TIA

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
TIA PROJECT CONCEPT REPORT

Project Type:	Intersection	P.I. Number:	0012216
GDOT District:	Two	County:	Laurens
Federal Route Number:	NA	MPO ID Number:	N/A
State Route Number:	19/26		

The project will improve traffic flow at the intersection of Hodges Street and US 80/SR 19/26 in Dublin, Georgia. The Rice Avenue intersections with Hodges and Roberson and a left turn lane from US 80/SR 19/26 onto Woodridge Road will also be addressed as part of the project.

Submitted for approval:

Consultant & Firm – Bryon Letourneau, P.E.; Pond & Company — DATE 2/9/15

TIA Project Manager — DATE 2/13/15

GDOT TIA Regional Coordinator — DATE 02/13/2015

TIA Program Manager — DATE 2/13/15

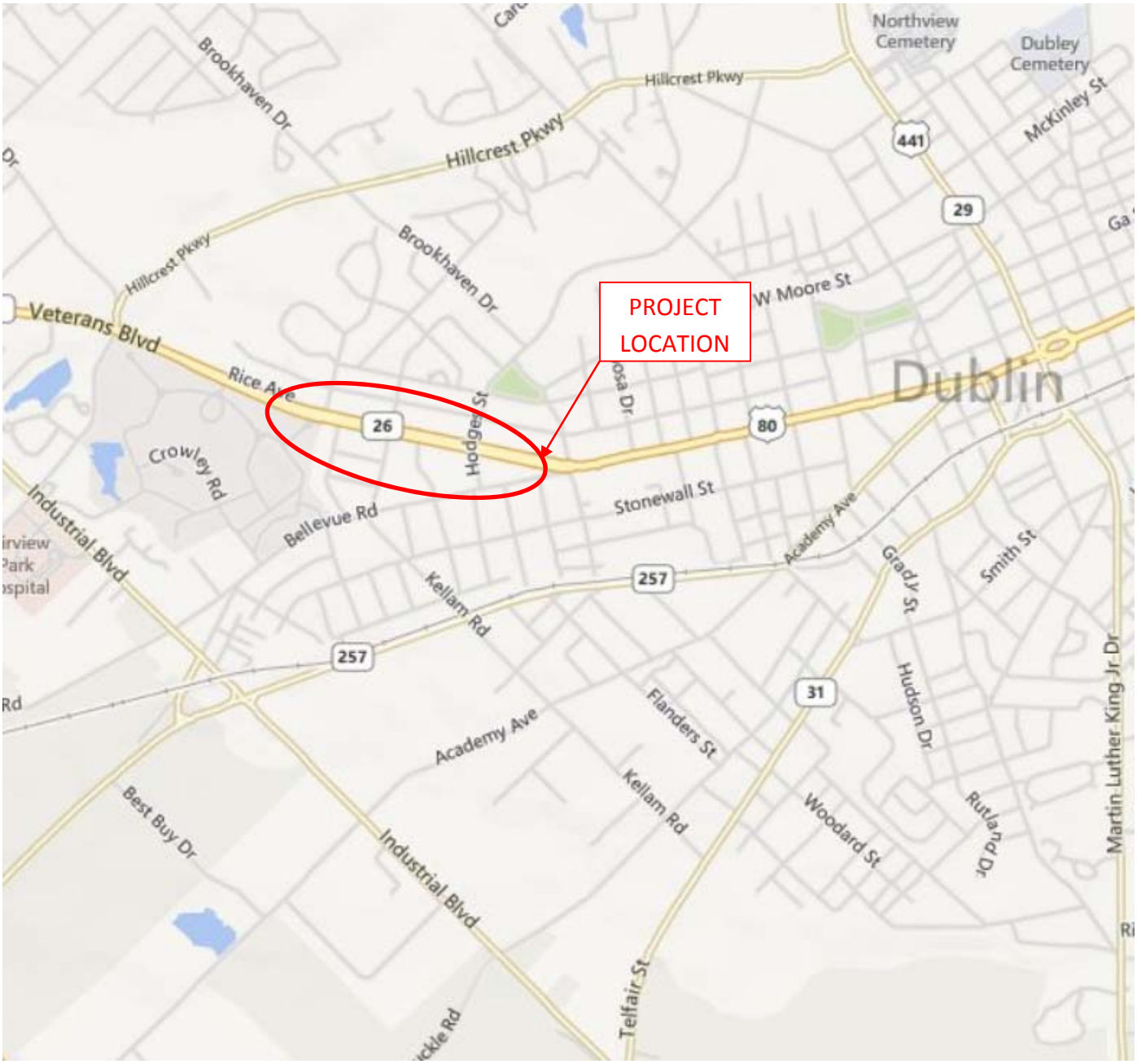
GDOT State TIA Administrator — DATE 2/16/2015

Approval:

Concur: GDOT Director of Engineering — DATE 2/20/2015

Approve: GDOT Chief Engineer — DATE 2.20.15

PROJECT LOCATION



US 80/SR 19/26 at Hodges St
Intersection Improvement
PI# 0012216
Laurens County

PLANNING & BACKGROUND DATA

Description of the proposed project: This project will add an eastbound left turn lane and extend the existing westbound left turn lane on US 80/SR 19/26 – Veterans Boulevard at the intersection with Hodges Street. Rice Avenue will be closed both east and west of Hodges Street. Access points from US 80/SR 19/26 – Veterans Boulevard to Rice Avenue and emergency vehicle turnarounds will be added near Hodges Street. A new traffic signal, crosswalks, and pedestrian controls will be added to the US 80/SR 19/26 – Veterans Boulevard intersection with Hodges Street.

Rice Avenue will also be closed both east and west of Roberson Street. Access points from US 80/SR 19/26 – Veterans Boulevard to Rice Avenue and emergency vehicle turnarounds will be added near Roberson Street. Additionally a westbound median left turn lane will be added to US 80/SR 19/26 – Veterans Boulevard at the Woodridge Road intersection.

TIA Stated Benefit: The project will improve the traffic flow at the intersection of Hodges Street and US 80/SR 19/26 and the directly adjacent intersection of Hodges Street with Rice Avenue. A traffic signal and eastbound median left turn lane will be installed at the intersection with US 80/SR 19/26. These improvements will improve traffic flow in this area of Dublin and decrease the likelihood of vehicular and pedestrian conflicts. The improvements at the Rice Avenue intersection with Hodges Street and Robertson Street and the left turn lane onto Woodridge Road will further improve traffic flow in this area.

Federal Oversight: ☐ Exempt ☐ State Funded ☒ TIA ☐ Other

MPO: N/A MPO Project ID

Regional Commission: Heart of Georgia-Altamaha RC Project ID: HG-0831

Congressional District(s): 12

Projected Traffic: 12,576 ADT (2015); 14,885 ADT (2025)

Functional Classification (Mainline): Urban Principal Arterial

Is this a 3R (Resurfacing, Restoration, & Rehabilitation) Project? ☒ No ☐ Yes

Will Context Sensitive Solutions procedures be utilized? ☒ No ☐ Yes

DESIGN AND STRUCTURAL DATA - **Mainline Design Features:** US 80/SR 19/26 – Veterans Boulevard

Feature	Existing	Standard*	Proposed
Typical Section			
• **Number of Lanes**	**4**	**4**	**5**
• **Lane Width(s)**	**12**	**12**	**12**
• **Outside Shoulder or Border Area Width**	**N/A**	**10**	**N/A**
• **Inside Shoulder Width**	**N/A**	**N/A**	**N/A**
Posted Speed	**40**		**40**
Design Speed	**40**	**40**	**40**
Min Horizontal Curve Radius	**N/A**	**485**	**N/A**
Superelevation Rate	**2%**	**2%**	**2%**
Grade	**1/5%**	**1-5%**	**1-5%**
Right-of-Way Width	**160'**	**160'**	**160'**
Design Vehicle	**WB-67**	**WB-67**	**WB-67**

*According to current GDOT design policy if applicable

Major Structures: N/A

Major Interchanges/Intersections: Hodges Street at US 80/SR 19/26

Utility Involvements: Power, Water, Gas, Cable

Public Interest Determination Policy and Procedure recommended (Utilities)? ☒ No ☐ Yes

SUE Required: ☒ No ☐ Yes

Railroad Involvement: None

Complete Streets - Bicycle, Pedestrian, and/or Transit Warrants:

Warrants met: ☒ None ☐ Bicycle ☐ Pedestrian ☐ Transit

Right-of-Way:

Required Right-of-Way anticipated: ☒ No ☐ Yes ☐ Undetermined

Easements anticipated: ☒ None ☐ Temporary ☐ Permanent ☐ Utility ☐ Other

Anticipated number of impacted parcels:	0
Displacements Anticipated:	0
Businesses:	0
Residences:	0
Other:	0

Transportation Management Plan [TMP] Required: ☒ No ☐ Yes
If Yes: Project classified as: ☐ Non-Significant ☐ Significant
TMP Components Anticipated: ☐ TTC ☐ TO ☐ PI

Design Exceptions to FHWA/AASHTO controlling criteria anticipated: None

Design Variances to GDOT Standard Criteria anticipated: None

ENVIRONMENTAL DATA

Anticipated Environmental Document:
GEPA: ☐ Type A Letter ☒ Type B Letter
NEPA: ☐ CE ☐ EA/FONSI

Project Air Quality:
Is the project located in a PM 2.5 Non-attainment area? ☒ No ☐ Yes
Is the project located in an Ozone Non-attainment area? ☒ No ☐ Yes
Is a Carbon Monoxide hotspot analysis required? ☒ No ☐ Yes

MS4 Compliance – Is the project located in an MS4 area? ☒ No ☐ Yes

Environmental Permits/Variances/Commitments/Coordination anticipated:
No environmental permits, variances, special commitments, or coordination are anticipated. No jurisdictional waters of the US are expected in the study area and no Section 4(f) impacts are anticipated.

NEPA/GEPA Comments & Information:
Environmental documentation for this TIA project will be GEPA Type B. Ecological, historic, archaeological, or air impacts will be studied, but no impacts are expected. Therefore, there are no anticipated delays to GEPA approval.

PROJECT RESPONSIBILITIES

Project Activities:

Project Activity	Party Responsible for Performing Task(s)
Concept Development	Pond & Company
Design	Pond & Company
Right-of-Way Acquisition	N/A
Utility Relocation	GDOT-TIA
Letting to Contract	GDOT-TIA
Construction Supervision	GDOT-TIA
Providing Material Pits	Contractor
Providing Detours	N/A
Environmental Studies, Documents, and Permits	Pond & Company (GT Hill Planners)
Environmental Mitigation	N/A
Construction Inspection & Materials Testing	GDOT-TIA

Lighting required: ☒ No ☐ Yes

Other projects in the area: None currently.

