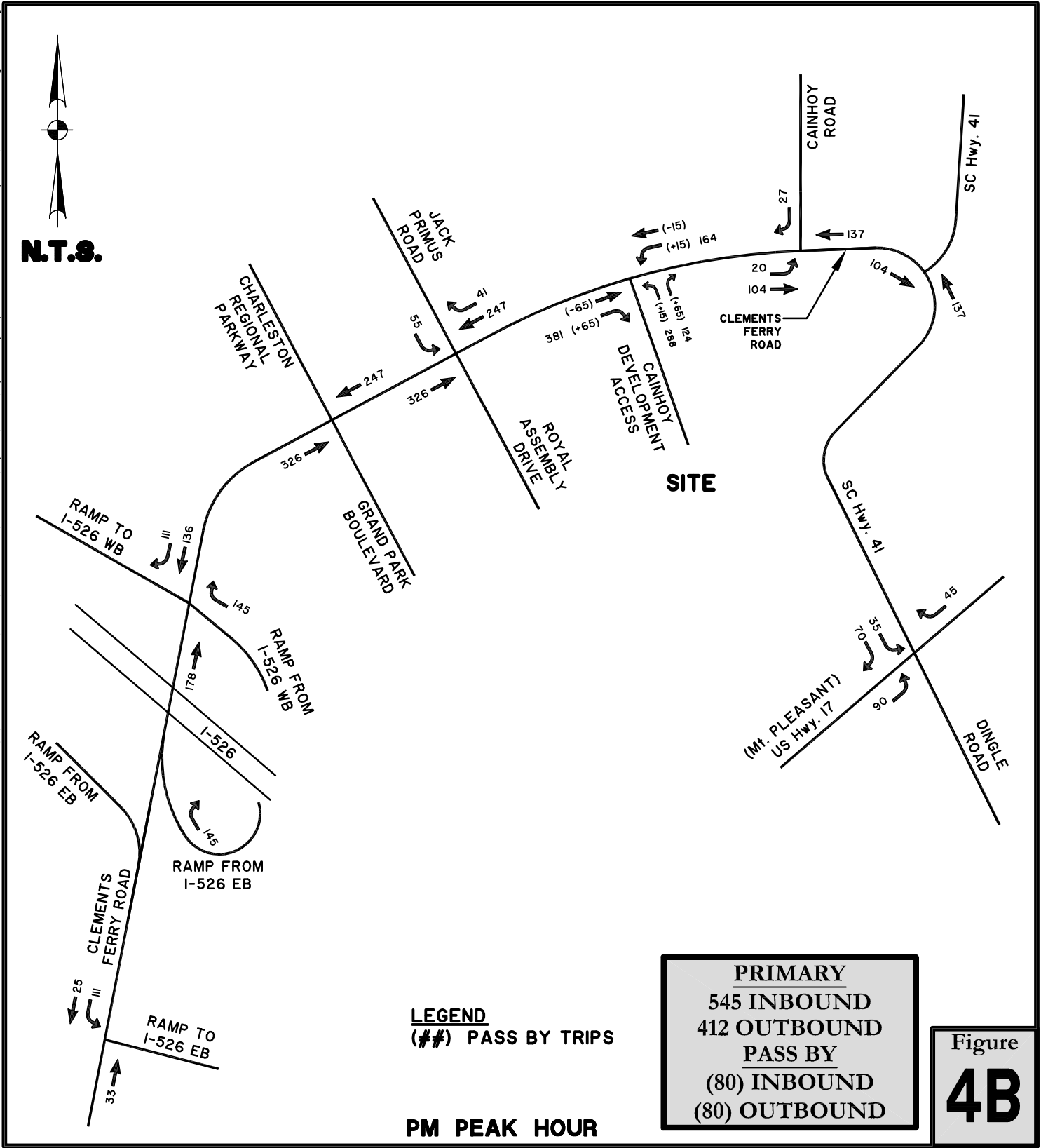
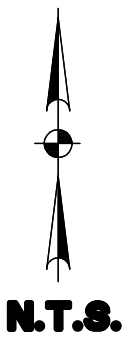
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SITE TRIPS - RESIDENTIAL AND RETAIL



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SITE TRIPS - RESIDENTIAL AND RETAIL

High School

Trips generated by the new Cainhoy High School are shown in Table 5. It is assumed that roughly 25% of the trips associated with the High School will remain internal to the Cainhoy development.

Table 5 – Trip Generation – High School

Land Use Code	Land Use	Daily Trips	AM Peak Entering	AM Peak Exiting	PM Peak Entering	PM Peak Exiting
530	1,200 student High School	2,052	348	168	72	84
	25% from within Cainhoy		87	42	18	21
	Total Trips at access point		261	126	54	63

The Berkeley County School District provided information regarding the home locations of its existing students. Currently, students in this area attend Hanahan High School. Though new school districting lines are not yet determined, students on Daniel Island and along Clements Ferry Road are likely to attend the new Cainhoy High School. Based on where the existing student population lives, it is estimated that 90% of the traffic entering and exiting Cainhoy at Clements Ferry Road could be associated with areas to the south.

The High School trips are distributed as follows:

- 10% to/from the north/east on Clements Ferry Road
 - 5% to/from Cainhoy Road
 - 5% to/from SC 41
- 90% to/from the south/west on Clements Ferry Road
 - Inbound
 - 10% from Jack Primus Road
 - 80% from Daniel Island and residential areas off Clements Ferry Rd
 - 40% from St. Thomas Island Road
 - 20% from I-526
 - 20% residential areas between I-526 and Char. Reg. Pkwy
 - Outbound
 - 10% to Jack Primus Road
 - 80% to Daniel Island and residential areas off Clements Ferry Rd
 - 20% to St. Thomas Island Road
 - 20% to I-526 eastbound
 - 20% to I-526 westbound
 - 20% to residential areas between I-526 and Char. Reg. Pkwy

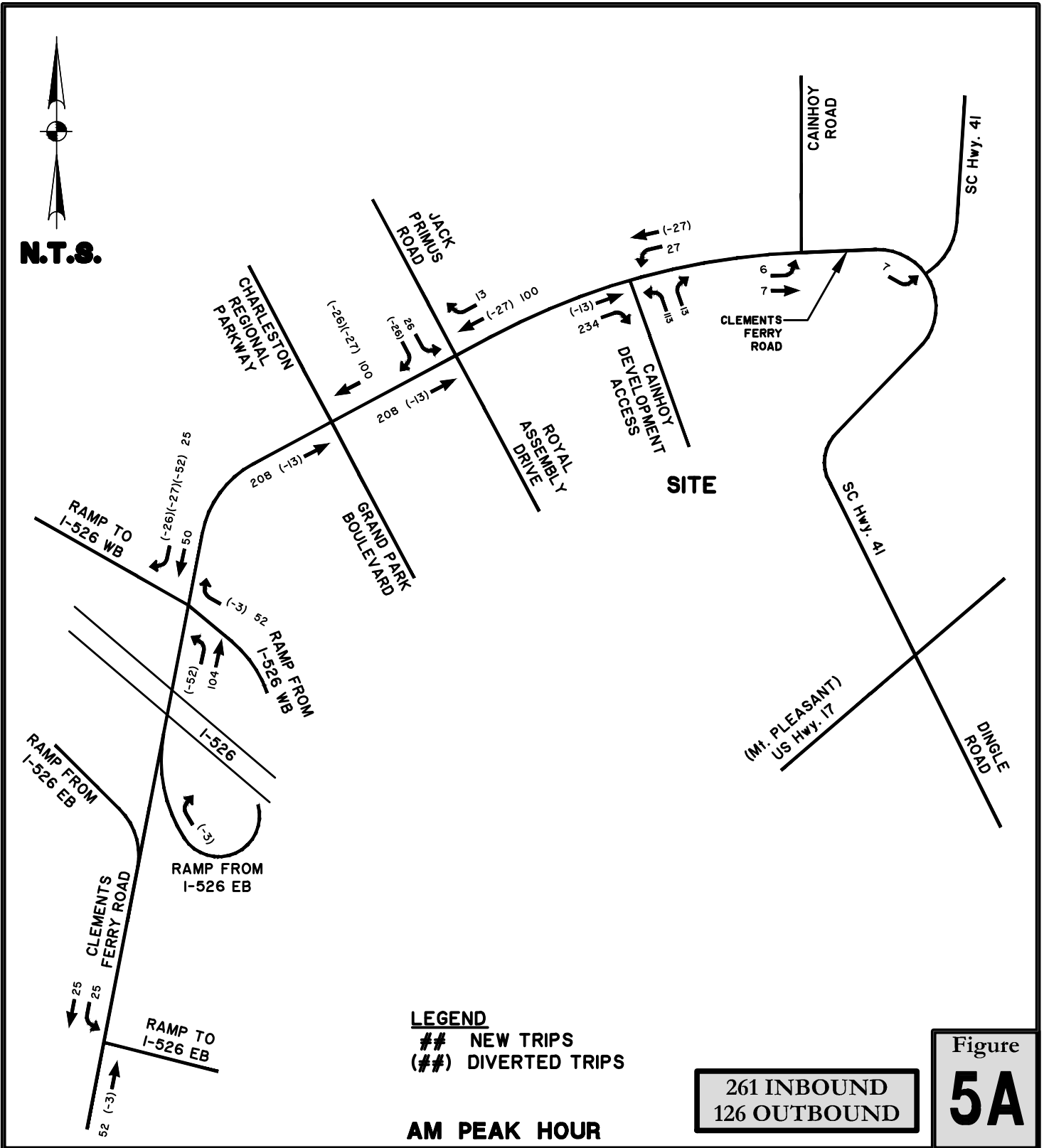
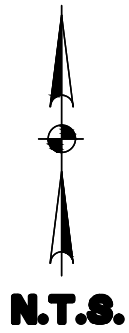
In general, trips associated with the proposed High School are not new trips to the overall roadway network. Rather, the High School trips are existing trips that will follow new patterns once the new school is constructed.

Students from the Cainhoy Road and SC 41 area currently travel the length of Clements Ferry Road to access I-526 to go to Hanahan High School. These trips will become shorter as the new school is constructed. Students in subdivisions on the southern portion of Clements Ferry Road travel south to I-526 to get to Hanahan High School. With the new Cainhoy High School, these students will travel north on Clements Ferry Road instead of south. Students who live on Daniel Island will use Clements Ferry Road instead of I-526.

Trips by the students that are currently going to Hanahan High School are subtracted from the intersection volumes. The change in travel patterns will show a decrease in certain turning movements at particular intersections. The following is assumed with regard to the students traveling to Hanahan High School.

- Areas along Cainhoy Road and SC 41 (10% of trips)
 - Inbound trips removed from the southbound through volumes at all intersections south of the Cainhoy access
- At Jack Primus Road (10% of trips)
 - Inbound trips removed from the Clements Ferry /Jack Primus southbound right turn movement and added to the southbound left turn movement
- Areas between I-526 and Charleston Regional Parkway (20% of trips)
 - Inbound trips removed from southbound right turn movement on to I-526 westbound ramp
- Areas on Daniel Island (60% of trips)
 - 20% of the inbound trips removed from northbound left turn movement on to I-526 westbound ramp
 - 40% of the inbound trips removed from I-526 westbound

Figure 5A (AM) and 5B (PM) shows the High School trips at each of the study intersections.

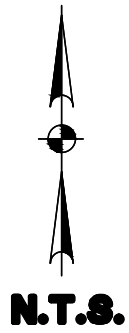


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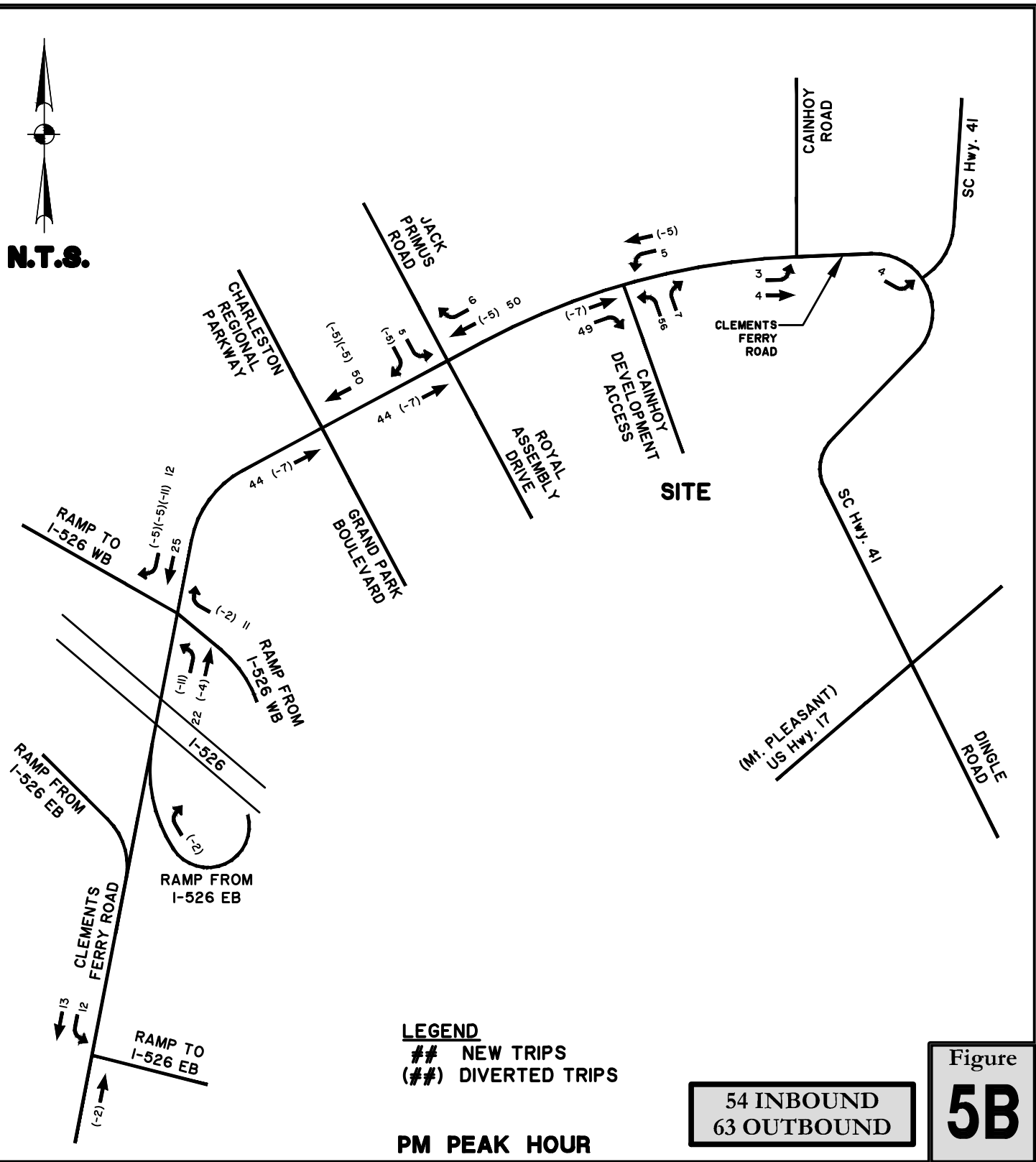
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TRAFFIC IMPACT STUDY
SITE TRIPS - HIGH SCHOOL



N.T.S.



LEGEND
NEW TRIPS
(##) DIVERTED TRIPS

54 INBOUND
63 OUTBOUND

Figure
5B

PM PEAK HOUR

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CAINHOY
 BERKELEY COUNTY, SC

TRAFFIC IMPACT STUDY

SITE TRIPS - HIGH SCHOOL

K-8 School

Trips generated by the new Elementary/ Middle School are shown in Table 6. It is assumed that roughly 25% of the trips associated with the K-8 School will remain internal to the Cainhoy development.

Table 6 – Trip Generation – K-8 school

Land Use Code	Land Use	Daily Trips	AM Peak Entering	AM Peak Exiting	PM Peak Entering	PM Peak Exiting
522	900 student Middle/Jr High School	1,458	270	216	72	72
520	500 student Elementary School	645	125	100	35	40
	Total	2,103	395	316	107	112
	25% from within Cainhoy		99	79	27	28
	Total Trips at access point		296	237	80	84

Most of the student population attending this new school would likely come from neighborhoods along Clements Ferry Road and within Cainhoy itself. Based on where the existing student population lives, it is estimated that 80% of the traffic entering and exiting Cainhoy at Clements Ferry Road could be associated with areas to the south.

The K-8 School trips are distributed as follows:

- 20% to/from the north/east on Clements Ferry Road
 - 10% to/from Cainhoy Road
 - 10% to/from SC 41
- 80% to the south/west on Clements Ferry Road
 - Inbound
 - 10% from Jack Primus Road
 - 70% from residential areas south of Char. Reg. Pkwy
 - 0% from I-526 ramp intersections
 - Outbound
 - 10% to Jack Primus Road
 - 70% to residential areas south of Char. Reg. Pkwy
 - 17.5% to I-526 eastbound
 - 17.5% to I-526 westbound
 - 17.5% to St Thomas Island Road
 - 17.5% to residential areas between I-526 and Char. Reg. Pkwy

As with the High School, trips associated with the K-8 School are diverted from other trip patterns. New school district lines are not yet set, but would be different than the trip distribution assumed for the new High School. Students residing on Daniel Island will likely continue to attend the existing Daniel Island K-8 school. Students residing off of Cainhoy Road will likely continue to attend the existing Cainhoy K-8 school.

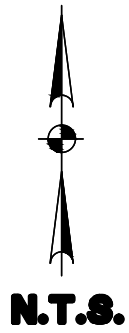
Areas along Clements Ferry Road north of I-526 are currently served by the Daniel Island K-8 school. Areas near Cainhoy Road are currently served by the Cainhoy K-8 school. Current trips by these students are subtracted from the intersection volumes. The following is assumed with regard to the students traveling to Daniel Island and Cainhoy K-8 Schools.

- At Cainhoy Road (10% of trips), currently associated with Cainhoy K-8
 - Inbound trips removed from the Clements Ferry /Cainhoy westbound right turn movement and changed to the westbound through movement
 - Outbound trips removed from the Clements Ferry /Cainhoy southbound left turn movement and changed to the eastbound through movement
- At Jack Primus Road (10% of trips) , currently associated with Cainhoy K-8
 - Inbound trips removed from Clements Ferry /Jack Primus southbound right turn movement and added to the southbound left turn movement
- Areas between I-526 and Charleston Regional Parkway (80% of trips) , currently associated with Daniel Island K-8
 - Inbound trips removed from the Clements Ferry / I-526 WB ramp southbound through movement
 - 40% removed from St Thomas Island Road route
 - 40% removed from the I-526 eastbound route

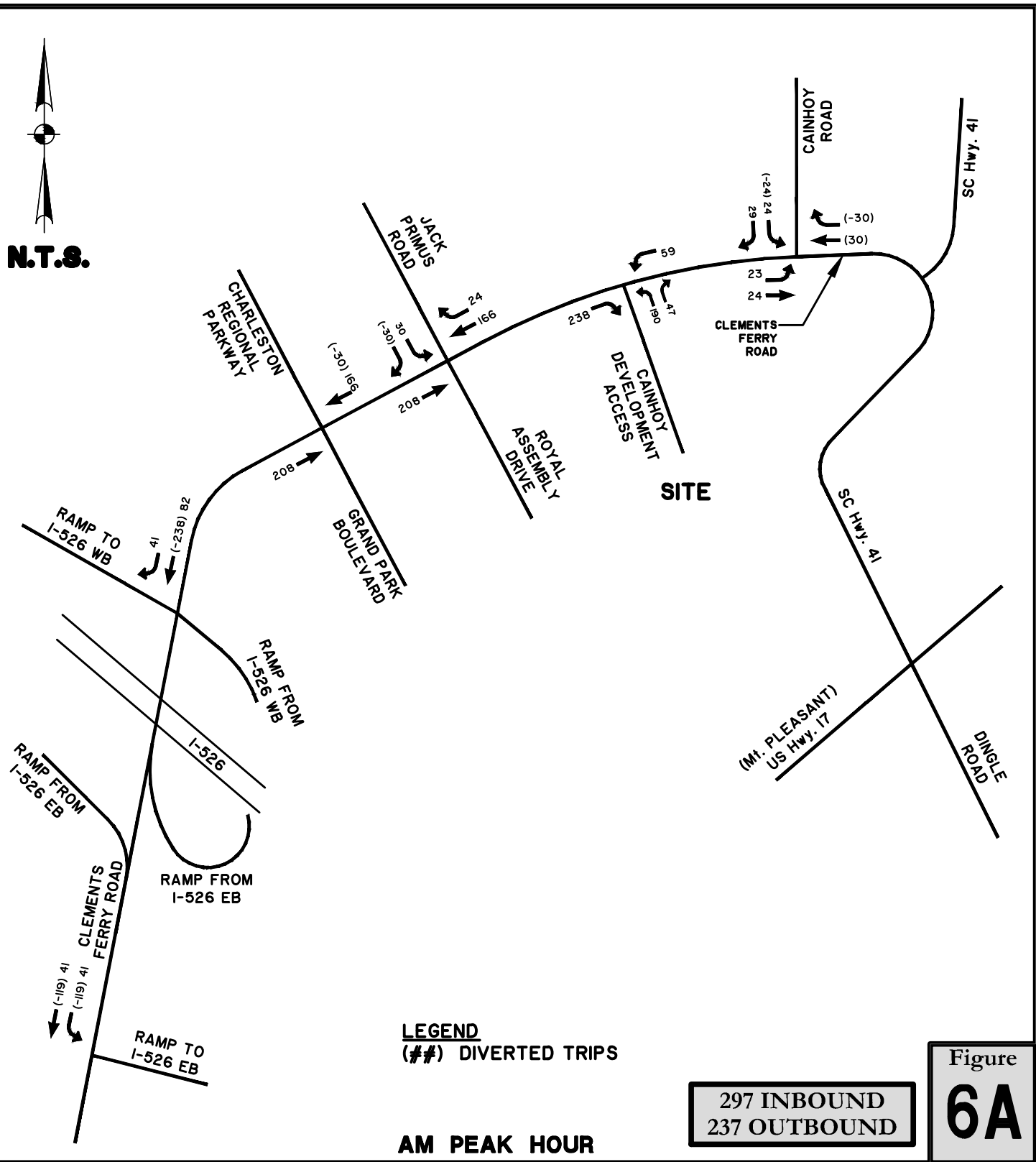
Figure 6A (AM) and 6B (PM) shows the K-8 School trips at each of the study intersections.

All of the retail, residential, high school, and K-8 school site generated trips (Figures 4, 5, and 6) are added together to determine the overall site generated trips for the entire Phase 1 portion of Cainhoy.

Site generated trips for all of the uses are shown in **Figure 7A (AM) and 7B (PM)**.



N.T.S.



LEGEND
 (##) DIVERTED TRIPS

297 INBOUND
237 OUTBOUND

AM PEAK HOUR

Figure
6A

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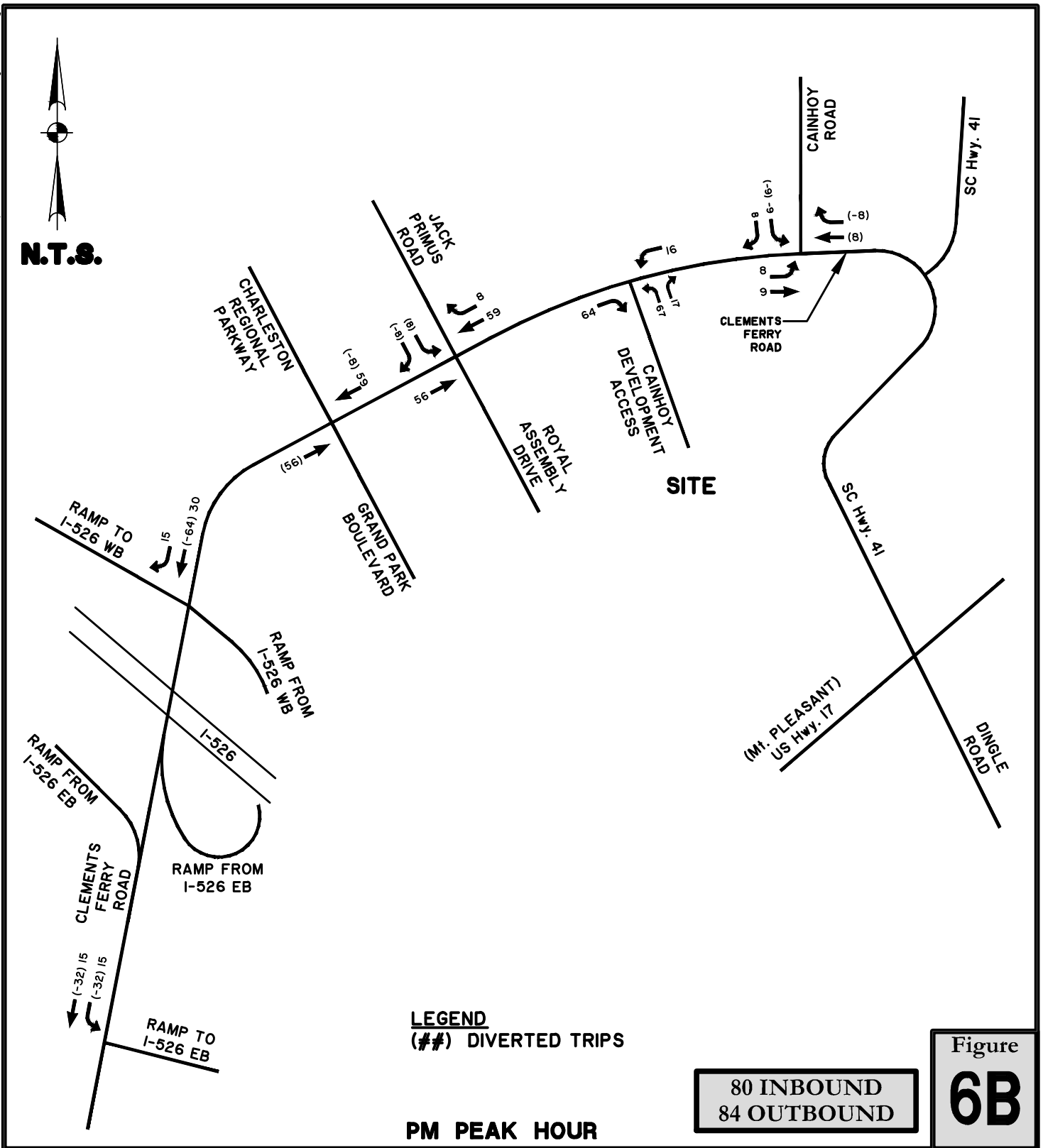
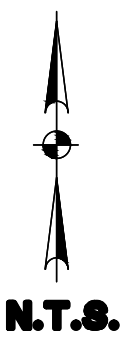
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 BERKELEY COUNTY, SC

TRAFFIC IMPACT STUDY

SITE TRIPS - K8 SCHOOL



LEGEND
 (##) DIVERTED TRIPS

80 INBOUND
 84 OUTBOUND

Figure
6B

PM PEAK HOUR

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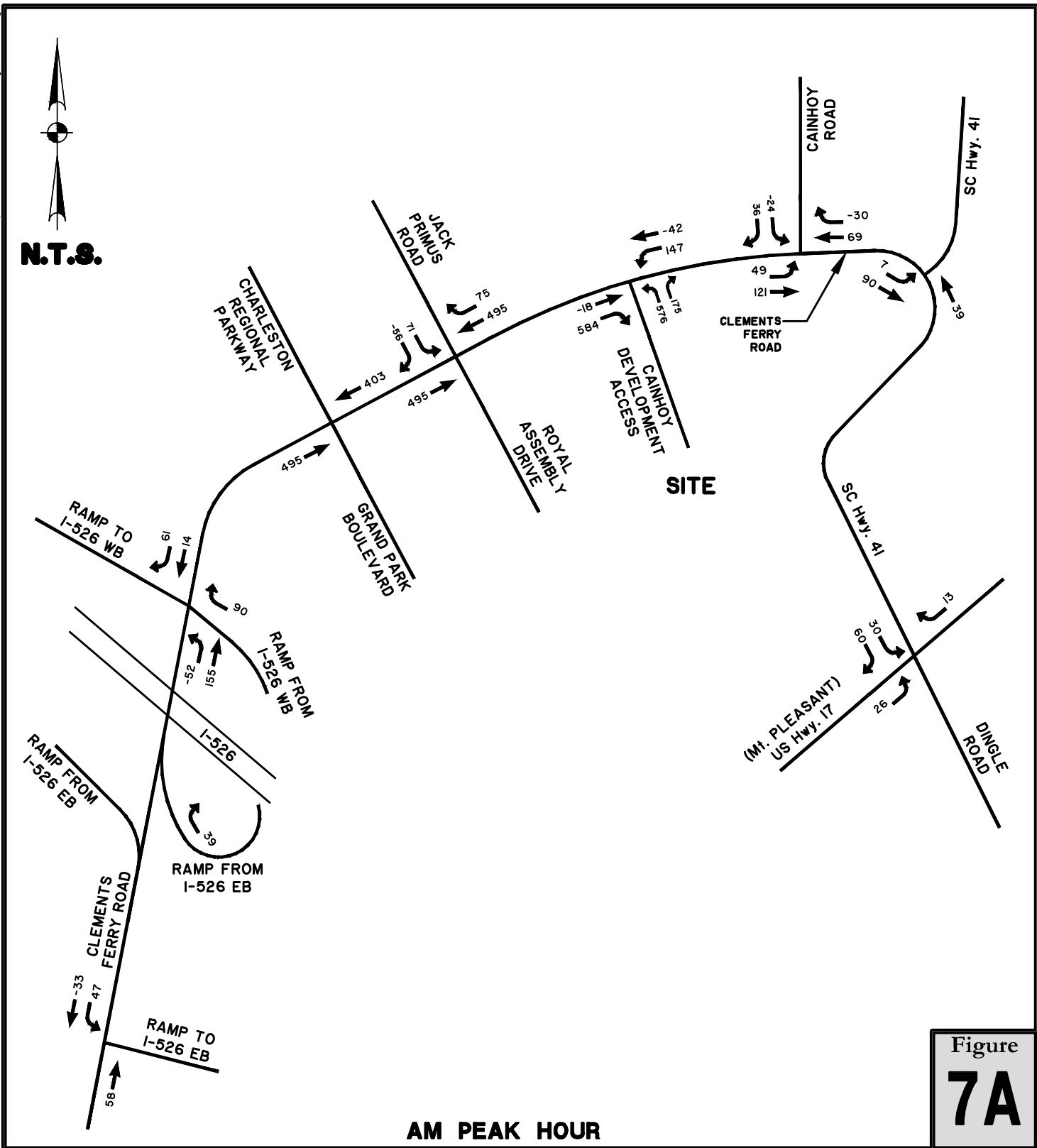
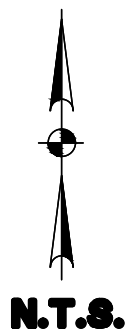
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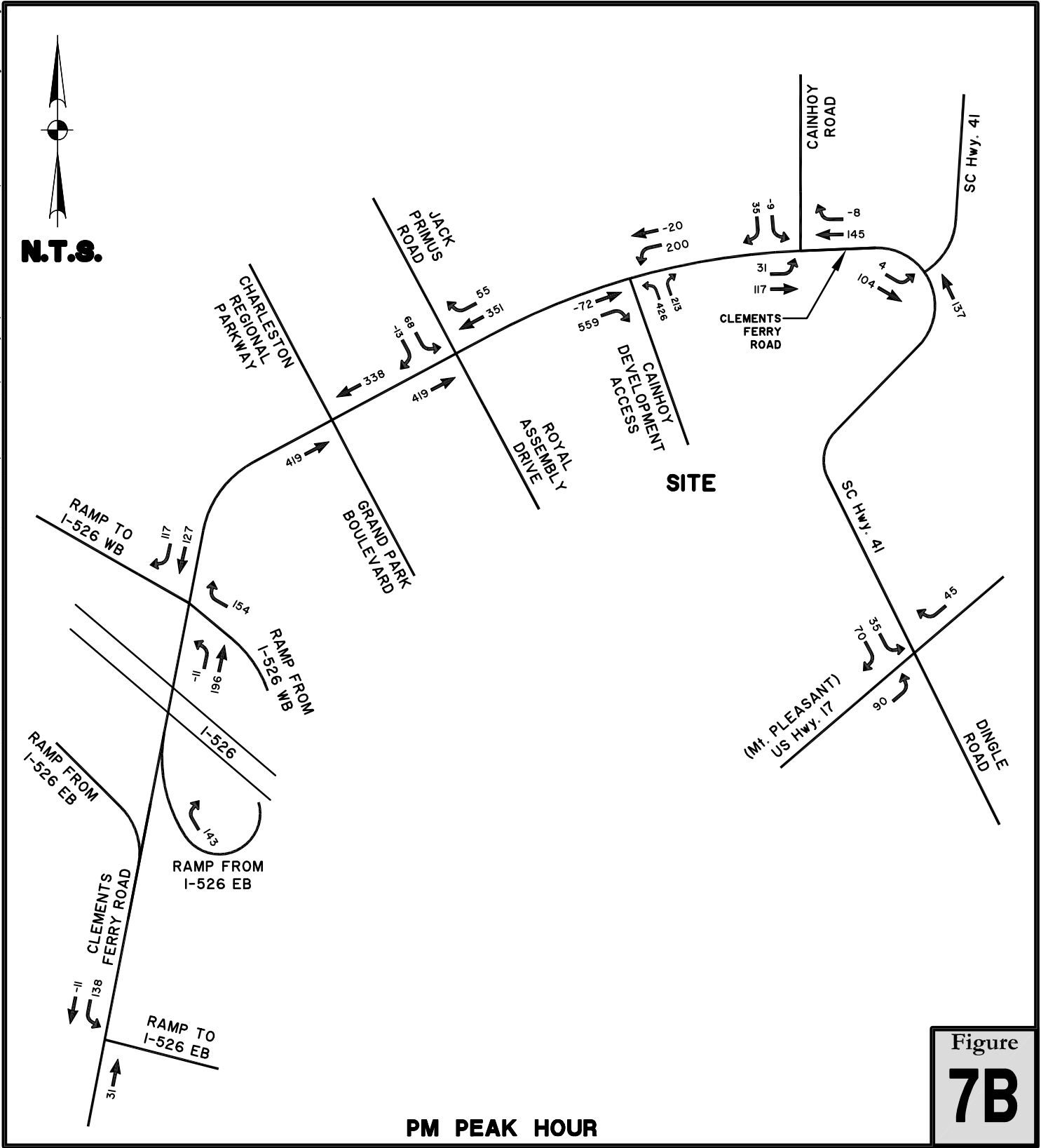
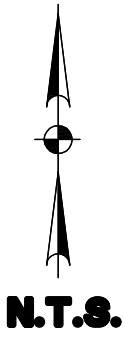
SITE TRIPS - K8 SCHOOL



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TRAFFIC IMPACT STUDY

TOTAL SITE TRIPS

6. INTERSECTION RECOMMENDATIONS

Cainhoy Main access

The following is recommended for the main site access at Clements Ferry Road:

- Construct the main access to Phase 1 of Cainhoy as a new 4-lane facility
- Construct a northbound right turn lane on Clements Ferry Road to include 350 feet of storage and a 200 foot taper.
- Construct a southbound left turn lane on Clements Ferry Road to include 350 feet of storage and a 200 foot taper.
- Signalize the intersection when warranted

Jack Primus Road and Charleston Regional Parkway intersections with Clements Ferry Road

The signalized intersections at Jack Primus Road and Charleston Regional Parkway will be reconstructed as part of the County's widening of Clements Ferry Road. As designed, these intersections should function adequately through the design year (2022).