Other coordination to date:

- Scoping Meeting held at GDOT District 2 Office on April 17, 2014.
- There have been numerous coordination meeting between GDOT-TIA, GDOT District 2, and the City of Dublin to produce this City of Dublin supported proposed concept.

Project Cost Estimate and Funding Responsibilities:

	Breakdown of PE	Breakdown of ROW	Breakdown of Reimbursable Utilities	Breakdown of CST	Total
Funded By	TIA	TIA	N/A	TIA	
TIA Current Programmed Budget	-	-	-	-	**$1,130,000**
Engineers Estimated Amount	$103,000	$0	$50,000	$801,641	
Contingency/TIA Mgmt Budget	$6,219	$3,750	$2,500	$44,031	
Total Estimated Cost	$109,219	$3,750	$52,500	$845,672	**$1,011,141**

Notes:

1. All Phases include TIA Management Costs and calculated Project/Program Risk contingencies which are include in the **Contingency Budget** line item.
2. Construction Phase includes Construction, 3% CEI, Env. Mitigation (as applicable) and Liquid AC Cost Adjustment (as applicable).
3. Engineer's Estimated Amount line item populated by Engineer/Consultant.

ALTERNATIVES

Preferred Alternative: Provide a new traffic signal at Hodges Street at US 80/SR 19/26. Improve traffic flow at intersection of Hodges Street and Roberson Street at Rice Avenue.			
Estimated Property Impacts:	**0**	**Estimated Total Cost:**	**$1,052,641.00**
Estimated ROW Cost:	**0**	**Estimated CST Time:**	**6 months**
Rationale: The preferred alternative improves traffic flow in the area of Hodges Street and US 80/SR 19/26 – Veterans Boulevard. This is a TIA Project with Construction Funding authorized for the preferred alternative.			

Comments/additional information: None

Attachments:

1. Concept Layout
2. Typical section
3. Cost Estimate
4. GDOT Traffic Engineering Report

CONCEPT–JANUARY 2015
ROBERSON ST & HODGES ST
AT VETERANS BLVD
INTERSECTION IMPROVEMENTS

LEGEND

PROPOSED SIGNAL

POND
Architects-Engineers-Planners
3500 Parkway Lane
Suite 600
Norcross, Ga. 30092
Phone 678-336-7740
Fax 678-336-7744
Web www.pondco.com

SCALE IN FEET
0 80 160

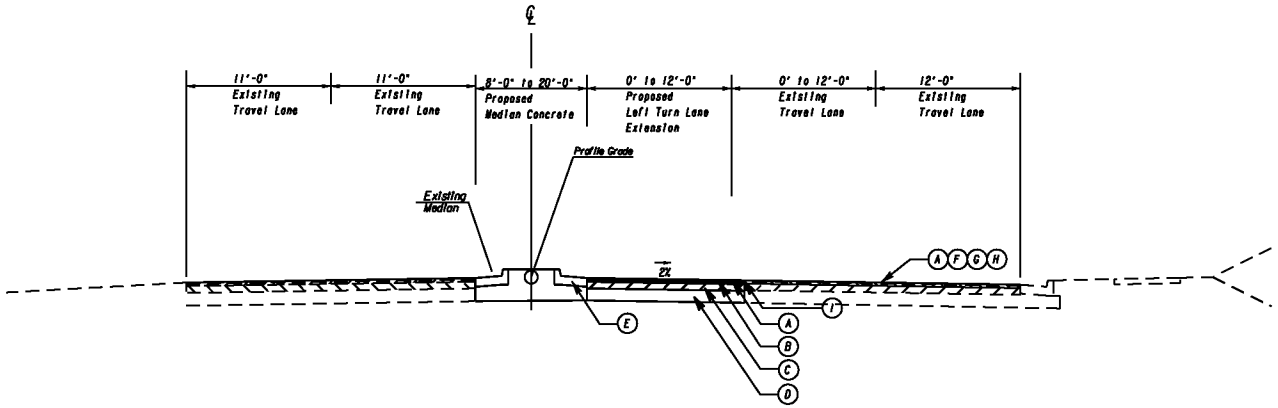
REVISION DATES

CITY OF DUBLIN

ROBERSON ST AND HODGES ST
AT VETERANS BLVD
INTERSECTION IMPROVEMENTS

ALT 1

DATE:##	TIME:##	#PG#	#DGN#	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
#USER#		##PENTABLE##		GA	0012216		



US 80 /SR 19/26 AT HODGES ST

N.T.S.

(A) - RECYCLED ASPH CONC 12.5 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME - 165 LBS/SY

(B) - RECYCLED ASPH CONC 19 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME - 220 LBS/SY

(C) - RECYCLED ASPH CONC 25 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME - 660 LBS/SY

(D) - GR AGGR BASE CRS, INCL MATL - 10 INCH DEPTH

(E) - CONC. CURB & GUTTER, 6" X 24" TP 2

(F) - MILLING ASPH CONC PVMT, VARIABLE DEPTH - 1.5" MINIMUM

(G) - RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME

(H) - RECYCLED ASPH CONC PATCHING, INCL BITUM MATL & H LIME

(I) - PVMT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH

POND
Architects - Engineers - Planners
3500 Parkway Lane
Suite 600
Norcross, Ga. 30092
Phone 678-336-7740
Fax 678-336-7744
Web www.pondco.com

REVISION DATES

CITY OF DUBLIN

OFFICE:

TYPICAL SECTION

US 80 / SR 19/26 AT HODGES ST
INTERSECTION IMPROVEMENT

DRAWING No. 5-01

5/4/2007 GRSMIC

Project No. 0012216

Description: **US 80 / SR 19/26 at Hodges St and Roberson St - Intersection Improvements**

1/16/2015 13:26

CONSTRUCTION COST ESTIMATE

Item No.	ITEMS:	Unit	Qty	Price	Cost
	ROADWAY ITEMS				
	TRAFFIC CONTROL - 0012216	LS	1	$50,000.00	$50,000.00
	GRADING COMPLETE - 0012216	LS	1	$50,000.00	$50,000.00
	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BIT MATL & H LIME	TN	1366	$90.00	$122,940.00
	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BIT MATL & H LIME	TN	222	$95.00	$21,090.00
	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BIT MATL & H LIME	TN	664	$95.00	$63,080.00
	GR AGGR BASE CRS, 10 INCH, INCL MATL	SY	2370	$16.57	$39,270.90
	MILL ASPH CONC PVMT, VARIABLE DEPTH	SY	14486	$4.35	$63,014.10
	RECYCLED ASPH CONC PATCHING, INCL BITUM MATL & H LIME	TN	50	$80.00	$4,000.00
	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	50	$80.00	$4,000.00
	BITUM TACK COAT	GL	616	$4.00	$2,464.00
	PVMT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH	LF	1530	$4.57	$6,992.10
	CONC CURB & GUTTER , 6 IN X 24 IN, TP 2	LF	1290	$16.00	$20,640.00
	CONCRETE MEDIAN, 6 IN	SY	285	$50.00	$14,250.00
	CLASS B CONC, BASE OR PVMT WIDENING	CY	10	$160.22	$1,602.20
	DROP INLET, GP 1	EA	2	$2,200.00	$4,400.00
	STORM DRAIN PIPE, 18 IN, H 1-10	LF	250	$40.00	$10,000.00
	CATCH BASIN, GP 1	EA	1	$2,500.00	$2,500.00
	CONC SIDEWALK, 4 IN	SY	40	$43.00	$1,720.00
	EROSION CONTROL - PERMANENT				
	SOD	SY	840	$4.15	$3,486.00
	EROSION CONTROL - TEMPORARY				
	TEMPORARY GRASSING	AC	1	$500.00	$500.00
	MULCH	TN	21	$209.80	$4,405.80
	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	2	$144.74	$289.48
	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	LF	461	$0.66	$304.26
	MAINTENANCE OF INLET SEDIMENT TRAP	EA	2	$66.29	$132.58
	TEMPORARY SILT FENCE, TYPE C	LF	922	$2.69	$2,480.18
	SIGNING AND MARKING				
	PAVEMENT MARKING ARROW, TP 1	EA	10	$47.14	$471.40
	HIGHWAY SIGNS, TP 1, MATL, REFL SHEETING, TP 3	SF	100	$12.31	$1,231.00
	GALV STEEL POSTS, TP 7	LF	130	$6.42	$834.60
	TRAFFIC SIGNAL INSTALLATION NO.1	LS	1	$200,000.00	$200,000.00
	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LF	5600	$0.89	$4,984.00
	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	LF	5120	$1.00	$5,120.00
	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	LF	680	$3.00	$2,040.00
	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	108	$4.00	$432.00
	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LF	5000	$1.00	$5,000.00
				ROADWAY SUBTOTAL =	**$481,963.30**
				EROSION CONTROL - PERMANENT SUBTOTAL =	**$3,486.00**
				EROSION CONTROL - TEMPORARY SUBTOTAL =	**$8,112.30**
				SIGNING, MARKING & SIGNAL SUBTOTAL =	**$220,113.00**
				SUBTOTAL =	**$713,674.60**
				E & I - 5.0% @ 1 YEAR =	**$35,683.73**
				CEI =	**$52,283.00**
				TOTAL =	**$801,641.33**

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
TRAFFIC ENGINEERING REPORT

For the intersections of:

Hodges Street with Rice Avenue and US 80/Veterans Blvd (PI #0012216)

City of Dublin, GA

Laurens County At Mile log: 22.00

Report prepared by:

Graham Malone, Pond & Company

3500 Parkway Lane, Suite 600, Norcross, GA 30092

P: 678.336.7740

MaloneG@pondco.com

Date report prepared: August 15, 2014

Location:

The study area is located within the city of Dublin, GA in Laurens County. The area is comprised of two closely spaced intersections. The major intersection in the study area is US 80/Veterans Blvd. at Hodges Street. A second road, Rice Avenue, which runs parallel to and north of US 80 also intersects with Hodges Street approximately 50' to the north of the major intersection described above.

Reason for the investigation:

To determine if a traffic signal is warranted at either (or both) intersections within the study area based on Federal signal warrant standards outlined in the 2009 *Manual on Uniform Traffic Control Devices (MUTCD)*.

Description of the intersection:

US 80 at Hodges Street

US 80 runs east-west and serves as a major thoroughfare for local traffic through Dublin, and for regional traffic to and from Macon, GA. US 80 is a 4-lane divided highway with a grassed median dividing the lanes of travel. The median is also planted with large trees at intervals along the corridor. One westbound left turn lane is the only auxiliary lane present at the intersection. Travel lanes are approximately 11' wide and the median is approximately 20' wide.

Hodges Street is a two-lane, north-south collector road which was recently extended to the northeast via a three-lane section that ends at Hillcrest Parkway. Lanes through the intersection are approximately 12' wide. The intersection is currently unsignalized and the side street of Hodges Street is stop controlled. US 80 is free-flowing.

Hodges Street at Rice Avenue

Approximately 50' north of the intersection of US 80 and Hodges Street is the secondary intersection of Hodges Street and Rice Avenue. Rice Avenue runs parallel to US 80 and provides access to several residences along the US 80 corridor. Rice is a two-lane road with approximately 10' wide lanes. The intersection is unsignalized, and Rice Avenue traffic is stop controlled. Hodges Street is free-flowing.

Due to the close proximity of these two intersections, this study intends to make recommendations for the entire site. Ideally, the two intersections would operate in a comprehensive manner, either through signalization or geometric modifications.

Traffic volumes in vehicles per day (vpd):

Traffic counts were conducted at the site in May, 2014 during a typical weekday when school was in session. 12-hour turning movement counts were taken for both intersections, along with 24-hour ADT counts along US 80, Hodges Street, and Rice Avenue. In addition to these counts, GDOT historic data was utilized to investigate traffic trends at the site. The daily traffic volumes for the most recent 5 year period are summarized below in **Table 1**.

Table 1: Average Daily Traffic (ADT) at Study Area

Year	US 80/Veterans Blvd.	Hodges St. (North of Rice Ave.)	Rice Ave. (East of Hodges St.)
2014	12,343	2,089	605
2013	11,010	1,960	-
2012	11,040	2,020	-
2011	10,740	2,010	-
2010	10,920	1,550	-
2009	11,240	1,330	-

Source: US 80 historic data taken from GDOT Counter TC 1750032; Hodges St. historic data taken from GDOT Counter TC 1757441

These growth trends were used to develop an overall growth rate for traffic in the area. As evidenced by the most recent 5-year trend, volumes along US 80 have remained relatively constant but the most recent 2014 count taken for the purposes of this study indicates that a rise in traffic may be occurring. For the purposes of this study, a 5-year compound annual growth rate of 1.89% was assumed based on the overall growth between 2009 and 2014.

Also of note is the steep jump in traffic on Hodges Street between 2010 and 2011, which can be explained by the completion of the Woodlawn Drive extension that connected Hodges Street to Woodlawn Drive north of the study area.

Vehicle classification counts were taken at the site to determine heavy vehicle percentages on Hodges Street and US 80. The results of these counts are summarized below:

- US 80/Veterans Blvd. Peak Hour Truck Percent, 2014: AM-5%; PM-6%
- US 80/Veterans Blvd. 24-Hour Truck Percent, 2014: 5%
- Hodges Street Peak Hour Truck Percent, 2014: AM-2%; PM-3%
- Hodges Street 24-Hour Truck Percent, 2014: 2%

All traffic data collected for use in this study can be found in **Appendix A** of this document.

Existing Traffic Control:

The intersections are unsignalized. Hodges Street traffic is controlled by stop signs at its intersection with US 80, while traffic on US 80 is free-flowing. Rice Avenue traffic is stopped by signage at its intersection with Hodges Street, while traffic on Hodges Street is free-flowing. Due to the proximity of the two intersections, traffic traveling southbound on Hodges Street that must stop for US 80 traffic has the potential to back up and block the intersection of Hodges St. and Rice Ave.

Vehicular Speeds:

The posted speed limit on US 80 (major street) is 40 miles per hour (mph). Speed counts indicate that 85th percentile speeds eastbound are approximately 47 mph and are 48 mph westbound on US 80.

Pedestrian Movements:

Sidewalk is in place on the southern side of US 80. Hodges Street and Rice Street volumes are relatively low-speed, low-volume roads that could be conducive to pedestrian travel. There is currently no striping or traffic control to allow for pedestrians coming from residences north of US 80 along Hodges Street to cross US 80 and reach the businesses and sidewalk on the south side of the highway.

Other Modes of Transportation Present:

There are no bus stops, transit, or bicycle facilities in the vicinity of the study intersection.

Parking:

Parking is not permitted in the vicinity of the study intersection.

Crash History:

The crash rates for US 80 at Hodges Street were provided by GDOT for years 2009-2012. A statewide average for crashes at an intersection is not available for comparison, however important information can still be obtained from studying crash history at the site. As indicated in **Table 2** below, crash frequency appears to be low. If the assumption remains that daily volumes have not changed significantly at this site over the previous 5 years, then an approximate crash rate of 0.3 crashes per million vehicles entering (MEV) can be calculated. A daily entering volume assumption of 14,300 vehicles per day was used in this calculation.

Table 2: Crash Summary, 2009 - 2012

Year	# of Crashes Resulting in:			Total # of:		Total # of Crashes	Crash Type				
	Fatalities	Injuries	PDO	Injuries	Fatalities		Rear End	Angle	Sideswipe	Head On	Other
2012	0	1	0	2	0	1	0	1	0	0	0
2011	1	1	2	3	1	3	0	1	2	0	0
2010	0	0	2	0	0	2	0	1	1	0	0
2009	0	0	1	0	0	1	0	1	0	0	0

It is important to note that while the crash rate at the study area appears to be relatively low, the crashes that have occurred led to several injuries and one fatality. Two of the seven reported crashes (29%) were responsible for 5 injuries and one death. Both of these crashes involved an angled collision between a vehicle traveling east or west on US 80 and a vehicle attempting to cross the 4-lane divided highway without the aid of signalization. Another two crashes that involved property damage can be attributed to vehicles trying to cross US 80 as well.

Adjacent Signalized Intersections:

The next adjacent signal to the east is approximately 1,400' away at the intersection of Veterans Blvd., Bellevue Ave., and Lancaster St. The next adjacent signal to the west is approximately 1,200' away at the intersection of Veterans Blvd. and Roberson St.

Alternatives Analysis:

Several alternatives were considered at these clustered intersections. The options considered are:

- No Build
- Alternative 1: Signalize US 80 at Hodges St. and retain side street stop control at Rice Avenue
- Alternative 2: Signalize US 80 at Hodges St. and convert newly capped east and west legs of Rice Ave. into right-in/right-out access points to prevent through traffic and left turns on Rice Ave.
- Alternative 3: Signalize US 80 at Hodges St. and Hodges St. at Rice Ave. by means of a single-controller system
- Alternative 4: Convert Rice Ave. into a one-way (WB only) road that would run the entire length and act as a type of "boulevard" frontage road with slip-lane access points between Rice Ave. and US 80
- Alternative 5: Construct a 4-legged roundabout at the intersection of US 80 and Hodges St. and prohibit access to Rice Ave. through the use of cul-de-sacs
- Alternative 6: Signalize US 80 at Hodges St. and cul-de-sac Rice Avenue's east and west legs; add mid-block right-in/right-out access points to Rice Avenue from US 80 at locations east and west of the intersection of US 80 and Hodges St.

Several of these alternatives are dependent upon whether or not the intersection meets signal warrant criteria, which is outlined in greater detail in the next section of this document. Alternative 4 was discarded as a viable short-term improvement option as well. While this concept could enhance the overall corridor by allowing for more greenspace and providing an opportunity to implement streetscape elements into the design, it is not ideal for implementing at a single isolated intersection.

The remaining alternatives were modeled using the standard software package, Synchro, version 8 by Trafficware to determine operational levels of service (LOS) per HCM 2010 methodology. Alternative 3 was analyzed using HCM 2000 methodology, due to limitations in the 2010 methodology to study multiple signals controlled by one cabinet. The roundabout was studied using the GDOT Roundabout Analysis Tool, version 2.1. This LOS analysis was conducted for existing conditions, a 2015 opening year scenario, and a 2025 design year scenario. Synchro reports and results from the roundabout analysis can be found in **Appendix B.** The results of the existing conditions analysis are detailed in **Table 3** and the alternatives analysis is documented in **Table 4.**

Table 3: 2014 Existing Conditions, Peak Hour LOS and Delay

Intersection	AM Peak Hour		PM Peak	
	LOS	Delay (sec)	LOS	Delay (sec)
US 80 at Hodges Street	A	3.7	A	3.5
Eastbound Approach - Free	-	-	-	-
Westbound Approach - Free	-	-	-	-
Westbound Left Turn Lane	A	8.1	A	8.9
Northbound Approach	B	13.9	C	16.3
Southbound Approach	C	15.3	C	17.2
Hodges Street at Rice Avenue	A	1	A	2.5
Eastbound Approach	A	9.4	B	10.1
Westbound Approach	A	9.3	A	9.9
Northbound Approach	-	-	-	-
Southbound Approach	-	-	-	-

Table 4: 2015 and 2025 Alternatives Analysis Results, Peak Hour LOS and Delay

Alternative	2015 AM Peak		2015 PM Peak		2025 AM Peak		2025 PM Peak	
	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
No Build - Unsignalized with Existing Lane Geometry								
US 80 at Hodges Street	A	3.7	A	3.6	A	5.4	A	6.7
Eastbound Approach - Free	-	-	-	-	-	-	-	-
Westbound Approach - Free	-	-	-	-	-	-	-	-
Westbound Left Turn Lane	A	8.1	A	8.9	A	8.3	A	9.4
Northbound Approach	B	14	C	16.5	C	15.8	C	19.9
Southbound Approach	C	15.5	C	17.5	C	19	C	23
Hodges Street at Rice Avenue	A	1	A	2.5	A	1	A	2.6
Eastbound Approach	A	9.4	B	10.1	A	9.6	B	10.5
Westbound Approach	A	9.3	A	9.9	A	9.5	B	10.2
Northbound Approach - Free	-	-	-	-	-	-	-	-
Southbound Approach - Free	-	-	-	-	-	-	-	-
Alternative 1 - Signalize US 80 at Hodges St.								
US 80 at Hodges Street	B	14.6	B	13.1	B	15	B	13.8
Eastbound Approach	B	14	B	12.3	B	14.3	B	13.2
Eastbound Left Turn Lane	B	11.9	A	9.2	B	11.8	A	9.3
Westbound Approach	B	13.9	B	11.4	B	14.1	B	12
Westbound Left Turn Lane	B	11.6	A	9.2	B	11.5	A	9.5
Northbound Approach	B	16.3	C	20.8	B	17.2	C	21.1
Southbound Approach	B	17.7	C	22.1	B	19.2	C	22.7