Recommendations at these intersections include:

- Monitor and adjust signal timing as needed

SC 41 and Clements Ferry Road

The SCDOT bridge replacement project will realign the SC 41 / Clements Ferry Road intersection. The intersection is planned to be signalized as part of the bridge replacement project. Recommendations include:

- Monitor and adjust signal timing as needed

SC 41 and US 17 (Mount Pleasant)

Existing volumes at the SC 41 / US 17 intersection are very high. There are numerous developments underway in Mount Pleasant that will impact this area. The Cainhoy development should add relatively minor amounts of traffic to this intersection.

Recommendations include:

- Monitor and adjust signal timing as needed

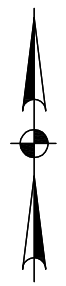
Westbound I-526 ramp

Delays at the westbound I-526 ramp intersection with Clements Ferry Road will continue to grow as volumes rise. Currently, the westbound off ramp approach to Clements Ferry Road provides a combination left/through lane and an exclusive right turn lane. Volume patterns show a very high right turn movement (northbound) and a relatively low left/through (southbound) volume. The following is recommended.

- Consideration should be given to changing the striping of the off ramp approach to provide a combination left/through/right turn lane and an exclusive right turn lane. This change would also require minor signage and signal adjustments.
- Monitor and adjust signal timing as needed

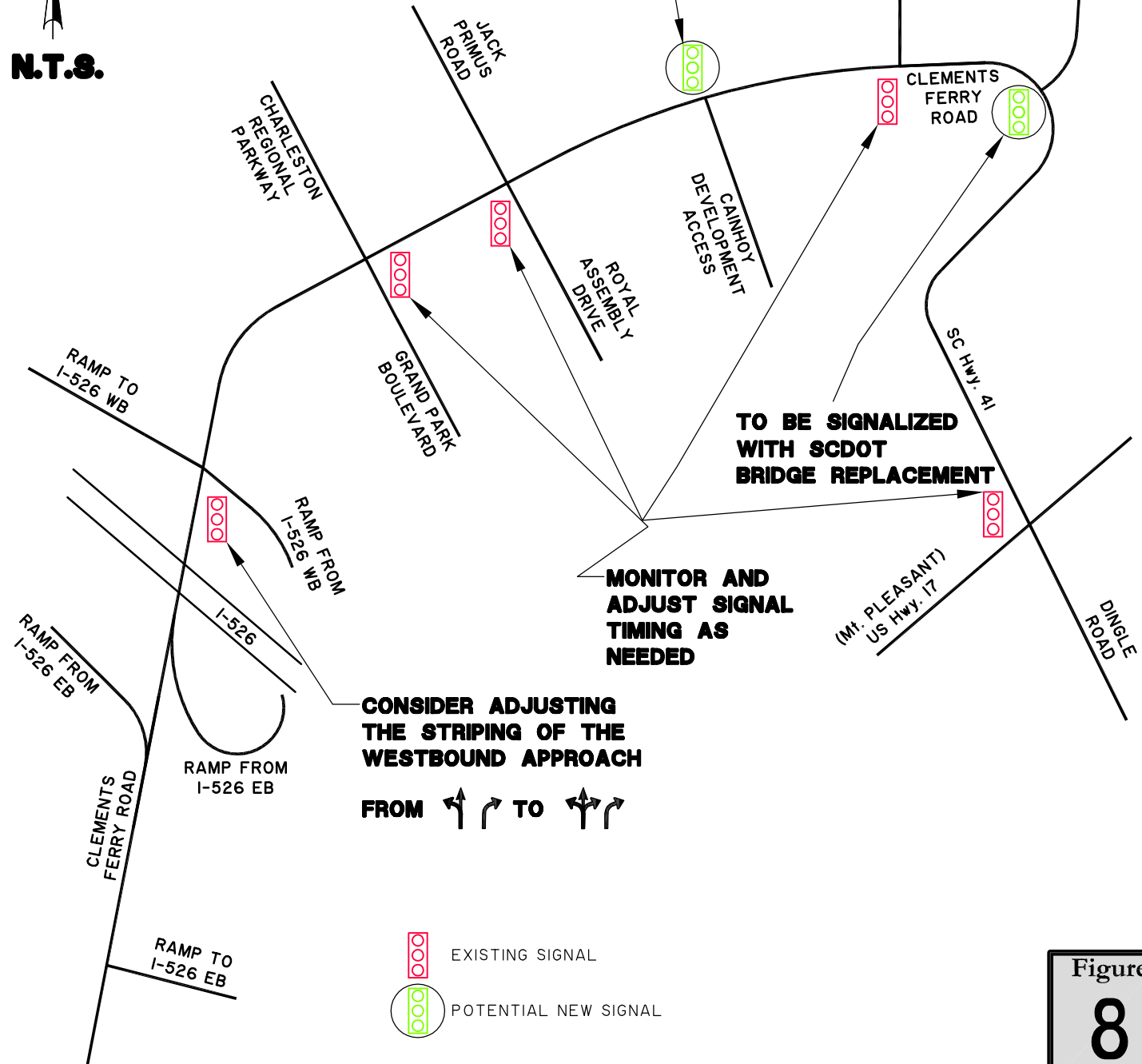
Proposed intersection modifications are shown in **Figure 8**.

2/15/2016 1:32:51 PM Z:\20028\20028 0000\Documents\Reports\Traffic\Impact study\report\DOT comments and responses\20028.0000-Figure Base.dwg



N.T.S.

**INSTALL NEW SIGNAL, CONSTRUCT
RIGHT AND LEFT AUXILIARY LANES
ON CLEMENTS FERRY ROAD**



**CONSIDER ADJUSTING
THE STRIPING OF THE
WESTBOUND APPROACH**



- EXISTING SIGNAL
- POTENTIAL NEW SIGNAL

Figure
8

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TRAFFIC IMPACT STUDY

INTERSECTION RECOMMENDATIONS

7. FUTURE (NO-BUILD/BUILD OUT) CONDITIONS

The site generated volumes (Figure 7A and 7B) are added to the no-build volumes (Figure 3A and 3B) to determine the morning and afternoon design volumes (**Figure 9A [AM] and 9B [PM]**).

The future volumes are used to calculate the intersection Levels of Service with and without the proposed development.

Both the No-build and Build out analyses assume the first phase of the Clements Ferry Road widening project (from I-526 to Jack Primus Road) is complete. Intersection configuration assumptions are in accordance with the preliminary design plans provided by SCDOT. Results of the capacity analyses are shown in the Table 7 on the following pages.

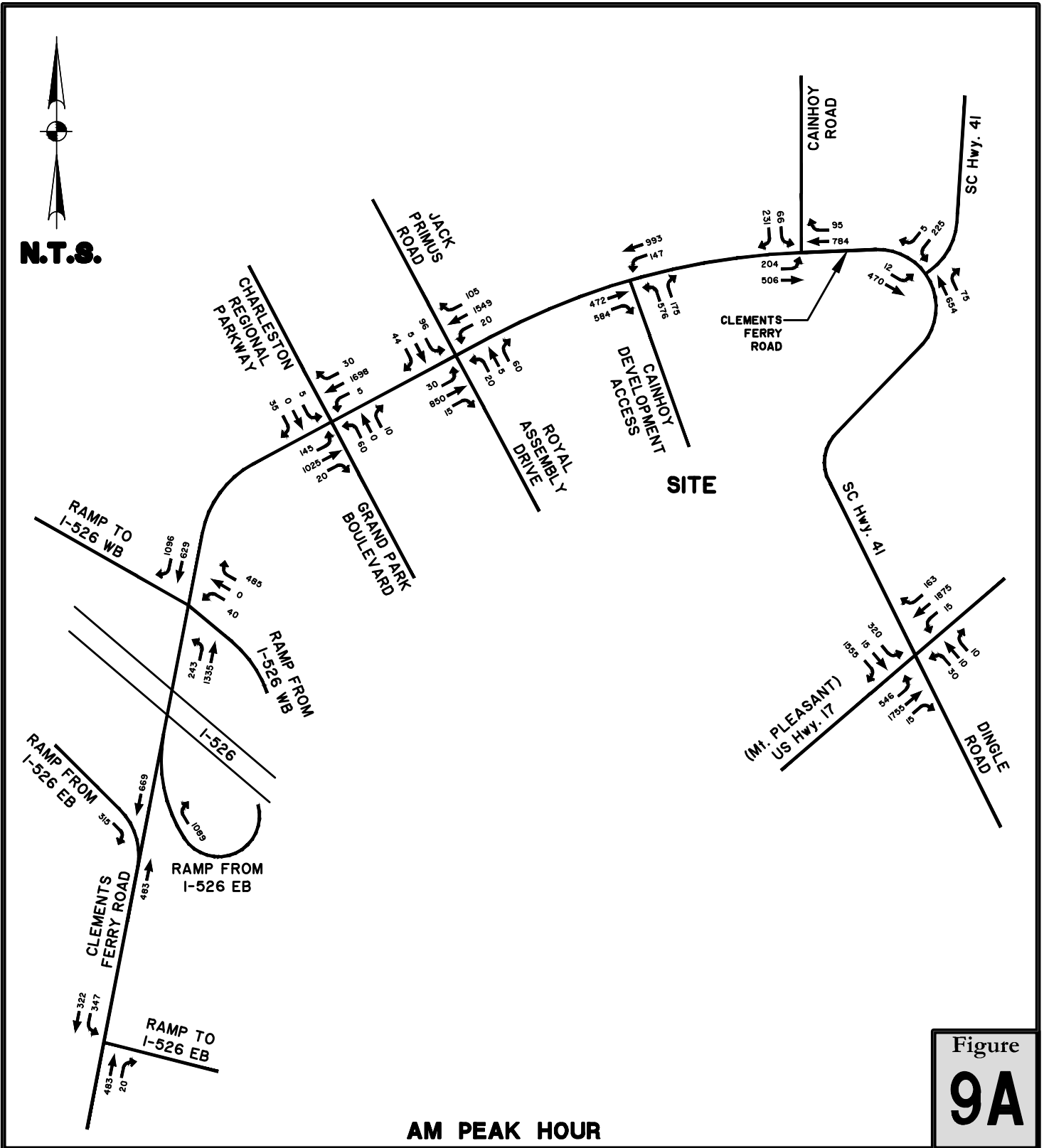
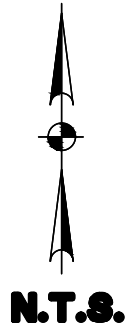
The first phase widening of Clements Ferry Road and the associated intersection improvements should ensure that the southern section of the corridor can operate efficiently in the near future.

The improvements recommended in section 6 should be implemented in order to maintain efficient operations through 2022. With the anticipated volumes along the northern section of the corridor, the second phase widening of Clements Ferry Road will likely be needed in the following years.

Table 7. Future Levels of Service (2022)

Intersection	Control	2022 AM Peak Hour		2022 PM Peak Hour	
		No-Build (LOS/DELAY)	Build Out (LOS/DELAY)	No-Build (LOS/DELAY)	Build Out (LOS/DELAY)
I-526 EB ramp and CFR					
SB left (Clements Ferry to on ramp)	None	A / 10	B / 11	B / 14	C / 19
I-526 WB ramp and CFR	Signal				
WB approach (ramp)		E / 59	F / 80	F / 148	F / 182
NB approach (Clements Ferry)		B / 11	B / 17	B / 11	D / 37
SB approach (Clements Ferry)		C / 29	D / 36	E / 63	F / 122
Overall intersection		C / 25	C / 34	D / 51	F / 96
I-526 WB ramp and CFR WITH STRIPING CHANGE					
WB approach (ramp)			D / 54		F / 101
NB approach (Clements Ferry)			A / 7		B / 18
SB approach (Clements Ferry)			C / 24		E / 71
Overall intersection			C / 21		D / 54
Charleston Regional Pkwy and CFR	Signal				
EB approach (Clements Ferry)		A / 6	A / 8	A / 4	A / 7
WB approach (Clements Ferry)		B / 10	B / 15	A / 7	A / 8
NB approach (Grand Park Blvd)		C / 27	D / 38	B / 16	C / 21
SB approach (Charleston Reg. Pky)		C / 24	C / 34	B / 16	C / 22
Overall intersection		A / 10	B / 13	A / 7	A / 8

Jack Primus Road and CFR	Signal				
EB approach (Clements Ferry)		A / 5	A / 7	A / 7	B / 11
WB approach (Clements Ferry)		A / 8	B / 12	A / 7	A / 9
NB approach (Royal Assembly)		B / 18	C / 23	B / 16	C / 20
SB approach (Jack Primus)		B / 18	C / 27	B / 16	C / 23
Overall intersection		A / 8	B / 12	A / 8	B / 11
Cainhoy Development access and CFR	Signal				
EB approach (Clements Ferry)			C / 24		D / 41
WB approach (Clements Ferry)			E / 65		D / 39
NB approach (Cainhoy access)			E / 75		F / 97
Overall intersection			D / 53		D / 52
Cainhoy Road and CFR	Signal				
EB approach (Clements Ferry)		A / 8	B / 16	B / 12	B / 15
WB approach (Clements Ferry)		C / 27	C / 33	B / 15	C / 24
SB approach (Cainhoy Road)		C / 24	C / 24	B / 15	C / 22
Overall intersection		C / 20	C / 25	B / 15	B / 19
SC 41 and CFR	Signal				
NB approach (from Bridge)		B / 10	B / 11	A / 5	A / 5
SB approach (from CFR)		A / 7	A / 9	B / 13	B / 15
EB approach (realigned SB SC 41)		B / 15	C / 23	B / 18	C / 23
Overall intersection		B / 11	B / 12	B / 10	B / 11
US 17 and SC 41 (Mount Pleasant)	Signal				
EB approach (SC 41)		C / 27	F / 84	C / 20	C / 23
WB approach (Dingle Road)		D / 53	D / 53	E / 64	E / 65
NB approach (US 17)		C / 24	C / 26	E / 60	E / 75
SB approach (US 17)		C / 29	C / 30	E / 70	E / 72
Overall intersection		C / 27	D / 45	E / 56	E / 65



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TRAFFIC IMPACT STUDY
 2022 BUILD OUT VOLUMES

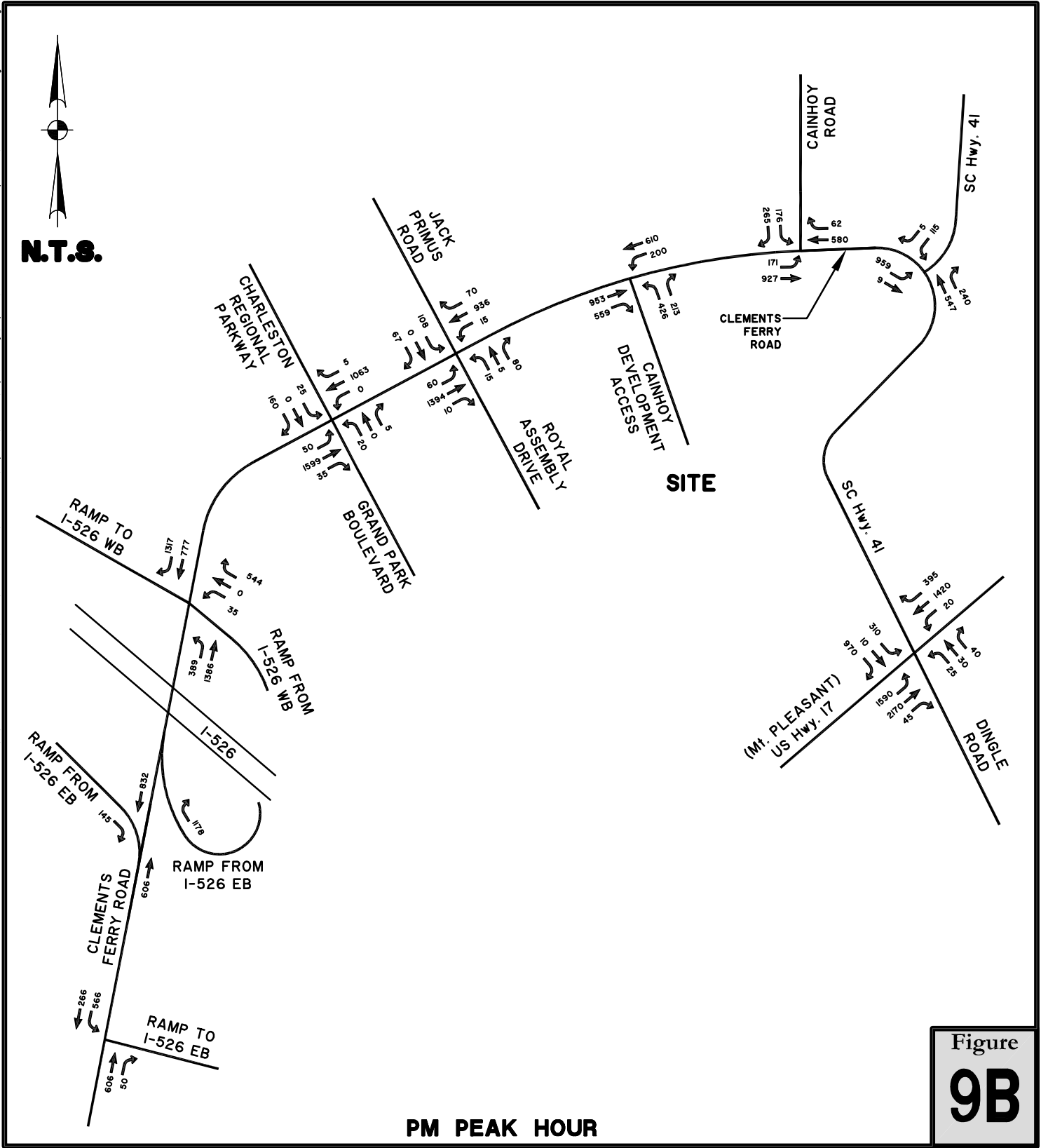
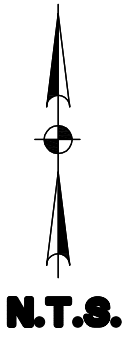


Figure
9B

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TRAFFIC IMPACT STUDY

2022 BUILD OUT VOLUMES

8. SIGNAL WARRANT ANALYSIS

A signal warrant analysis for the Clements Ferry Road / Cainhoy Access Road intersection was completed subsequent to the July 2014 impact study.

The MUTCD signal warrant criteria were examined in relation to the anticipated conditions at the Clements Ferry Road / Point Hope Parkway intersection. Future conditions in 2016 anticipate the operation of an 800 student K-8 school. Future conditions in 2017 anticipate the operation of the K-8 school and a 500 student High School. The schools are anticipated to grow from these opening numbers (of students) to the sizes described in this analysis (1,200 student HS; 1,400 student K-8).

Based on its anticipated size at the opening of the K-8 school in 2016, the peak hour warrant should be met for at least 2 hours of the day. By 2017, with the opening of the High School, the peak hour and the four hour warrants should be met. The 8-hour warrant may also be met depending on the amount of off peak traffic generated by the schools (8-hour thresholds were met for each of the 4 hours evaluated).

A signal will be needed at this intersection at some point in the near future. The warrant analysis recommended that consideration be given to installation of the signal for the opening of the K-8 school in 2016.

In response to the warrant analysis, SCDOT has stated "it is agreed that the proposed signal location would be acceptable based on known roadway and area conditions; however, the signal cannot be allowed to be installed until warrants are met or near being met. An appropriate time for the signal installation may be best for the projected high school opening date. This would allow for the K-8 and development traffic to be in place and more details to be known about the high school traffic to be generated."

9. SUMMARY / CONCLUSIONS

The Cainhoy PUD Master Plan area consists of over 9,000 acres in Berkeley County and the City of Charleston. The first phase of development is planned on the south side of Clements Ferry Road and is envisioned to include residential, retail, and institutional uses.

Roadway improvements planned in the area include a County project to widen Clements Ferry Road, which is scheduled to be completed in two phases. The first phase will widen approximately 3.6 miles of Clements Ferry Road from I-526 to Jack Primus Road and is planned to be constructed over the next few years. The second phase will widen approximately 4.5 miles of Clements Ferry Road from Jack Primus Road to SC 41; a construction timeframe for this section has not been determined.

The SCDOT proposes to replace the existing SC 41 bridge over the Wando River. The project will also realign the SC 41 / Clements Ferry Road intersection so that southbound SC 41 will intersect Clements Ferry Road at a T intersection. The intersection will be signalized with the project.

In addition to the County and SCDOT projects, the following is recommended:

At the Cainhoy Access:

- Construct right and left auxiliary lanes on Clements Ferry Road
- Signalize the intersection when warranted

At the Westbound I-526 ramp and Clements Ferry Road intersection

- Consider modifying the off ramp approach to provide a combination left/through/right turn lane and an exclusive right turn lane.

At the other signalized intersection in the study area

- Monitor and adjust signal timing as needed

With the improvements listed above, the roadway network in the vicinity should function adequately through the first phase of the Cainhoy development. Additional phases of Cainhoy will require future study at an appropriate time.

Appendix

Correspondence

Clements Ferry Road widening plans

Traffic Counts

Capacity Analyses

Ingham, Jeffrey

From: Ingham, Jeffrey
Sent: Tuesday, March 18, 2014 4:54 PM
To: 'Umberger, Nathan S.'; Mathis, Michael <MATHISM@charleston-sc.gov>
(MATHISM@charleston-sc.gov)
Cc: Hinson, Ron E
Subject: Cainhoy traffic study
Attachments: scoping 3-6-14.doc

Nathan/ Michael,

I've attached a summary of our scoping meeting on the 6th. I'm going to proceed based on this, so please let me know if you have any comments or corrections.

Also, can one of you please send me the latest plan set for the Phase 1 of Clements Ferry Road widening (or point me to where I can get it)? I'll need to make sure I'm modeling those intersections and that part of the roadway correctly.

As far as the Horizon plan, those folks are still working on their development agreement and need to iron out a few things before they give me any formal go-ahead. Once they do, I'll send something similar.

Thanks again.

Jeff Ingham, PE, PTOE
Transportation Engineer
Thomas & Hutton
ingham.j@thomasandhutton.com
(P) 843-725-5266 (F) 843-849-0203
[Website](#) | [vCard](#)

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CAINHOY TRAFFIC STUDY SCOPING

A meeting was held on 3/6/14 to outline the scope and assumptions of the traffic impact analysis to be conducted for the Cainhoy development. In attendance were:

- Jeff Ingham, Thomas & Hutton
- Michael Mathis, City of Charleston
- Nathan Umberger, SCDOT
- Ron Hinson, SCDOT (by phone)

It was agreed that the initial traffic impact analysis would cover roughly the first 8-10 years of development. Michael Mathis noted that additional studies will be required as the project moves forward.

For the "initial phase" (8-10 years), the owner estimates that the following would be constructed:

- 600 single family homes
- 150 townhomes/apartments
- 150,000 square feet of retail space
- 1,250 student high school
- 900 student middle/Jr high school

Base conditions will include the Phase 1 widening of Clements Ferry Road – from I-526 to Jack Primus. For the time frame covered by this study, the section of Clements Ferry Road between Jack Primus and SC 41 is assumed to remain as two-lane.

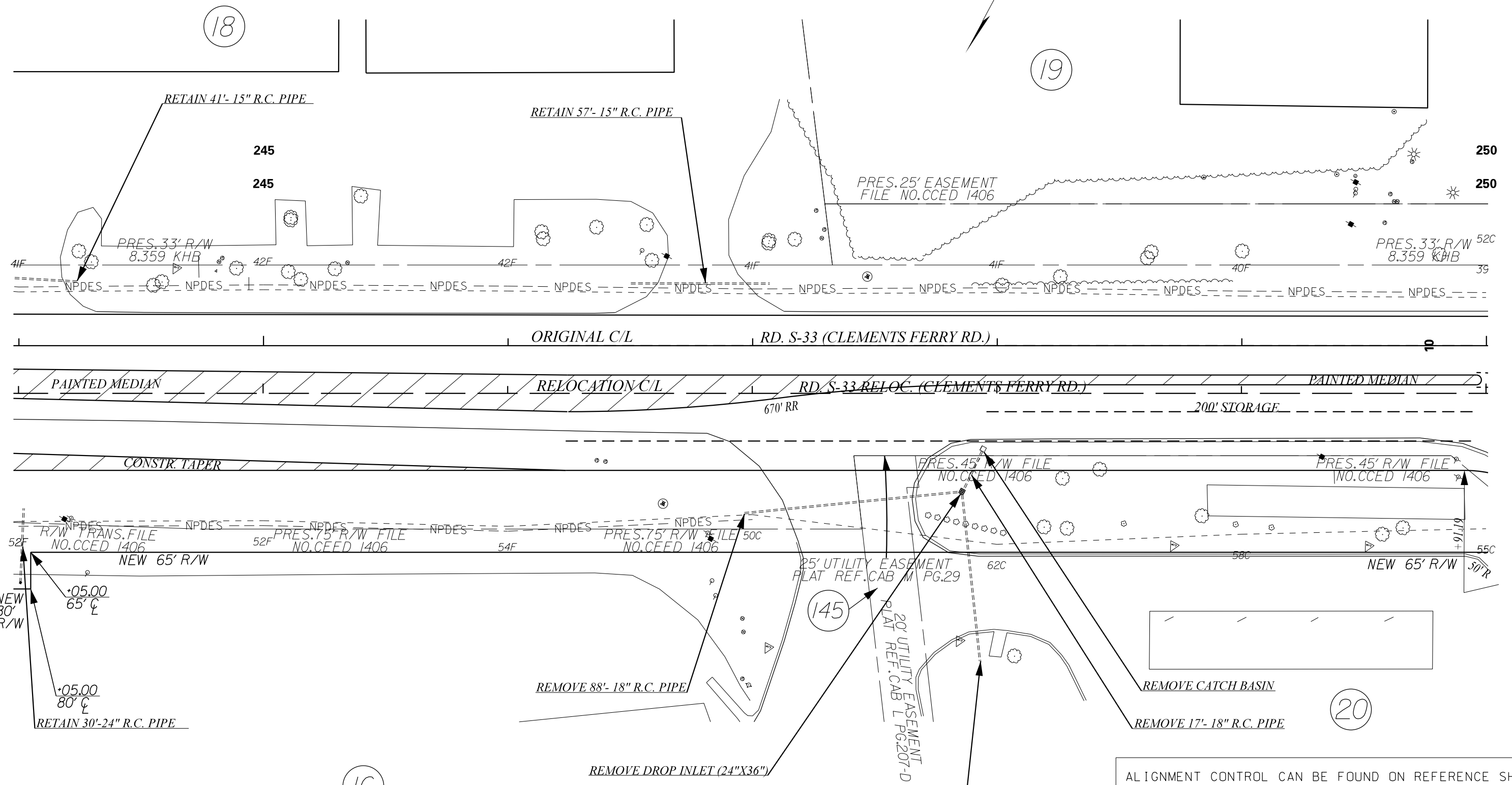
Intersections requested to be counted/ studied as a part of this analysis include:

- Development access on Clements Ferry Road
- Clements Ferry Road and SC 41 (as redesigned by the bridge project)
- Clements Ferry Road and Cainhoy Road
- Clements Ferry Road and Jack Primus Road
- Clements Ferry Road and Charleston Regional Parkway
- Clements Ferry Road and I-526 EB ramp
- Clements Ferry Road and I-526 WB ramp
- SC 41 and US 17 (Mount Pleasant)

A study completed by SCDOT in 2012 assumed a background growth rate on Clements Ferry Road of 2% annually. The same rate is proposed for this study. Morning and afternoon peak hours will be evaluated. Trip distributions will be determined after observing the counts and patterns. Further coordination with SCDOT and the City may be required as the study progresses. SCDOT noted that there may be a need for an interim meeting. All analysis will follow standard procedures for Traffic Impact Studies.

FED. RD. DIST. NO.	STATE	COUNTY	FILE NO.	ROAD NO.	SHEET NO.
3	S.C.	BERKELEY	8.3590.1	S-33	8

**PRELIMINARY
NOT FOR CONSTRUCTION**



ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET

4					
3					
2					
1					
REV. NO.	BY	DATE	DESCRIPTION OF REVISION	GROUP	
TOPO.		DATE			
DWG.		DATE			
R/W		DATE			

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROAD DESIGN COLUMBIA, S.C.

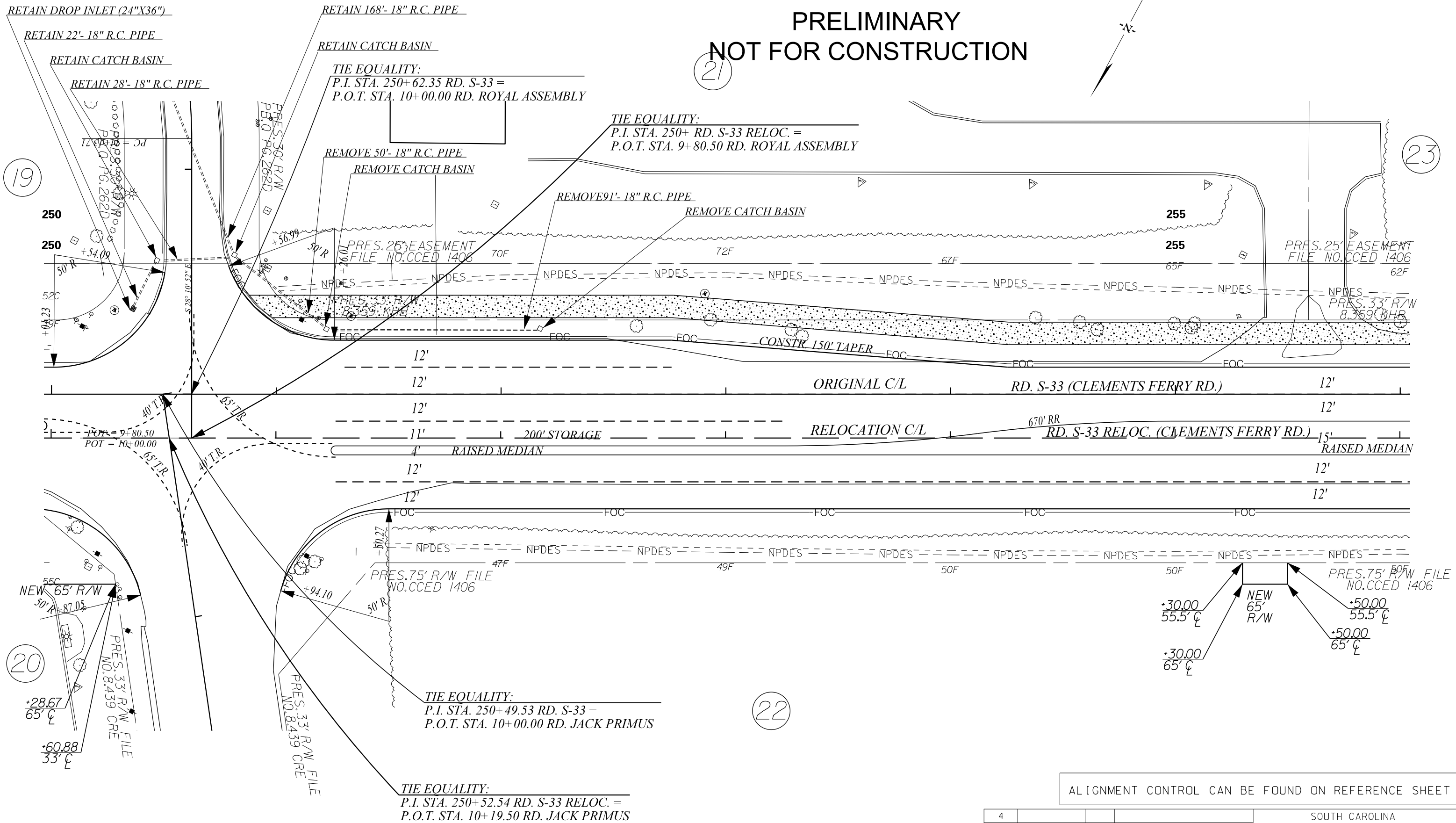
S-33 (CLEMETS FERRY RD.)
STA. 244+00.00 TO STA. 250+00.00

SCALE 1"= 20' RTE. S-33 DWG. NO. PNI

P:\Berkeley\39390_533_Clemets Ferry\Road\New Folder\39390p.f.dgn
 ElledgeCR
 19-NOV-2013

FED. RD. DIST. NO.	STATE	COUNTY	FILE NO.	ROAD NO.	SHEET NO.
3	S.C.	BERKELEY	8.39390.1	S-33	9

PRELIMINARY NOT FOR CONSTRUCTION



ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET

4						SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION ROAD DESIGN COLUMBIA, S.C. S-33 (CLEMENTS FERRY RD.) STA. 250+00.00 TO STA. 256+00.00 SCALE 1" = 20' RTE. S-33 DWG. NO. PNI
3						
2						
1						
REV. NO.	BY	DATE	DESCRIPTION OF REVISION			

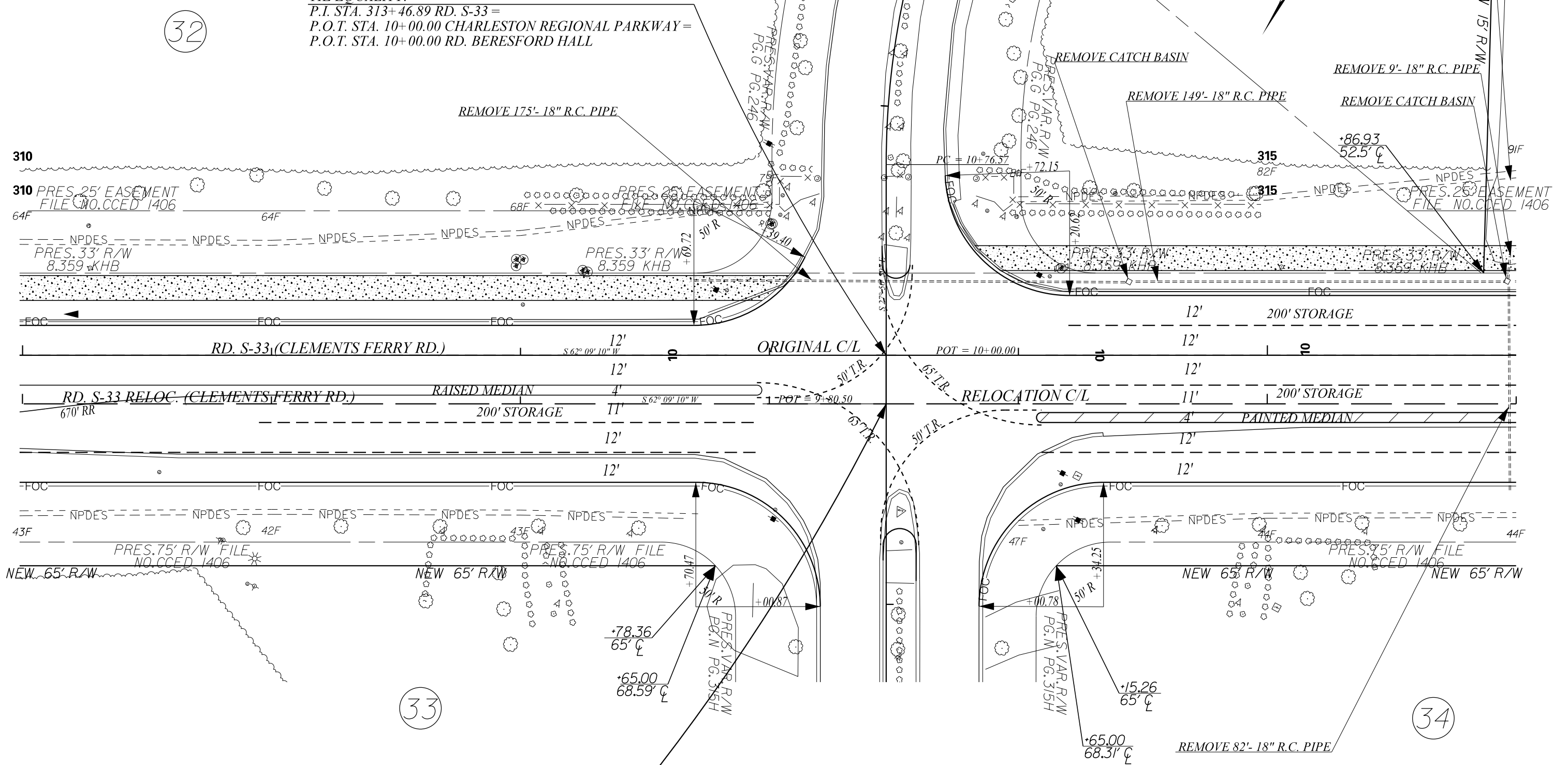
P:\Berkeley\39390_533_Clements Ferry Road\New Folder\7-39390p.f.dgn
 ElledgeCR
 19-NOV-2013