Alternative	2015 AM Peak		2015 PM Peak		2025 AM Peak		2025 PM Peak	
	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
Hodges Street at Rice Avenue	A	1	A	2.5	A	1	A	2.6
Eastbound Approach	A	9.4	B	10.1	A	9.6	B	10.5
Westbound Approach	A	9.3	A	9.9	A	9.5	A	10.2
Northbound Approach - Free	-	-	-	-	-	-	-	-
Southbound Approach - Free	-	-	-	-	-	-	-	-
Alternative 2 - Signalize US 80 at Hodges St. & Right-in/Right-out access on east and west legs of Rice Ave								
US 80 at Hodges Street	B	14.6	B	13.1	B	15.1	B	13.9
Eastbound Approach	B	14	B	12.4	B	14.3	B	13.4
Eastbound Left Turn Lane	B	11.9	A	9.2	B	11.8	A	9.4
Westbound Approach	B	13.9	B	11.5	B	14.2	B	12.2
Westbound Left Turn Lane	B	11.6	A	9.2	B	11.5	A	9.6
Northbound Approach	B	16.3	C	20.8	B	17.2	C	21.1
Southbound Approach	B	17.7	C	22.1	B	19.2	C	22.7
Hodges Street at Rice Avenue	A	1	A	1	A	1	A	1
Eastbound Approach	A	8.9	A	8.8	A	9.1	A	8.9
Westbound Approach	A	8.5	A	8.7	A	8.6	A	8.8
Northbound Approach - Free	-	-	-	-	-	-	-	-
Southbound Approach - Free	-	-	-	-	-	-	-	-
Alternative 3 - Signalize US 80 at Hodges St. and Rice Ave. at Hodges St. (HCM 2000)								
US 80 at Hodges Street	C	21.3	C	25.3	C	21.8	C	27.2
Eastbound Approach	C	24.6	C	28.9	C	25.8	C	31.6
Eastbound Left Turn Lane	C	20.9	C	21.4	C	21.2	C	21.8
Westbound Approach	C	23.0	C	25.4	C	23.2	C	26.8
Westbound Left Turn Lane	B	18.0	C	20.1	B	17.1	C	21.0
Northbound Approach	C	29.4	C	29.6	C	27.3	C	29.0
Southbound Approach	B	4.5	A	2.4	A	5.4	A	2.9
Hodges Street at Rice Avenue	C	28.5	C	23.0	C	28.0	C	23.6
Eastbound Approach	C	24.0	C	23.4	C	26.6	C	24.2
Westbound Approach	C	24.1	C	23.4	C	26.9	C	24.2
Northbound Approach	A	1	A	1	A	1	A	1
Southbound Approach	D	38.6	D	38.8	D	37.4	D	39.5

Alternative	2015 AM Peak		2015 PM Peak		2025 AM Peak		2025 PM Peak	
	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
Alternative 5 – Roundabout (GDOT RAB Analysis Tool)								
US 80 at Hodges Street	*HCM 2010 Results*				*Calibrated Model Results*			
Eastbound Approach	A	5.4	A	6.8	A	4	A	4.9
Westbound Approach	A	5.3	A	5.9	A	3.8	A	4.2
Northbound Approach	A	4.7	A	5.9	A	3.8	A	5.3
Southbound Approach	A	6.1	A	6.2	A	5.1	A	4.2
Alternative 6 - Signalize US 80 at Hodges St. & cul-de-sac east/west legs of Rice Ave.; add midblock right-in/right-out access								
US 80 at Hodges Street	B	14.6	B	13.3	B	15.1	B	14.1
Eastbound Approach	B	14	B	12.4	B	14.3	B	13.4
Eastbound Left Turn Lane	B	11.9	A	9.1	B	11.8	A	9.3
Westbound Approach	B	14	B	11.7	B	14.3	B	12.5
Westbound Left Turn Lane	B	11.6	A	9.3	B	11.5	A	9.6
Northbound Approach	B	16.4	C	20.8	B	17.3	C	21.1
Southbound Approach	B	17.8	C	22.2	B	19.2	C	23

The roundabout concept provides excellent levels of service for all approaches during both typical peak times in the design year, however the footprint of the roundabout would likely be large enough to require significant right-of-way acquisition. Residents at the corner of Rice Ave. and Hodges St. could be greatly affected. The impact for construction of a roundabout in this location is significant and therefore it is not recommended.

Signalizing the intersection of US 80 at Hodges Street in Alternatives 1, 2 and 6 results in very similar approach operations. The treatment applied to Rice Avenue becomes the deciding factor between these three alternatives.

- Retaining the stop control on Rice (Alt. 1) provides the least restrictive solution but maintains the existing conflict points whose effects are exacerbated by the close proximity to the larger intersection to the south.
- Alternative 2 allows for a reduction in conflict points by limiting movements to right turns to/from Rice Avenue but removes the ability for a vehicle to travel east or west through the stop control on Rice Ave.
- Alternative 6 removes all conflict points immediately north of the intersection of US 80 and Hodges Street. Traffic volumes along Rice Avenue are very low, and creating cul-de-sacs on the east and west legs of the road would not significantly impact traffic progression. Access to Rice Avenue would be provided by two right-in/right-out driveways located on US 80 to the east and west of its intersection with Hodges St. The full access point on US 80 to Rice Ave. at its eastern

terminus would remain and would still accommodate left turns. This configuration was selected as the preferred alternative.

Alternative 3 creates a signal cluster that would need to be controlled by one controller cabinet. The first phase would consist of protected left turn movements on US 80 followed by the through movements. The second phase would control traffic on Hodges Street. The third and final phase would control traffic on Rice. This third phase could present a potentially confusing situation for drivers who turn from Rice Avenue towards US 80. Without proper signal placement a driver could become trapped within the intersection and be unaware that his or her phase is ending. Overcoming this trapping situation would require signalization that could display conflicting signals depending on a driver's position at the intersection.

Warrant Analysis:

A traffic signal warrant analysis was conducted for the intersection of US 80 at Hodges Street based on *Manual On Uniform Traffic Control Devices (MUTCD)* criteria and GDOT policy. It is important to note that in this particular warrant analysis, southbound right turns from Hodges Street were not removed to remain consistent with the preferred concept design (Alternative 6). Constraints such as proximity to Rice Avenue and existing residences on Hodges Street make a dedicated southbound right turn lane undesirable at the site. Right turns were removed from the northbound side-street approach since a northbound right turn lane is more feasible on this approach.

The analysis was based on traffic conditions anticipated in year 2025 under traffic conditions that are expected in Alternative 6. The signal warrant analysis indicates that a signal will be warranted in year 2025 based on satisfying the following signal warrants:

- Warrant 1: Eight Hour Vehicular Volume
- Warrant 2: Four Hour Vehicular Volume

The expected opening date of this project was assumed to occur in 2015 and a warrant study was conducted using anticipated volumes. A signal is not warranted in 2015, however, the Warrant 1 condition for interruption of continuous flow (Condition B) is met for 7 hours of the day, and nearly meets the eighth hour. The full 8-hour Warrant 1 is met with traffic anticipated by year 2018.

Appendix C contains the traffic signal warrant volumes and results from the analysis.

Recommendations:

This analysis of the two intersections in close proximity to one another in Dublin, GA indicates that a signal at the major intersection is warranted by 2018 based on 8-hour signal warrant criteria, therefore installation of a traffic signal by 2018 is recommended. The preferred concept is Alternative 6, as outlined in the previous sections. **Appendix D** illustrates Alternative 6 in greater detail. This concept provides the necessary signal and limits impacts to adjacent properties. Signalizing the side street

approaches of Hodges Street is also expected to reduce the severity and number of angled collisions involving drivers crossing US 80. Geometric modifications include:

- Construct an eastbound left turn lane on US 80
- Reconstruct east and west legs of Rice Avenue into cul-de-sacs with appropriate pavement area for service vehicles
- Construct a right-in/right-out access point to Rice Avenue from US 80 to the east and west of US 80's intersection with Hodges Street.

Traffic Engineering Report Appendix:

- Appendix A: Raw Traffic Count data; Balanced Turning Movements in Base Year 2014, Opening Year 2015 and Design Year 2025
- Appendix B: 2014, 2015 and 2025 Synchro Reports & Roundabout Analysis Results
- Appendix C: 2015, 2018 and 2025 Signal Warrant Analysis Reports
- Appendix D: Concept Drawing

Appendix A:

Raw Traffic Count Data; Balanced Turning Movements in Base Year 2014, Opening Year 2015 and Design Year 2025

TRAFFIC DATA SERVICES

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24-HOUR ADT COUNT SUMMARY

CLIENT: POND AND COMPANY
PROJECT: CITY OF DUBLIN TRAFFIC STUDY
LOCATION: #1 RICE AVENUE EAST OF HODGES STREET

DATE: THURSDAY, NOVEMBER 18TH 2010

DIRECTION:	EB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	0	0	0	0
1:00	0	0	0	1	1
2:00	0	0	0	0	0
3:00	0	0	1	0	1
4:00	0	0	0	0	0
5:00	0	2	1	0	3
6:00	0	0	1	0	1
7:00	0	1	3	3	7
8:00	1	1	5	5	12
9:00	7	3	3	4	17
10:00	6	5	7	8	26
11:00	3	3	6	3	15
12:00	11	5	10	8	34
13:00	7	6	8	4	25
14:00	6	6	7	7	26
15:00	2	2	5	7	16
16:00	6	10	7	6	29
17:00	5	4	5	6	20
18:00	1	1	3	4	9
19:00	0	1	3	2	6
20:00	4	1	1	1	7
21:00	0	2	3	0	5
22:00	1	0	0	0	1
23:00	0	0	0	0	0
				TOTAL	261

AM PEAK HOUR	1000-1100
VOLUME	26
PM PEAK HOUR	1200-1300
VOLUME	34

DIRECTION:	WB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	0	0	1	1
1:00	0	0	0	0	0
2:00	0	0	0	0	0
3:00	0	0	0	0	0
4:00	0	0	0	0	0
5:00	0	2	1	0	3
6:00	0	0	1	0	1
7:00	0	3	2	3	8
8:00	4	4	5	4	17
9:00	6	2	5	2	15
10:00	9	7	7	6	29
11:00	9	10	4	6	29
12:00	11	7	12	10	40
13:00	11	4	4	11	30
14:00	7	10	4	6	27
15:00	9	4	3	8	24
16:00	7	15	8	9	39
17:00	13	6	6	4	29
18:00	4	4	1	1	10
19:00	4	2	3	2	11
20:00	2	5	0	0	7
21:00	8	8	3	3	22
22:00	2	0	0	0	2
23:00	0	0	0	0	0
				TOTAL	344

AM PEAK HOUR	1030-1130
VOLUME	32
PM PEAK HOUR	1615-1715
VOLUME	45

TOTAL BI-DIRECTIONAL VOLUME	605

TRAFFIC DATA SERVICES

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24-HOUR ADT COUNT SUMMARY

CLIENT: POND AND COMPANY
PROJECT: CITY OF DUBLIN TRAFFIC STUDY
LOCATION: #2 RICE AVENUE WEST OF HODGES STREET

DATE: THURSDAY, NOVEMBER 18TH 2010

DIRECTION:	EB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	0	0	0	0
1:00	0	0	0	0	0
2:00	0	0	0	0	0
3:00	0	0	1	0	1
4:00	0	0	0	0	0
5:00	0	0	0	0	0
6:00	0	0	0	0	0
7:00	0	0	3	1	4
8:00	1	0	1	1	3
9:00	2	1	1	6	10
10:00	2	3	2	7	14
11:00	1	2	4	1	8
12:00	3	4	7	3	17
13:00	3	3	1	4	11
14:00	4	4	5	7	20
15:00	1	4	6	6	17
16:00	4	6	3	9	22
17:00	8	5	5	1	19
18:00	0	4	5	3	12
19:00	1	1	0	3	5
20:00	1	0	1	0	2
21:00	0	1	0	1	2
22:00	1	0	0	0	1
23:00	0	0	0	0	0
				TOTAL	168

AM PEAK HOUR	1000-1100
VOLUME	14
PM PEAK HOUR	1645-1745
VOLUME	27

DIRECTION:	WB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	0	0	0	0
1:00	0	0	0	0	0
2:00	0	0	0	0	0
3:00	0	1	0	0	1
4:00	0	0	0	0	0
5:00	0	0	1	0	1
6:00	0	0	0	0	0
7:00	0	1	2	6	9
8:00	2	0	2	1	5
9:00	4	0	1	1	6
10:00	4	2	3	4	13
11:00	3	7	3	4	17
12:00	6	2	7	6	21
13:00	9	2	4	14	29
14:00	4	6	3	6	19
15:00	4	3	2	6	15
16:00	9	9	8	4	30
17:00	5	3	3	2	13
18:00	4	1	0	1	6
19:00	2	1	2	0	5
20:00	1	1	0	0	2
21:00	3	3	0	0	6
22:00	0	0	0	0	0
23:00	0	1	0	0	1
				TOTAL	199

AM PEAK HOUR	1030-1130
VOLUME	17
PM PEAK HOUR	1545-1645
VOLUME	32

TOTAL BI-DIRECTIONAL VOLUME	367

TRAFFIC DATA SERVICES

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24-HOUR ADT COUNT SUMMARY

CLIENT: POND AND COMPANY
PROJECT: CITY OF DUBLIN TRAFFIC STUDY
LOCATION: #3 HODGES STREET SOUTH OF US 80/VETERANS BOULEVARD
DATE: THURSDAY, NOVEMBER 18TH 2010

DIRECTION:	NB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	1	0	3	4
1:00	1	0	0	0	1
2:00	0	0	0	0	0
3:00	0	0	0	1	1
4:00	1	0	0	0	1
5:00	0	4	4	2	10
6:00	2	2	4	7	15
7:00	7	6	9	10	32
8:00	11	8	5	5	29
9:00	5	5	6	4	20
10:00	3	4	11	7	25
11:00	6	13	9	18	46
12:00	23	14	13	14	64
13:00	17	8	14	11	50
14:00	11	7	11	15	44
15:00	17	11	13	13	54
16:00	13	13	14	16	56
17:00	21	17	17	19	74
18:00	16	7	11	14	48
19:00	11	13	3	12	39
20:00	4	9	8	5	26
21:00	6	4	1	4	15
22:00	2	4	1	0	7
23:00	0	1	1	2	4
				TOTAL	665

AM PEAK HOUR	1100-1200
VOLUME	46
PM PEAK HOUR	1700-1800
VOLUME	74

DIRECTION:	SB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	1	0	0	1
1:00	0	2	1	1	4
2:00	1	2	1	0	4
3:00	0	0	0	0	0
4:00	0	1	0	0	1
5:00	3	1	0	13	17
6:00	5	6	5	11	27
7:00	2	16	15	24	57
8:00	15	7	11	10	43
9:00	12	13	10	6	41
10:00	7	11	14	16	48
11:00	12	18	7	11	48
12:00	17	21	19	14	71
13:00	21	14	15	18	68
14:00	14	16	15	12	57
15:00	12	10	4	13	39
16:00	12	12	16	19	59
17:00	15	15	23	14	67
18:00	15	19	11	13	58
19:00	18	9	8	10	45
20:00	11	8	5	7	31
21:00	6	8	5	5	24
22:00	2	4	6	1	13
23:00	4	2	1	0	7
				TOTAL	830

AM PEAK HOUR	0715-0815
VOLUME	70
PM PEAK HOUR	1215-1315
VOLUME	75

TOTAL BI-DIRECTIONAL VOLUME	1495

TRAFFIC DATA SERVICES

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24-HOUR ADT COUNT SUMMARY

CLIENT: POND AND COMPANY
PROJECT: CITY OF DUBLIN TRAFFIC STUDY
LOCATION: #4 HODGES STREET NORTH OF RICE AVENUE

DATE: THURSDAY, NOVEMBER 18TH 2010

DIRECTION:	NB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	2	1	1	3	7
1:00	1	0	0	1	2
2:00	0	0	0	0	0
3:00	0	0	0	0	0
4:00	1	0	0	0	1
5:00	0	2	3	3	8
6:00	2	4	6	6	18
7:00	7	8	9	16	40
8:00	10	14	14	5	43
9:00	4	5	8	8	25
10:00	9	4	8	13	34
11:00	3	16	12	16	47
12:00	27	14	26	17	84
13:00	12	11	10	15	48
14:00	22	12	13	11	58
15:00	12	14	19	16	61
16:00	16	19	25	20	80
17:00	29	23	21	30	103
18:00	18	15	12	9	54
19:00	15	18	7	12	52
20:00	11	7	7	5	30
21:00	6	10	5	8	29
22:00	8	4	2	0	14
23:00	1	1	1	2	5
				TOTAL	843

AM PEAK HOUR	0745-0845
VOLUME	54
PM PEAK HOUR	1700-1800
VOLUME	103

DIRECTION:	SB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	2	0	1	1	4
1:00	0	1	1	3	5
2:00	1	2	1	0	4
3:00	0	1	0	0	1
4:00	0	1	0	0	1
5:00	4	4	0	17	25
6:00	9	7	6	20	42
7:00	12	20	36	43	111
8:00	24	18	22	16	80
9:00	18	17	14	16	65
10:00	16	19	16	16	67
11:00	19	25	10	12	66
12:00	25	21	16	27	89
13:00	30	19	21	29	99
14:00	21	22	16	26	85
15:00	19	15	17	18	69
16:00	26	19	28	30	103
17:00	21	17	28	16	82
18:00	15	21	13	19	68
19:00	15	23	20	10	68
20:00	15	12	12	9	48
21:00	18	5	11	3	37
22:00	3	8	7	0	18
23:00	4	3	2	0	9
				TOTAL	1246

AM PEAK HOUR	0715-0815
VOLUME	123
PM PEAK HOUR	1600-1700
VOLUME	103

TOTAL BI-DIRECTIONAL VOLUME	2089

TRAFFIC DATA SERVICES

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24-HOUR ADT COUNT SUMMARY

CLIENT: POND AND COMPANY
PROJECT: CITY OF DUBLIN TRAFFIC STUDY
LOCATION: #5 US 80/VETERANS BOULEVARD WEST OF HODGES AVENUE
DATE: THURSDAY, NOVEMBER 18TH 2010

DIRECTION:	EB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	20	11	3	4	38
1:00	4	6	3	1	14
2:00	4	1	2	3	10
3:00	1	1	2	4	8
4:00	3	6	1	2	12
5:00	7	9	10	13	39
6:00	10	12	20	31	73
7:00	46	59	62	86	253
8:00	79	73	56	77	285
9:00	70	79	68	77	294
10:00	78	88	101	103	370
11:00	102	102	118	122	444
12:00	156	176	123	169	624
13:00	134	147	140	119	540
14:00	95	124	131	135	485
15:00	125	150	127	148	550
16:00	133	121	146	117	517
17:00	126	135	118	85	464
18:00	113	113	111	90	427
19:00	77	80	72	69	298
20:00	86	70	84	57	297
21:00	53	62	45	42	202
22:00	34	22	28	18	102
23:00	13	22	9	10	54
				TOTAL	6400

AM PEAK HOUR	1100-1200
VOLUME	444
PM PEAK HOUR	1200-1300
VOLUME	624

DIRECTION:	WB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	5	2	2	4	13
1:00	3	3	0	4	10
2:00	2	1	1	0	4
3:00	0	2	2	5	9
4:00	6	5	6	13	30
5:00	16	21	12	21	70
6:00	17	11	37	71	136
7:00	50	78	90	97	315
8:00	90	86	77	98	351
9:00	84	72	82	80	318
10:00	94	100	112	81	387
11:00	109	141	125	142	517
12:00	189	137	137	127	590
13:00	132	113	77	75	397
14:00	111	119	105	117	452
15:00	109	91	114	105	419
16:00	117	94	123	112	446
17:00	105	122	94	82	403
18:00	87	82	84	79	332
19:00	67	71	47	52	237
20:00	51	46	53	48	198
21:00	68	51	46	39	204
22:00	15	21	7	12	55
23:00	12	14	16	8	50
				TOTAL	5943

AM PEAK HOUR	1100-1200
VOLUME	517
PM PEAK HOUR	1200-1300
VOLUME	590

TOTAL BI-DIRECTIONAL VOLUME	12343

TRAFFIC DATA SERVICES

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12-HOUR INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: POND AND COMPANY
PROJECT: MILTON GA TRAFFIC STUDY
DATE: TUESDAY, MAY 20TH 2014
PERIOD: 7:00 A.M. TO 7:00 P.M.
INTERSECTION: N/S HODGES ROAD
E/W US 80