FED. RD. DIST. NO.	STATE	COUNTY	FILE NO.	ROAD NO.	SHEET NO.
3	S.C.	BERKELEY	8.39390.1	S-33	19

PRELIMINARY NOT FOR CONSTRUCTION

32

TIE EQUALITY:
P.I. STA. 313+46.89 RD. S-33 =
P.O.T. STA. 10+00.00 CHARLESTON REGIONAL PARKWAY =
P.O.T. STA. 10+00.00 RD. BERESFORD HALL



33

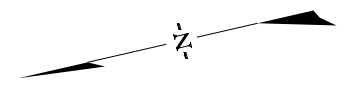
TIE EQUALITY:
P.I. STA. 313+46.94 RD. S-33 RELOC. =
P.O.T. STA. 9+80.50 RD. BERESFORD HALL =
P.O.T. STA. 10+19.50 RD. CHARLESTON REGIONAL PARKWAY

34

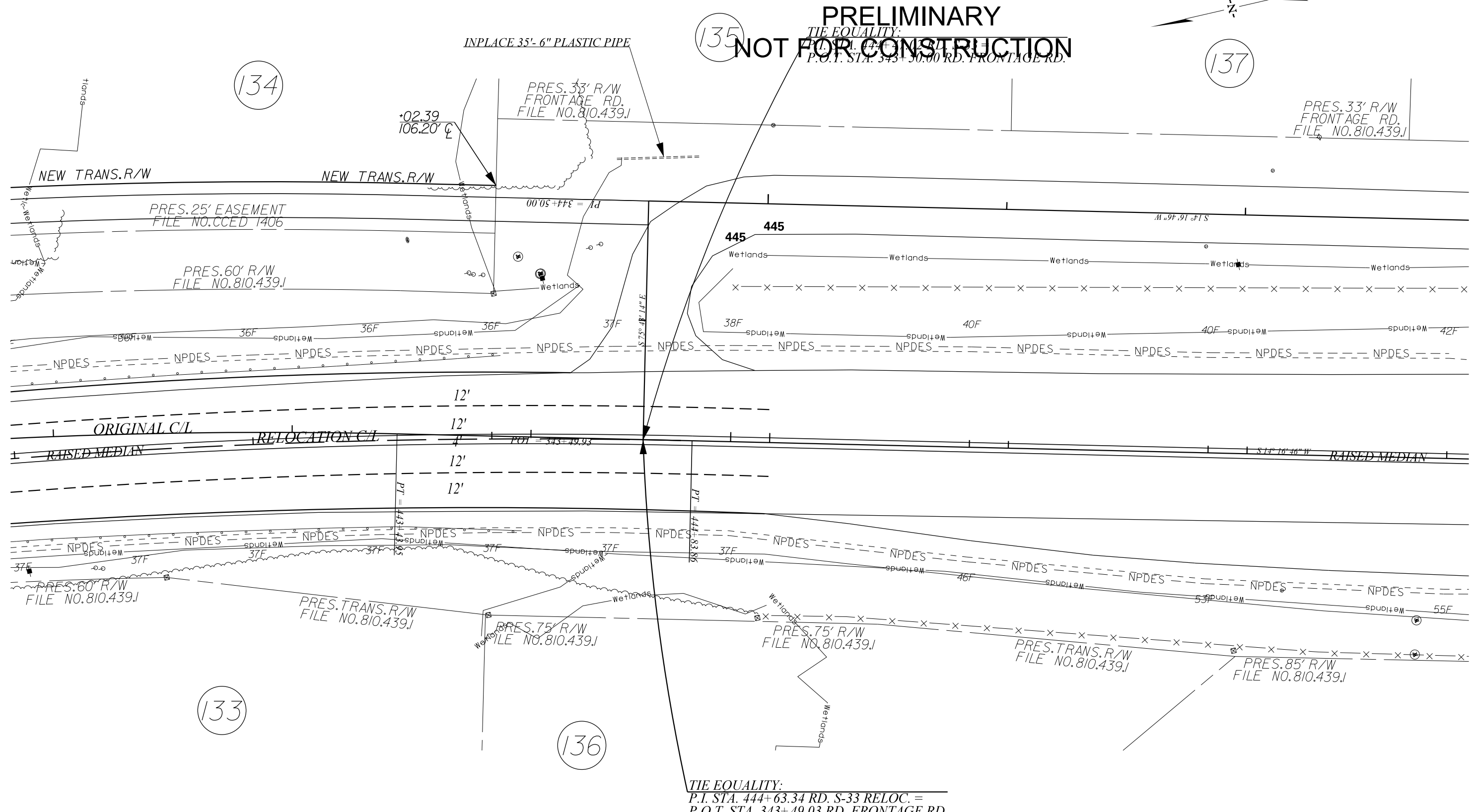
ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET

4						SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION ROAD DESIGN COLUMBIA, S.C.
3						
2						
1						
REV. NO.	BY	DATE	DESCRIPTION OF REVISION			S-33 (CLEMENTS FERRY RD.) STA. 310+00.00 TO STA. 316+00.00
TOPO.	DATE		GROUP			
DWG.	DATE		GROUP			
R/W	DATE		GROUP			SCALE 1"= 20' RTE. S-33 DWG. NO. PNI

FED. RD. DIV. NO.	STATE	COUNTY	FILE NO.	ROAD NO.	SHEET NO.
3	S.C.	BERKELEY	8.39390.1	S-33	41



PRELIMINARY
NOT FOR CONSTRUCTION



TIE EQUALITY:
P.I. STA. 444+63.34 RD. S-33 RELOC. =
P.O.T. STA. 343+49.03 RD. FRONTAGE RD.

ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET

4					
3					
2					
1					
REV. NO.	BY	DATE	DESCRIPTION OF REVISION		
TOPO.		DATE			
DWG.		DATE	GROUP		
R/W		DATE			

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROAD DESIGN COLUMBIA, S.C.

S-33 (CLEMENS FERRY RD.)
STA. 442+00.00 TO STA. 448+00.00

SCALE 1" = 20' RTE. S-33 DWG. NO. PNI

P:\Berkeley_39390_533_Clements Ferry Road\New Folder\39390pf.dgn
ElledgeCR
19-NOV-2013

2002-2012 Berkeley County Traffic Counts

Station	Local Road Name	Location	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
160	Berlin Myers Pkwy.	Dorchester Co. line to US 17A	18,700	20,900	21,600	23,500	22,600	22,400	23,000	21,300	23,000	23,000	22,900
161	SC 45	School Bus Dr. to Charleston Co. line	275	400	300	350	450	500	300	450	500	500	400
163	SC 311	US 176 to SC 6/Mudville Rd.	1,650	1,400	1,300	1,450	1,300	1,500	1,600	1,300	1,350	1,350	1,350
165	SC 402	US 52 to Hard Pinch Rd.	5,100	5,400	5,200	5,600	5,200	5,700	5,400	5,500	4,800	4,600	4,600
167	SC 402	Hard Pinch Rd. to Copperhead Rd.	2,100	2,200	2,100	2,300	2,200	2,400	2,100	2,300	1,950	2,400	1,950
169	SC 402	Copperhead Rd. to SC 41	2,500	2,500	2,600	2,800	2,500	2,700	2,400	2,500	2,500	2,500	2,500
171	US 52 Bypass	US 52 to US 17A/US 52	9,600	10,400	9,900	10,600	11,000	11,000	10,100	9,400	10,300	8,900	10,200
173	Ranger Dr.	SC 6 to Smithfield Rd.	1,750	2,200	1,850	2,400	2,700	2,400	2,400	1,800	1,450	1,500	1,400
175	Cty. Line/Poplar Hill Dr.	US 176 to SC 6	1,900	1,700	1,600	1,400	1,350	1,350	1,250	1,600	1,850	1,800	1,750
177	Jedburg Rd.	Dorchester Co. to US 176	5,500	6,000	5,600	5,500	6,200	7,000	5,900	6,000	5,400	5,500	5,100
179	Cooper Store Rd.	US 176 to SC 6	2,400	2,700	2,700	3,200	2,900	2,900	2,600	2,600	2,500	2,400	2,400
181	Sugar Hill Dr.	SC 6 to Pinopolis Rd.	1,100	1,150	1,100	1,000	1,050	1,050	1,050	950	N/A	N/A	N/A
183	Old Dairy Rd.	Dorchester Co. line to Jedburg Rd.	1,050	1,050	1,100	1,150	1,550	2,900	2,200	2,300	2,100	2,000	1,700
185	Black Tom Rd. extension	US 176 to Black Tom Rd.	1,500	1,600	1,450	1,500	1,450	1,600	1,500	1,500	1,250	1,300	1,350
186	SC 45	Old Highway 6 to Slider Dr./Highway 35	2,900	2,800	2,800	2,700	2,900	2,700	2,600	2,500	2,300	2,300	2,100
187	Hwy 35	Mandella Rd. to SC 45	2,800	2,300	2,100	2,300	2,300	2,200	1,850	1,850	1,850	1,600	1,150
188	Slider Dr.	Old Highway 6 to Highway 35	400	350	350	375	400	375	250	275	225	250	200
189	Mendel Rivers Rd.	Brick Church Circle to Harristown Rd.	600	500	500	500	500	475	425	400	500	500	550
190	Mendel Rivers Rd.	Harristown Rd. to Gravel Hill Rd.	800	750	750	800	800	750	800	900	800	800	900
191	Harristown Rd.	Mendel Rivers Rd. to US 17	1,200	1,300	1,350	1,000	1,600	1,500	1,450	1,500	1,500	1,500	1,450
192	Harristown Rd.	US 52 to Mendel Rivers Rd.	2,200	2,000	1,450	1,450	1,500	1,500	1,900	1,900	1,550	1,750	2,000
193	E Church St.	Bonneau to US 17A	800	800	650	550	700	700	800	800	650	700	800
195	Old Black Oak Rd.	Power House Rd. to north of Manigault Dr.	500	500	650	450	475	500	750	850	1,050	800	850
197	Dr. Evans Rd.	SC 402 to Sawmill Rd.	1,150	1,200	1,050	1,150	1,150	1,200	1,100	1,150	1,050	1,000	900
199	Whitesville Rd.	US 17A to Highway 315	3,500	3,900	4,100	4,100	4,000	4,100	3,900	3,700	3,600	3,700	3,800
201	Whitesville Rd.	Highway 315 to SC 6	2,100	2,400	2,300	2,100	2,000	2,100	2,200	2,100	3,300	3,500	3,200
203	Old Highway 52	US 52 to Gippy Dike Rd.	2,900	3,500	3,500	3,200	3,200	3,500	3,500	3,300	2,800	2,800	2,900
205	Old Highway 52	Gippy Dike Rd. to Dennis Blvd.	7,600	7,800	7,200	7,000	7,000	7,100	6,200	6,100	5,100	4,900	4,800
207	Cypress Gardens Rd.	Bushy Park Rd. to Old Highway 52	4,100	5,400	5,300	4,500	5,000	5,100	6,000	5,500	6,500	6,000	6,200
209	Cainhoy Rd.	SC 41 to Baldwin Corner Rd.	1,700	1,300	1,300	1,200	1,100	1,200	1,550	1,450	1,950	2,200	2,200
211	Cainhoy Rd.	Baldwin Corner Rd. to Clements Ferry Rd.	5,000	5,700	6,600	5,600	6,000	6,400	5,600	5,900	4,500	4,300	6,300
213	Bethera Rd.	US 17A to SC 41	250	225	250	275	275	325	350	450	225	225	275
215	Steed Creek Rd.	SC 402 to Charleston Co. line	300	300	300	275	275	300	300	375	375	400	475
217	Broughton Rd.	Levee Dr. to SC 6	4,000	3,400	3,400	3,400	3,400	3,500	3,800	3,300	3,500	3,500	3,300
218	Pinopolis Rd.	Sugar Hill Dr. to Land-O-Pines Circle	2,800	2,800	3,100	3,100	3,100	3,000	3,000	2,400	2,700	2,700	2,700
219	Pinopolis Rd.	SC 6 to Sugar Hill Dr.	2,400	2,400	2,600	2,600	2,500	2,500	2,200	2,000	2,300	2,200	2,100
220	Pinopolis Rd.	Land-O-Pines Cir. to 0.04 mi. N of Almond St.	1,500	1,500	1,650	1,700	1,700	1,700	1,100	900	1,300	1,450	1,450
221	Altman St.	US 52 to White St.	5,800	6,200	6,100	6,300	6,100	6,100	5,300	5,300	5,500	5,300	5,500
223	Old Whitesville Rd.	Sugar Hill Dr. to Whitesville Rd.	2,900	3,000	3,200	3,400	3,200	3,200	2,800	2,500	2,800	2,600	2,700

2002-2012 Berkeley County Traffic Counts

Station	Local Road Name	Location	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
224	Sugar Hill Rd	SC 6 to Pinopolis Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,100
225	Perry Hill Rd.	US 17A to Annie Williams St.	3,200	3,300	3,000	3,100	3,000	3,100	2,700	2,800	2,500	2,600	2,400
227	Red Bank Rd.	US 52 to Howe Hall Rd.	21,500	21,300	21,100	20,000	21,300	19,700	19,000	18,700	20,200	18,600	19,800
229	Howe Hall Rd.	Red Bank Rd. to Rahway Rd.	4,200	4,400	4,100	3,800	4,000	4,000	3,900	3,900	4,400	3,700	3,700
230	Red Bank Rd.	Snake Rd. to Howe Hall Rd.	N/A	25,600	24,700	24,400	24,100	23,500	25,100	26,300	25,600	25,600	26,000
231	NAD Rd.	Howe Hall Rd. to Hampton Rd.	13,500	13,700	16,300	16,800	16,800	16,600	17,900	17,500	16,200	15,000	15,800
232	Red Bank Rd.	N Rhett Ave. to Snake Rd.	24,400	25,400	25,900	26,100	25,800	25,700	25,500	26,800	26,700	25,000	26,600
233	Red Bank Rd.	Bushy Park Rd. east of N Rhett Ave.	21,100	20,400	20,900	19,800	19,800	19,900	18,600	20,400	19,200	20,600	21,800
234	NAD Rd.	Hampton Rd. to Charleston Co. line	N/A	20,300	21,300	21,900	22,600	24,500	25,100	26,100	24,900	20,600	25,400
235	Snake Rd.	NAD Rd. to Red Bank Rd.	8,200	8,000	7,900	9,700	10,800	11,100	10,200	10,200	9,400	8,800	8,600
236	N Rhett Ave.	Red Bank Rd. to Williams Rd.	22,100	24,900	23,700	22,900	22,600	22,200	21,700	21,400	25,000	25,500	26,500
237	N Rhett Ave.	Liberty Hall Rd. to Red Bank Rd.	9,300	9,800	9,600	9,300	10,200	10,300	10,800	11,500	12,600	12,000	11,700
238	N Rhett Ave.	Williams Rd. to Yeamans Hall Rd.	22,300	25,200	25,900	26,300	26,900	26,500	27,000	25,800	28,700	27,300	27,300
239	Liberty Hall Rd.	US 176 to US 52	7,700	7,800	8,000	8,000	8,100	8,100	7,700	7,900	9,200	8,800	8,600
241	Amy Dr.	Hollywood Dr. to Judy Dr.	2,500	2,600	2,600	2,500	2,600	2,600	2,600	2,500	2,100	2,100	2,300
243	Springhill Rd.	Fort Dr. to Redeemer Rd.	325	375	350	325	325	350	200	175	150	225	150
245	Murray Dr.	Highland Park Ave. to Yeamans Hall Rd.	10,700	10,300	10,400	10,600	9,600	10,700	9,600	10,100	8,300	9,700	9,700
246	N Rhett Ave.	Yeamans Hall Rd. to Charleston Co. line	24,100	25,400	27,600	27,500	27,200	28,600	27,200	27,800	30,100	28,000	28,000
247	Murray Dr.	Yeamans Hall Rd. to Charleston Co. line	6,500	6,300	6,100	6,300	5,900	6,700	5,300	5,600	4,700	5,500	4,900
249	Yeamans Hall Rd.	Williams Rd. to N Rhett Ave.	7,000	7,300	7,200	7,300	7,100	7,100	6,800	6,100	7,200	6,800	6,600
251	Wall St.	US 52 to Cooper St.	900	900	800	850	850	850	700	550	550	550	600
253	Maple St.	Yeamans Hall Rd. to Pine St.	450	350	375	375	400	375	350	250	300	250	225
255	Old Mount Holly Rd.	Dead end to US 176	5,300	5,400	5,800	6,200	7,000	7,800	6,800	7,600	8,100	8,000	7,600
257	Old Highway 6	US 52 to SC 45	1,450	1,200	1,250	1,400	1,450	1,400	900	1,050	1,050	1,100	1,100
259	Cypress Gardens Rd.	Old Highway 52 to US 17A	1,750	2,800	2,500	2,200	2,500	2,600	3,100	2,800	2,100	2,800	3,100
261	Russellville Rd.	Highway 35 to US 52	950	900	950	700	700	700	700	650	550	600	700
263	Power House Rd.	US 52 westerly to end	1,550	1,950	1,500	1,700	1,450	1,500	1,850	1,300	1,450	1,200	1,250
265	Edgewater Rd.	.05 mi. S of Thomas Walters Rd. to SC 45	650	750	600	600	600	600	475	425	350	250	300
267	Cypress Campground Rd	US 176 to Dorchester Co. line	850	1,100	950	1,050	950	1,000	850	1,100	750	750	650
269	Clements Ferry Rd.	SC 41 to Jack Primus Rd.	10,000	11,500	15,600	15,500	17,300	16,700	15,400	15,300	15,200	14,800	14,800
270	Clements Ferry Rd.	Jack Primus Rd. to St. Thomas Island Dr.	11,900	14,200	18,900	21,100	22,400	22,000	20,500	20,300	27,400	28,600	28,500
271	Slider Dr.	SC 45 to Old Highway 6	1,350	950	950	1,150	1,250	1,200	900	700	600	600	650
272	Clements Ferry Rd.	SC 41 to Reflectance Dr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8,800
273	Mandella Rd.	US 52 to Highway 35	2,500	2,100	2,200	2,300	2,300	2,200	1,600	2,300	2,100	1,850	2,100
274			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12,100
275	Black Oak Rd.	0.45 mi. W of Old Horseshoe Rd. to US 52	3,600	3,400	3,700	3,500	3,700	3,800	3,800	3,600	3,400	3,500	3,500
277	Short Cut Rd.	SC 6 to SC 6	1,450	1,400	1,600	1,550	1,600	1,500	1,350	1,500	1,150	1,200	1,050
279	Myers Rd.	US 17A to US 176	7,900	7,100	7,900	8,100	7,900	7,800	7,600	6,600	7,400	7,100	7,200
280	Crowfield Blvd.	US 176 to College Park Rd.	11,700	12,300	14,100	13,200	15,300	14,600	13,100	13,400	11,500	11,100	12,400

2002-2012 Berkeley County Traffic Counts

Station	Local Road Name	Location	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
340	St. Thomas Island Dr.	Clements Ferry Rd. to end	3,400	3,700	4,600	4,400	5,100	5,200	5,500	6,200	6,300	6,600	5,900
341	US 176	US 17A to Myers Rd.	9,000	21,500	9,300	9,200	9,900	10,700	10,900	11,500	11,700	11,600	11,600
2179	I-26	SC 27 to Jedburg Rd.	32,500	34,100	35,600	36,600	37,800	38,900	37,700	37,600	38,900	38,300	37,800
2181	I-26	Jedburg Rd. to US 17A	38,500	41,500	41,700	43,000	44,900	46,500	45,700	45,700	48,300	48,200	47,700
2183	I-26	US 17A to College Park Rd.	53,600	55,000	57,800	58,100	58,600	60,900	59,400	58,800	64,300	64,400	66,900
2517	I-526	Virginia Ave. to Clements Ferry Rd.	50,000	54,500	59,000	61,700	61,800	62,800	60,300	59,000	61,300	62,400	64,400
2518	I-526	Clements Ferry Rd. to Seven Farms Rd.	41,600	45,600	49,800	52,500	51,600	51,500	48,900	48,200	50,400	52,600	51,600
2520	I-526	Seven Farms Rd to Long Point Rd.	44,700	49,300	52,800	55,100	53,900	54,200	54,500	53,900	54,300	53,400	53,000

To see all the details that are visible on the screen, use the "Print" link next to the map.

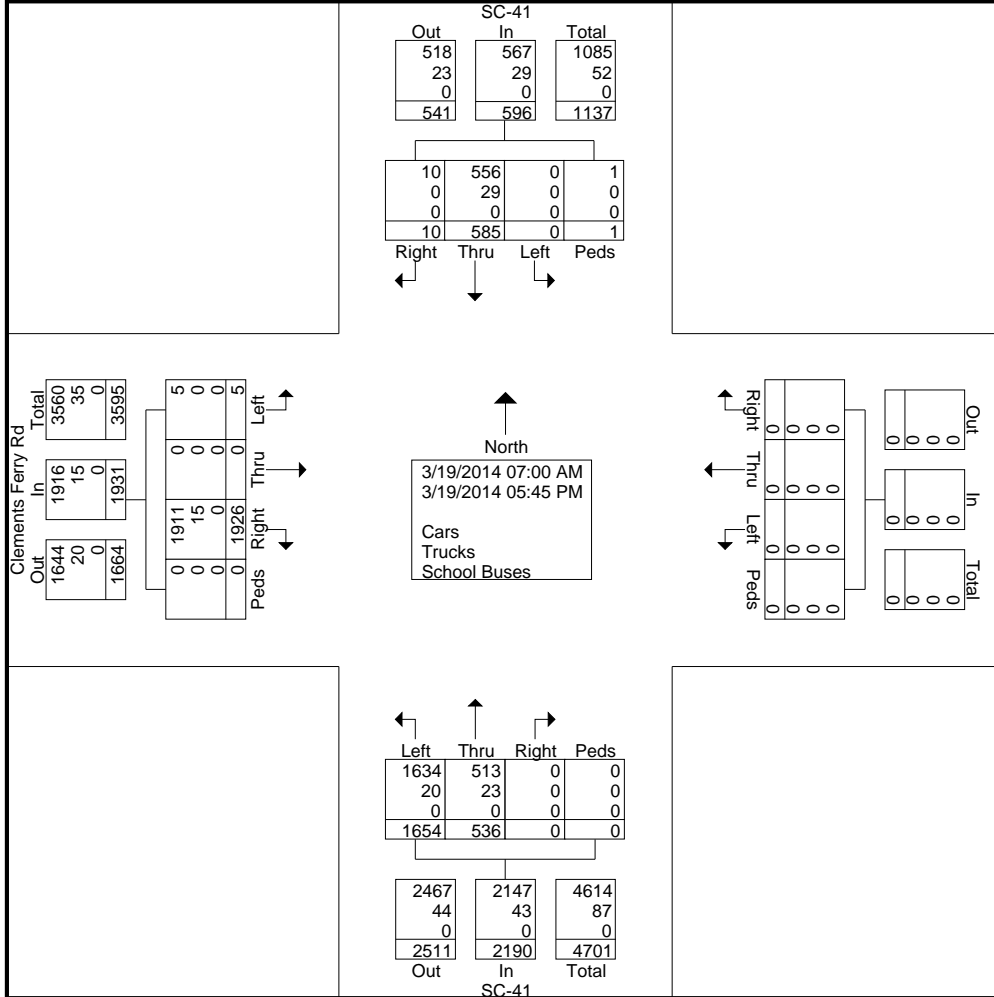




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ABBEVILLE, GEORGIA 31001
843.216.3304

COUNTER: T-0520
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 WEATHER: BE
 OTHER: T&H

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 SITE CODE : 14610011
 START DATE : 3/19/2014
 PAGE NO : 2



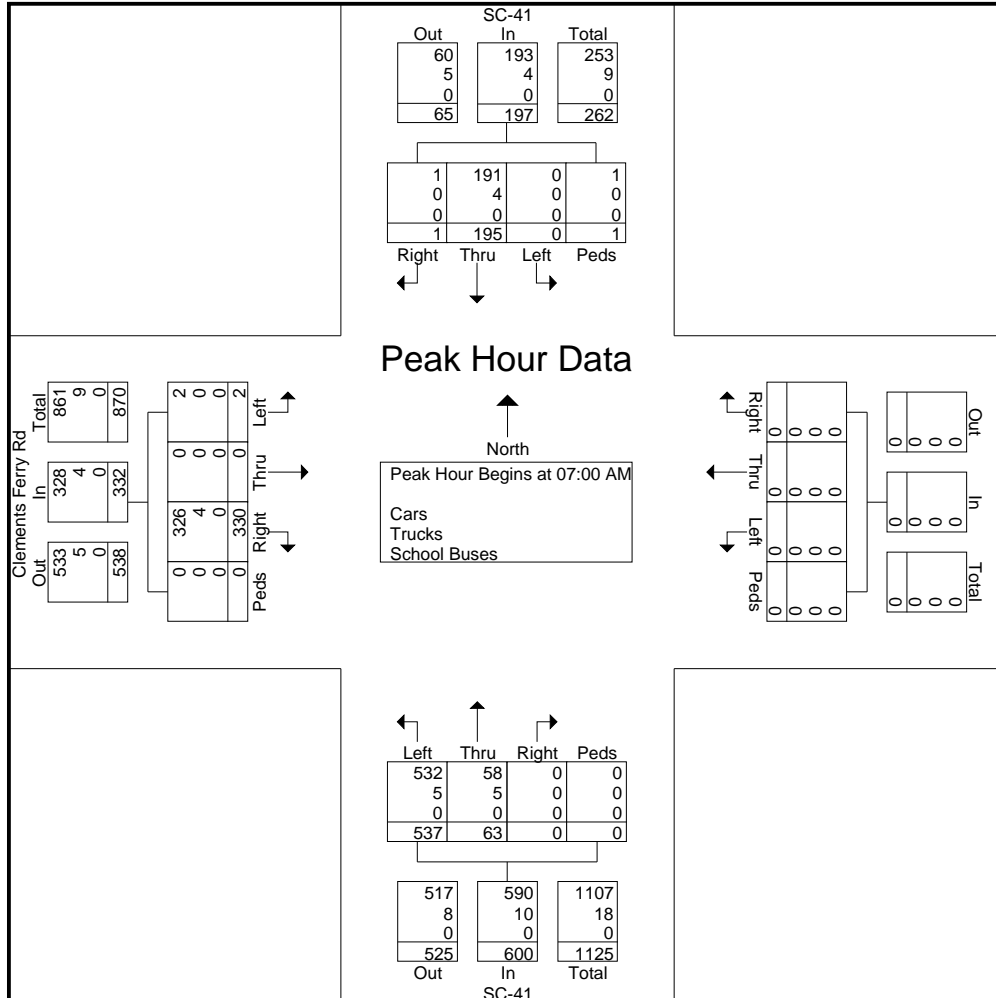


TRAFFIC DATA CONNECTION
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 ABBEVILLE, GEORGIA 31001
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COUNTER: T-0520
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FILE NAME : 14610-01
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 START DATE : 3/19/2014
 PAGE NO : 3

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	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	137	22	0	0	159	0	49	0	1	50	0	0	66	0	66	0	0	0	0	0	275
07:15 AM	149	12	0	0	161	0	49	1	0	50	2	0	65	0	67	0	0	0	0	0	278
07:30 AM	125	13	0	0	138	0	60	0	0	60	0	0	114	0	114	0	0	0	0	0	312
07:45 AM	126	16	0	0	142	0	37	0	0	37	0	0	85	0	85	0	0	0	0	0	264
Total Volume	537	63	0	0	600	0	195	1	1	197	2	0	330	0	332	0	0	0	0	0	1129
% App. Total	89.5	10.5	0	0		0	99	0.5	0.5		0.6	0	99.4	0		0	0	0	0	0	
PHF	.901	.716	.000	.000	.932	.000	.813	.250	.250	.821	.250	.000	.724	.000	.728	.000	.000	.000	.000	.000	.905
Cars	532	58	0	0	590	0	191	1	1	193	2	0	326	0	328	0	0	0	0	0	1111
% Cars	99.1	92.1	0	0	98.3	0	97.9	100	100	98.0	100	0	98.8	0	98.8	0	0	0	0	0	98.4
Trucks	5	5	0	0	10	0	4	0	0	4	0	0	4	0	4	0	0	0	0	0	18
% Trucks	0.9	7.9	0	0	1.7	0	2.1	0	0	2.0	0	0	1.2	0	1.2	0	0	0	0	0	1.6
School Buses																					
% School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



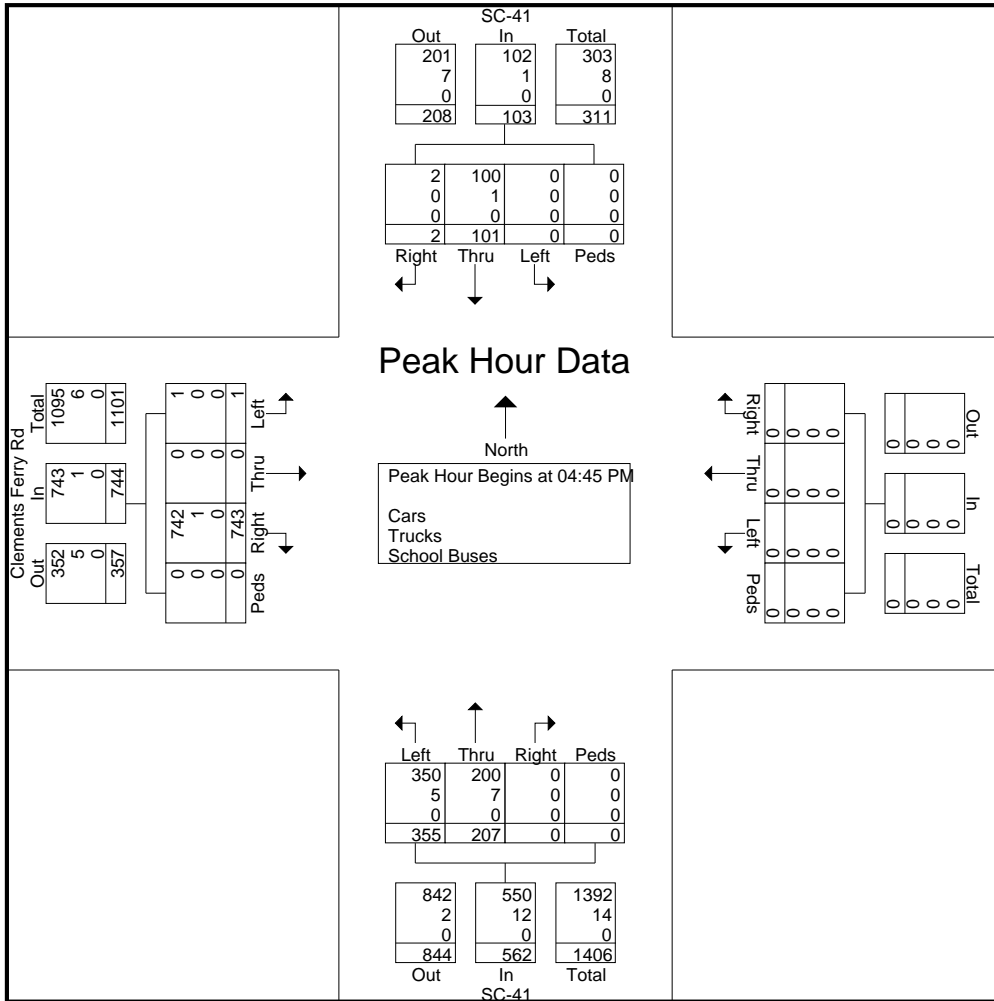


TRAFFIC DATA CONNECTION
PO BOX 445
ABBEVILLE, GEORGIA 31001
843.216.3304

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 WEATHER: BE
 OTHER: T&H

FILE NAME : 14610-01
 SITE CODE : 14610011
 START DATE : 3/19/2014
 PAGE NO : 4

Start Time	SC-41 NORTHBOUND					SC-41 SOUTHBOUND					CLEMENTS FERRY RD EASTBOUND					WESTBOUND					Int. Total	
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04:45 PM	87	46	0	0	133	0	20	1	0	21	0	0	172	0	172	0	0	0	0	0	0	326
05:00 PM	102	36	0	0	138	0	28	1	0	29	1	0	154	0	155	0	0	0	0	0	0	322
05:15 PM	85	61	0	0	146	0	30	0	0	30	0	0	236	0	236	0	0	0	0	0	0	412
05:30 PM	81	64	0	0	145	0	23	0	0	23	0	0	181	0	181	0	0	0	0	0	0	349
Total Volume	355	207	0	0	562	0	101	2	0	103	1	0	743	0	744	0	0	0	0	0	0	1409
% App. Total	63.2	36.8	0	0		0	98.1	1.9	0		0.1	0	99.9	0		0	0	0	0	0		
PHF	.870	.809	.000	.000	.962	.000	.842	.500	.000	.858	.250	.000	.787	.000	.788	.000	.000	.000	.000	.000	.000	.855
Cars	350	200	0	0	550	0	100	2	0	102	1	0	742	0	743	0	0	0	0	0	0	1395
% Cars	98.6	96.6	0	0	97.9	0	99.0	100	0	99.0	100	0	99.9	0	99.9	0	0	0	0	0	0	99.0
Trucks	5	7	0	0	12	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	14
% Trucks	1.4	3.4	0	0	2.1	0	1.0	0	0	1.0	0	0	0.1	0	0.1	0	0	0	0	0	0	1.0
School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



To see all the details that are visible on the screen, use the "Print" link next to the map.