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	2	3	2	0	45	4	0	3	0	1	53	1	114
715-730	3	3	5	3	57	4	0	0	1	3	52	1	132
730-745	4	8	5	2	88	3	0	3	0	1	60	3	177
745-800	17	19	6	4	83	11	1	5	3	2	81	1	233
800-815	4	11	9	3	82	3	3	4	7	1	78	5	210
815-830	4	11	6	2	85	2	0	4	0	0	79	3	196
830-845	5	13	7	4	71	3	0	2	1	0	49	0	155
845-900	4	8	6	2	93	7	1	4	1	0	60	2	188
900-915	2	9	4	0	81	5	2	6	1	1	71	1	183
915-930	5	10	6	1	68	5	1	2	2	0	77	2	179
930-945	5	8	5	6	82	6	1	5	0	2	77	3	200
945-1000	1	8	4	2	72	8	0	7	1	1	104	3	211
1000-1015	7	5	6	7	89	7	2	2	4	2	82	1	214
1015-1030	6	9	4	2	95	7	2	3	1	3	87	1	220
1030-1045	8	11	4	4	97	11	3	4	1	1	97	3	244
1045-1100	1	12	2	5	89	11	2	3	1	0	96	7	229
1100-1115	7	9	8	3	100	11	3	1	3	3	119	9	276
1115-1130	10	11	1	5	134	16	5	2	5	0	139	4	332
1130-1145	3	7	1	3	116	13	4	3	5	2	115	3	275
1145-1200	5	6	2	7	133	21	7	5	3	7	146	9	351
1200-1215	5	12	5	7	176	12	4	4	3	10	154	11	403
1215-1230	7	8	7	5	123	13	3	5	3	8	112	7	301
1230-1245	8	6	10	5	134	9	11	5	1	1	117	5	312
1245-100	6	9	9	5	121	12	3	5	6	5	204	7	392
100-115	7	11	8	4	114	12	13	4	3	2	144	5	327
115-130	3	5	8	2	106	10	2	3	2	3	162	9	315
130-145	6	14	2	2	71	9	2	4	3	4	123	8	248
145-200	8	9	6	5	84	10	3	2	3	3	97	4	234
200-215	7	13	3	3	110	9	3	5	2	1	110	3	269
215-230	4	10	3	4	109	17	2	3	3	3	124	7	289
230-245	3	6	1	2	99	5	6	6	4	5	92	4	233
245-300	8	11	11	1	99	8	5	5	2	4	112	5	271
300-315	10	7	6	4	101	7	3	9	1	3	125	6	282
315-330	3	6	7	3	89	6	2	4	4	1	95	6	226
330-345	7	4	6	3	106	7	4	6	1	5	123	5	277
345-400	5	9	3	4	102	6	2	6	4	5	114	5	265
400-415	7	10	2	5	108	9	0	4	2	1	145	7	300
415-430	6	8	5	7	88	5	1	6	2	3	148	4	283
430-445	12	9	6	8	100	6	4	3	3	2	156	4	313
445-500	11	13	6	8	111	5	1	4	2	3	119	5	288
500-515	6	12	6	12	90	6	5	5	3	2	138	4	289
515-530	9	10	2	7	111	9	3	8	2	1	133	6	301
530-545	5	13	5	7	86	11	5	4	5	3	112	3	259
545-600	1	11	3	7	87	13	3	7	2	1	110	5	250
600-615	5	4	5	6	81	6	7	3	1	1	98	9	226
615-630	3	14	5	4	74	7	3	5	0	1	88	4	208
630-645	3	9	1	2	73	4	4	5	3	5	101	9	219
645-700	5	9	5	1	69	10	2	9	0	0	23	7	140

TRAFFIC DATA SERVICES

TEL: (678) 687-8266 FAX: (404) 294-6122

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: POND AND COMPANY
PROJECT: MILTON GA TRAFFIC STUDY
DATE: TUESDAY, MAY 20TH 2014
PERIOD: 7:00 A.M. TO 7:00 P.M.
INTERSECTION: N/S HODGES ROAD
E/W US 80

HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
TIME	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	26	33	18	9	273	22	1	11	4	7	246	6	656
715'-815	28	41	25	12	310	21	4	12	11	7	271	10	752
730-830	29	49	26	11	338	19	4	16	10	4	298	12	816
745-845	**30**	**54**	**28**	**13**	**321**	**19**	**4**	**15**	**11**	**3**	**287**	**9**	**794**
800-900	17	43	28	11	331	15	4	14	9	1	266	10	749
815-915	15	41	23	8	330	17	3	16	3	1	259	6	722
830-930	16	40	23	7	313	20	4	14	5	1	257	5	705
845-945	16	35	21	9	324	23	5	17	4	3	285	8	750
9'00-1000	13	35	19	9	303	24	4	20	4	4	329	9	773
915-1015	18	31	21	16	311	26	4	16	7	5	340	9	804
930-1030	19	30	19	17	338	28	5	17	6	8	350	8	845
945-1045	22	33	18	15	353	33	7	16	7	7	370	8	889
1000-1100	22	37	16	18	370	36	9	12	7	6	362	12	907
1015-1115	22	41	18	14	381	40	10	11	6	7	399	20	969
1030-1130	26	43	15	17	420	49	13	10	10	4	451	23	1081
1045-1145	21	39	12	16	439	51	14	9	14	5	469	23	1112
1100-1200	25	33	12	18	483	61	19	11	16	12	519	25	1234
1115-1215	23	36	9	22	559	62	20	14	16	19	554	27	1361
1130-1230	20	33	15	22	548	59	18	17	14	27	527	30	1330
1145-1245	25	32	24	24	566	55	25	19	10	26	529	32	1367
1200-100	26	35	31	22	554	46	21	19	13	24	587	30	1408
1215-115	28	34	34	19	492	46	30	19	13	16	577	24	1332
1230-130	24	31	35	16	475	43	29	17	12	11	627	26	1346
1245-145	22	39	27	13	412	43	20	16	14	14	633	29	1282
100-200	24	39	24	13	375	41	20	13	11	12	526	26	1124
115-215	24	41	19	12	371	38	10	14	10	11	492	24	1066
130-230	25	46	14	14	374	45	10	14	11	11	454	22	1040
145-245	22	38	13	14	402	41	14	16	12	12	423	18	1025
200-300	22	40	18	10	417	39	16	19	11	13	438	19	1062
215-315	25	34	21	11	408	37	16	23	10	15	453	22	1075
230-330	24	30	25	10	388	26	16	24	11	13	424	21	1012
245-345	28	28	30	11	395	28	14	24	8	13	455	22	1056
300-400	25	26	22	14	398	26	11	25	10	14	457	22	1050
315-415	22	29	18	15	405	28	8	20	11	12	477	23	1068
330-430	25	31	16	19	404	27	7	22	9	14	530	21	1125
345-445	30	36	16	24	398	26	7	19	11	11	563	20	1161
400-500	36	40	19	28	407	25	6	17	9	9	568	20	1184
415-515	35	42	23	35	389	22	11	18	10	10	561	17	1173
430-530	**38**	**44**	**20**	**35**	**412**	**26**	**13**	**20**	**10**	**8**	**546**	**19**	**1191**
445-545	31	48	19	34	398	31	14	21	12	9	502	18	1137
500-600	21	46	16	33	374	39	16	24	12	7	493	18	1099
515-615	20	38	15	27	365	39	18	22	10	6	453	23	1036
530-630	14	42	18	24	328	37	18	19	8	6	408	21	943
545-645	12	38	14	19	315	30	17	20	6	8	397	27	903
600-700	16	36	16	13	297	27	16	22	4	7	310	29	793

TRAFFIC DATA SERVICES

TEL: (678) 687-8266 FAX: (404) 294-6122

12-HOUR INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: POND AND COMPANY
PROJECT: DUBLIN GA TRAFFIC STUDY
DATE: TUESDAY, MAY 20TH 2014
PERIOD: 7:00 A.M. TO 7:00 P.M.
INTERSECTION: N/S HODGES ROAD
E/W RICE AVENUE

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	3	2	3	0	0	1	0	0	0	0	0	0	9
715-730	0	12	0	3	0	2	0	5	0	0	0	0	22
730-745	0	13	0	0	1	2	0	6	0	1	2	0	25
745-800	1	40	0	1	0	2	0	11	2	1	0	0	58
800-815	0	21	0	2	2	0	0	9	1	1	0	0	36
815-830	0	20	0	0	0	1	1	7	0	0	0	0	29
830-845	0	24	0	2	1	0	0	4	0	0	1	1	33
845-900	0	16	0	0	1	3	1	6	0	0	1	0	28
900-915	1	14	0	0	2	0	2	2	0	0	2	0	23
915-930	0	18	1	0	0	2	1	4	0	0	1	0	27
930-945	0	14	0	1	1	1	1	10	0	0	1	0	29
945-1000	1	16	0	0	0	1	1	12	0	3	1	1	36
1000-1015	0	14	0	3	3	3	0	9	1	0	1	2	36
1015-1030	0	19	0	1	2	4	0	9	0	0	2	0	37
1030-1045	1	14	0	0	1	3	1	10	0	1	2	0	33
1045-1100	1	15	0	1	3	1	0	11	0	0	4	3	39
1100-1115	1	16	1	0	2	3	0	9	0	1	0	0	33
1115-1130	4	22	1	2	4	2	1	11	0	0	2	0	49
1130-1145	0	9	0	1	2	1	1	18	0	1	2	1	36
1145-1200	1	13	0	2	3	0	0	11	1	0	1	0	32
1200-1215	2	24	1	1	4	1	0	19	1	0	3	0	56
1215-1230	0	20	0	2	0	1	0	17	0	1	1	1	43
1230-1245	0	14	0	4	4	0	0	18	0	2	3	0	45
1245-100	0	32	0	1	3	1	0	11	0	1	2	0	51
100-115	1	23	1	3	5	1	0	15	0	0	0	0	49
115-130	1	16	3	0	0	0	0	11	1	0	3	0	35
130-145	1	19	2	1	3	0	1	13	0	0	1	0	41
145-200	5	23	1	2	5	0	0	10	0	0	2	2	50
200-215	1	20	0	3	2	1	0	11	1	0	4	0	43
215-230	1	20	0	3	6	1	0	9	0	0	4	0	44
230-245	0	16	1	2	2	0	0	18	0	0	3	2	44
245-300	2	24	1	0	2	0	0	17	1	1	6	0	54
300-315	1	17	0	2	5	2	0	15	0	0	1	0	43
315-330	1	12	0	0	0	1	0	10	0	1	2	1	28
330-345	1	20	0	2	1	0	0	17	0	0	3	4	48
345-400	3	15	0	3	3	1	0	18	0	1	4	0	48
400-415	3	23	0	2	4	0	0	12	0	0	3	1	48
415-430	2	16	2	4	7	1	1	13	0	0	5	1	52
430-445	0	26	0	2	8	0	0	18	0	0	3	0	57
445-500	0	28	1	1	3	0	0	14	0	2	5	2	56
500-515	1	27	0	1	2	1	0	20	0	1	4	3	60
515-530	2	10	1	1	1	2	0	25	0	0	3	2	47
530-545	0	25	3	3	3	0	0	9	0	1	1	1	46
545-600	0	15	2	2	2	0	0	19	0	0	1	0	41
600-615	1	15	1	1	1	0	0	15	0	0	0	0	34
615-630	0	20	0	2	1	1	0	14	0	0	1	3	42
630-645	0	12	0	0	0	0	0	17	0	1	1	3	34
645-700	0	19	0	0	1	0	0	20	0	0	3	0	43