TRAFFIC DATA CONNECTION
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843.216.3304

COUNTER: D4-0930
 COUNTED BY: LE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-02
 SITE CODE : 01461002
 START DATE : 3/20/2014
 PAGE NO : 1

GROUPS PRINTED- CARS - TRUCKS - SCHOOL BUSES

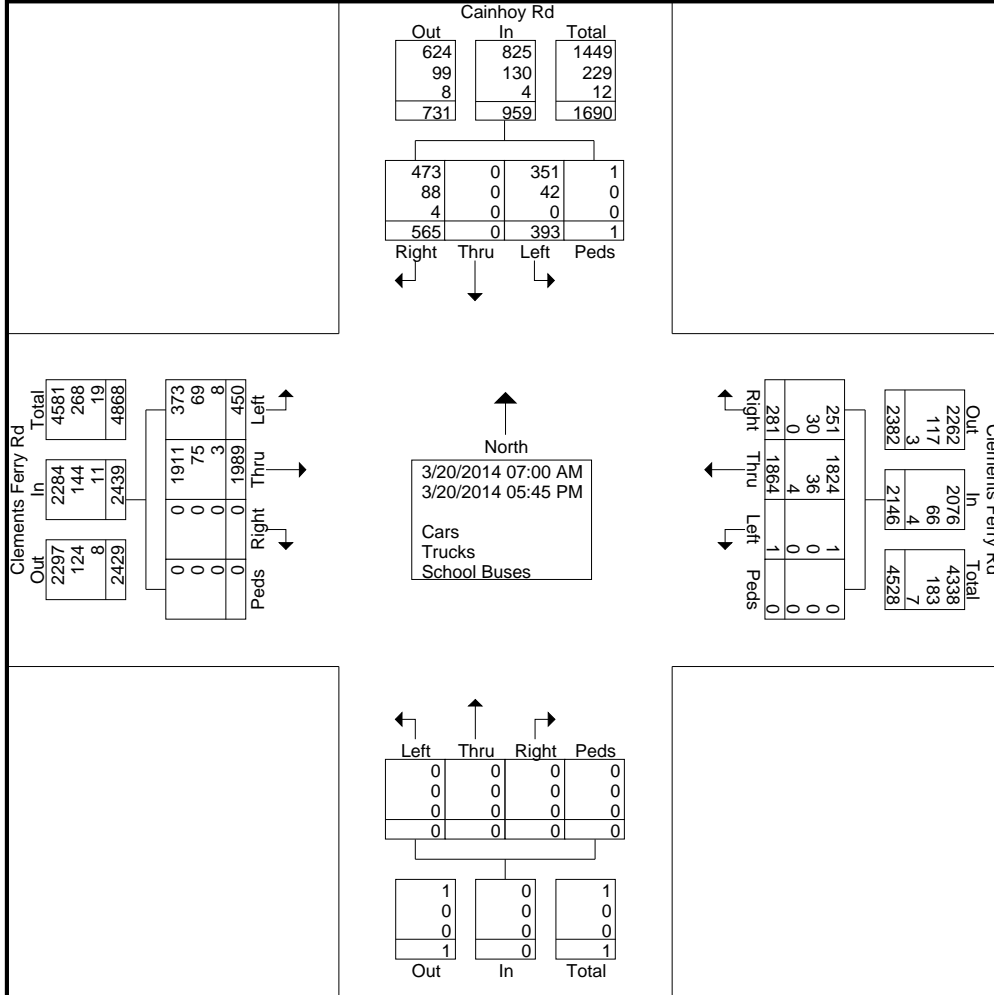
Start Time	NORTHBOUND					CAINHOY RD SOUTHBOUND					CLEMENTS FERRY RD EASTBOUND					CLEMENTS FERRY RD WESTBOUND					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	0	0	0	0	14	0	53	0	67	43	55	0	0	98	1	175	19	0	195	360
07:15 AM	0	0	0	0	0	22	0	39	0	61	28	71	0	0	99	0	150	26	0	176	336
07:30 AM	0	0	0	0	0	30	0	40	0	70	29	112	0	0	141	0	168	36	0	204	415
07:45 AM	0	0	0	0	0	12	0	37	0	49	35	97	0	0	132	0	127	30	0	157	338
Total	0	0	0	0	0	78	0	169	0	247	135	335	0	0	470	1	620	111	0	732	1449
08:00 AM	0	0	0	0	0	11	0	25	0	36	20	88	0	0	108	0	123	15	0	138	282
08:15 AM	0	0	0	0	0	15	0	18	0	33	28	66	0	0	94	0	157	14	0	171	298
08:30 AM	0	0	0	0	0	17	0	15	0	32	20	98	0	0	118	0	140	10	0	150	300
08:45 AM	0	0	0	0	0	7	0	21	0	28	21	76	0	0	97	0	94	8	0	102	227
Total	0	0	0	0	0	50	0	79	0	129	89	328	0	0	417	0	514	47	0	561	1107
*** BREAK ***																					
04:00 PM	0	0	0	0	0	16	0	23	0	39	25	126	0	0	151	0	80	15	0	95	285
04:15 PM	0	0	0	0	0	41	0	35	0	76	24	138	0	0	162	0	82	19	0	101	339
04:30 PM	0	0	0	0	0	28	0	31	0	59	29	151	0	0	180	0	100	13	0	113	352
04:45 PM	0	0	0	0	0	30	0	52	0	82	36	168	0	0	204	0	84	24	0	108	394
Total	0	0	0	0	0	115	0	141	0	256	114	583	0	0	697	0	346	71	0	417	1370
05:00 PM	0	0	0	0	0	27	0	35	0	62	28	180	0	0	208	0	102	13	0	115	385
05:15 PM	0	0	0	0	0	54	0	46	0	100	34	175	0	0	209	0	94	14	0	108	417
05:30 PM	0	0	0	0	0	49	0	66	0	115	22	183	0	0	205	0	97	11	0	108	428
05:45 PM	0	0	0	0	0	20	0	29	1	50	28	205	0	0	233	0	91	14	0	105	388
Total	0	0	0	0	0	150	0	176	1	327	112	743	0	0	855	0	384	52	0	436	1618
Grand Total	0	0	0	0	0	393	0	565	1	959	450	1989	0	0	2439	1	1864	281	0	2146	5544
Apprch %	0	0	0	0	0	41	0	58.9	0.1	18.5	81.5	0	0	0	0	0	86.9	13.1	0	0	
Total %	0	0	0	0	0	7.1	0	10.2	0	17.3	8.1	35.9	0	0	44	0	33.6	5.1	0	38.7	
Cars	0	0	0	0	0	351	0	473	1	825	373	1911	0	0	2284	1	1824	251	0	2076	5185
% Cars	0	0	0	0	0	89.3	0	83.7	100	86	82.9	96.1	0	0	93.6	100	97.9	89.3	0	96.7	93.5
Trucks	0	0	0	0	0	42	0	88	0	130	69	75	0	0	144	0	36	30	0	66	340
% Trucks	0	0	0	0	0	10.7	0	15.6	0	13.6	15.3	3.8	0	0	5.9	0	1.9	10.7	0	3.1	6.1
School Buses	0	0	0	0	0	0	0	4	0	4	8	3	0	0	11	0	4	0	0	4	19
% School Buses	0	0	0	0	0	0	0	0.7	0	0.4	1.8	0.2	0	0	0.5	0	0.2	0	0	0.2	0.3



TRAFFIC DATA CONNECTION
PO BOX 445
ABBEVILLE, GEORGIA 31001
843.216.3304

COUNTER: D4-0930
 COUNTED BY: LE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-02
 SITE CODE : 01461002
 START DATE : 3/20/2014
 PAGE NO : 2



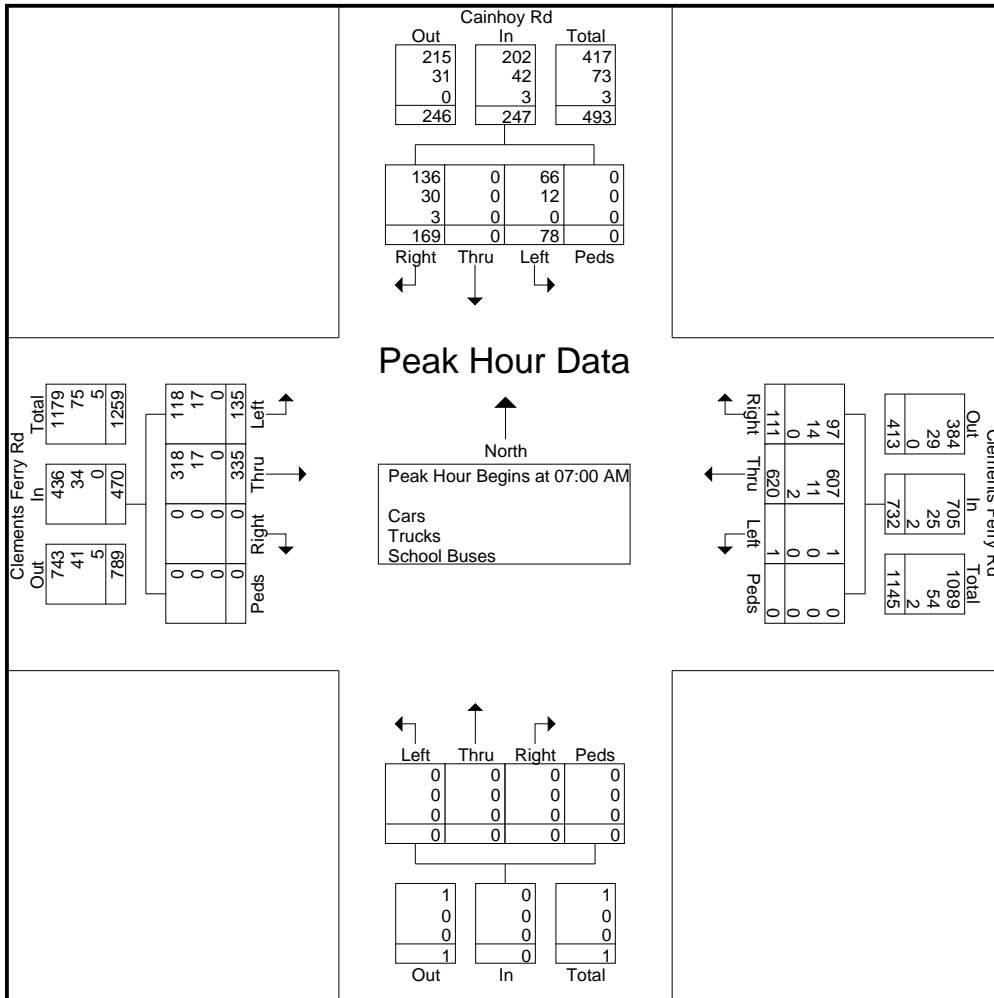


TRAFFIC DATA CONNECTION
PO BOX 445
ABBEVILLE, GEORGIA 31001
843.216.3304

COUNTER: D4-0930
 COUNTED BY: LE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-02
 SITE CODE : 01461002
 START DATE : 3/20/2014
 PAGE NO : 3

Start Time	NORTHBOUND					CAINHOY RD SOUTHBOUND					CLEMENTS FERRY RD EASTBOUND					CLEMENTS FERRY RD WESTBOUND					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	14	0	53	0	67	43	55	0	0	98	1	175	19	0	195	360
07:15 AM	0	0	0	0	0	22	0	39	0	61	28	71	0	0	99	0	150	26	0	176	336
07:30 AM	0	0	0	0	0	30	0	40	0	70	29	112	0	0	141	0	168	36	0	204	415
07:45 AM	0	0	0	0	0	12	0	37	0	49	35	97	0	0	132	0	127	30	0	157	338
Total Volume	0	0	0	0	0	78	0	169	0	247	135	335	0	0	470	1	620	111	0	732	1449
% App. Total	0	0	0	0	0	31.6	0	68.4	0		28.7	71.3	0	0		0.1	84.7	15.2	0		
PHF	.000	.000	.000	.000	.000	.650	.000	.797	.000	.882	.785	.748	.000	.000	.833	.250	.886	.771	.000	.897	.873
Cars	0	0	0	0	0	66	0	136	0	202	118	318	0	0	436	1	607	97	0	705	1343
% Cars	0	0	0	0	0	84.6	0	80.5	0	81.8	87.4	94.9	0	0	92.8	100	97.9	87.4	0	96.3	92.7
Trucks	0	0	0	0	0	12	0	30	0	42	17	17	0	0	34	0	11	14	0	25	101
% Trucks	0	0	0	0	0	15.4	0	17.8	0	17.0	12.6	5.1	0	0	7.2	0	1.8	12.6	0	3.4	7.0
School Buses	0	0	0	0	0	0	0	1.8	0	1.2	0	0	0	0	0	0	0.3	0	0	0.3	0.3
% School Buses	0	0	0	0	0	0	0	1.8	0	1.2	0	0	0	0	0	0	0.3	0	0	0.3	0.3



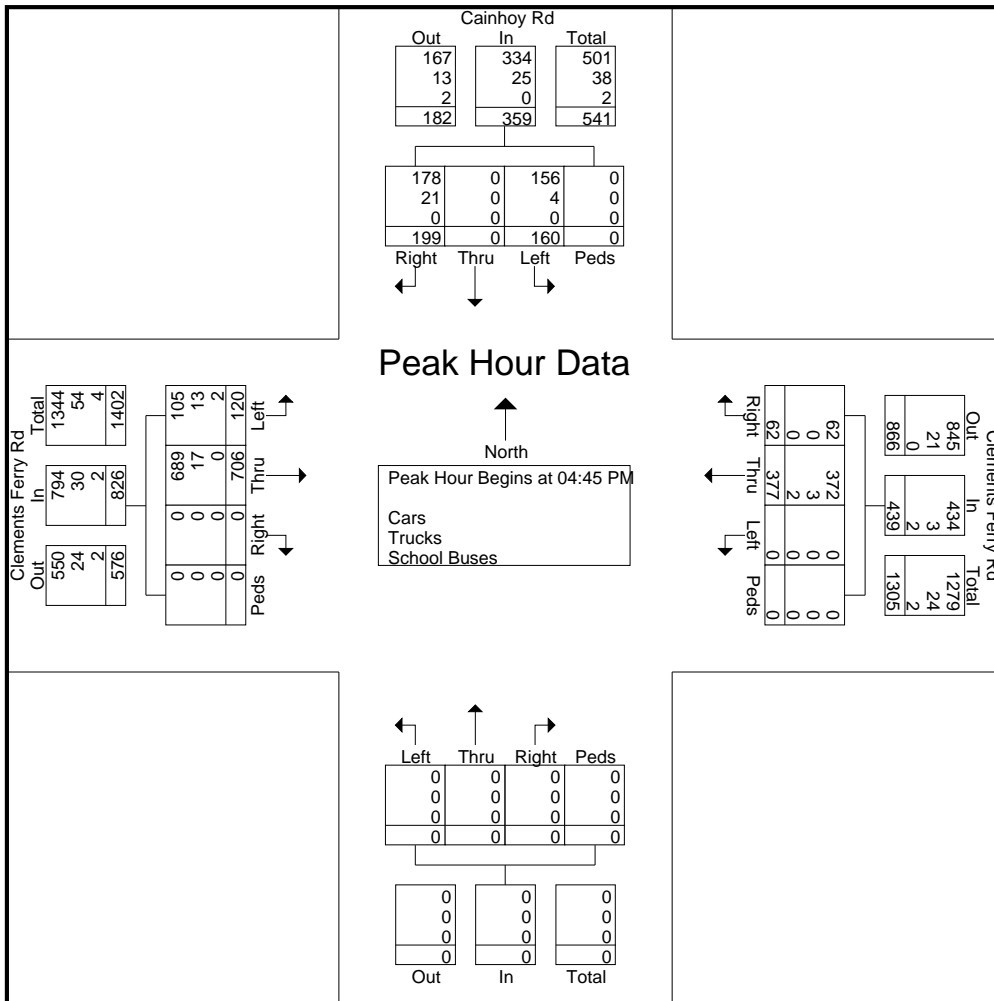


TRAFFIC DATA CONNECTION
PO BOX 445
ABBEVILLE, GEORGIA 31001
843.216.3304

COUNTER: D4-0930
 COUNTED BY: LE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-02
 SITE CODE : 01461002
 START DATE : 3/20/2014
 PAGE NO : 4

Start Time	NORTHBOUND					CAINHOY RD SOUTHBOUND					CLEMENTS FERRY RD EASTBOUND					CLEMENTS FERRY RD WESTBOUND					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	30	0	52	0	82	36	168	0	0	204	0	84	24	0	108	394
05:00 PM	0	0	0	0	0	27	0	35	0	62	28	180	0	0	208	0	102	13	0	115	385
05:15 PM	0	0	0	0	0	54	0	46	0	100	34	175	0	0	209	0	94	14	0	108	417
05:30 PM	0	0	0	0	0	49	0	66	0	115	22	183	0	0	205	0	97	11	0	108	428
Total Volume	0	0	0	0	0	160	0	199	0	359	120	706	0	0	826	0	377	62	0	439	1624
% App. Total	0	0	0	0	0	44.6	0	55.4	0		14.5	85.5	0	0		0	85.9	14.1	0		
PHF	.000	.000	.000	.000	.000	.741	.000	.754	.000	.780	.833	.964	.000	.000	.988	.000	.924	.646	.000	.954	.949
Cars	0	0	0	0	0	156	0	178	0	334	105	689	0	0	794	0	372	62	0	434	1562
% Cars	0	0	0	0	0	97.5	0	89.4	0	93.0	87.5	97.6	0	0	96.1	0	98.7	100	0	98.9	96.2
Trucks	0	0	0	0	0	4	0	21	0	25	13	17	0	0	30	0	3	0	0	3	58
% Trucks	0	0	0	0	0	2.5	0	10.6	0	7.0	10.8	2.4	0	0	3.6	0	0.8	0	0	0.7	3.6
School Buses																					
% School Buses	0	0	0	0	0	0	0	0	0	0	1.7	0	0	0	0.2	0	0.5	0	0	0.5	0.2



To see all the details that are visible on the screen, use the "Print" link next to the map.





TRAFFIC DATA CONNECTION
PO BOX 445
ABBEVILLE, GEORGIA 31001
843.216.3304

COUNTER: T-1328
 COUNTED BY: BLE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-03
 SITE CODE : 1461003
 START DATE : 3/19/2014
 PAGE NO : 1

GROUPS PRINTED- CARS - TRUCKS & BUSES - SCHOOL BUSES

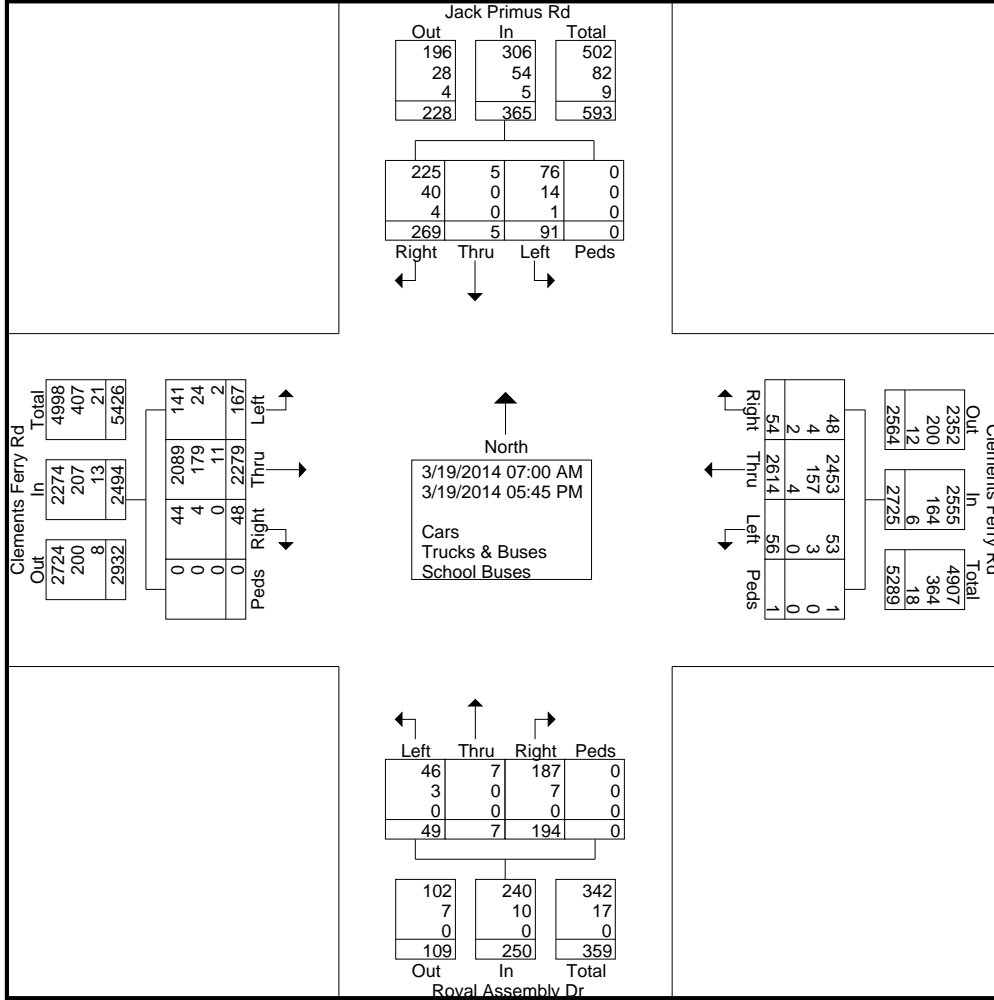
Start Time	ROYAL ASSEMBLY DR NORTHBOUND					JACK PRIMUS RD SOUTHBOUND					CLEMENTS FERRY RD EASTBOUND					CLEMENTS FERRY RD WESTBOUND					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	4	0	11	0	15	5	0	19	0	24	5	82	1	0	88	4	242	5	0	251	378
07:15 AM	7	1	15	0	23	6	3	24	0	33	8	80	5	0	93	6	255	4	0	265	414
07:30 AM	5	0	13	0	18	5	0	23	0	28	7	78	2	0	87	3	205	5	0	213	346
07:45 AM	0	1	12	0	13	5	0	23	0	28	8	69	4	0	81	6	248	12	0	266	388
Total	16	2	51	0	69	21	3	89	0	113	28	309	12	0	349	19	950	26	0	995	1526
08:00 AM	4	0	11	0	15	1	1	19	0	21	5	65	3	0	73	3	211	4	0	218	327
08:15 AM	5	0	7	0	12	2	0	14	0	16	6	114	3	0	123	8	183	2	0	193	344
08:30 AM	5	0	8	0	13	6	0	12	0	18	11	97	7	0	115	2	184	0	0	186	332
08:45 AM	1	1	10	0	12	1	0	10	0	11	7	102	6	0	115	3	153	0	0	156	294
Total	15	1	36	0	52	10	1	55	0	66	29	378	19	0	426	16	731	6	0	753	1297
*** BREAK ***																					
04:00 PM	2	1	6	0	9	5	0	10	0	15	6	145	0	0	151	1	119	2	1	123	298
04:15 PM	2	1	8	0	11	8	1	12	0	21	13	189	2	0	204	1	102	2	0	105	341
04:30 PM	0	0	11	0	11	5	0	10	0	15	22	215	2	0	239	6	109	4	0	119	384
04:45 PM	3	0	13	0	16	6	0	22	0	28	16	194	3	0	213	2	95	3	0	100	357
Total	7	2	38	0	47	24	1	54	0	79	57	743	7	0	807	10	425	11	1	447	1380
05:00 PM	3	0	17	0	20	17	0	16	0	33	15	213	2	0	230	5	109	3	0	117	400
05:15 PM	4	2	24	0	30	9	0	18	0	27	11	216	3	0	230	2	145	4	0	151	438
05:30 PM	2	0	18	0	20	6	0	14	0	20	17	219	2	0	238	1	132	2	0	135	413
05:45 PM	2	0	10	0	12	4	0	23	0	27	10	201	3	0	214	3	122	2	0	127	380
Total	11	2	69	0	82	36	0	71	0	107	53	849	10	0	912	11	508	11	0	530	1631
Grand Total	49	7	194	0	250	91	5	269	0	365	167	2279	48	0	2494	56	2614	54	1	2725	5834
Apprch %	19.6	2.8	77.6	0		24.9	1.4	73.7	0		6.7	91.4	1.9	0		2.1	95.9	2	0		
Total %	0.8	0.1	3.3	0	4.3	1.6	0.1	4.6	0	6.3	2.9	39.1	0.8	0	42.7	1	44.8	0.9	0	46.7	
Cars	46	7	187	0	240	76	5	225	0	306	141	2089	44	0	2274	53	2453	48	1	2555	5375
% Cars	93.9	100	96.4	0	96	83.5	100	83.6	0	83.8	84.4	91.7	91.7	0	91.2	94.6	93.8	88.9	100	93.8	92.1
Trucks & Buses	3	0	7	0	10	14	0	40	0	54	24	179	4	0	207	3	157	4	0	164	435
% Trucks & Buses	6.1	0	3.6	0	4	15.4	0	14.9	0	14.8	14.4	7.9	8.3	0	8.3	5.4	6	7.4	0	6	7.5
School Buses	0	0	0	0	0	1	0	4	0	5	2	11	0	0	13	0	4	2	0	6	24
% School Buses	0	0	0	0	0	1.1	0	1.5	0	1.4	1.2	0.5	0	0	0.5	0	0.2	3.7	0	0.2	0.4



TRAFFIC DATA CONNECTION
PO Box 445
ABBEVILLE, GEORGIA 31001
843.216.3304

COUNTER: T-1328
 COUNTED BY: BLE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-03
 SITE CODE : 1461003
 START DATE : 3/19/2014
 PAGE NO : 2



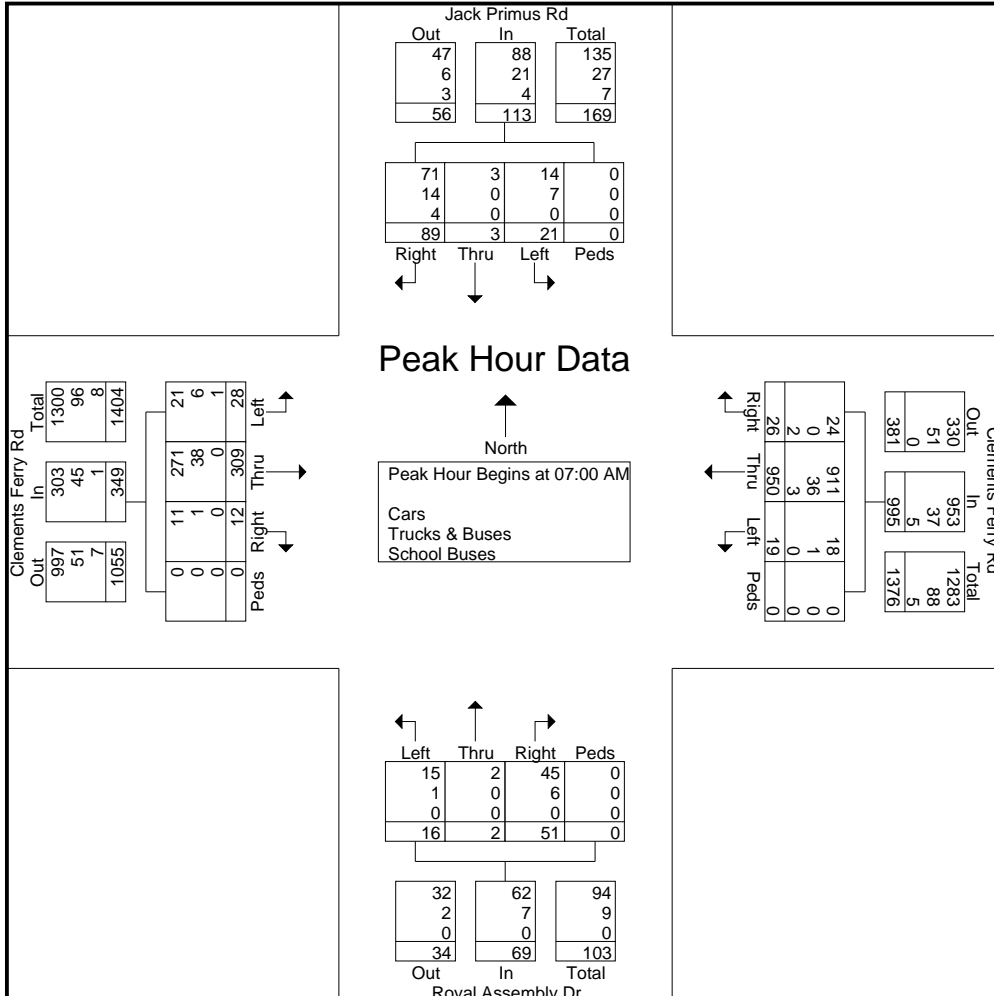


TRAFFIC DATA CONNECTION
 PO Box 445
 ABBEVILLE, GEORGIA 31001
 843.216.3304

COUNTER: T-1328
 COUNTED BY: BLE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-03
 SITE CODE : 1461003
 START DATE : 3/19/2014
 PAGE NO : 3

Start Time	ROYAL ASSEMBLY DR NORTHBOUND					JACK PRIMUS RD SOUTHBOUND					CLEMENTS FERRY RD EASTBOUND					CLEMENTS FERRY RD WESTBOUND					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	4	0	11	0	15	5	0	19	0	24	5	82	1	0	88	4	242	5	0	251	378
07:15 AM	7	1	15	0	23	6	3	24	0	33	8	80	5	0	93	6	255	4	0	265	414
07:30 AM	5	0	13	0	18	5	0	23	0	28	7	78	2	0	87	3	205	5	0	213	346
07:45 AM	0	1	12	0	13	5	0	23	0	28	8	69	4	0	81	6	248	12	0	266	388
Total Volume	16	2	51	0	69	21	3	89	0	113	28	309	12	0	349	19	950	26	0	995	1526
% App. Total	23.2	2.9	73.9	0		18.6	2.7	78.8	0		8	88.5	3.4	0		1.9	95.5	2.6	0		
PHF	.571	.500	.850	.000	.750	.875	.250	.927	.000	.856	.875	.942	.600	.000	.938	.792	.931	.542	.000	.935	.921
Cars	15	2	45	0	62	14	3	71	0	88	21	271	11	0	303	18	911	24	0	953	1406
% Cars	93.8	100	88.2	0	89.9	66.7	100	79.8	0	77.9	75.0	87.7	91.7	0	86.8	94.7	95.9	92.3	0	95.8	92.1
Trucks & Buses																					
% Trucks & Buses	6.3	0	11.8	0	10.1	33.3	0	15.7	0	18.6	21.4	12.3	8.3	0	12.9	5.3	3.8	0	0	3.7	7.2
School Buses	0	0	0	0	0	0	0	4	0	4	1	0	0	0	1	0	3	2	0	5	10
% School Buses	0	0	0	0	0	0	0	4.5	0	3.5	3.6	0	0	0	0.3	0	0.3	7.7	0	0.5	0.7



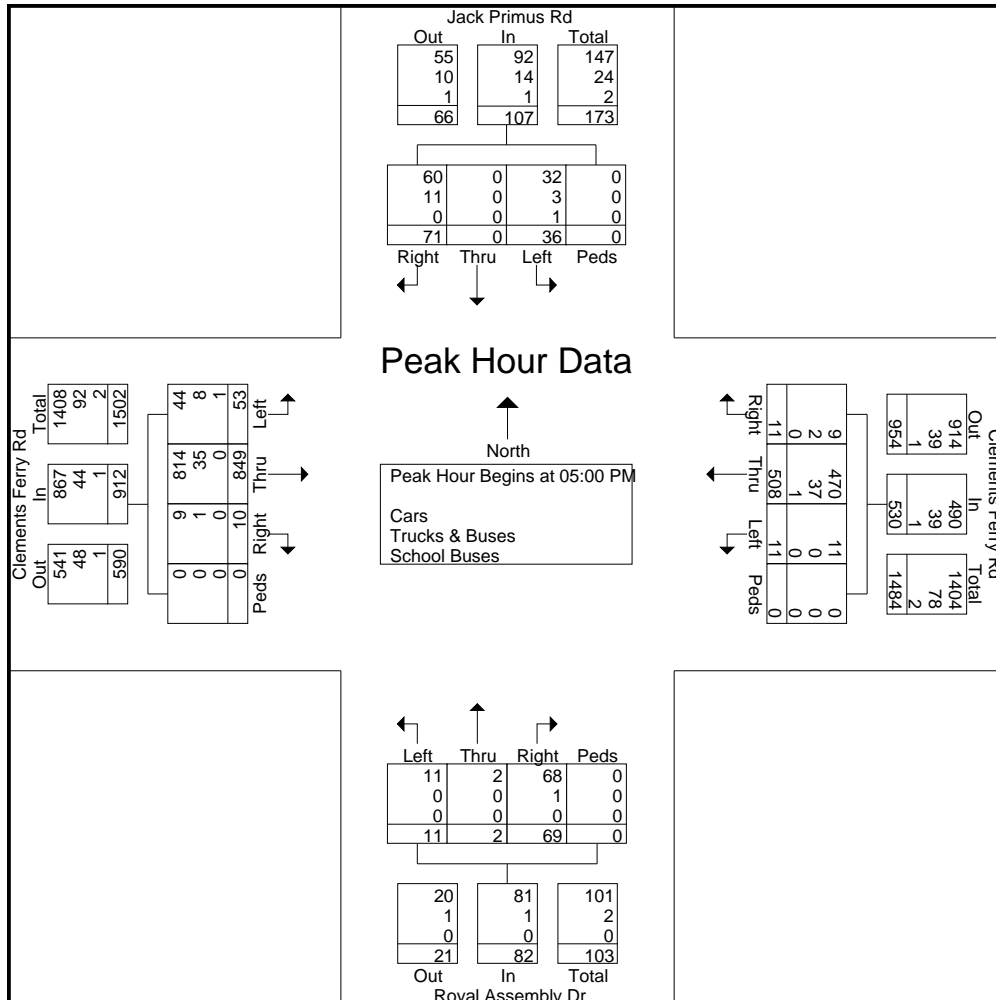


TRAFFIC DATA CONNECTION
PO BOX 445
ABBEVILLE, GEORGIA 31001
843.216.3304

COUNTER: T-1328
 COUNTED BY: BLE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-03
 SITE CODE : 1461003
 START DATE : 3/19/2014
 PAGE NO : 4

Start Time	ROYAL ASSEMBLY DR NORTHBOUND					JACK PRIMUS RD SOUTHBOUND					CLEMENTS FERRY RD EASTBOUND					CLEMENTS FERRY RD WESTBOUND					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
05:00 PM	3	0	17	0	20	17	0	16	0	33	15	213	2	0	230	5	109	3	0	117	400
05:15 PM	4	2	24	0	30	9	0	18	0	27	11	216	3	0	230	2	145	4	0	151	438
05:30 PM	2	0	18	0	20	6	0	14	0	20	17	219	2	0	238	1	132	2	0	135	413
05:45 PM	2	0	10	0	12	4	0	23	0	27	10	201	3	0	214	3	122	2	0	127	380
Total Volume	11	2	69	0	82	36	0	71	0	107	53	849	10	0	912	11	508	11	0	530	1631
% App. Total	13.4	2.4	84.1	0		33.6	0	66.4	0		5.8	93.1	1.1	0		2.1	95.8	2.1	0		
PHF	.688	.250	.719	.000	.683	.529	.000	.772	.000	.811	.779	.969	.833	.000	.958	.550	.876	.688	.000	.877	.931
Cars	11	2	68	0	81	32	0	60	0	92	44	814	9	0	867	11	470	9	0	490	1530
% Cars	100	100	98.6	0	98.8	88.9	0	84.5	0	86.0	83.0	95.9	90.0	0	95.1	100	92.5	81.8	0	92.5	93.8
Trucks & Buses																					
% Trucks & Buses	0	0	1.4	0	1.2	8.3	0	15.5	0	13.1	15.1	4.1	10.0	0	4.8	0	7.3	18.2	0	7.4	6.0
School Buses	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	1	0	0	1	3
% School Buses	0	0	0	0	0	2.8	0	0	0	0.9	1.9	0	0	0	0.1	0	0.2	0	0	0.2	0.2



To see all the details that are visible on the screen, use the "Print" link next to the map.





TRAFFIC DATA CONNECTION
PO BOX 445
ABBEVILLE, GEORGIA 31001
843.216.3304

COUNTER: D4-0930
 COUNTED BY: LE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-04
 SITE CODE : 14610042
 START DATE : 3/19/2014
 PAGE NO : 1

GROUPS PRINTED- CARS - TRUCKS - SCHOOL BUSES

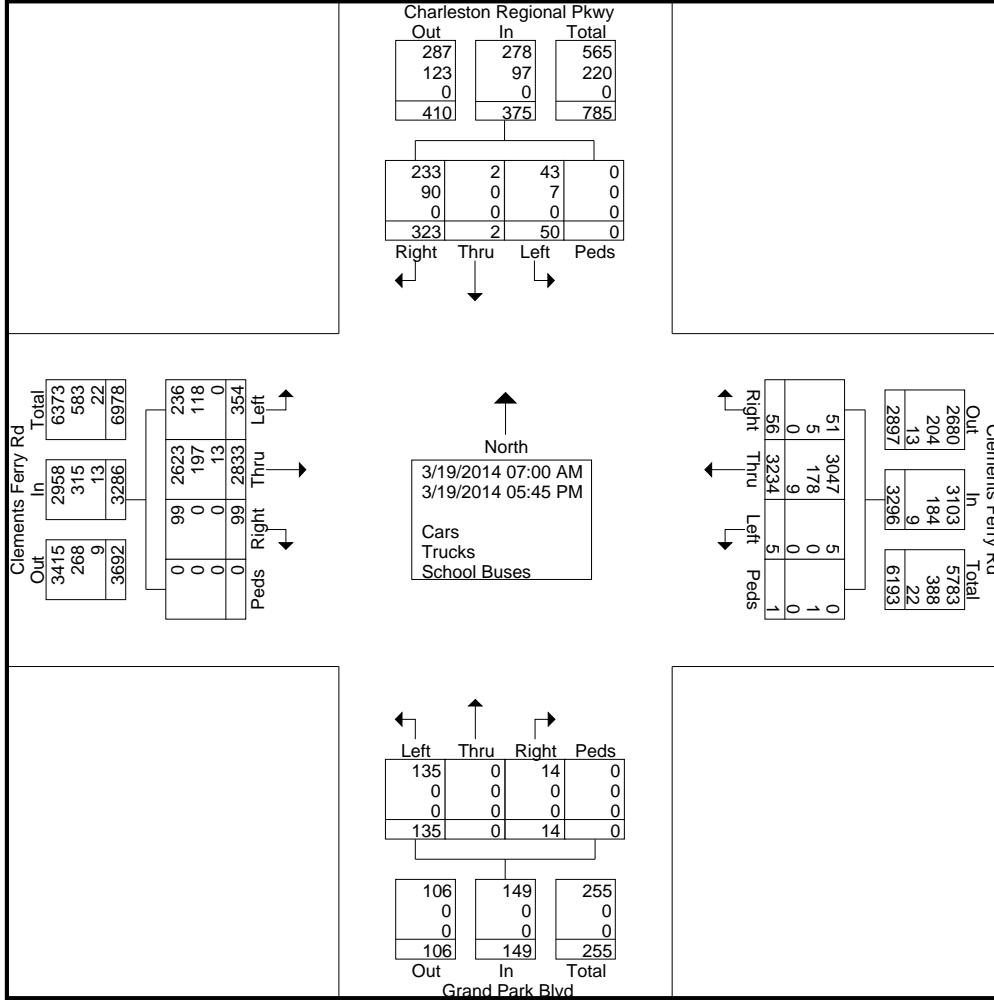
Start Time	GRAND PARK BLVD NORTHBOUND					CHARLESTON REGIONAL PKWY SOUTHBOUND					CLEMENTS FERRY RD EASTBOUND					CLEMENTS FERRY RD WESTBOUND					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	10	0	0	0	10	1	1	5	0	7	20	103	2	0	125	1	243	5	1	250	392
07:15 AM	17	0	0	0	17	1	0	10	0	11	25	110	4	0	139	0	347	3	0	350	517
07:30 AM	14	0	2	0	16	0	0	6	0	6	21	140	2	0	163	0	248	2	0	250	435
07:45 AM	12	0	3	0	15	0	0	7	0	7	38	118	0	0	156	0	266	8	0	274	452
Total	53	0	5	0	58	2	1	28	0	31	104	471	8	0	583	1	1104	18	1	1124	1796
08:00 AM	9	0	1	0	10	1	0	8	0	9	42	93	12	0	147	1	265	13	0	279	445
08:15 AM	8	0	0	0	8	2	1	16	0	19	45	134	7	0	186	1	234	8	0	243	456
08:30 AM	18	0	2	0	20	1	0	17	0	18	25	120	2	0	147	1	213	4	0	218	403
08:45 AM	5	0	0	0	5	3	0	10	0	13	24	136	4	0	164	0	203	0	0	203	385
Total	40	0	3	0	43	7	1	51	0	59	136	483	25	0	644	3	915	25	0	943	1689
*** BREAK ***																					
04:00 PM	4	0	0	0	4	6	0	28	0	34	24	170	14	0	208	0	130	1	0	131	377
04:15 PM	6	0	2	0	8	2	0	28	0	30	23	234	5	0	262	0	146	3	0	149	449
04:30 PM	3	0	1	0	4	4	0	35	0	39	10	254	7	0	271	0	139	0	0	139	453
04:45 PM	7	0	1	0	8	5	0	32	0	37	12	251	5	0	268	0	125	1	0	126	439
Total	20	0	4	0	24	17	0	123	0	140	69	909	31	0	1009	0	540	5	0	545	1718
05:00 PM	6	0	0	0	6	9	0	48	0	57	9	258	9	0	276	0	188	2	0	190	529
05:15 PM	2	0	1	0	3	5	0	26	0	31	13	262	10	0	285	0	180	1	0	181	500
05:30 PM	6	0	0	0	6	7	0	31	0	38	18	223	6	0	247	0	139	2	0	141	432
05:45 PM	8	0	1	0	9	3	0	16	0	19	5	227	10	0	242	1	168	3	0	172	442
Total	22	0	2	0	24	24	0	121	0	145	45	970	35	0	1050	1	675	8	0	684	1903
Grand Total	135	0	14	0	149	50	2	323	0	375	354	2833	99	0	3286	5	3234	56	1	3296	7106
Apprch %	90.6	0	9.4	0		13.3	0.5	86.1	0		10.8	86.2	3	0		0.2	98.1	1.7	0		
Total %	1.9	0	0.2	0	2.1	0.7	0	4.5	0	5.3	5	39.9	1.4	0	46.2	0.1	45.5	0.8	0	46.4	
Cars	135	0	14	0	149	43	2	233	0	278	236	2623	99	0	2958	5	3047	51	0	3103	6488
% Cars	100	0	100	0	100	86	100	72.1	0	74.1	66.7	92.6	100	0	90	100	94.2	91.1	0	94.1	91.3
Trucks	0	0	0	0	0	7	0	90	0	97	118	197	0	0	315	0	178	5	1	184	596
% Trucks	0	0	0	0	0	14	0	27.9	0	25.9	33.3	7	0	0	9.6	0	5.5	8.9	100	5.6	8.4
School Buses	0	0	0	0	0	0	0	0	0	0	0	13	0	0	13	0	9	0	0	9	22
% School Buses	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0.4	0	0.3	0	0	0.3	0.3



TRAFFIC DATA CONNECTION
PO BOX 445
ABBEVILLE, GEORGIA 31001
843.216.3304

COUNTER: D4-0930
 COUNTED BY: LE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-04
 SITE CODE : 14610042
 START DATE : 3/19/2014
 PAGE NO : 2





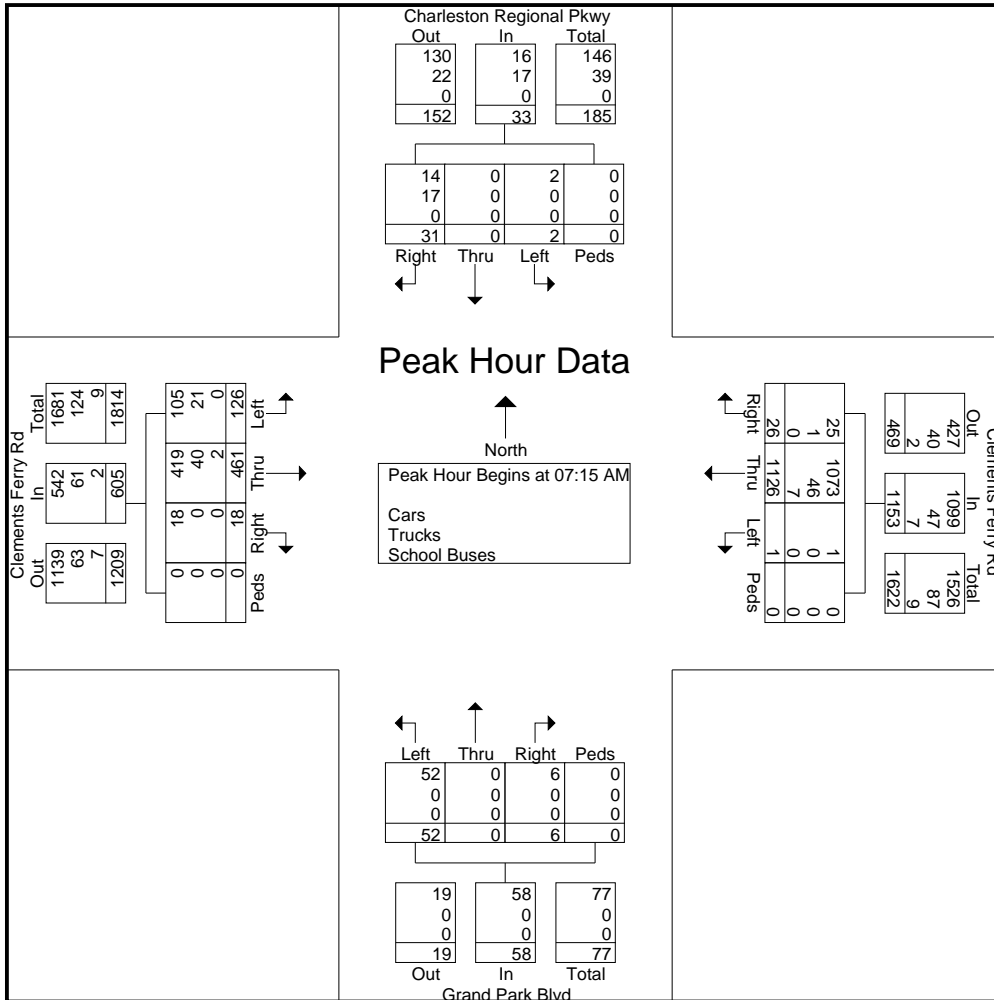
TRAFFIC DATA CONNECTION
PO BOX 445
ABBEVILLE, GEORGIA 31001
843.216.3304

COUNTER: D4-0930
 COUNTED BY: LE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-04
 SITE CODE : 14610042
 START DATE : 3/19/2014
 PAGE NO : 3

Start Time	GRAND PARK BLVD NORTHBOUND					CHARLESTON REGIONAL PKWY SOUTHBOUND					CLEMENTS FERRY RD EASTBOUND					CLEMENTS FERRY RD WESTBOUND					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:15 AM	17	0	0	0	17	1	0	10	0	11	25	110	4	0	139	0	347	3	0	350	517
07:30 AM	14	0	2	0	16	0	0	6	0	6	21	140	2	0	163	0	248	2	0	250	435
07:45 AM	12	0	3	0	15	0	0	7	0	7	38	118	0	0	156	0	266	8	0	274	452
08:00 AM	9	0	1	0	10	1	0	8	0	9	42	93	12	0	147	1	265	13	0	279	445
Total Volume	52	0	6	0	58	2	0	31	0	33	126	461	18	0	605	1	1126	26	0	1153	1849
% App. Total	89.7	0	10.3	0		6.1	0	93.9	0		20.8	76.2	3	0		0.1	97.7	2.3	0		
PHF	.765	.000	.500	.000	.853	.500	.000	.775	.000	.750	.750	.823	.375	.000	.928	.250	.811	.500	.000	.824	.894
Cars	52	0	6	0	58	2	0	14	0	16	105	419	18	0	542	1	1073				
% Cars	100	0	100	0	100	100	0	45.2	0	48.5	83.3	90.9	100	0	89.6	100	95.3	96.2	0	95.3	92.8
Trucks	0	0	0	0	0	0	0	17	0	17	21	40	0	0	61	0	46	1	0	47	125
% Trucks	0	0	0	0	0	0	0	54.8	0	51.5	16.7	8.7	0	0	10.1	0	4.1	3.8	0	4.1	6.8
School Buses	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	7	0	0	7	9
% School Buses	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0.3	0	0.6	0	0	0.6	0.5

Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:15 AM



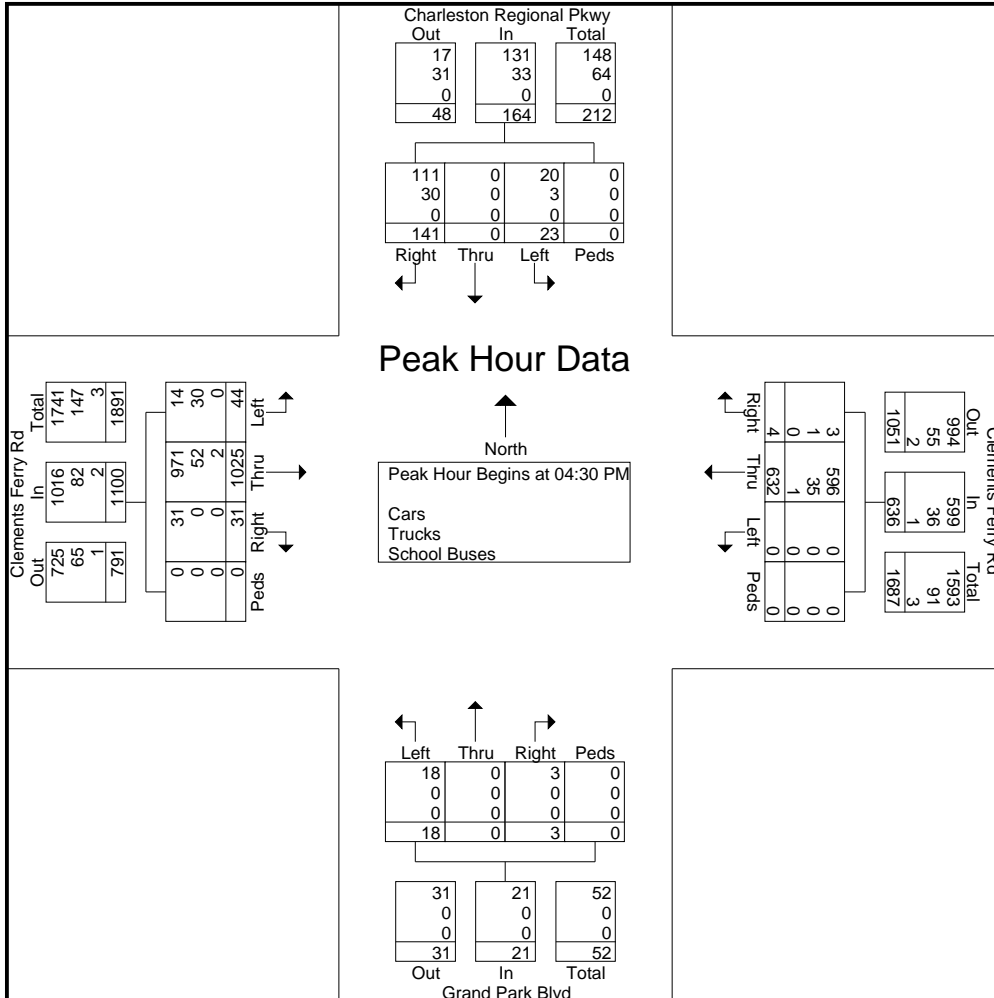


TRAFFIC DATA CONNECTION
PO Box 445
ABBEVILLE, GEORGIA 31001
843.216.3304

COUNTER: D4-0930
 COUNTED BY: LE
 WEATHER: MILD
 OTHER: T&H

FILE NAME : 14610-04
 SITE CODE : 14610042
 START DATE : 3/19/2014
 PAGE NO : 4

Start Time	GRAND PARK BLVD NORTHBOUND					CHARLESTON REGIONAL PKWY SOUTHBOUND					CLEMENTS FERRY RD EASTBOUND					CLEMENTS FERRY RD WESTBOUND					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	3	0	1	0	4	4	0	35	0	39	10	254	7	0	271	0	139	0	0	139	453
04:45 PM	7	0	1	0	8	5	0	32	0	37	12	251	5	0	268	0	125	1	0	126	439
05:00 PM	6	0	0	0	6	9	0	48	0	57	9	258	9	0	276	0	188	2	0	190	529
05:15 PM	2	0	1	0	3	5	0	26	0	31	13	262	10	0	285	0	180	1	0	181	500
Total Volume	18	0	3	0	21	23	0	141	0	164	44	1025	31	0	1100	0	632	4	0	636	1921
% App. Total	85.7	0	14.3	0		14	0	86	0		4	93.2	2.8	0		0	99.4	0.6	0		
PHF	.643	.000	.750	.000	.656	.639	.000	.734	.000	.719	.846	.978	.775	.000	.965	.000	.840	.500	.000	.837	.908
Cars	18	0	3	0	21	20	0	111	0	131	14	971	31	0	1016	0	596	3	0	599	1767
% Cars	100	0	100	0	100	87.0	0	78.7	0	79.9	31.8	94.7	100	0	92.4	0	94.3	75.0	0	94.2	92.0
Trucks	0	0	0	0	0	3	0	30	0	33	30	52	0	0	82	0	35	1	0	36	151
% Trucks	0	0	0	0	0	13.0	0	21.3	0	20.1	68.2	5.1	0	0	7.5	0	5.5	25.0	0	5.7	7.9
School Buses																					
% School Buses	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2	0	0.2	0	0	0.2	0.2



To see all the details that are visible on the screen, use the "Print" link next to the map.





Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

Counter: T-0520
 Counted By: BE
 Weather: Mild
 Other: T&H

File Name : 14610-06
 Site Code : 01461006
 Start Date : 3/20/2014
 Page No : 1

Groups Printed- Cars - Trucks and Buses - School Buses

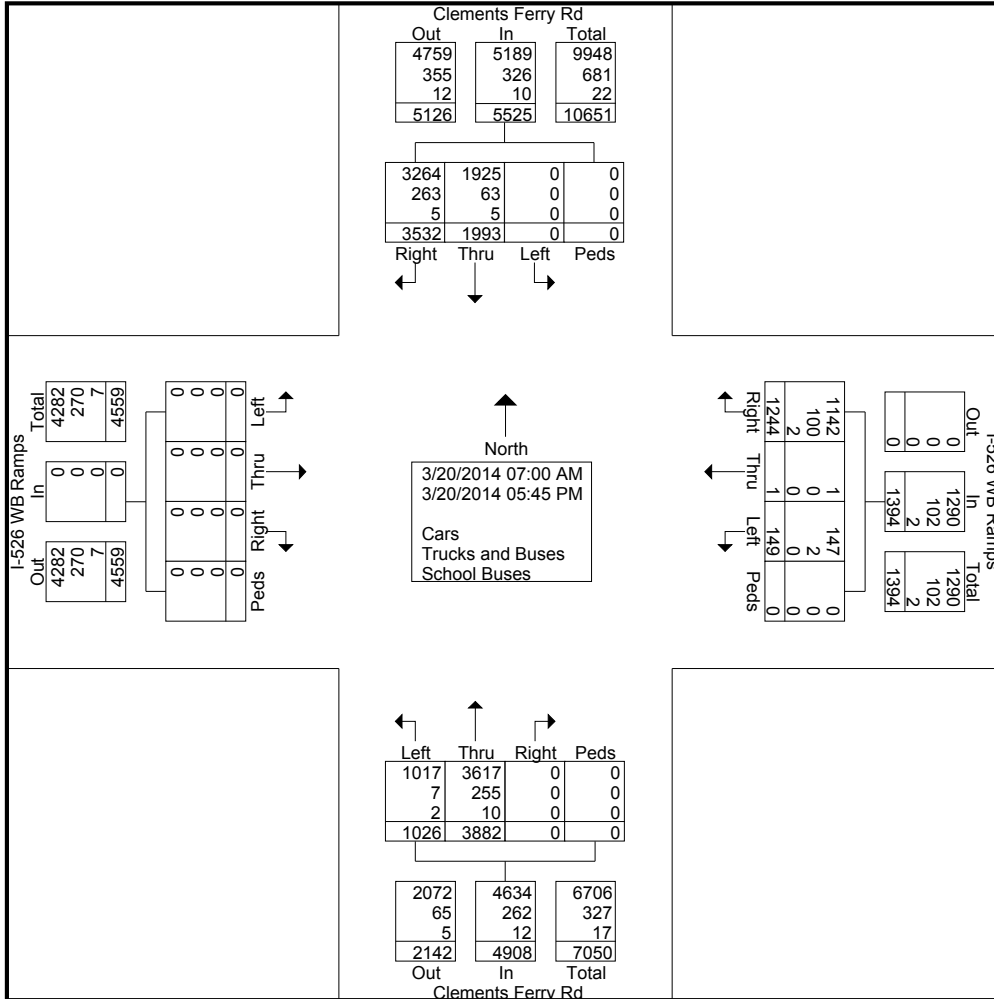
Start Time	Clements Ferry Rd Northbound					Clements Ferry Rd Southbound					I-526 WB Ramps Eastbound					I-526 WB Ramps Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	34	188	0	0	222	0	84	245	0	329	0	0	0	0	0	4	0	29	0	33	584
07:15 AM	52	222	0	0	274	0	92	265	0	357	0	0	0	0	0	7	0	57	0	64	695
07:30 AM	70	266	0	0	336	0	135	200	0	335	0	0	0	0	0	4	0	64	0	68	739
07:45 AM	74	268	0	0	342	0	192	246	0	438	0	0	0	0	0	12	0	106	0	118	898
Total	230	944	0	0	1174	0	503	956	0	1459	0	0	0	0	0	27	0	256	0	283	2916
08:00 AM	60	272	0	0	332	0	115	188	0	303	0	0	0	0	0	14	0	118	0	132	767
08:15 AM	60	206	0	0	266	0	107	207	0	314	0	0	0	0	0	13	0	97	0	110	690
08:30 AM	41	209	0	0	250	0	126	199	0	325	0	0	0	0	0	17	1	49	0	67	642
08:45 AM	35	219	0	0	254	0	116	146	0	262	0	0	0	0	0	13	0	69	0	82	598
Total	196	906	0	0	1102	0	464	740	0	1204	0	0	0	0	0	57	1	333	0	391	2697
*** BREAK ***																					
04:00 PM	73	210	0	0	283	0	102	181	0	283	0	0	0	0	0	6	0	68	0	74	640
04:15 PM	56	290	0	0	346	0	109	179	0	288	0	0	0	0	0	9	0	81	0	90	724
04:30 PM	62	258	0	0	320	0	149	230	0	379	0	0	0	0	0	10	0	71	0	81	780
04:45 PM	63	258	0	0	321	0	122	248	0	370	0	0	0	0	0	4	0	79	0	83	774
Total	254	1016	0	0	1270	0	482	838	0	1320	0	0	0	0	0	29	0	299	0	328	2918
05:00 PM	98	235	0	0	333	0	140	263	0	403	0	0	0	0	0	8	0	76	0	84	820
05:15 PM	96	296	0	0	392	0	123	287	0	410	0	0	0	0	0	9	0	95	0	104	906
05:30 PM	88	247	0	0	335	0	178	246	0	424	0	0	0	0	0	10	0	88	0	98	857
05:45 PM	64	238	0	0	302	0	103	202	0	305	0	0	0	0	0	9	0	97	0	106	713
Total	346	1016	0	0	1362	0	544	998	0	1542	0	0	0	0	0	36	0	356	0	392	3296
Grand Total	1026	3882	0	0	4908	0	1993	3532	0	5525	0	0	0	0	0	149	1	1244	0	1394	11827
Apprch %	20.9	79.1	0	0		0	36.1	63.9	0		0	0	0	0		10.7	0.1	89.2	0		
Total %	8.7	32.8	0	0	41.5	0	16.9	29.9	0	46.7	0	0	0	0		1.3	0	10.5	0	11.8	
Cars	1017	3617	0	0	4634	0	1925	3264	0	5189	0	0	0	0	0	147	1	1142	0	1290	11113
% Cars	99.1	93.2	0	0	94.4	0	96.6	92.4	0	93.9	0	0	0	0	0	98.7	100	91.8	0	92.5	94
Trucks and Buses	7	255	0	0	262	0	63	263	0	326	0	0	0	0	0	2	0	100	0	102	690
% Trucks and Buses																					
School Buses	2	10	0	0	12	0	5	5	0	10	0	0	0	0	0	0	0	2	0	2	24
% School Buses	0.2	0.3	0	0	0.2	0	0.3	0.1	0	0.2	0	0	0	0	0	0	0	0.2	0	0.1	0.2



Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

Counter: T-0520
 Counted By: BE
 Weather: Mild
 Other: T&H

File Name : 14610-06
 Site Code : 01461006
 Start Date : 3/20/2014
 Page No : 2



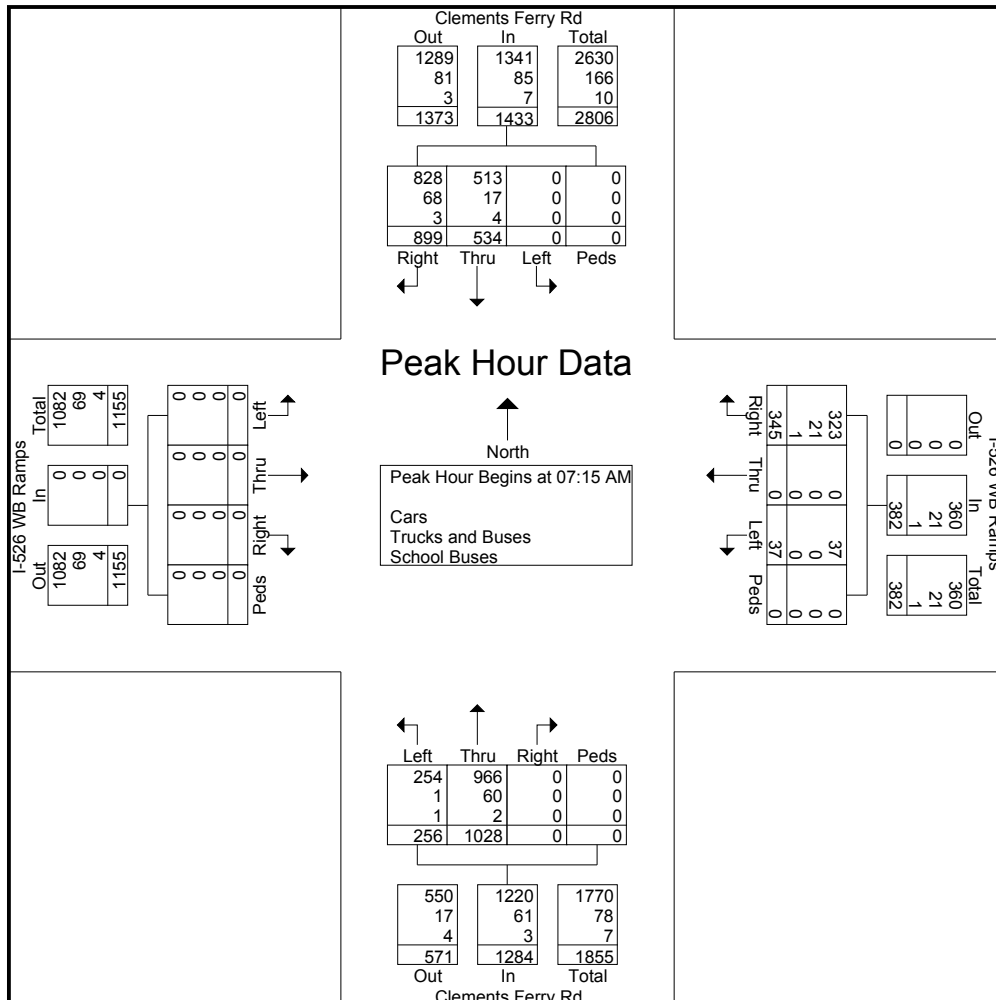


Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

Counter: T-0520
 Counted By: BE
 Weather: Mild
 Other: T&H

File Name : 14610-06
 Site Code : 01461006
 Start Date : 3/20/2014
 Page No : 3

Start Time	Clements Ferry Rd Northbound					Clements Ferry Rd Southbound					I-526 WB Ramps Eastbound					I-526 WB Ramps Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	52	222	0	0	274	0	92	265	0	357	0	0	0	0	0	7	0	57	0	64	695
07:30 AM	70	266	0	0	336	0	135	200	0	335	0	0	0	0	0	4	0	64	0	68	739
07:45 AM	74	268	0	0	342	0	192	246	0	438	0	0	0	0	0	12	0	106	0	118	898
08:00 AM	60	272	0	0	332	0	115	188	0	303	0	0	0	0	0	14	0	118	0	132	767
Total Volume	256	1028	0	0	1284	0	534	899	0	1433	0	0	0	0	0	37	0	345	0	382	3099
% App. Total	19.9	80.1	0	0		0	37.3	62.7	0		0	0	0	0		9.7	0	90.3	0		
PHF	.865	.945	.000	.000	.939	.000	.695	.848	.000	.818	.000	.000	.000	.000	.000	.661	.000	.731	.000	.723	.863
Cars	254	966	0	0	1220	0	513	828	0	1341	0	0	0	0	0	37	0	323	0	360	2921
% Cars	99.2	94.0	0	0	95.0	0	96.1	92.1	0	93.6	0	0	0	0	0	100	0	93.6	0	94.2	94.3
Trucks and Buses	1	60	0	0	61	0	17	68	0	85	0	0	0	0	0	0	0	21	0	21	167
% Trucks and Buses																					
School Buses	1	2	0	0	3	0	4	3	0	7	0	0	0	0	0	0	0	1	0	1	11
% School Buses	0.4	0.2	0	0	0.2	0	0.7	0.3	0	0.5	0	0	0	0	0	0	0	0.3	0	0.3	0.4



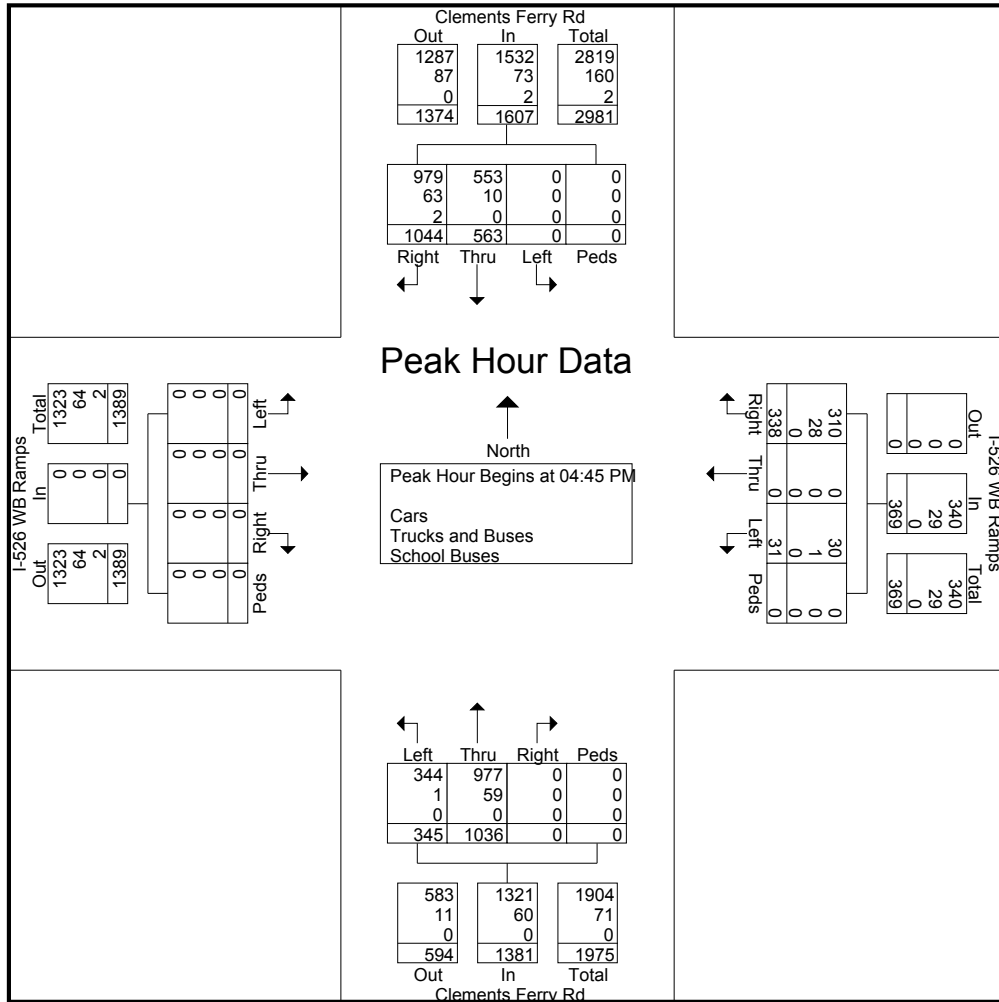


Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

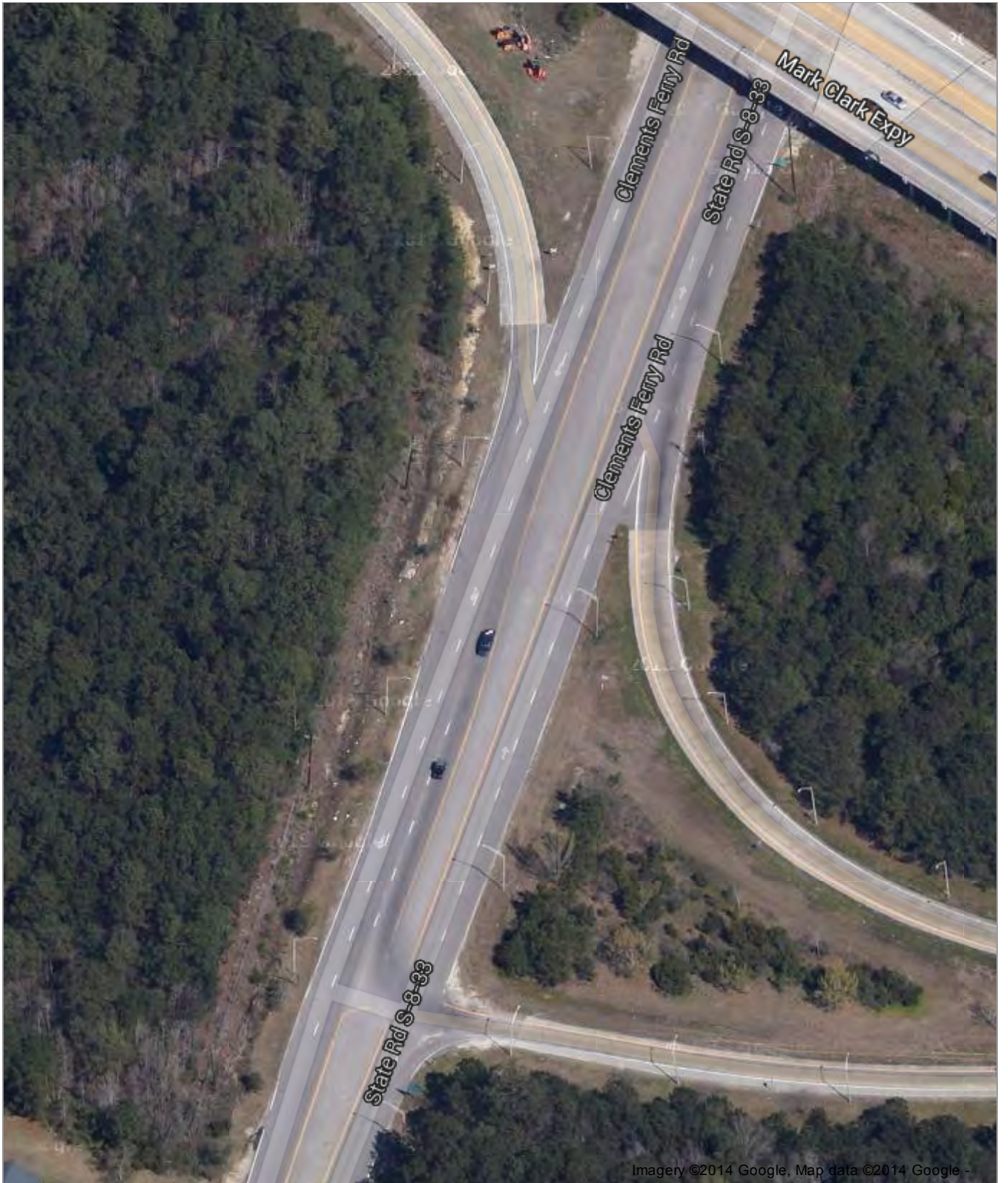
Counter: T-0520
 Counted By: BE
 Weather: Mild
 Other: T&H

File Name : 14610-06
 Site Code : 01461006
 Start Date : 3/20/2014
 Page No : 4

Start Time	Clements Ferry Rd Northbound					Clements Ferry Rd Southbound					I-526 WB Ramps Eastbound					I-526 WB Ramps Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	63	258	0	0	321	0	122	248	0	370	0	0	0	0	0	4	0	79	0	83	774
05:00 PM	98	235	0	0	333	0	140	263	0	403	0	0	0	0	0	8	0	76	0	84	820
05:15 PM	96	296	0	0	392	0	123	287	0	410	0	0	0	0	0	9	0	95	0	104	906
05:30 PM	88	247	0	0	335	0	178	246	0	424	0	0	0	0	0	10	0	88	0	98	857
Total Volume	345	1036	0	0	1381	0	563	1044	0	1607	0	0	0	0	0	31	0	338	0	369	3357
% App. Total	25	75	0	0		0	35	65	0		0	0	0	0		8.4	0	91.6	0		
PHF	.880	.875	.000	.000	.881	.000	.791	.909	.000	.948	.000	.000	.000	.000	.000	.775	.000	.889	.000	.887	.926
Cars	344	977	0	0	1321	0	553	979	0	1532	0	0	0	0	0	30	0	310	0	340	3193
% Cars	99.7	94.3	0	0	95.7	0	98.2	93.8	0	95.3	0	0	0	0	0	96.8	0	91.7	0	92.1	95.1
Trucks and Buses	1	59	0	0	60	0	10	63	0	73	0	0	0	0	0	1	0	28	0	29	162
% Trucks and Buses																					
School Buses	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
% School Buses	0	0	0	0	0	0	0	0.2	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1



To see all the details that are visible on the screen, use the "Print" link next to the map.





Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

Counter: T-1328
 Counted By: BLE
 Weather: Mild
 Other: T&H

File Name : 14610-05
 Site Code : 14610051
 Start Date : 3/20/2014
 Page No : 1

Groups Printed- Cars - Trucks - School Buses

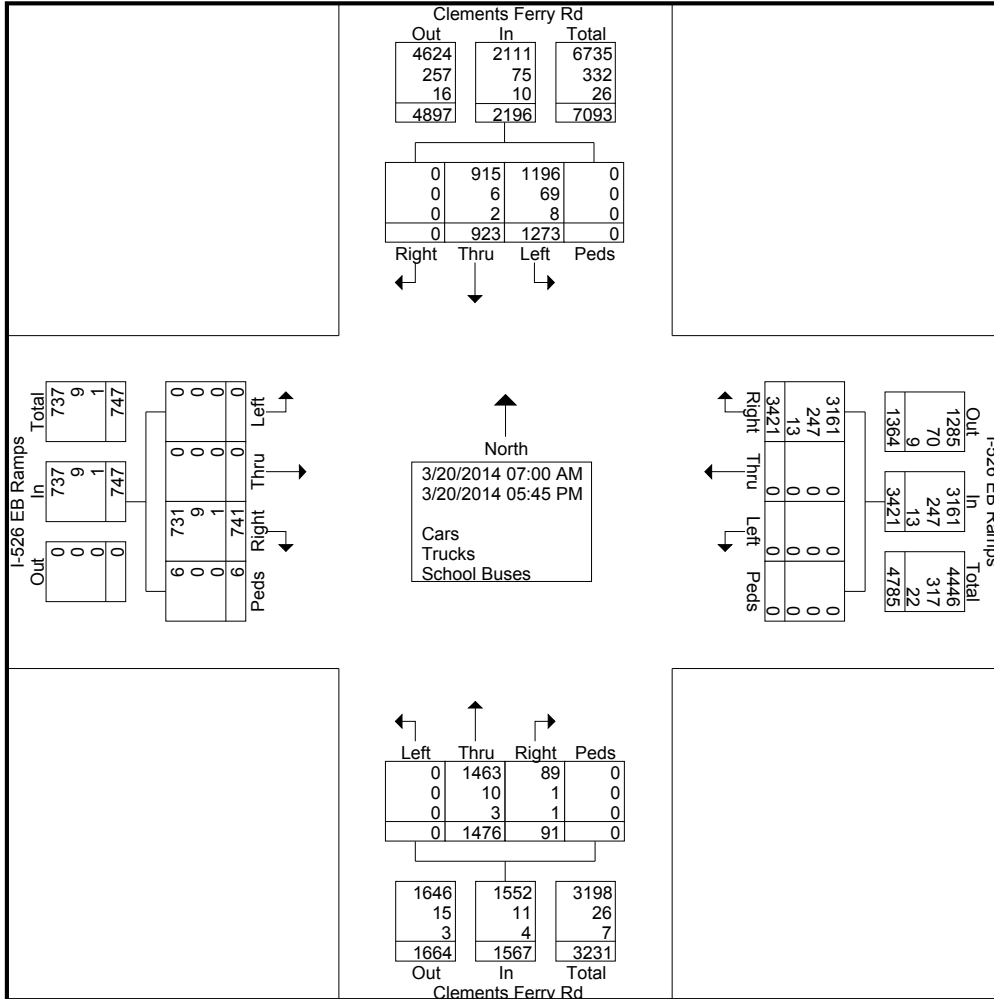
Start Time	Clements Ferry Rd Northbound					Clements Ferry Rd Southbound					I-526 EB Ramps Eastbound					I-526 EB Ramps Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	46	6	0	52	66	38	0	0	104	0	0	33	0	33	0	0	182	0	182	371
07:15 AM	0	62	3	0	65	66	44	0	0	110	0	0	50	0	50	0	0	211	0	211	436
07:30 AM	0	88	8	0	96	54	74	0	0	128	0	0	60	0	60	0	0	232	0	232	516
07:45 AM	0	94	3	0	97	96	89	0	0	185	0	0	62	0	62	0	0	256	0	256	600
Total	0	290	20	0	310	282	245	0	0	527	0	0	205	0	205	0	0	881	0	881	1923
08:00 AM	0	90	1	0	91	42	72	0	0	114	0	0	82	0	82	0	0	255	0	255	542
08:15 AM	0	99	5	0	104	70	73	0	0	143	0	0	72	0	72	0	0	171	0	171	490
08:30 AM	0	61	6	0	67	68	82	0	0	150	0	0	77	0	77	0	0	187	0	187	481
08:45 AM	0	59	1	0	60	83	69	0	0	152	0	0	64	0	64	0	0	187	0	187	463
Total	0	309	13	0	322	263	296	0	0	559	0	0	295	0	295	0	0	800	0	800	1976
*** BREAK ***																					
04:00 PM	0	93	7	0	100	67	47	0	0	114	0	0	25	0	25	0	0	193	0	193	432
04:15 PM	0	91	1	0	92	83	50	0	0	133	0	0	30	0	30	0	0	244	0	244	499
04:30 PM	0	92	6	0	98	104	42	0	0	146	0	0	28	6	34	0	0	210	0	210	488
04:45 PM	0	76	1	0	77	75	60	0	0	135	0	0	47	0	47	0	0	249	0	249	508
Total	0	352	15	0	367	329	199	0	0	528	0	0	130	6	136	0	0	896	0	896	1927
05:00 PM	0	143	16	0	159	103	54	0	0	157	0	0	23	0	23	0	0	200	0	200	539
05:15 PM	0	153	13	0	166	102	44	0	0	146	0	0	30	0	30	0	0	249	0	249	591
05:30 PM	0	128	14	0	142	118	55	0	0	173	0	0	26	0	26	0	0	203	0	203	544
05:45 PM	0	101	0	0	101	76	30	0	0	106	0	0	32	0	32	0	0	192	0	192	431
Total	0	525	43	0	568	399	183	0	0	582	0	0	111	0	111	0	0	844	0	844	2105
Grand Total	0	1476	91	0	1567	1273	923	0	0	2196	0	0	741	6	747	0	0	3421	0	3421	7931
Apprch %	0	94.2	5.8	0		58	42	0	0		0	0	99.2	0.8		0	0	100	0		
Total %	0	18.6	1.1	0	19.8	16.1	11.6	0	0	27.7	0	0	9.3	0.1	9.4	0	0	43.1	0	43.1	
Cars	0	1463	89	0	1552	1196	915	0	0	2111	0	0	731	6	737	0	0	3161	0	3161	7561
% Cars	0	99.1	97.8	0	99	94	99.1	0	0	96.1	0	0	98.7	100	98.7	0	0	92.4	0	92.4	95.3
Trucks	0	10	1	0	11	69	6	0	0	75	0	0	9	0	9	0	0	247	0	247	342
% Trucks	0	0.7	1.1	0	0.7	5.4	0.7	0	0	3.4	0	0	1.2	0	1.2	0	0	7.2	0	7.2	4.3
School Buses	0	3	1	0	4	8	2	0	0	10	0	0	1	0	1	0	0	13	0	13	28
% School Buses	0	0.2	1.1	0	0.3	0.6	0.2	0	0	0.5	0	0	0.1	0	0.1	0	0	0.4	0	0.4	0.4



Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

Counter: T-1328
 Counted By: BLE
 Weather: Mild
 Other: T&H

File Name : 14610-05
 Site Code : 14610051
 Start Date : 3/20/2014
 Page No : 2



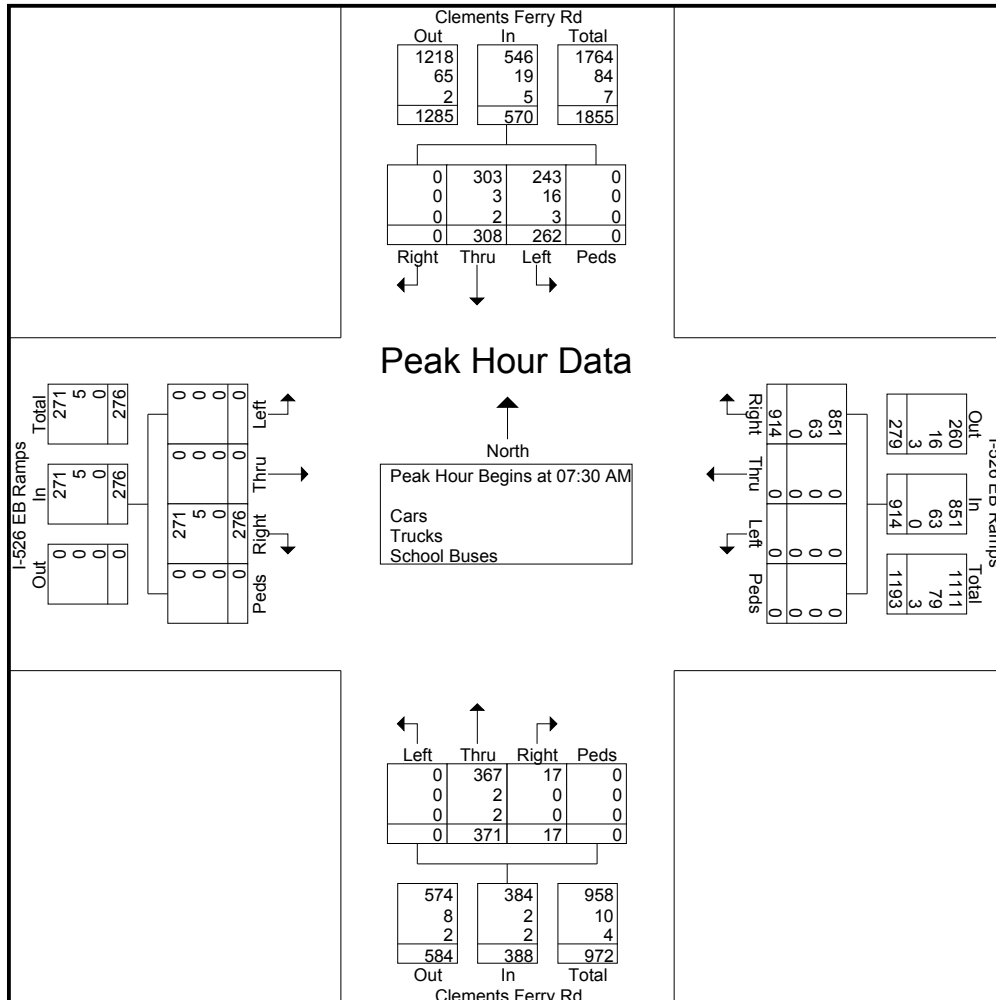


Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

Counter: T-1328
 Counted By: BLE
 Weather: Mild
 Other: T&H

File Name : 14610-05
 Site Code : 14610051
 Start Date : 3/20/2014
 Page No : 3

Start Time	Clements Ferry Rd Northbound					Clements Ferry Rd Southbound					I-526 EB Ramps Eastbound					I-526 EB Ramps Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	88	8	0	96	54	74	0	0	128	0	0	60	0	60	0	0	232	0	232	516
07:45 AM	0	94	3	0	97	96	89	0	0	185	0	0	62	0	62	0	0	256	0	256	600
08:00 AM	0	90	1	0	91	42	72	0	0	114	0	0	82	0	82	0	0	255	0	255	542
08:15 AM	0	99	5	0	104	70	73	0	0	143	0	0	72	0	72	0	0	171	0	171	490
Total Volume	0	371	17	0	388	262	308	0	0	570	0	0	276	0	276	0	0	914	0	914	2148
% App. Total	0	95.6	4.4	0		46	54	0	0		0	0	100	0		0	0	100	0		
PHF	.000	.937	.531	.000	.933	.682	.865	.000	.000	.770	.000	.000	.841	.000	.841	.000	.000	.893	.000	.893	.895
Cars	0	367	17	0	384	243	303	0	0	546	0	0	271	0	271	0	0	851	0	851	2052
% Cars	0	98.9	100	0	99.0	92.7	98.4	0	0	95.8	0	0	98.2	0	98.2	0	0	93.1	0	93.1	95.5
Trucks	0	2	0	0	2	16	3	0	0	19	0	0	5	0	5	0	0	63	0	63	89
% Trucks	0	0.5	0	0	0.5	6.1	1.0	0	0	3.3	0	0	1.8	0	1.8	0	0	6.9	0	6.9	4.1
School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3



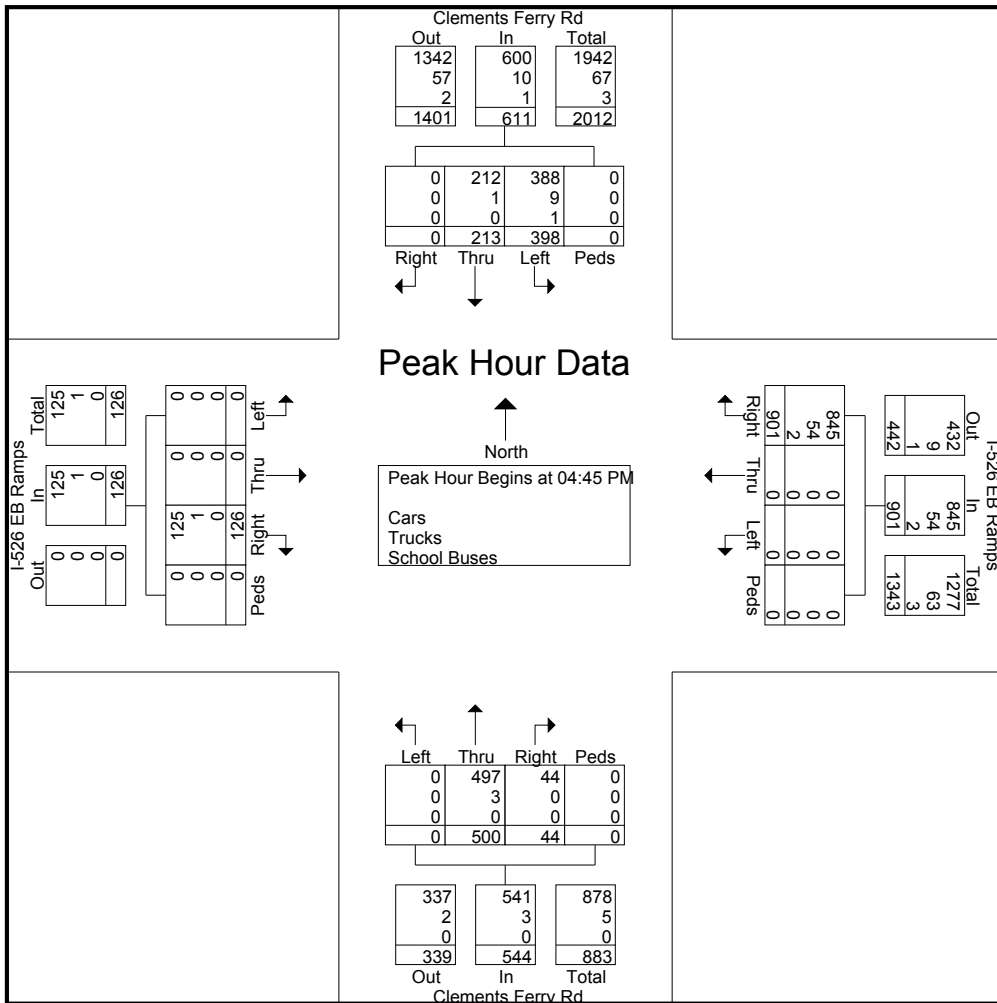


Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

Counter: T-1328
 Counted By: BLE
 Weather: Mild
 Other: T&H

File Name : 14610-05
 Site Code : 14610051
 Start Date : 3/20/2014
 Page No : 4

Start Time	Clements Ferry Rd Northbound					Clements Ferry Rd Southbound					I-526 EB Ramps Eastbound					I-526 EB Ramps Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	76	1	0	77	75	60	0	0	135	0	0	47	0	47	0	0	249	0	249	508
05:00 PM	0	143	16	0	159	103	54	0	0	157	0	0	23	0	23	0	0	200	0	200	539
05:15 PM	0	153	13	0	166	102	44	0	0	146	0	0	30	0	30	0	0	249	0	249	591
05:30 PM	0	128	14	0	142	118	55	0	0	173	0	0	26	0	26	0	0	203	0	203	544
Total Volume	0	500	44	0	544	398	213	0	0	611	0	0	126	0	126	0	0	901	0	901	2182
% App. Total	0	91.9	8.1	0		65.1	34.9	0	0		0	0	100	0		0	0	100	0		
PHF	.000	.817	.688	.000	.819	.843	.888	.000	.000	.883	.000	.000	.670	.000	.670	.000	.000	.905	.000	.905	.923
Cars	0	497	44	0	541	388	212	0	0	600	0	0	125	0	125	0	0	845	0	845	2111
% Cars	0	99.4	100	0	99.4	97.5	99.5	0	0	98.2	0	0	99.2	0	99.2	0	0	93.8	0	93.8	96.7
Trucks	0	3	0	0	3	9	1	0	0	10	0	0	1	0	1	0	0	54	0	54	68
% Trucks	0	0.6	0	0	0.6	2.3	0.5	0	0	1.6	0	0	0.8	0	0.8	0	0	6.0	0	6.0	3.1
School Buses	0	0	0	0	0	0.3	0	0	0	0.2	0	0	0	0	0	0	0	0.2	0	0.2	0.1
% School Buses	0	0	0	0	0	0.3	0	0	0	0.2	0	0	0	0	0	0	0	0.2	0	0.2	0.1



To see all the details that are visible on the screen, use the "Print" link next to the map.





Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

Counter: T-0520/D4-0930
 Counted By: BE/LE
 Weather: Mild
 Other: T&H

File Name : 14610-07
 Site Code : 14610071
 Start Date : 3/19/2014
 Page No : 1

Groups Printed- Cars - Trucks - School Buses

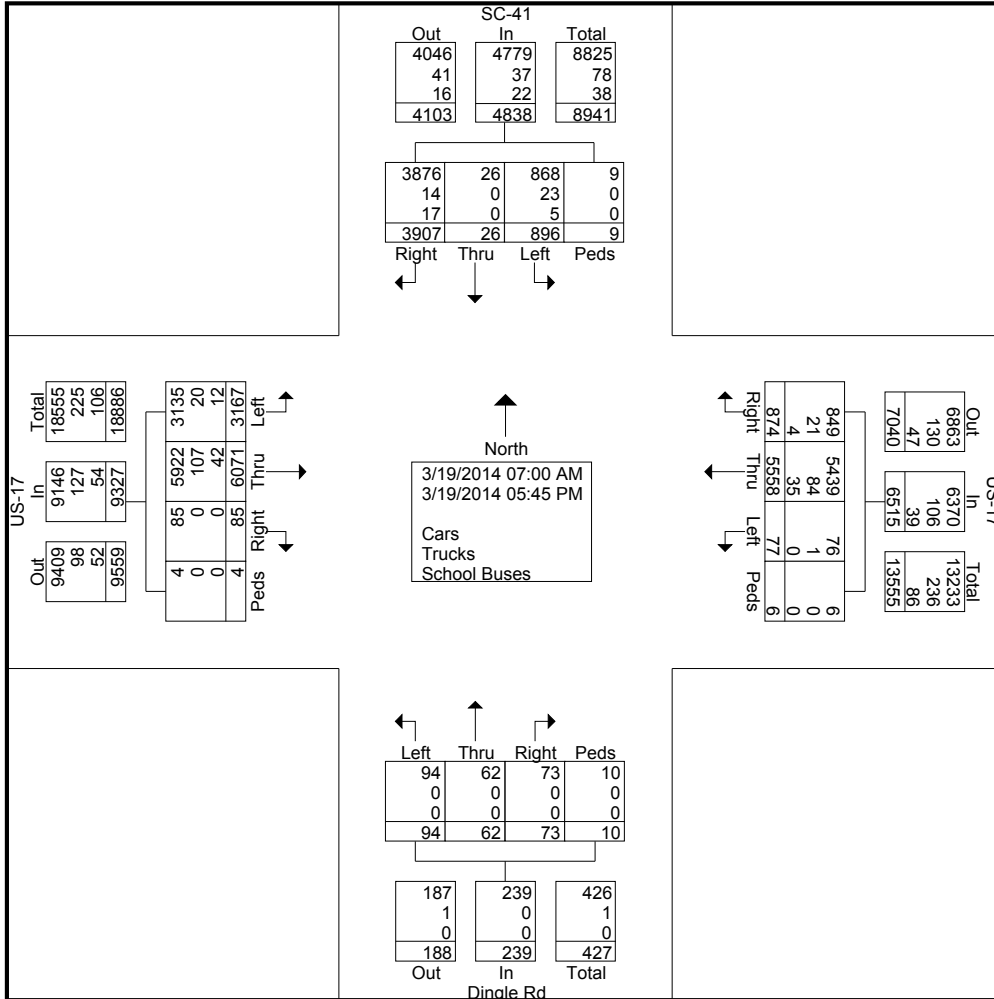
Start Time	Dingle Rd Northbound					SC-41 Southbound					US-17 Eastbound					US-17 Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	5	1	0	1	7	52	0	308	0	360	58	204	4	0	266	7	320	19	0	346	979
07:15 AM	6	1	4	0	11	68	1	278	0	347	63	272	1	0	336	11	428	48	0	487	1181
07:30 AM	9	1	0	0	10	57	4	333	0	394	97	365	6	0	468	2	454	40	0	496	1368
07:45 AM	3	4	5	0	12	83	4	335	0	422	109	479	3	0	591	3	368	27	0	398	1423
Total	23	7	9	1	40	260	9	1254	0	1523	327	1320	14	0	1661	23	1570	134	0	1727	4951
08:00 AM	8	0	1	0	9	69	1	302	1	373	127	440	3	1	571	6	346	34	0	386	1339
08:15 AM	5	4	3	0	12	44	3	331	0	378	121	242	1	1	365	4	463	28	0	495	1250
08:30 AM	3	1	1	0	5	42	0	287	0	329	107	201	1	0	309	2	327	43	2	374	1017
08:45 AM	2	0	3	2	7	65	0	296	1	362	96	261	7	0	364	6	270	46	1	323	1056
Total	18	5	8	2	33	220	4	1216	2	1442	451	1144	12	2	1609	18	1406	151	3	1578	4662
*** BREAK ***																					
04:00 PM	10	6	7	0	23	35	1	140	3	179	253	377	3	0	633	7	423	80	0	510	1345
04:15 PM	7	7	5	0	19	40	0	139	1	180	228	413	4	0	645	7	320	84	0	411	1255
04:30 PM	3	6	6	0	15	60	4	194	0	258	323	439	7	2	771	2	279	65	0	346	1390
04:45 PM	11	4	4	1	20	40	0	180	0	220	275	491	6	0	772	2	326	57	1	386	1398
Total	31	23	22	1	77	175	5	653	4	837	1079	1720	20	2	2821	18	1348	286	1	1653	5388
05:00 PM	1	9	10	2	22	73	2	214	2	291	305	435	14	0	754	6	341	88	2	437	1504
05:15 PM	4	6	6	1	17	54	1	202	0	257	317	506	8	0	831	6	325	61	0	392	1497
05:30 PM	8	3	10	2	23	51	2	180	1	234	300	491	8	0	799	1	327	90	0	418	1474
05:45 PM	9	9	8	1	27	63	3	188	0	254	388	455	9	0	852	5	241	64	0	310	1443
Total	22	27	34	6	89	241	8	784	3	1036	1310	1887	39	0	3236	18	1234	303	2	1557	5918
Grand Total	94	62	73	10	239	896	26	3907	9	4838	3167	6071	85	4	9327	77	5558	874	6	6515	20919
Apprch %	39.3	25.9	30.5	4.2		18.5	0.5	80.8	0.2		34	65.1	0.9	0		1.2	85.3	13.4	0.1		
Total %	0.4	0.3	0.3	0	1.1	4.3	0.1	18.7	0	23.1	15.1	29	0.4	0	44.6	0.4	26.6	4.2	0	31.1	
Cars	94	62	73	10	239	868	26	3876	9	4779	3135	5922	85	4	9146	76	5439	849	6	6370	20534
% Cars	100	100	100	100	100	96.9	100	99.2	100	98.8	99	97.5	100	100	98.1	98.7	97.9	97.1	100	97.8	98.2
Trucks	0	0	0	0	0	23	0	14	0	37	20	107	0	0	127	1	84	21	0	106	270
% Trucks	0	0	0	0	0	2.6	0	0.4	0	0.8	0.6	1.8	0	0	1.4	1.3	1.5	2.4	0	1.6	1.3
School Buses	0	0	0	0	0	5	0	17	0	22	12	42	0	0	54	0	35	4	0	39	115
% School Buses	0	0	0	0	0	0.6	0	0.4	0	0.5	0.4	0.7	0	0	0.6	0	0.6	0.5	0	0.6	0.5



Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

Counter: T-0520/D4-0930
 Counted By: BE/LE
 Weather: Mild
 Other: T&H

File Name : 14610-07
 Site Code : 14610071
 Start Date : 3/19/2014
 Page No : 2



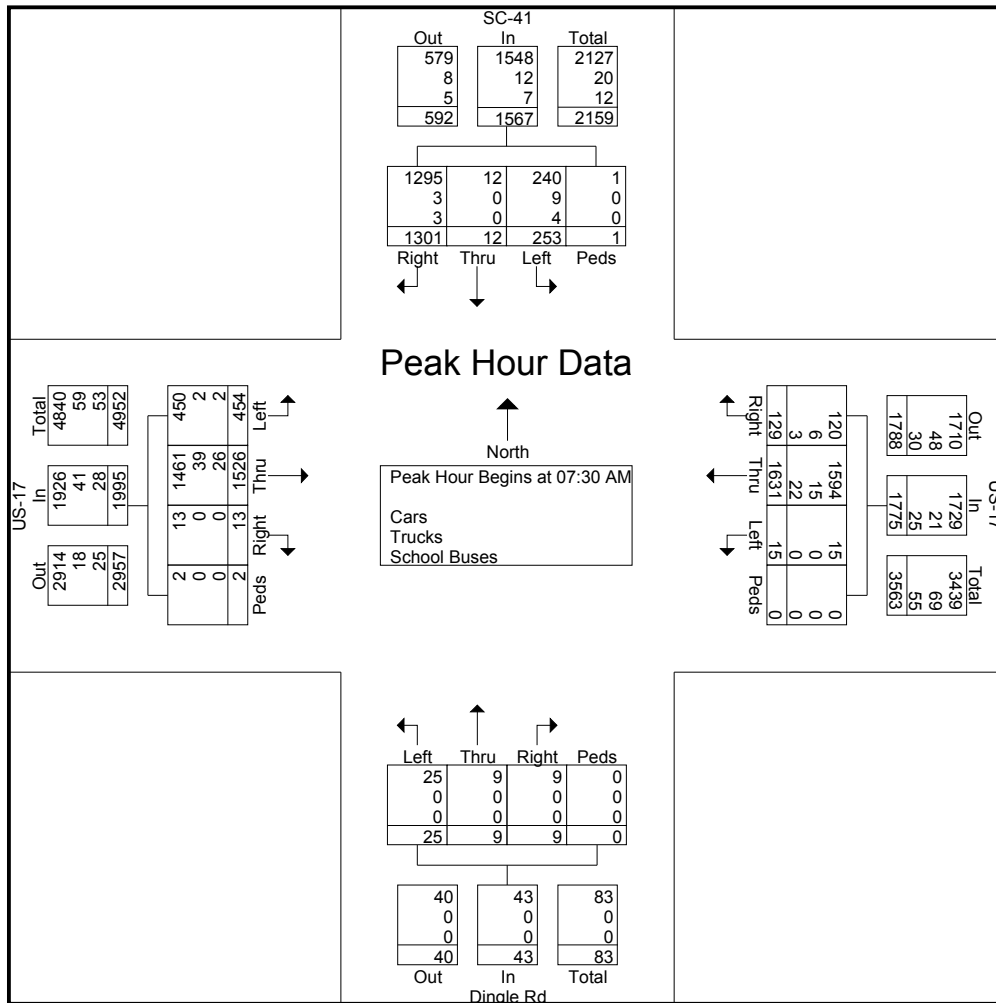


Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

Counter: T-0520/D4-0930
 Counted By: BE/LE
 Weather: Mild
 Other: T&H

File Name : 14610-07
 Site Code : 14610071
 Start Date : 3/19/2014
 Page No : 3

Start Time	Dingle Rd Northbound					SC-41 Southbound					US-17 Eastbound					US-17 Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	9	1	0	0	10	57	4	333	0	394	97	365	6	0	468	2	454	40	0	496	1368
07:45 AM	3	4	5	0	12	83	4	335	0	422	109	479	3	0	591	3	368	27	0	398	1423
08:00 AM	8	0	1	0	9	69	1	302	1	373	127	440	3	1	571	6	346	34	0	386	1339
08:15 AM	5	4	3	0	12	44	3	331	0	378	121	242	1	1	365	4	463	28	0	495	1250
Total Volume	25	9	9	0	43	253	12	1301	1	1567	454	1526	13	2	1995	15	1631	129	0	1775	5380
% App. Total	58.1	20.9	20.9	0		16.1	0.8	83	0.1		22.8	76.5	0.7	0.1		0.8	91.9	7.3	0		
PHF	.694	.563	.450	.000	.896	.762	.750	.971	.250	.928	.894	.796	.542	.500	.844	.625	.881	.806	.000	.895	.945
Cars	25	9	9	0	43	240	12	1295			1461				1594						
% Cars	100	100	100	0	100	94.9	100	99.5	100	98.8	99.1	95.7	100	100	96.5	100	97.7	93.0	0	97.4	97.5
Trucks	0	0	0	0	0	9	0	3	0	12	2	39	0	0	41	0	15	6	0	21	74
% Trucks	0	0	0	0	0	3.6	0	0.2	0	0.8	0.4	2.6	0	0	2.1	0	0.9	4.7	0	1.2	1.4
School Buses	0	0	0	0	0	4	0	3	0	7	2	26	0	0	28	0	22	3	0	25	60
% School Buses	0	0	0	0	0	1.6	0	0.2	0	0.4	0.4	1.7	0	0	1.4	0	1.3	2.3	0	1.4	1.1



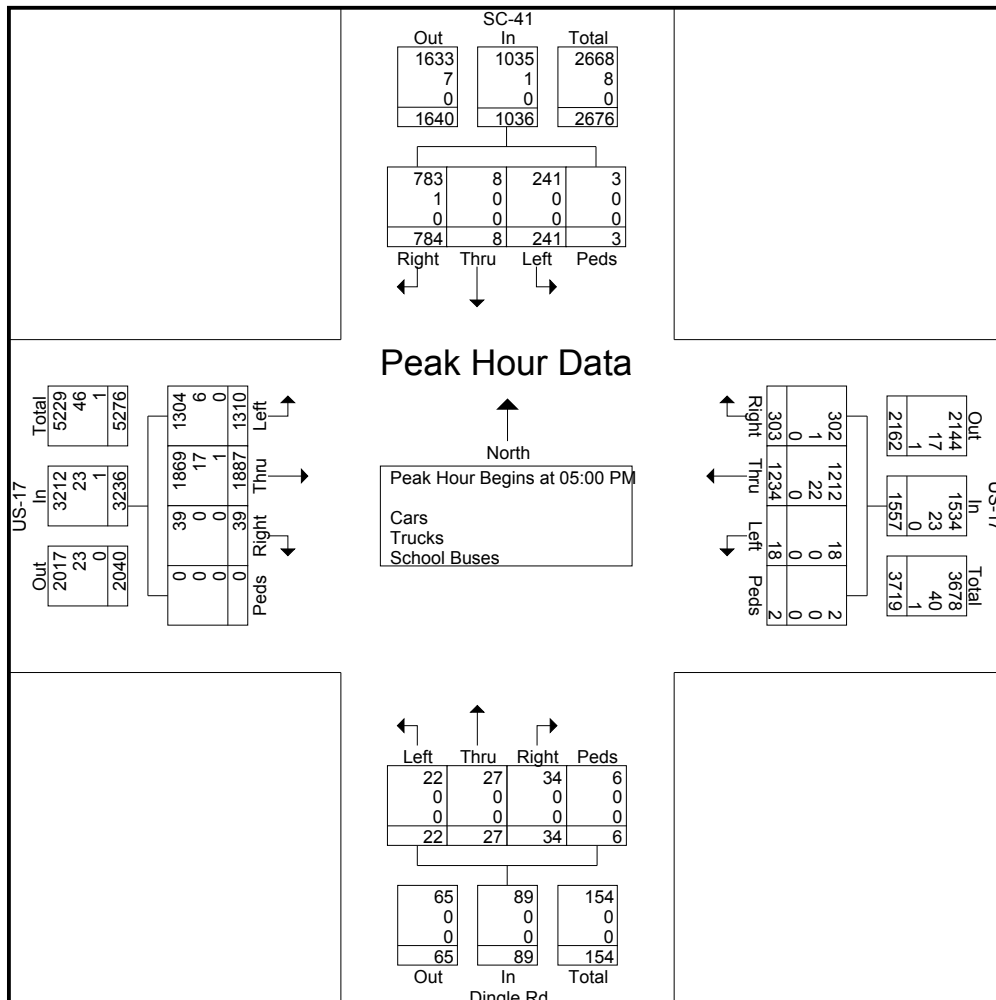


Traffic Data Connection
 PO Box 445
 Abbeville, Georgia 31001
 843.216.3304

Counter: T-0520/D4-0930
 Counted By: BE/LE
 Weather: Mild
 Other: T&H

File Name : 14610-07
 Site Code : 14610071
 Start Date : 3/19/2014
 Page No : 4

Start Time	Dingle Rd Northbound					SC-41 Southbound					US-17 Eastbound					US-17 Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	9	10	2	22	73	2	214	2	291	305	435	14	0	754	6	341	88	2	437	1504
05:15 PM	4	6	6	1	17	54	1	202	0	257	317	506	8	0	831	6	325	61	0	392	1497
05:30 PM	8	3	10	2	23	51	2	180	1	234	300	491	8	0	799	1	327	90	0	418	1474
05:45 PM	9	9	8	1	27	63	3	188	0	254	388	455	9	0	852	5	241	64	0	310	1443
Total Volume	22	27	34	6	89	241	8	784	3	1036	1310	1887	39	0	3236	18	1234	303	2	1557	5918
% App. Total	24.7	30.3	38.2	6.7		23.3	0.8	75.7	0.3		40.5	58.3	1.2	0		1.2	79.3	19.5	0.1		
PHF	.611	.750	.850	.750	.824	.825	.667	.916	.375	.890	.844	.932	.696	.000	.950	.750	.905	.842	.250	.891	.984
Cars	22	27	34	6	89	241	8	783	3	1035	1304	1869					1212				
% Cars	100	100	100	100	100	100	100	99.9	100	99.9	99.5	99.0	100	0	99.3	100	98.2	99.7	100	98.5	99.2
Trucks	0	0	0	0	0	0	0	1	0	1	6	17	0	0	23	0	22	1	0	23	47
% Trucks	0	0	0	0	0	0	0	0.1	0	0.1	0.5	0.9	0	0	0.7	0	1.8	0.3	0	1.5	0.8
School Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% School Buses	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.0	0	0	0	0	0	0.0