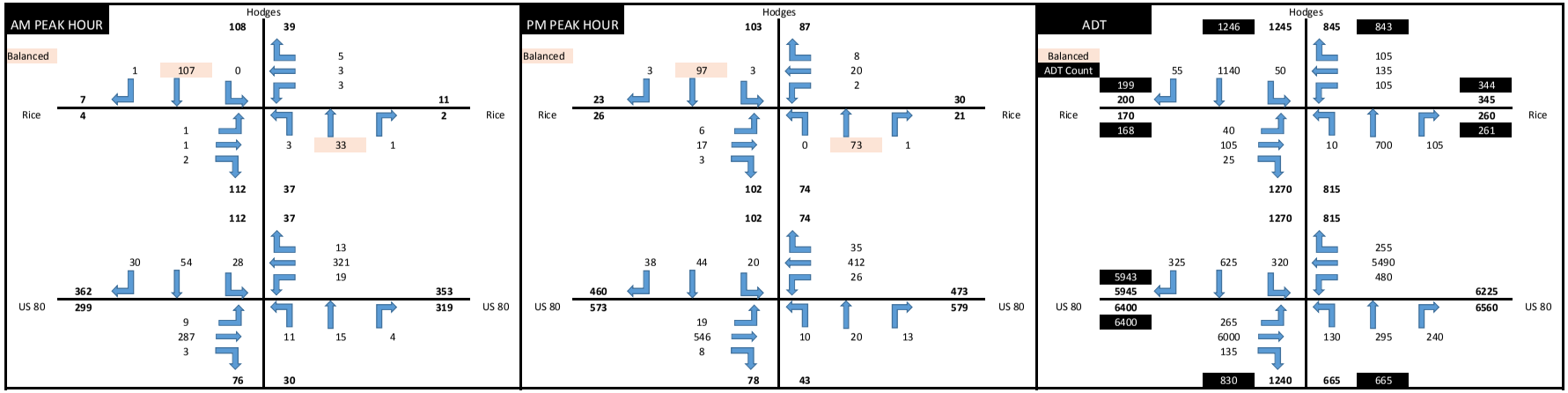
TRAFFIC DATA SERVICES

TEL: (678) 687-8266 FAX: (404) 294-6122

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: POND AND COMPANY
PROJECT: DUBLIN GA TRAFFIC STUDY
DATE: TUESDAY, MAY 20TH 2014
PERIOD: 7:00 A.M. TO 7:00 P.M.
INTERSECTION: N/S HODGES ROAD
E/W RICE AVENUE

HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
TIME	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	4	67	3	4	1	7	0	22	2	2	2	0	114
715'-815	1	86	0	6	3	6	0	31	3	3	2	0	141
730-830	1	94	0	3	3	5	1	33	3	3	2	0	148
745-845	**1**	**105**	**0**	**5**	**3**	**3**	**1**	**31**	**3**	**2**	**1**	**1**	**156**
800-900	0	81	0	4	4	4	2	26	1	1	2	1	126
815-915	1	74	0	2	4	4	4	19	0	0	4	1	113
830-930	1	72	1	2	4	5	4	16	0	0	5	1	111
845-945	1	62	1	1	4	6	5	22	0	0	5	0	107
9'00-1000	2	62	1	1	3	4	5	28	0	3	5	1	115
915-1015	1	62	1	4	4	7	3	35	1	3	4	3	128
930-1030	1	63	0	5	6	9	2	40	1	3	5	3	138
945-1045	2	63	0	4	6	11	2	40	1	4	6	3	142
1000-1100	2	62	0	5	9	11	1	39	1	1	9	5	145
1015-1115	3	64	1	2	8	11	1	39	0	2	8	3	142
1030-1130	7	67	2	3	10	9	2	41	0	2	8	3	154
1045-1145	6	62	2	4	11	7	2	49	0	2	8	4	157
1100-1200	6	60	2	5	11	6	2	49	1	2	5	1	150
1115-1215	7	68	2	6	13	4	2	59	2	1	8	1	173
1130-1230	3	66	1	6	9	3	1	65	2	2	7	2	167
1145-1245	3	71	1	9	11	2	0	65	2	3	8	1	176
1200-100	2	90	1	8	11	3	0	65	1	4	9	1	195
1215-115	1	89	1	10	12	3	0	61	0	4	6	1	188
1230-130	2	85	4	8	12	2	0	55	1	3	8	0	180
1245-145	3	90	6	5	11	2	1	50	1	1	6	0	176
100-200	8	81	7	6	13	1	1	49	1	0	6	2	175
115-215	8	78	6	6	10	1	1	45	2	0	10	2	169
130-230	8	82	3	9	16	2	1	43	1	0	11	2	178
145-245	7	79	2	10	15	2	0	48	1	0	13	4	181
200-300	4	80	2	8	12	2	0	55	2	1	17	2	185
215-315	4	77	2	7	15	3	0	59	1	1	14	2	185
230-330	4	69	2	4	9	3	0	60	1	2	12	3	169
245-345	5	73	1	4	8	3	0	59	1	2	12	5	173
300-400	6	64	0	7	9	4	0	60	0	2	10	5	167
315-415	8	70	0	7	8	2	0	57	0	2	12	6	172
330-430	9	74	2	11	15	2	1	60	0	1	15	6	196
345-445	8	80	2	11	22	2	1	61	0	1	15	2	205
400-500	5	93	3	9	22	1	1	57	0	2	16	4	213
415-515	**3**	**97**	**3**	**8**	**20**	**2**	**1**	**65**	**0**	**3**	**17**	**6**	**225**
430-530	3	91	2	5	14	3	0	77	0	3	15	7	220
445-545	3	90	5	6	9	3	0	68	0	4	13	8	209
500-600	3	77	6	7	8	3	0	73	0	2	9	6	194
515-615	3	65	7	7	7	2	0	68	0	1	5	3	168
530-630	1	75	6	8	7	1	0	57	0	1	3	4	163
545-645	1	62	3	5	4	1	0	65	0	1	3	6	151
600-700	1	66	1	3	3	1	0	66	0	1	5	6	153


AM PEAK HOUR
Hodges
Balanced
108
39
1
107
0
5
3
3
7
11
Rice
4
2
Rice
1
1
2
3
33
1
112
37
112
37
13
321
19
30
54
28
362
353
US 80
299
319
US 80
9
287
3
11
15
4
76
30
PM PEAK HOUR
Hodges
Balanced
103
87
3
97
3
8
20
2
23
30
Rice
26
21
Rice
6
17
3
0
73
1
102
74
102
74
35
412
26
38
44
20
460
473
US 80
573
579
US 80
19
546
8
10
20
13
78
43
ADT
Hodges
Balanced
ADT Count
1246
1245
845
843
105
135
105
55
1140
50
199
200
344
345
Rice
170
168
260
261
Rice
40
105
25
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700
105
1270
815
1270
815
255
5490
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625
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5943
5945
6400
6400
6225
6560
US 80
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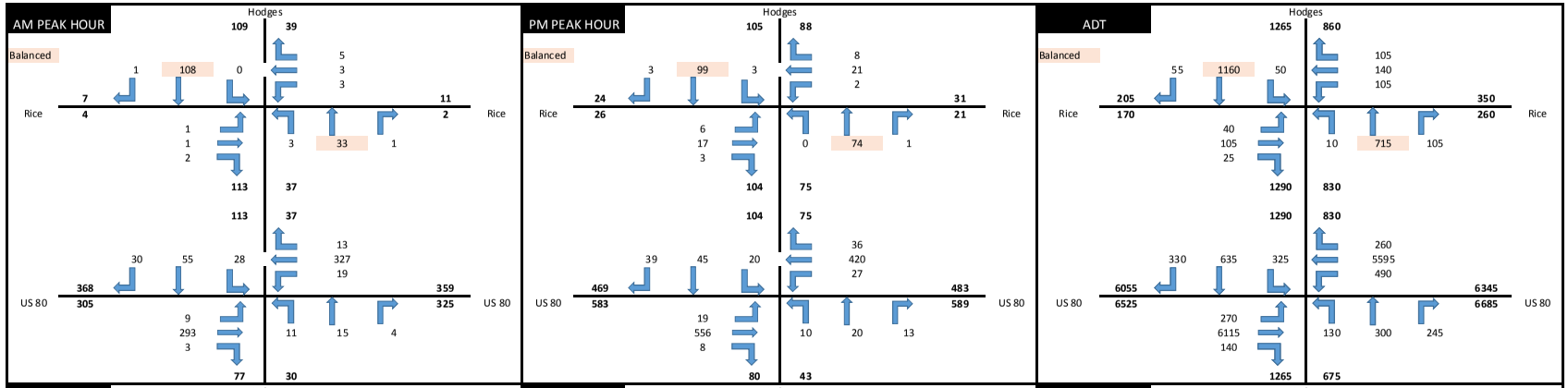
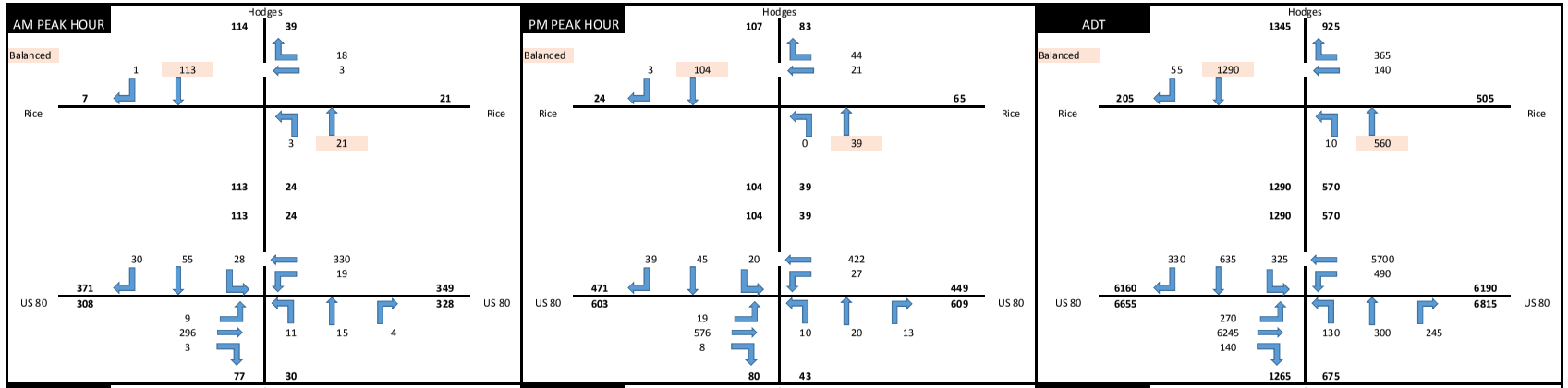
1240
665
665