2014 Capacity Analyses

3: I526 EB on ramp & Clements Ferry Road

Z:\20028\20028.0000\Documents\Reports\traffic\Impact study\synchro\AM 2014.syn



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↘	↑↑
Volume (veh/h)	0	0	371	17	262	308
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	403	18	285	335
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		TWLTL	
Median storage veh					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1149	211			422	
vC1, stage 1 conf vol	412					
vC2, stage 2 conf vol	737					
vCu, unblocked vol	1149	211			422	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			75	
cM capacity (veh/h)	301	795			1134	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	269	153	285	167	167
Volume Left	0	0	285	0	0
Volume Right	0	18	0	0	0
cSH	1700	1700	1134	1700	1700
Volume to Capacity	0.16	0.09	0.25	0.10	0.10
Queue Length 95th (ft)	0	0	25	0	0
Control Delay (s)	0.0	0.0	9.2	0.0	0.0
Lane LOS			A		
Approach Delay (s)	0.0		4.2		
Approach LOS					

Intersection Summary					
Average Delay			2.5		
Intersection Capacity Utilization			32.0%	ICU Level of Service	A
Analysis Period (min)			15		

5: I526 WB ramp & Clements Ferry Road

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↘	↕↕			↕↕	↗
Volume (vph)	0	0	0	37	0	345	256	1028	0	0	534	899
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Fr _t					1.00	0.85	1.00	1.00			1.00	0.85
Fl _t Protected					0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1719	1538	1719	3438			3438	1538
Fl _t Permitted					0.95	1.00	0.32	1.00			1.00	1.00
Satd. Flow (perm)					1719	1538	583	3438			3438	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	43	0	401	298	1195	0	0	621	1045
RTOR Reduction (vph)	0	0	0	0	0	63	0	0	0	0	0	519
Lane Group Flow (vph)	0	0	0	0	43	338	298	1195	0	0	621	526
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type				Perm		Perm	pm+pt					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8	2					6
Actuated Green, G (s)					17.3	17.3	36.5	36.5			27.3	27.3
Effective Green, g (s)					17.3	17.3	36.5	36.5			27.3	27.3
Actuated g/C Ratio					0.27	0.27	0.57	0.57			0.43	0.43
Clearance Time (s)					5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					466	417	426	1967			1471	658
v/s Ratio Prot							0.06	c0.35			0.18	
v/s Ratio Perm					0.03	c0.22	0.34					c0.34
v/c Ratio					0.09	0.81	0.70	0.61			0.42	0.80
Uniform Delay, d ₁					17.4	21.7	8.2	9.0			12.7	15.9
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d ₂					0.1	11.1	5.0	0.5			0.2	6.8
Delay (s)					17.5	32.8	13.2	9.5			12.9	22.6
Level of Service					B	C	B	A			B	C
Approach Delay (s)		0.0			31.3			10.2			19.0	
Approach LOS		A			C			B			B	

Intersection Summary

HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

11: Clements Ferry Road & Charleston Regional Business Center

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	461	18	1	1126	26	52	0	6	2	0	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1556	1759	1583	1736	1827	1553		1770	1583		1203	1077
Flt Permitted	0.10	1.00	1.00	0.47	1.00	1.00		0.80	1.00		0.80	1.00
Satd. Flow (perm)	158	1759	1583	867	1827	1553		1490	1583		1013	1077
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	140	512	20	1	1251	29	58	0	7	2	0	34
RTOR Reduction (vph)	0	0	6	0	0	11	0	0	6	0	0	31
Lane Group Flow (vph)	140	512	14	1	1251	18	0	58	1	0	2	3
Heavy Vehicles (%)	16%	8%	2%	4%	4%	4%	2%	2%	2%	50%	2%	50%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	45.3	41.5	41.5	39.5	38.6	38.6		5.0	5.0		5.0	5.0
Effective Green, g (s)	45.3	41.5	41.5	39.5	38.6	38.6		5.0	5.0		5.0	5.0
Actuated g/C Ratio	0.74	0.68	0.68	0.64	0.63	0.63		0.08	0.08		0.08	0.08
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	203	1189	1070	570	1149	976		121	129		82	88
v/s Ratio Prot	c0.04	0.29		0.00	c0.68							
v/s Ratio Perm	0.47		0.01	0.00		0.01		c0.04	0.00		0.00	0.00
v/c Ratio	0.69	0.43	0.01	0.00	1.09	0.02		0.48	0.00		0.02	0.03
Uniform Delay, d1	14.8	4.5	3.3	3.9	11.4	4.3		27.0	25.9		26.0	26.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	9.4	0.3	0.0	0.0	54.1	0.0		3.0	0.0		0.1	0.1
Delay (s)	24.2	4.8	3.3	3.9	65.5	4.3		29.9	25.9		26.1	26.1
Level of Service	C	A	A	A	E	A		C	C		C	C
Approach Delay (s)		8.8			64.1			29.5			26.1	
Approach LOS		A			E			C			C	

Intersection Summary

HCM Average Control Delay	44.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

14: Clements Ferry Road & Jack Primus Road

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	309	12	19	950	26	16	2	51	21	3	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.90			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.96	1.00
Satd. Flow (prot)	1597	1681	1429	1736	1827	1553		1536			1542	1369
Flt Permitted	0.11	1.00	1.00	0.56	1.00	1.00		0.91			0.77	1.00
Satd. Flow (perm)	179	1681	1429	1020	1827	1553		1419			1246	1369
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	336	13	21	1033	28	17	2	55	23	3	97
RTOR Reduction (vph)	0	0	5	0	0	10	0	50	0	0	0	88
Lane Group Flow (vph)	30	336	8	21	1033	18	0	24	0	0	26	9
Heavy Vehicles (%)	13%	13%	13%	4%	4%	4%	10%	10%	10%	18%	18%	18%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	39.2	37.5	37.5	37.4	36.6	36.6		5.5			5.5	5.5
Effective Green, g (s)	39.2	37.5	37.5	37.4	36.6	36.6		5.5			5.5	5.5
Actuated g/C Ratio	0.68	0.65	0.65	0.65	0.63	0.63		0.10			0.10	0.10
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	163	1091	927	670	1157	983		135			119	130
v/s Ratio Prot	c0.01	0.20		0.00	c0.57							
v/s Ratio Perm	0.12		0.01	0.02		0.01		0.02			c0.02	0.01
v/c Ratio	0.18	0.31	0.01	0.03	0.89	0.02		0.18			0.22	0.07
Uniform Delay, d1	8.5	4.5	3.6	3.6	8.9	3.9		24.1			24.2	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.5	0.2	0.0	0.0	9.0	0.0		0.6			0.9	0.2
Delay (s)	9.1	4.6	3.6	3.7	17.9	3.9		24.7			25.1	24.1
Level of Service	A	A	A	A	B	A		C			C	C
Approach Delay (s)		4.9			17.3			24.7			24.3	
Approach LOS		A			B			C			C	

Intersection Summary

HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

20: Clements Ferry Road & Cainhoy Road

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	135	335	620	111	78	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1687	1776	1807		1543	1380
Flt Permitted	0.13	1.00	1.00		0.95	1.00
Satd. Flow (perm)	232	1776	1807		1543	1380
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	155	385	713	128	90	194
RTOR Reduction (vph)	0	0	8	0	0	165
Lane Group Flow (vph)	155	385	833	0	90	29
Heavy Vehicles (%)	7%	7%	3%	3%	17%	17%
Turn Type	pm+pt			Perm		
Protected Phases	5	2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	41.3	41.3	32.8		8.9	8.9
Effective Green, g (s)	41.3	41.3	32.8		8.9	8.9
Actuated g/C Ratio	0.69	0.69	0.54		0.15	0.15
Clearance Time (s)	4.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	268	1218	985		228	204
v/s Ratio Prot	c0.04	0.22	c0.46		c0.06	
v/s Ratio Perm	0.35					0.02
v/c Ratio	0.58	0.32	0.85		0.39	0.14
Uniform Delay, d1	9.1	3.8	11.6		23.2	22.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.0	0.2	6.8		1.1	0.3
Delay (s)	12.1	3.9	18.3		24.3	22.6
Level of Service	B	A	B		C	C
Approach Delay (s)		6.3	18.3		23.2	
Approach LOS		A	B		C	

Intersection Summary

HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	253	12	1301	25	9	9	454	1526	13	15	1631	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.97		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1693	1583		1759		3433	5079		1770	5085	1583
Flt Permitted	0.95	0.96	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1693	1583		1759		3433	5079		1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	266	13	1369	26	9	9	478	1606	14	16	1717	136
RTOR Reduction (vph)	0	0	0	0	8	0	0	1	0	0	0	42
Lane Group Flow (vph)	138	141	1369	0	36	0	478	1619	0	16	1717	94
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	13.2	13.2	104.8		6.1		18.8	63.7		1.8	46.7	46.7
Effective Green, g (s)	13.2	13.2	104.8		6.1		18.8	63.7		1.8	46.7	46.7
Actuated g/C Ratio	0.13	0.13	1.00		0.06		0.18	0.61		0.02	0.45	0.45
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	212	213	1583		102		616	3087		30	2266	705
v/s Ratio Prot	0.08	0.08			0.02		0.14	0.32		0.01	0.34	
v/s Ratio Perm			c0.86									0.06
v/c Ratio	0.65	0.66	0.86		0.35		0.78	0.52		0.53	0.76	0.13
Uniform Delay, d1	43.6	43.7	0.0		47.4		41.0	11.8		51.1	24.3	17.1
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.0	7.5	6.6		2.1		6.1	0.2		17.0	1.5	0.1
Delay (s)	50.6	51.2	6.6		49.5		47.1	12.0		68.1	25.8	17.2
Level of Service	D	D	A		D		D	B		E	C	B
Approach Delay (s)		14.1			49.5			20.0			25.5	
Approach LOS		B			D			B			C	

Intersection Summary

HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	104.8	Sum of lost time (s)	0.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations		↕	↕			↕
Volume (veh/h)	537	63	195	0	0	330
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	584	68	212	0	0	359
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	212				1448	212
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	212				1448	212
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	57				100	57
cM capacity (veh/h)	1358				82	828

Direction, Lane #	NB 1	SB 1	SE 1
Volume Total	652	212	359
Volume Left	584	0	0
Volume Right	0	0	359
cSH	1358	1700	828
Volume to Capacity	0.43	0.12	0.43
Queue Length 95th (ft)	55	0	55
Control Delay (s)	9.1	0.0	12.6
Lane LOS	A		B
Approach Delay (s)	9.1	0.0	12.6
Approach LOS			B

Intersection Summary			
Average Delay		8.5	
Intersection Capacity Utilization	50.0%		ICU Level of Service A
Analysis Period (min)		15	

3: I526 EB on ramp & Clements Ferry Road

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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Volume (veh/h)	0	0	500	44	398	213
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	543	48	433	232
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			TWLTL
Median storage veh						2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1548	296			591	
vC1, stage 1 conf vol	567					
vC2, stage 2 conf vol	981					
vCu, unblocked vol	1548	296			591	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			56	
cM capacity (veh/h)	170	701			974	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	362	229	433	116	116	
Volume Left	0	0	433	0	0	
Volume Right	0	48	0	0	0	
cSH	1700	1700	974	1700	1700	
Volume to Capacity	0.21	0.13	0.44	0.07	0.07	
Queue Length 95th (ft)	0	0	58	0	0	
Control Delay (s)	0.0	0.0	11.6	0.0	0.0	
Lane LOS			B			
Approach Delay (s)	0.0		7.6			
Approach LOS						
Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization			43.9%		ICU Level of Service	A
Analysis Period (min)			15			

5: I526 WB ramp & Clements Ferry Road

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↘	↕↕			↕↕	↗
Volume (vph)	0	0	0	31	0	338	345	1036	0	0	563	1044
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Fr _t					1.00	0.85	1.00	1.00			1.00	0.85
Fl _t Protected					0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1719	1538	1719	3438			3438	1538
Fl _t Permitted					0.95	1.00	0.36	1.00			1.00	1.00
Satd. Flow (perm)					1719	1538	643	3438			3438	1538
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	33	0	363	371	1114	0	0	605	1123
RTOR Reduction (vph)	0	0	0	0	0	107	0	0	0	0	0	394
Lane Group Flow (vph)	0	0	0	0	33	256	371	1114	0	0	605	729
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type				Perm		Perm	pm+pt					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8	2					6
Actuated Green, G (s)					16.1	16.1	53.8	53.8			41.5	41.5
Effective Green, g (s)					16.1	16.1	53.8	53.8			41.5	41.5
Actuated g/C Ratio					0.20	0.20	0.67	0.67			0.52	0.52
Clearance Time (s)					5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					346	310	545	2315			1786	799
v/s Ratio Prot							c0.07	0.32			0.18	
v/s Ratio Perm					0.02	c0.17	0.39					c0.47
v/c Ratio					0.10	0.83	0.68	0.48			0.34	0.91
Uniform Delay, d ₁					26.0	30.6	6.1	6.3			11.2	17.5
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d ₂					0.1	16.2	3.5	0.2			0.1	14.6
Delay (s)					26.1	46.8	9.6	6.5			11.3	32.2
Level of Service					C	D	A	A			B	C
Approach Delay (s)		0.0			45.1			7.2			24.9	
Approach LOS		A			D			A			C	

Intersection Summary

HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

11: Clements Ferry Road & Charleston Regional Business Center

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	1025	31	0	632	4	18	0	3	23	0	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1703	1792	1524		1792	1524		1805	1615		1504	1346
Flt Permitted	0.26	1.00	1.00		1.00	1.00		0.74	1.00		0.74	1.00
Satd. Flow (perm)	465	1792	1524		1792	1524		1408	1615		1179	1346
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	48	1126	34	0	695	4	20	0	3	25	0	155
RTOR Reduction (vph)	0	0	10	0	0	2	0	0	3	0	0	139
Lane Group Flow (vph)	48	1126	24	0	695	2	0	20	0	0	25	16
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	0%	0%	0%	20%	20%	20%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	40.3	40.3	40.3		33.5	33.5		5.8	5.8		5.8	5.8
Effective Green, g (s)	40.3	40.3	40.3		33.5	33.5		5.8	5.8		5.8	5.8
Actuated g/C Ratio	0.72	0.72	0.72		0.60	0.60		0.10	0.10		0.10	0.10
Clearance Time (s)	4.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	396	1287	1095		1070	910		146	167		122	139
v/s Ratio Prot	0.01	c0.63			0.39							
v/s Ratio Perm	0.08		0.02			0.00		0.01	0.00		c0.02	0.01
v/c Ratio	0.12	0.87	0.02		0.65	0.00		0.14	0.00		0.20	0.12
Uniform Delay, d1	4.0	6.0	2.3		7.4	4.6		22.9	22.6		23.0	22.8
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	6.9	0.0		1.4	0.0		0.4	0.0		0.8	0.4
Delay (s)	4.1	12.9	2.3		8.8	4.6		23.3	22.6		23.9	23.2
Level of Service	A	B	A		A	A		C	C		C	C
Approach Delay (s)		12.2			8.8			23.2			23.3	
Approach LOS		B			A			C			C	

Intersection Summary

HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

14: Clements Ferry Road & Jack Primus Road

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	849	10	11	508	11	11	2	69	36	0	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1703	1792	1524	1703	1792	1524		1656			1597	1429
Flt Permitted	0.37	1.00	1.00	0.19	1.00	1.00		0.94			0.96	1.00
Satd. Flow (perm)	666	1792	1524	338	1792	1524		1574			1617	1429
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	57	913	11	12	546	12	12	2	74	39	0	76
RTOR Reduction (vph)	0	0	2	0	0	5	0	66	0	0	0	68
Lane Group Flow (vph)	57	913	9	12	546	7	0	22	0	0	39	8
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	1%	1%	1%	13%	13%	13%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	38.1	35.3	35.3	34.1	33.3	33.3		5.7			5.7	5.7
Effective Green, g (s)	38.1	35.3	35.3	34.1	33.3	33.3		5.7			5.7	5.7
Actuated g/C Ratio	0.68	0.63	0.63	0.61	0.60	0.60		0.10			0.10	0.10
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	507	1134	964	226	1069	909		161			165	146
v/s Ratio Prot	c0.01	c0.51		0.00	0.30							
v/s Ratio Perm	0.07		0.01	0.03		0.00		0.01			c0.02	0.01
v/c Ratio	0.11	0.81	0.01	0.05	0.51	0.01		0.13			0.24	0.05
Uniform Delay, d1	3.3	7.7	3.8	6.1	6.5	4.6		22.8			23.0	22.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.1	4.3	0.0	0.1	0.4	0.0		0.4			0.7	0.2
Delay (s)	3.4	11.9	3.8	6.2	6.9	4.6		23.2			23.8	22.8
Level of Service	A	B	A	A	A	A		C			C	C
Approach Delay (s)		11.3			6.9			23.2			23.1	
Approach LOS		B			A			C			C	

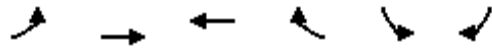
Intersection Summary

HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

20: Clements Ferry Road & Cainhoy Road

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	120	706	377	62	160	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1845	1845		1687	1509
Flt Permitted	0.30	1.00	1.00		0.95	1.00
Satd. Flow (perm)	554	1845	1845		1687	1509
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	126	743	397	65	168	209
RTOR Reduction (vph)	0	0	10	0	0	163
Lane Group Flow (vph)	126	743	452	0	168	46
Heavy Vehicles (%)	3%	3%	1%	1%	7%	7%
Turn Type	pm+pt			Perm		
Protected Phases	5	2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	27.2	27.2	18.7		10.4	10.4
Effective Green, g (s)	27.2	27.2	18.7		10.4	10.4
Actuated g/C Ratio	0.57	0.57	0.39		0.22	0.22
Clearance Time (s)	4.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	430	1054	725		369	330
v/s Ratio Prot	0.03	c0.40	0.25		c0.10	
v/s Ratio Perm	0.14					0.03
v/c Ratio	0.29	0.70	0.62		0.46	0.14
Uniform Delay, d1	5.7	7.3	11.6		16.1	15.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	2.2	1.7		0.9	0.2
Delay (s)	6.1	9.5	13.3		17.0	15.2
Level of Service	A	A	B		B	B
Approach Delay (s)		9.0	13.3		16.0	
Approach LOS		A	B		B	

Intersection Summary

HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	47.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	241	8	784	22	27	34	1310	1887	39	18	1234	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.94		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1690	1583		1737		3433	5070		1770	5085	1583
Flt Permitted	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1690	1583		1737		3433	5070		1770	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	246	8	800	22	28	35	1337	1926	40	18	1259	309
RTOR Reduction (vph)	0	0	0	0	18	0	0	1	0	0	0	116
Lane Group Flow (vph)	128	126	800	0	67	0	1337	1965	0	18	1259	193
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	13.9	13.9	135.5		10.4		53.1	89.3		1.9	38.1	38.1
Effective Green, g (s)	13.9	13.9	135.5		10.4		53.1	89.3		1.9	38.1	38.1
Actuated g/C Ratio	0.10	0.10	1.00		0.08		0.39	0.66		0.01	0.28	0.28
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	172	173	1583		133		1345	3341		25	1430	445
v/s Ratio Prot	c0.08	0.07			0.04		c0.39	0.39		0.01	c0.25	
v/s Ratio Perm			c0.51									0.12
v/c Ratio	0.74	0.73	0.51		0.50		0.99	0.59		0.72	0.88	0.43
Uniform Delay, d1	59.1	59.0	0.0		60.1		41.0	12.9		66.5	46.5	39.9
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.9	14.2	1.2		2.9		23.0	0.3		67.0	6.7	0.7
Delay (s)	75.0	73.2	1.2		63.0		64.0	13.1		133.5	53.2	40.6
Level of Service	E	E	A		E		E	B		F	D	D
Approach Delay (s)		18.7			63.0			33.7			51.6	
Approach LOS		B			E			C			D	

Intersection Summary

HCM Average Control Delay	36.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	135.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations		↕	↕			↕
Volume (veh/h)	355	207	101	0	0	743
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	413	241	117	0	0	864
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	117				1184	117
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	117				1184	117
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	72				100	8
cM capacity (veh/h)	1477				151	937

Direction, Lane #	NB 1	SB 1	SE 1
Volume Total	653	117	864
Volume Left	413	0	0
Volume Right	0	0	864
cSH	1477	1700	937
Volume to Capacity	0.28	0.07	0.92
Queue Length 95th (ft)	29	0	350
Control Delay (s)	6.3	0.0	34.9
Lane LOS	A		D
Approach Delay (s)	6.3	0.0	34.9
Approach LOS			D

Intersection Summary			
Average Delay		20.9	
Intersection Capacity Utilization		58.0%	ICU Level of Service
Analysis Period (min)		15	B

2022 No Build Capacity Analyses

3: I526 EB on ramp & Clements Ferry Road

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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Volume (veh/h)	0	0	425	20	300	355
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	472	22	333	394
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		TWLTL	
Median storage veh					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1347	247			494	
vC1, stage 1 conf vol	483					
vC2, stage 2 conf vol	864					
vCu, unblocked vol	1347	247			494	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			69	
cM capacity (veh/h)	238	753			1058	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	315	180	333	197	197	
Volume Left	0	0	333	0	0	
Volume Right	0	22	0	0	0	
cSH	1700	1700	1058	1700	1700	
Volume to Capacity	0.19	0.11	0.31	0.12	0.12	
Queue Length 95th (ft)	0	0	34	0	0	
Control Delay (s)	0.0	0.0	10.0	0.0	0.0	
Lane LOS			A			
Approach Delay (s)	0.0		4.6			
Approach LOS						
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			35.7%		ICU Level of Service	A
Analysis Period (min)			15			

5: I526 WB ramp & Clements Ferry Road

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↘	↑↑			↑↑	↗
Volume (vph)	0	0	0	40	0	395	295	1180	0	0	615	1035
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Fr _t					1.00	0.85	1.00	1.00			1.00	0.85
Fl _t Protected					0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1719	1538	1719	3438			3438	1538
Fl _t Permitted					0.95	1.00	0.31	1.00			1.00	1.00
Satd. Flow (perm)					1719	1538	555	3438			3438	1538
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	44	0	439	328	1311	0	0	683	1150
RTOR Reduction (vph)	0	0	0	0	0	53	0	0	0	0	0	452
Lane Group Flow (vph)	0	0	0	0	44	386	328	1311	0	0	683	698
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type				Perm		Perm	pm+pt					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8	2					6
Actuated Green, G (s)					22.3	22.3	52.2	52.2			41.1	41.1
Effective Green, g (s)					22.3	22.3	52.2	52.2			41.1	41.1
Actuated g/C Ratio					0.26	0.26	0.62	0.62			0.49	0.49
Clearance Time (s)					5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					454	406	441	2124			1672	748
v/s Ratio Prot							c0.06	0.38			0.20	
v/s Ratio Perm					0.03	c0.25	0.40					c0.45
v/c Ratio					0.10	0.95	0.74	0.62			0.41	0.93
Uniform Delay, d1					23.5	30.6	9.2	10.0			13.9	20.4
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2					0.1	32.1	6.7	0.5			0.2	18.5
Delay (s)					23.6	62.7	15.9	10.5			14.1	38.9
Level of Service					C	E	B	B			B	D
Approach Delay (s)		0.0			59.1			11.6			29.6	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

11: Clements Ferry Road & Charleston Regional Business Center

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	530	20	5	1295	30	60	0	10	5	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1556	3406	1524	1703	3394			1770	1583		1203	1077
Flt Permitted	0.11	1.00	1.00	0.43	1.00			0.83	1.00		0.83	1.00
Satd. Flow (perm)	176	3406	1524	770	3394			1552	1583		1056	1077
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	161	589	22	6	1439	33	67	0	11	6	0	39
RTOR Reduction (vph)	0	0	8	0	2	0	0	0	10	0	0	36
Lane Group Flow (vph)	161	589	14	6	1470	0	0	67	1	0	6	3
Heavy Vehicles (%)	16%	6%	6%	6%	6%	6%	2%	2%	2%	50%	2%	50%
Turn Type	pm+pt		Perm	pm+pt			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	42.3	37.5	37.5	34.0	33.2			4.8	4.8		4.8	4.8
Effective Green, g (s)	42.3	37.5	37.5	34.0	33.2			4.8	4.8		4.8	4.8
Actuated g/C Ratio	0.74	0.66	0.66	0.60	0.58			0.08	0.08		0.08	0.08
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	254	2237	1001	472	1973			130	133		89	91
v/s Ratio Prot	c0.06	0.17		0.00	c0.43							
v/s Ratio Perm	0.41		0.01	0.01				c0.04	0.00		0.01	0.00
v/c Ratio	0.63	0.26	0.01	0.01	0.75			0.52	0.01		0.07	0.04
Uniform Delay, d1	7.2	4.1	3.4	4.7	8.8			25.0	24.0		24.1	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	5.1	0.1	0.0	0.0	1.6			3.4	0.0		0.3	0.2
Delay (s)	12.3	4.1	3.4	4.7	10.4			28.5	24.0		24.4	24.2
Level of Service	B	A	A	A	B			C	C		C	C
Approach Delay (s)		5.8			10.4			27.8			24.2	
Approach LOS		A			B			C			C	

Intersection Summary

HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

14: Clements Ferry Road & Jack Primus Road

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	355	15	20	1090	30	20	5	60	25	5	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.90			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.96	1.00
Satd. Flow (prot)	1703	3406	1524	1703	3406	1524		1545			1546	1369
Flt Permitted	0.17	1.00	1.00	0.52	1.00	1.00		0.91			0.70	1.00
Satd. Flow (perm)	298	3406	1524	931	3406	1524		1422			1126	1369
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	394	17	22	1211	33	22	6	67	28	6	111
RTOR Reduction (vph)	0	0	8	0	0	12	0	59	0	0	0	98
Lane Group Flow (vph)	33	394	9	22	1211	21	0	36	0	0	34	13
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	10%	10%	10%	18%	18%	18%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	26.7	25.3	25.3	25.3	24.6	24.6		5.5			5.5	5.5
Effective Green, g (s)	26.7	25.3	25.3	25.3	24.6	24.6		5.5			5.5	5.5
Actuated g/C Ratio	0.59	0.56	0.56	0.56	0.54	0.54		0.12			0.12	0.12
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	218	1894	847	530	1841	824		172			136	165
v/s Ratio Prot	c0.00	0.12		0.00	c0.36							
v/s Ratio Perm	0.08		0.01	0.02		0.01		0.03			c0.03	0.01
v/c Ratio	0.15	0.21	0.01	0.04	0.66	0.02		0.21			0.25	0.08
Uniform Delay, d1	4.6	5.1	4.5	4.5	7.4	4.9		18.0			18.1	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.3	0.1	0.0	0.0	0.9	0.0		0.6			1.0	0.2
Delay (s)	4.9	5.1	4.5	4.6	8.3	4.9		18.7			19.1	18.0
Level of Service	A	A	A	A	A	A		B			B	B
Approach Delay (s)		5.1			8.2			18.7			18.2	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

20: Clements Ferry Road & Cainhoy Road

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	155	385	715	125	90	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1736	1827	1790		1736	1553
Flt Permitted	0.10	1.00	1.00		0.95	1.00
Satd. Flow (perm)	187	1827	1790		1736	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	172	428	794	139	100	217
RTOR Reduction (vph)	0	0	8	0	0	186
Lane Group Flow (vph)	172	428	925	0	100	31
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	pm+pt			Perm		
Protected Phases	5	2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	44.1	44.1	35.1		8.9	8.9
Effective Green, g (s)	44.1	44.1	35.1		8.9	8.9
Actuated g/C Ratio	0.70	0.70	0.56		0.14	0.14
Clearance Time (s)	4.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	254	1279	997		245	219
v/s Ratio Prot	c0.05	0.23	c0.52		c0.06	
v/s Ratio Perm	0.42					0.02
v/c Ratio	0.68	0.33	0.93		0.41	0.14
Uniform Delay, d1	11.9	3.7	12.8		24.6	23.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.0	0.2	14.1		1.1	0.3
Delay (s)	18.9	3.9	26.9		25.8	24.0
Level of Service	B	A	C		C	C
Approach Delay (s)		8.2	26.9		24.5	
Approach LOS		A	C		C	

Intersection Summary

HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	15	1495	30	10	10	520	1755	15	15	1875	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.97		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1693	1583		1759		3433	5079		1770	5085	1583
Flt Permitted	0.95	0.96	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1693	1583		1759		3433	5079		1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	305	16	1574	32	11	11	547	1847	16	16	1974	158
RTOR Reduction (vph)	0	0	0	0	8	0	0	1	0	0	0	41
Lane Group Flow (vph)	159	162	1574	0	46	0	547	1862	0	16	1974	117
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	14.2	14.2	111.7		6.9		19.7	68.7		1.9	50.9	50.9
Effective Green, g (s)	14.2	14.2	111.7		6.9		19.7	68.7		1.9	50.9	50.9
Actuated g/C Ratio	0.13	0.13	1.00		0.06		0.18	0.62		0.02	0.46	0.46
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	214	215	1583		109		605	3124		30	2317	721
v/s Ratio Prot	0.09	0.10			0.03		0.16	0.37		0.01	0.39	
v/s Ratio Perm			c0.99									0.07
v/c Ratio	0.74	0.75	0.99		0.42		0.90	0.60		0.53	0.85	0.16
Uniform Delay, d1	47.0	47.1	0.0		50.5		45.1	13.1		54.5	27.0	17.9
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	13.0	13.9	21.3		2.6		16.9	0.3		17.0	3.2	0.1
Delay (s)	60.0	60.9	21.3		53.0		62.0	13.4		71.5	30.3	18.0
Level of Service	E	E	C		D		E	B		E	C	B
Approach Delay (s)		27.9			53.0			24.4			29.7	
Approach LOS		C			D			C			C	

Intersection Summary

HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	111.7	Sum of lost time (s)	0.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			














Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	225	5	615	75	5	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	1553	1827	1553	1736	1827
Flt Permitted	0.95	1.00	1.00	1.00	0.26	1.00
Satd. Flow (perm)	1736	1553	1827	1553	471	1827
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	6	683	83	6	422
RTOR Reduction (vph)	0	4	0	41	0	0
Lane Group Flow (vph)	250	2	683	42	6	422
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	11.7	11.7	22.7	22.7	22.7	22.7
Effective Green, g (s)	11.7	11.7	22.7	22.7	22.7	22.7
Actuated g/C Ratio	0.26	0.26	0.51	0.51	0.51	0.51
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	457	409	934	794	241	934
v/s Ratio Prot	c0.14		c0.37			0.23
v/s Ratio Perm		0.00		0.03	0.01	
v/c Ratio	0.55	0.00	0.73	0.05	0.02	0.45
Uniform Delay, d1	14.1	12.1	8.5	5.5	5.4	6.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0	3.0	0.0	0.0	0.3
Delay (s)	15.4	12.1	11.4	5.5	5.4	7.2
Level of Service	B	B	B	A	A	A
Approach Delay (s)	15.3		10.8			7.2
Approach LOS	B		B			A

Intersection Summary

HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		




















c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis 3: I526 EB on ramp & Clements Ferry Road

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Volume (veh/h)	0	0	575	50	460	245
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	639	56	511	272
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		TWLTL	
Median storage (veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1825	347			694	
vC1, stage 1 conf vol	667					
vC2, stage 2 conf vol	1158					
vCu, unblocked vol	1825	347			694	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			43	
cM capacity (veh/h)	106	649			890	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	426	269	511	136	136	
Volume Left	0	0	511	0	0	
Volume Right	0	56	0	0	0	
cSH	1700	1700	890	1700	1700	
Volume to Capacity	0.25	0.16	0.57	0.08	0.08	
Queue Length 95th (ft)	0	0	94	0	0	
Control Delay (s)	0.0	0.0	14.3	0.0	0.0	
Lane LOS			B			
Approach Delay (s)	0.0		9.4			
Approach LOS						
Intersection Summary						
Average Delay			5.0			
Intersection Capacity Utilization			49.6%		ICU Level of Service	A
Analysis Period (min)			15			
























HCM Signalized Intersection Capacity Analysis

5: I526 WB ramp & Clements Ferry Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	35	0	390	400	1190	0	0	650	1200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	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)					1719	1538	1719	3438			3438	1538
Flt Permitted					0.95	1.00	0.32	1.00			1.00	1.00
Satd. Flow (perm)					1719	1538	576	3438			3438	1538
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	39	0	433	444	1322	0	0	722	1333
RTOR Reduction (vph)	0	0	0	0	0	80	0	0	0	0	0	308
Lane Group Flow (vph)	0	0	0	0	39	353	444	1322	0	0	722	1025
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type				Perm		Perm	pm+pt					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8	2					6
Actuated Green, G (s)					30.0	30.0	110.0	110.0			91.0	91.0
Effective Green, g (s)					30.0	30.0	110.0	110.0			91.0	91.0
Actuated g/C Ratio					0.20	0.20	0.73	0.73			0.61	0.61
Clearance Time (s)					5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					344	308	537	2521			2086	933
v/s Ratio Prot							c0.08	0.38			0.21	
v/s Ratio Perm					0.02	c0.23	0.52					c0.67
v/c Ratio					0.11	1.15	0.83	0.52			0.35	1.10
Uniform Delay, d1					49.1	60.0	9.3	8.7			14.7	29.5
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2					0.1	96.9	10.1	0.2			0.1	60.1
Delay (s)					49.3	156.9	19.4	8.9			14.8	89.6
Level of Service					D	F	B	A			B	F
Approach Delay (s)		0.0			148.0			11.5			63.3	
Approach LOS		A			F			B			E	
Intersection Summary												
HCM Average Control Delay			51.3		HCM Level of Service						D	
HCM Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			150.0		Sum of lost time (s)						14.0	
Intersection Capacity Utilization			111.5%		ICU Level of Service						H	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Clements Ferry Road & Charleston Regional Business Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Volume (vph)	50	1180	35	0	725	5	20	0	5	25	0	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0		5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00		0.95			1.00	1.00		1.00	1.00
Fr _t	1.00	1.00	0.85		1.00			1.00	0.85		1.00	0.85
Fl _t Protected	0.95	1.00	1.00		1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1703	3406	1524		3402			1805	1615		1504	1346
Fl _t Permitted	0.26	1.00	1.00		1.00			0.74	1.00		0.74	1.00
Satd. Flow (perm)	472	3406	1524		3402			1404	1615		1176	1346
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	1311	39	0	806	6	22	0	6	28	0	178
RTOR Reduction (vph)	0	0	14	0	1	0	0	0	5	0	0	155
Lane Group Flow (vph)	56	1311	25	0	811	0	0	22	1	0	28	23
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	0%	0%	0%	20%	20%	20%
Turn Type	pm+pt		Perm	pm+pt			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	27.1	27.1	27.1		20.6			5.5	5.5		5.5	5.5
Effective Green, g (s)	27.1	27.1	27.1		20.6			5.5	5.5		5.5	5.5
Actuated g/C Ratio	0.64	0.64	0.64		0.48			0.13	0.13		0.13	0.13
Clearance Time (s)	4.0	5.0	5.0		5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	373	2167	969		1645			181	209		152	174
v/s Ratio Prot	0.01	c0.38			0.24							
v/s Ratio Perm	0.09		0.02					0.02	0.00		c0.02	0.02
v/c Ratio	0.15	0.60	0.03		0.49			0.12	0.00		0.18	0.13
Uniform Delay, d ₁	3.4	4.6	2.9		7.5			16.4	16.2		16.5	16.4
Progression Factor	1.00	1.00	1.00		1.00			1.00	1.00		1.00	1.00
Incremental Delay, d ₂	0.2	0.5	0.0		0.2			0.3	0.0		0.6	0.3
Delay (s)	3.5	5.1	2.9		7.7			16.7	16.2		17.1	16.8
Level of Service	A	A	A		A			B	B		B	B
Approach Delay (s)		4.9			7.7			16.6			16.8	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM Average Control Delay			7.0		HCM Level of Service				A			
HCM Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			42.6		Sum of lost time (s)			10.0				
Intersection Capacity Utilization			55.7%		ICU Level of Service				B			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

14: Clements Ferry Road & Jack Primus Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	975	10	15	585	15	15	5	80	40	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1703	3406	1524	1703	3406	1524		1667			1597	1429
Flt Permitted	0.37	1.00	1.00	0.23	1.00	1.00		0.94			0.99	1.00
Satd. Flow (perm)	658	3406	1524	416	3406	1524		1574			1672	1429
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	1083	11	17	650	17	17	6	89	44	0	89
RTOR Reduction (vph)	0	0	5	0	0	9	0	77	0	0	0	77
Lane Group Flow (vph)	67	1083	6	17	650	8	0	35	0	0	44	12
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	1%	1%	1%	13%	13%	13%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		4			4
Actuated Green, G (s)	24.5	22.0	22.0	20.7	20.1	20.1		5.5			5.5	5.5
Effective Green, g (s)	24.5	22.0	22.0	20.7	20.1	20.1		5.5			5.5	5.5
Actuated g/C Ratio	0.58	0.52	0.52	0.49	0.48	0.48		0.13			0.13	0.13
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	445	1780	796	223	1626	728		206			218	187
v/s Ratio Prot	c0.01	c0.32		0.00	0.19							
v/s Ratio Perm	0.08		0.00	0.04		0.01		0.02			c0.03	0.01
v/c Ratio	0.15	0.61	0.01	0.08	0.40	0.01		0.17			0.20	0.06
Uniform Delay, d1	3.9	7.0	4.8	5.6	7.1	5.8		16.3			16.3	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.2	0.6	0.0	0.1	0.2	0.0		0.4			0.5	0.1
Delay (s)	4.0	7.6	4.8	5.7	7.3	5.8		16.7			16.8	16.2
Level of Service	A	A	A	A	A	A		B			B	B
Approach Delay (s)		7.4			7.2			16.7			16.4	
Approach LOS		A			A			B			B	

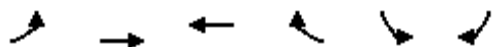
Intersection Summary

HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	42.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

20: Clements Ferry Road & Cainhoj Road



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↑	↕		↕	↕
Volume (vph)	140	810	435	70	185	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1736	1827	1793		1736	1553
Flt Permitted	0.24	1.00	1.00		0.95	1.00
Satd. Flow (perm)	439	1827	1793		1736	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	156	900	483	78	206	256
RTOR Reduction (vph)	0	0	8	0	0	202
Lane Group Flow (vph)	156	900	553	0	206	54
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	pm+pt					Perm
Protected Phases	5	2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	34.2	34.2	24.4		11.9	11.9
Effective Green, g (s)	34.2	34.2	24.4		11.9	11.9
Actuated g/C Ratio	0.61	0.61	0.43		0.21	0.21
Clearance Time (s)	4.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	402	1114	780		368	329
v/s Ratio Prot	0.04	c0.49	0.31		c0.12	
v/s Ratio Perm	0.20					0.03
v/c Ratio	0.39	0.81	0.71		0.56	0.17
Uniform Delay, d1	6.7	8.4	12.9		19.8	18.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	4.4	3.0		1.8	0.2
Delay (s)	7.3	12.8	15.9		21.6	18.3
Level of Service	A	B	B		C	B
Approach Delay (s)		12.0	15.9		19.8	
Approach LOS		B	B		B	























Intersection Summary

HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

22: SC 41 & US 17

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	275	10	900	25	30	40	1500	2170	45	20	1420	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.94		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1691	1583		1735		3433	5070		1770	5085	1583
Flt Permitted	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1691	1583		1735		3433	5070		1770	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	281	10	918	26	31	41	1531	2214	46	20	1449	357
RTOR Reduction (vph)	0	0	0	0	19	0	0	1	0	0	0	117
Lane Group Flow (vph)	146	145	918	0	79	0	1531	2259	0	20	1449	240
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	14.7	14.7	136.1		11.2		52.1	87.3		2.9	38.1	38.1
Effective Green, g (s)	14.7	14.7	136.1		11.2		52.1	87.3		2.9	38.1	38.1
Actuated g/C Ratio	0.11	0.11	1.00		0.08		0.38	0.64		0.02	0.28	0.28
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	182	183	1583		143		1314	3252		38	1424	443
v/s Ratio Prot	c0.09	0.09			0.05		c0.45	0.45		0.01	c0.28	
v/s Ratio Perm			c0.58									0.15
v/c Ratio	0.80	0.79	0.58		0.55		1.17	0.69		0.53	1.02	0.54
Uniform Delay, d1	59.3	59.2	0.0		60.0		42.0	15.8		65.9	49.0	41.6
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	21.9	20.5	1.6		4.5		83.0	0.7		12.5	28.3	1.4
Delay (s)	81.2	79.7	1.6		64.6		125.0	16.4		78.4	77.3	42.9
Level of Service	F	E	A		E		F	B		E	E	D
Approach Delay (s)		20.5			64.6			60.3			70.6	
Approach LOS		C			E			E			E	
Intersection Summary												
HCM Average Control Delay			56.1				HCM Level of Service				E	
HCM Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			136.1				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			97.3%				ICU Level of Service			F		
Analysis Period (min)			15									
c	Critical Lane Group											



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	115	5	410	240	5	855
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	1553	1827	1553	1736	1827
Flt Permitted	0.95	1.00	1.00	1.00	0.48	1.00
Satd. Flow (perm)	1736	1553	1827	1553	870	1827
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	6	456	267	6	950
RTOR Reduction (vph)	0	5	0	102	0	0
Lane Group Flow (vph)	128	1	456	165	6	950
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	9.1	9.1	30.8	30.8	30.8	30.8
Effective Green, g (s)	9.1	9.1	30.8	30.8	30.8	30.8
Actuated g/C Ratio	0.18	0.18	0.62	0.62	0.62	0.62
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	317	283	1128	959	537	1128
v/s Ratio Prot	c0.07		0.25			c0.52
v/s Ratio Perm		0.00		0.11	0.01	
v/c Ratio	0.40	0.00	0.40	0.17	0.01	0.84
Uniform Delay, d1	18.0	16.7	4.9	4.1	3.7	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.0	0.2	0.1	0.0	5.9
Delay (s)	18.8	16.7	5.1	4.2	3.7	13.5
Level of Service	B	B	A	A	A	B
Approach Delay (s)	18.8		4.8			13.4
Approach LOS	B		A			B

Intersection Summary




















HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	49.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

2022 Build Out Capacity Analyses

HCM Signalized Intersection Capacity Analysis

5: I526 WB ramp & Clements Ferry Road

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	40	0	485	243	1335	0	0	629	1096	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					5.0	5.0	4.0	5.0			5.0	5.0	
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00	
Fr _t					1.00	0.85	1.00	1.00			1.00	0.85	
Fl _t Protected					0.95	1.00	0.95	1.00			1.00	1.00	
Satd. Flow (prot)					1719	1538	1719	3438			3438	1538	
Fl _t Permitted					0.95	1.00	0.30	1.00			1.00	1.00	
Satd. Flow (perm)					1719	1538	535	3438			3438	1538	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	0	0	0	44	0	539	270	1483	0	0	699	1218	
RTOR Reduction (vph)	0	0	0	0	0	25	0	0	0	0	0	501	
Lane Group Flow (vph)	0	0	0	0	44	514	270	1483	0	0	699	717	
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	5%	5%	5%	5%	5%	5%	
Turn Type				Perm		Perm	pm+pt					Perm	
Protected Phases					8		5	2			6		
Permitted Phases				8		8	2					6	
Actuated Green, G (s)					31.1	31.1	55.9	55.9			46.9	46.9	
Effective Green, g (s)					31.1	31.1	55.9	55.9			46.9	46.9	
Actuated g/C Ratio					0.32	0.32	0.58	0.58			0.48	0.48	
Clearance Time (s)					5.0	5.0	4.0	5.0			5.0	5.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)					551	493	369	1981			1662	744	
v/s Ratio Prot							0.04	c0.43			0.20		
v/s Ratio Perm					0.03	c0.33	0.38					c0.47	
v/c Ratio					0.08	1.04	0.73	0.75			0.42	0.96	
Uniform Delay, d ₁					23.0	33.0	14.8	15.3			16.2	24.2	
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d ₂					0.1	52.0	7.3	1.6			0.2	24.2	
Delay (s)					23.0	84.9	22.1	16.9			16.4	48.4	
Level of Service					C	F	C	B			B	D	
Approach Delay (s)		0.0			80.3			17.7			36.8		
Approach LOS		A			F			B			D		
Intersection Summary													
HCM Average Control Delay			34.9		HCM Level of Service						C		
HCM Volume to Capacity ratio			1.01										
Actuated Cycle Length (s)			97.0		Sum of lost time (s)					15.0			
Intersection Capacity Utilization			96.3%		ICU Level of Service					F			
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

11: Clements Ferry Road & Charleston Regional Business Center



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	1025	20	5	1698	30	60	0	10	5	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1556	3406	1524	1703	3397			1770	1583		1203	1077
Flt Permitted	0.07	1.00	1.00	0.25	1.00			0.75	1.00		0.71	1.00
Satd. Flow (perm)	114	3406	1524	447	3397			1404	1583		904	1077
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	161	1139	22	6	1887	33	67	0	11	6	0	39
RTOR Reduction (vph)	0	0	6	0	1	0	0	0	10	0	0	35
Lane Group Flow (vph)	161	1139	16	6	1919	0	0	67	1	0	6	4
Heavy Vehicles (%)	16%	6%	6%	6%	6%	6%	2%	2%	2%	50%	2%	50%
Turn Type	pm+pt		Perm	pm+pt			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	64.8	59.9	59.9	54.4	53.5			7.6	7.6		7.6	7.6
Effective Green, g (s)	64.8	59.9	59.9	54.4	53.5			7.6	7.6		7.6	7.6
Actuated g/C Ratio	0.79	0.73	0.73	0.66	0.65			0.09	0.09		0.09	0.09
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	217	2476	1108	309	2206			129	146		83	99
v/s Ratio Prot	c0.07	0.33		0.00	c0.56							
v/s Ratio Perm	0.52		0.01	0.01				c0.05	0.00		0.01	0.00
v/c Ratio	0.74	0.46	0.01	0.02	0.87			0.52	0.01		0.07	0.04
Uniform Delay, d1	21.0	4.6	3.1	4.8	11.6			35.7	34.0		34.2	34.1
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	12.8	0.1	0.0	0.0	4.0			3.5	0.0		0.4	0.2
Delay (s)	33.9	4.8	3.1	4.8	15.6			39.2	34.0		34.5	34.2
Level of Service	C	A	A	A	B			D	C		C	C
Approach Delay (s)		8.3			15.6			38.4			34.3	
Approach LOS		A			B			D			C	


























Intersection Summary

HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

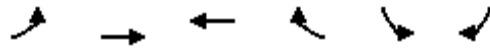
14: Clements Ferry Road & Jack Primus Road

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 			 			 		
Volume (vph)	30	850	15	20	1549	105	20	5	60	96	5	44	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.90			1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00	
Satd. Flow (prot)	1703	3406	1524	1703	3406	1524		1545			1537	1369	
Flt Permitted	0.11	1.00	1.00	0.27	1.00	1.00		0.89			0.80	1.00	
Satd. Flow (perm)	199	3406	1524	478	3406	1524		1397			1286	1369	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	33	944	17	22	1721	117	22	6	67	107	6	49	
RTOR Reduction (vph)	0	0	7	0	0	27	0	57	0	0	0	42	
Lane Group Flow (vph)	33	944	10	22	1721	90	0	38	0	0	113	7	
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	10%	10%	10%	18%	18%	18%	
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm	
Protected Phases	5	2		1	6			8			4		
Permitted Phases	2		2	6		6	8			4		4	
Actuated Green, G (s)	37.6	36.0	36.0	37.6	36.0	36.0		8.8			8.8	8.8	
Effective Green, g (s)	37.6	36.0	36.0	37.6	36.0	36.0		8.8			8.8	8.8	
Actuated g/C Ratio	0.62	0.60	0.60	0.62	0.60	0.60		0.15			0.15	0.15	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0	
Lane Grp Cap (vph)	164	2030	908	330	2030	908		204			187	199	
v/s Ratio Prot	c0.01	0.28		0.00	c0.51								
v/s Ratio Perm	0.12		0.01	0.04		0.06		0.03			c0.09	0.01	
v/c Ratio	0.20	0.47	0.01	0.07	0.85	0.10		0.19			0.60	0.04	
Uniform Delay, d1	7.9	6.8	5.0	4.5	10.0	5.2		22.7			24.2	22.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00	
Incremental Delay, d2	0.6	0.2	0.0	0.1	3.5	0.0		0.4			5.4	0.1	
Delay (s)	8.5	7.0	5.0	4.6	13.5	5.3		23.1			29.6	22.2	
Level of Service	A	A	A	A	B	A		C			C	C	
Approach Delay (s)		7.0			12.8			23.1			27.4		
Approach LOS		A			B			C			C		
Intersection Summary													
HCM Average Control Delay			12.0									HCM Level of Service	B
HCM Volume to Capacity ratio			0.78										
Actuated Cycle Length (s)			60.4								Sum of lost time (s)	14.0	
Intersection Capacity Utilization			63.7%									ICU Level of Service	B
Analysis Period (min)			15										

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

20: Clements Ferry Road & Cainhoy Road



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	204	506	784	95	66	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1736	1827	1800		1736	1553
Flt Permitted	0.10	1.00	1.00		0.95	1.00
Satd. Flow (perm)	187	1827	1800		1736	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	227	562	871	106	73	257
RTOR Reduction (vph)	0	0	6	0	0	200
Lane Group Flow (vph)	227	562	971	0	73	57
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	pm+pt			Perm		
Protected Phases	5	2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	44.1	44.1	35.1		8.6	8.6
Effective Green, g (s)	44.1	44.1	35.1		8.6	8.6
Actuated g/C Ratio	0.70	0.70	0.56		0.14	0.14
Clearance Time (s)	4.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	255	1285	1008		238	213
v/s Ratio Prot	c0.07	0.31	c0.54		c0.04	
v/s Ratio Perm	0.56					0.04
v/c Ratio	0.89	0.44	0.96		0.31	0.27
Uniform Delay, d1	15.9	4.0	13.2		24.4	24.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	29.5	0.2	19.9		0.7	0.7
Delay (s)	45.4	4.2	33.1		25.1	24.9
Level of Service	D	A	C		C	C
Approach Delay (s)		16.1	33.1		24.9	
Approach LOS		B	C		C	

Intersection Summary

HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

22: SC 41 & US 17

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	15	1555	30	10	10	546	1755	15	15	1875	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.97		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1693	1583		1759		3433	5079		1770	5085	1583
Flt Permitted	0.95	0.96	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1693	1583		1759		3433	5079		1770	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	337	16	1637	32	11	11	575	1847	16	16	1974	172
RTOR Reduction (vph)	0	0	0	0	8	0	0	1	0	0	0	46
Lane Group Flow (vph)	175	178	1637	0	46	0	575	1862	0	16	1974	126
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	14.7	14.7	112.7		7.0		20.2	69.1		1.9	50.8	50.8
Effective Green, g (s)	14.7	14.7	112.7		7.0		20.2	69.1		1.9	50.8	50.8
Actuated g/C Ratio	0.13	0.13	1.00		0.06		0.18	0.61		0.02	0.45	0.45
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	219	221	1583		109		615	3114		30	2292	714
v/s Ratio Prot	0.10	0.11			0.03		0.17	0.37		0.01	0.39	
v/s Ratio Perm			c1.03									0.08
v/c Ratio	0.80	0.81	1.03		0.42		0.93	0.60		0.53	0.86	0.18
Uniform Delay, d1	47.6	47.6	56.4		50.9		45.6	13.3		55.0	27.8	18.5
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	18.1	18.9	31.9		2.6		21.5	0.3		17.0	3.6	0.1
Delay (s)	65.7	66.5	88.3		53.5		67.1	13.6		72.0	31.4	18.6
Level of Service	E	E	F		D		E	B		E	C	B
Approach Delay (s)		84.3			53.5			26.2			30.6	
Approach LOS		F			D			C			C	
Intersection Summary												
HCM Average Control Delay			45.3				HCM Level of Service				D	
HCM Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			112.7				Sum of lost time (s)			0.0		
Intersection Capacity Utilization			77.9%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

30: SC 41 & Clements Ferry Road



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	225	5	654	75	12	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	1553	1827	1553	1736	1827
Flt Permitted	0.95	1.00	1.00	1.00	0.24	1.00
Satd. Flow (perm)	1736	1553	1827	1553	447	1827
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	6	727	83	13	522
RTOR Reduction (vph)	0	4	0	36	0	0
Lane Group Flow (vph)	250	2	727	47	13	522
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	16.0	16.0	34.0	34.0	34.0	34.0
Effective Green, g (s)	16.0	16.0	34.0	34.0	34.0	34.0
Actuated g/C Ratio	0.27	0.27	0.57	0.57	0.57	0.57
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	463	414	1035	880	253	1035
v/s Ratio Prot	c0.14		c0.40			0.29
v/s Ratio Perm		0.00		0.03	0.03	
v/c Ratio	0.54	0.00	0.70	0.05	0.05	0.50
Uniform Delay, d1	18.8	16.1	9.4	5.8	5.8	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	0.0	2.2	0.0	0.4	1.8
Delay (s)	23.3	16.2	11.5	5.8	6.2	9.6
Level of Service	C	B	B	A	A	A
Approach Delay (s)	23.1		11.0			9.6
Approach LOS	C		B			A

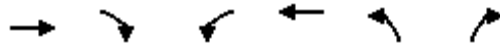
Intersection Summary

HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

32: Clements Ferry Road & Cainhoy access



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Volume (vph)	472	584	147	993	576	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	5.0
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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1827	1553	1736	1827	1736	1553
Flt Permitted	1.00	1.00	0.26	1.00	0.95	1.00
Satd. Flow (perm)	1827	1553	479	1827	1736	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	524	649	163	1103	640	194
RTOR Reduction (vph)	0	354	0	0	0	100
Lane Group Flow (vph)	524	295	163	1103	640	94
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type		Perm	pm+pt			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2	6			8
Actuated Green, G (s)	54.6	54.6	68.0	68.0	42.0	42.0
Effective Green, g (s)	54.6	54.6	68.0	68.0	42.0	42.0
Actuated g/C Ratio	0.46	0.46	0.57	0.57	0.35	0.35
Clearance Time (s)	5.0	5.0	4.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	831	707	370	1035	608	544
v/s Ratio Prot	0.29		0.03	c0.60	c0.37	
v/s Ratio Perm		0.19	0.22			0.06
v/c Ratio	0.63	0.42	0.44	1.07	1.05	0.17
Uniform Delay, d1	25.0	22.0	15.9	26.0	39.0	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.4	0.8	47.2	51.1	0.2
Delay (s)	26.6	22.4	16.7	73.2	90.1	27.1
Level of Service	C	C	B	E	F	C
Approach Delay (s)	24.3			65.9	75.5	
Approach LOS	C			E	E	



















Intersection Summary

HCM Average Control Delay	53.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: I526 WB ramp & Clements Ferry Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	35	0	544	389	1386	0	0	777	1317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.0	5.0			5.0	5.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	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)					1719	1538	1719	3438			3438	1538
Flt Permitted					0.95	1.00	0.24	1.00			1.00	1.00
Satd. Flow (perm)					1719	1538	430	3438			3438	1538
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	39	0	604	432	1540	0	0	863	1463
RTOR Reduction (vph)	0	0	0	0	0	30	0	0	0	0	0	408
Lane Group Flow (vph)	0	0	0	0	39	574	432	1540	0	0	863	1055
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type				Perm		Perm	pm+pt					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8	2					6
Actuated Green, G (s)					44.0	44.0	96.0	96.0			79.0	79.0
Effective Green, g (s)					44.0	44.0	96.0	96.0			79.0	79.0
Actuated g/C Ratio					0.29	0.29	0.64	0.64			0.53	0.53
Clearance Time (s)					5.0	5.0	4.0	5.0			5.0	5.0
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					504	451	387	2200			1811	810
v/s Ratio Prot							c0.10	0.45			0.25	
v/s Ratio Perm					0.02	c0.37	0.62					c0.69
v/c Ratio					0.08	1.27	1.12	0.70			0.48	1.30
Uniform Delay, d1					38.3	53.0	22.1	17.6			22.4	35.5
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2					0.1	138.8	81.1	1.0			0.2	145.1
Delay (s)					38.4	191.8	103.2	18.6			22.6	180.6
Level of Service					D	F	F	B			C	F
Approach Delay (s)		0.0			182.5			37.1			122.0	
Approach LOS		A			F			D			F	
Intersection Summary												
HCM Average Control Delay			96.0		HCM Level of Service						F	
HCM Volume to Capacity ratio			1.28									
Actuated Cycle Length (s)			150.0		Sum of lost time (s)						14.0	
Intersection Capacity Utilization			118.1%		ICU Level of Service						H	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Clements Ferry Road & Charleston Regional Business Center



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1599	35	0	1063	5	20	0	5	25	0	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0		5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00		0.95			1.00	1.00		1.00	1.00
Fr _t	1.00	1.00	0.85		1.00			1.00	0.85		1.00	0.85
Fl _t Protected	0.95	1.00	1.00		1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1703	3406	1524		3403			1805	1615		1504	1346
Fl _t Permitted	0.16	1.00	1.00		1.00			0.74	1.00		0.74	1.00
Satd. Flow (perm)	286	3406	1524		3403			1404	1615		1176	1346
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	1777	39	0	1181	6	22	0	6	28	0	178
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	5	0	0	153
Lane Group Flow (vph)	56	1777	27	0	1187	0	0	22	1	0	28	25
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	0%	0%	0%	20%	20%	20%
Turn Type	pm+pt		Perm	pm+pt			Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	39.4	39.4	39.4		32.5			7.5	7.5		7.5	7.5
Effective Green, g (s)	39.4	39.4	39.4		32.5			7.5	7.5		7.5	7.5
Actuated g/C Ratio	0.69	0.69	0.69		0.57			0.13	0.13		0.13	0.13
Clearance Time (s)	4.0	5.0	5.0		5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	270	2358	1055		1944			185	213		155	177
v/s Ratio Prot	0.01	c0.52			0.35							
v/s Ratio Perm	0.13		0.02					0.02	0.00		c0.02	0.02
v/c Ratio	0.21	0.75	0.03		0.61			0.12	0.00		0.18	0.14
Uniform Delay, d ₁	4.2	5.6	2.7		8.0			21.8	21.5		22.0	21.9
Progression Factor	1.00	1.00	1.00		1.00			1.00	1.00		1.00	1.00
Incremental Delay, d ₂	0.4	1.4	0.0		0.6			0.3	0.0		0.6	0.4
Delay (s)	4.6	7.0	2.7		8.6			22.1	21.5		22.5	22.2
Level of Service	A	A	A		A			C	C		C	C
Approach Delay (s)		6.9			8.6			21.9			22.3	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

14: Clements Ferry Road & Jack Primus Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1394	10	15	936	70	15	5	80	108	0	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1703	3406	1524	1703	3406	1524		1667			1597	1429
Flt Permitted	0.20	1.00	1.00	0.13	1.00	1.00		0.93			0.81	1.00
Satd. Flow (perm)	366	3406	1524	238	3406	1524		1560			1363	1429
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	1549	11	17	1040	78	17	6	89	120	0	74
RTOR Reduction (vph)	0	0	3	0	0	32	0	76	0	0	0	63
Lane Group Flow (vph)	67	1549	8	17	1040	46	0	36	0	0	120	11
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	1%	1%	1%	13%	13%	13%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	35.4	32.4	32.4	30.8	30.1	30.1		8.4			8.4	8.4
Effective Green, g (s)	35.4	32.4	32.4	30.8	30.1	30.1		8.4			8.4	8.4
Actuated g/C Ratio	0.64	0.58	0.58	0.55	0.54	0.54		0.15			0.15	0.15
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	306	1988	890	151	1847	827		236			206	216
v/s Ratio Prot	c0.01	c0.45		0.00	0.31							
v/s Ratio Perm	0.13		0.01	0.06		0.03		0.02			c0.09	0.01
v/c Ratio	0.22	0.78	0.01	0.11	0.56	0.06		0.15			0.58	0.05
Uniform Delay, d1	4.5	8.8	4.8	6.9	8.4	6.0		20.5			21.9	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	0.4	2.0	0.0	0.3	0.4	0.0		0.3			4.2	0.1
Delay (s)	4.9	10.8	4.8	7.2	8.8	6.0		20.8			26.1	20.2
Level of Service	A	B	A	A	A	A		C			C	C
Approach Delay (s)		10.5			8.6			20.8			23.8	
Approach LOS		B			A			C			C	

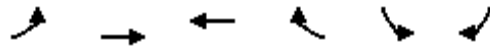
Intersection Summary

HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

20: Clements Ferry Road & Cainhoj Road



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	171	927	580	62	176	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1736	1827	1803		1736	1553
Flt Permitted	0.13	1.00	1.00		0.95	1.00
Satd. Flow (perm)	244	1827	1803		1736	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	190	1030	644	69	196	294
RTOR Reduction (vph)	0	0	5	0	0	237
Lane Group Flow (vph)	190	1030	708	0	196	57
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	pm+pt			Perm		
Protected Phases	5	2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	39.6	39.6	27.9		12.0	12.0
Effective Green, g (s)	39.6	39.6	27.9		12.0	12.0
Actuated g/C Ratio	0.64	0.64	0.45		0.19	0.19
Clearance Time (s)	4.0	5.0	5.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	343	1175	817		338	303
v/s Ratio Prot	0.07	c0.56	0.39		c0.11	
v/s Ratio Perm	0.29					0.04
v/c Ratio	0.55	0.88	0.87		0.58	0.19
Uniform Delay, d1	9.3	9.0	15.2		22.5	20.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.9	7.6	9.5		2.4	0.3
Delay (s)	11.3	16.6	24.7		24.9	21.0
Level of Service	B	B	C		C	C
Approach Delay (s)		15.8	24.7		22.6	
Approach LOS		B	C		C	

Intersection Summary

HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

22: SC 41 & US 17

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	10	970	25	30	40	1590	2170	45	20	1420	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0		5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.94		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1690	1583		1735		3433	5070		1770	5085	1583
Flt Permitted	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1690	1583		1735		3433	5070		1770	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	316	10	990	26	31	41	1622	2214	46	20	1449	403
RTOR Reduction (vph)	0	0	0	0	19	0	0	1	0	0	0	133
Lane Group Flow (vph)	164	162	990	0	79	0	1622	2259	0	20	1449	270
Turn Type	Split		Free	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			Free									6
Actuated Green, G (s)	15.4	15.4	136.7		11.2		52.1	87.2		2.9	38.0	38.0
Effective Green, g (s)	15.4	15.4	136.7		11.2		52.1	87.2		2.9	38.0	38.0
Actuated g/C Ratio	0.11	0.11	1.00		0.08		0.38	0.64		0.02	0.28	0.28
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	189	190	1583		142		1308	3234		38	1414	440
v/s Ratio Prot	c0.10	0.10			0.05		c0.47	0.45		0.01	c0.28	
v/s Ratio Perm			c0.63									0.17
v/c Ratio	0.87	0.85	0.63		0.55		1.24	0.70		0.53	1.02	0.61
Uniform Delay, d1	59.6	59.5	0.0		60.3		42.3	16.2		66.2	49.3	43.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	31.7	29.0	1.9		4.6		114.7	0.7		12.5	30.4	2.5
Delay (s)	91.3	88.5	1.9		65.0		157.0	16.8		78.7	79.8	45.5
Level of Service	F	F	A		E		F	B		E	E	D
Approach Delay (s)		23.7			65.0			75.4			72.4	
Approach LOS		C			E			E			E	
Intersection Summary												
HCM Average Control Delay			65.0				HCM Level of Service				E	
HCM Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			136.7				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			100.8%				ICU Level of Service			G		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

30: SC 41 & Clements Ferry Road



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	115	5	547	240	9	959
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1736	1553	1827	1553	1736	1827
Flt Permitted	0.95	1.00	1.00	1.00	0.38	1.00
Satd. Flow (perm)	1736	1553	1827	1553	690	1827
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	6	608	267	10	1066
RTOR Reduction (vph)	0	5	0	90	0	0
Lane Group Flow (vph)	128	1	608	177	10	1066
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	9.9	9.9	39.4	39.4	39.4	39.4
Effective Green, g (s)	9.9	9.9	39.4	39.4	39.4	39.4
Actuated g/C Ratio	0.17	0.17	0.66	0.66	0.66	0.66
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	290	259	1214	1032	458	1214
v/s Ratio Prot	c0.07		0.33			c0.58
v/s Ratio Perm		0.00		0.11	0.01	
v/c Ratio	0.44	0.00	0.50	0.17	0.02	0.88
Uniform Delay, d1	22.2	20.6	5.0	3.8	3.4	8.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.0	0.3	0.1	0.0	7.4
Delay (s)	23.3	20.6	5.3	3.8	3.4	15.5
Level of Service	C	C	A	A	A	B
Approach Delay (s)	23.2		4.9			15.4
Approach LOS	C		A			B

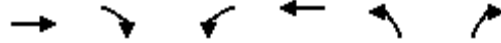
Intersection Summary

HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	59.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

32: Clements Ferry Road & Cainhoy access



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Volume (vph)	953	559	200	610	426	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	4.0	5.0	5.0	5.0
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	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1827	1553	1736	1827	1736	1553
Flt Permitted	1.00	1.00	0.06	1.00	0.95	1.00
Satd. Flow (perm)	1827	1553	103	1827	1736	1553
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1059	621	222	678	473	237
RTOR Reduction (vph)	0	0	0	0	0	165
Lane Group Flow (vph)	1059	621	222	678	473	72
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type		Free	pm+pt			Perm
Protected Phases	2		1	6	8	
Permitted Phases		Free	6			8
Actuated Green, G (s)	67.0	120.0	81.0	81.0	29.0	29.0
Effective Green, g (s)	67.0	120.0	81.0	81.0	29.0	29.0
Actuated g/C Ratio	0.56	1.00	0.68	0.68	0.24	0.24
Clearance Time (s)	5.0		4.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1020	1553	206	1233	420	375
v/s Ratio Prot	0.58		c0.09	0.37	c0.27	
v/s Ratio Perm		0.40	c0.64			0.05
v/c Ratio	1.04	0.40	1.08	0.55	1.13	0.19
Uniform Delay, d1	26.5	0.0	41.4	10.1	45.5	36.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	38.6	0.8	84.9	0.5	83.0	0.2
Delay (s)	65.1	0.8	126.3	10.6	128.5	36.4
Level of Service	E	A	F	B	F	D
Approach Delay (s)	41.3			39.1	97.7	
Approach LOS	D			D	F	

Intersection Summary

HCM Average Control Delay	52.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		




















c Critical Lane Group

2022 Build Out
Capacity Analyses

Ramp Striping
changes




















HCM Signalized Intersection Capacity Analysis

5: I526 WB ramp & Clements Ferry Road

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	40	0	485	243	1335	0	0	629	1096	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					5.0	5.0	4.0	5.0			5.0	5.0	
Lane Util. Factor					0.95	0.95	1.00	0.95			0.95	1.00	
Frt					0.87	0.85	1.00	1.00			1.00	0.85	
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00	
Satd. Flow (prot)					1489	1461	1719	3438			3438	1538	
Flt Permitted					0.99	1.00	0.33	1.00			1.00	1.00	
Satd. Flow (perm)					1489	1461	592	3438			3438	1538	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	0	0	0	44	0	539	270	1483	0	0	699	1218	
RTOR Reduction (vph)	0	0	0	0	54	54	0	0	0	0	0	380	
Lane Group Flow (vph)	0	0	0	0	238	237	270	1483	0	0	699	838	
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	5%	5%	5%	5%	5%	5%	
Turn Type				Perm		Perm	pm+pt					Perm	
Protected Phases					8		5	2			6		
Permitted Phases				8		8	2					6	
Actuated Green, G (s)					15.6	15.6	57.2	57.2			48.1	48.1	
Effective Green, g (s)					15.6	15.6	57.2	57.2			48.1	48.1	
Actuated g/C Ratio					0.19	0.19	0.69	0.69			0.58	0.58	
Clearance Time (s)					5.0	5.0	4.0	5.0			5.0	5.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)					281	275	478	2375			1997	893	
v/s Ratio Prot							0.03	c0.43			0.20		
v/s Ratio Perm					0.16	c0.16	0.36					c0.54	
v/c Ratio					0.85	0.86	0.56	0.62			0.35	0.94	
Uniform Delay, d1					32.4	32.5	5.3	7.0			9.1	16.0	
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d2					20.2	22.9	1.5	0.5			0.1	16.9	
Delay (s)					52.7	55.5	6.8	7.5			9.2	32.9	
Level of Service					D	E	A	A			A	C	
Approach Delay (s)		0.0			54.1			7.4			24.3		
Approach LOS		A			D			A			C		
Intersection Summary													
HCM Average Control Delay			21.4		HCM Level of Service						C		
HCM Volume to Capacity ratio			0.92										
Actuated Cycle Length (s)			82.8		Sum of lost time (s)					15.0			
Intersection Capacity Utilization			105.2%		ICU Level of Service					G			
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

5: I526 WB ramp & Clements Ferry Road

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	0	0	0	35	0	544	389	1386	0	0	777	1317	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					5.0	5.0	4.0	5.0			5.0	5.0	
Lane Util. Factor					0.95	0.95	1.00	0.95			0.95	1.00	
Frt					0.87	0.85	1.00	1.00			1.00	0.85	
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00	
Satd. Flow (prot)					1483	1461	1719	3438			3438	1538	
Flt Permitted					0.99	1.00	0.28	1.00			1.00	1.00	
Satd. Flow (perm)					1483	1461	499	3438			3438	1538	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	0	0	0	39	0	604	432	1540	0	0	863	1463	
RTOR Reduction (vph)	0	0	0	0	55	55	0	0	0	0	0	296	
Lane Group Flow (vph)	0	0	0	0	268	265	432	1540	0	0	863	1167	
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	5%	5%	5%	5%	5%	5%	
Turn Type				Perm		Perm	pm+pt					Perm	
Protected Phases					8		5	2			6		
Permitted Phases				8		8	2					6	
Actuated Green, G (s)					28.3	28.3	111.0	111.0			98.0	98.0	
Effective Green, g (s)					28.3	28.3	111.0	111.0			98.0	98.0	
Actuated g/C Ratio					0.19	0.19	0.74	0.74			0.66	0.66	
Clearance Time (s)					5.0	5.0	4.0	5.0			5.0	5.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)					281	277	445	2556			2257	1010	
v/s Ratio Prot							c0.06	0.45			0.25		
v/s Ratio Perm					0.18	c0.18	0.66					c0.76	
v/c Ratio					0.95	0.96	0.97	0.60			0.38	1.16	
Uniform Delay, d1					59.8	59.9	15.5	8.9			11.8	25.7	
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d2					40.9	41.8	35.0	0.4			0.1	81.4	
Delay (s)					100.7	101.7	50.4	9.3			11.9	107.1	
Level of Service					F	F	D	A			B	F	
Approach Delay (s)		0.0			101.2			18.3			71.7		
Approach LOS		A			F			B			E		
Intersection Summary													
HCM Average Control Delay			54.3		HCM Level of Service						D		
HCM Volume to Capacity ratio			1.11										
Actuated Cycle Length (s)			149.3		Sum of lost time (s)					14.0			
Intersection Capacity Utilization			127.9%		ICU Level of Service					H			
Analysis Period (min)			15										
c Critical Lane Group													