NO BUILD, ALTERNATIVE 1, ALTERNATIVE 3, & ALTERNATIVE 5 TRAFFIC

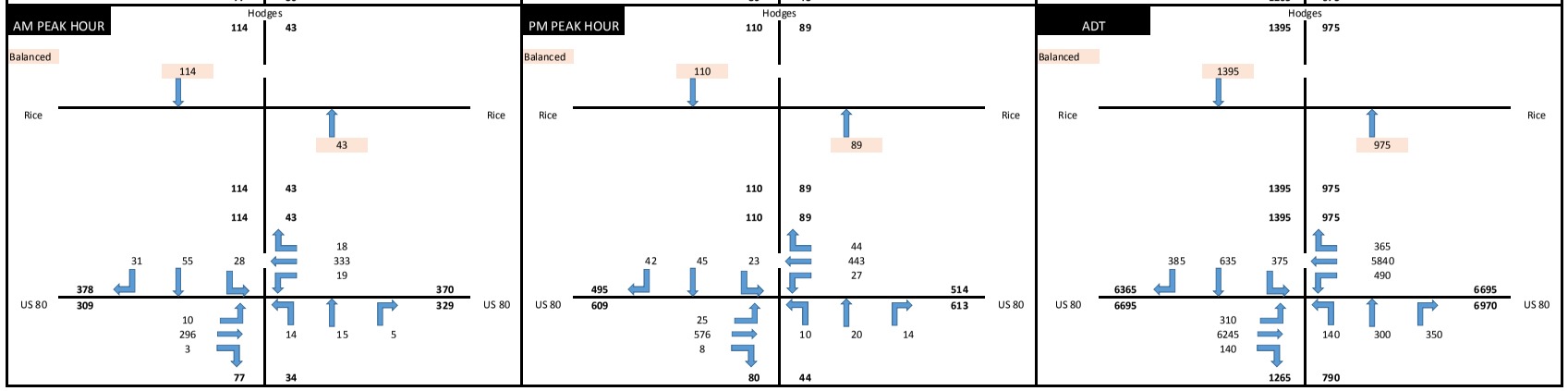


ALTERNATIVE 2 TRAFFIC

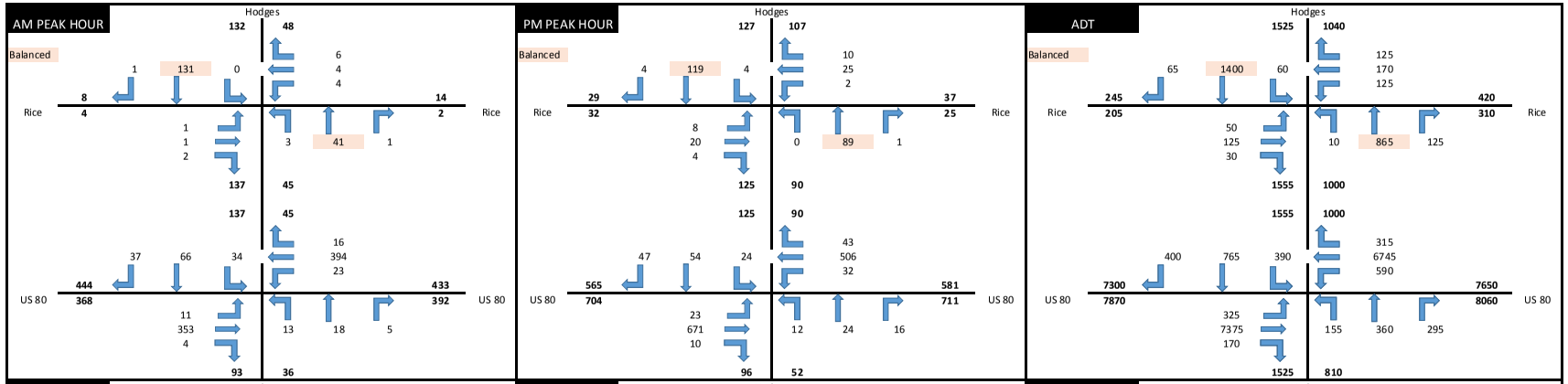
ALTERNATIVE 4 TRAFFIC



ALTERNATIVE 6 TRAFFIC

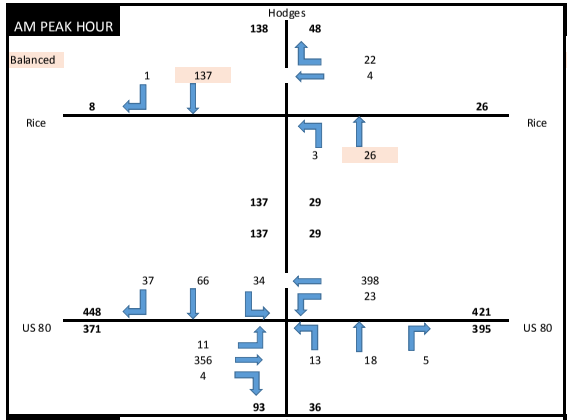


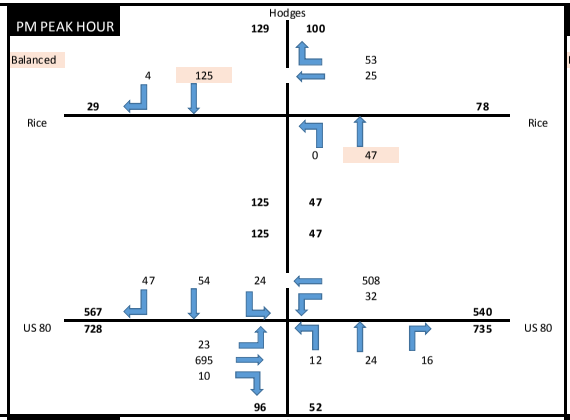
NO BUILD, ALTERNATIVE 1, ALTERNATIVE 3, & ALTERNATIVE 5 TRAFFIC

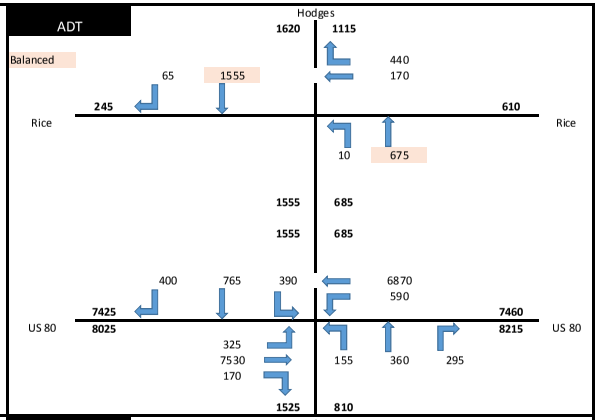


ALTERNATIVE 2 TRAFFIC

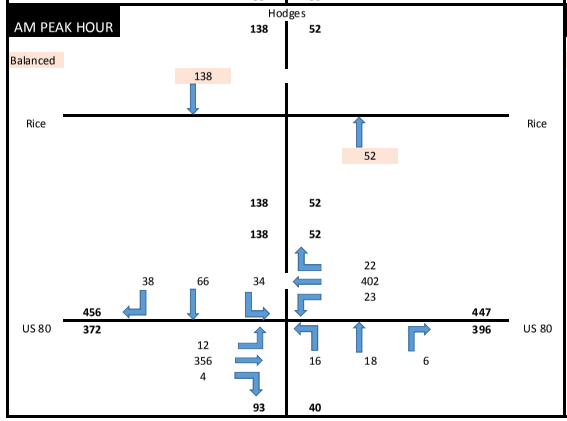
ALTERNATIVE 4 TRAFFIC

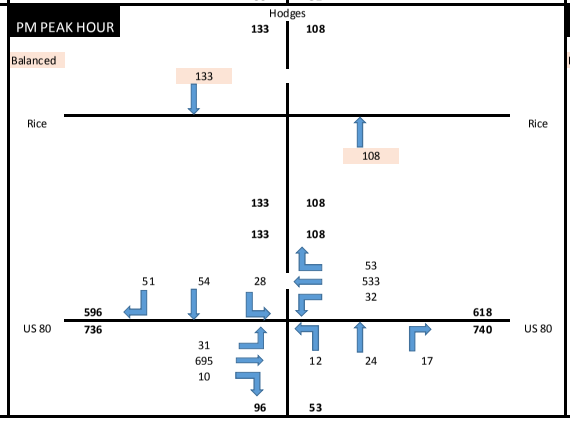


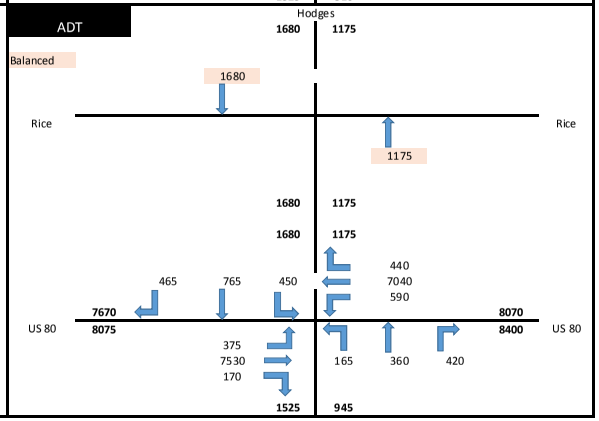




ALTERNATIVE 6 TRAFFIC







Appendix B:
2014, 2015 and 2025 Synchro Reports & Roundabout Analysis Results

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	1	2	3	3	5	3	33	1	0	107	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	2	4	4	6	4	39	1	0	126	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	177	173	126	174	173	39	127	0	0	40	0	0
Stage 1	126	126	-	46	46	-	-	-	-	-	-	-
Stage 2	51	47	-	128	127	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	785	720	924	789	720	1033	1459	-	-	1570	-	-
Stage 1	878	792	-	968	857	-	-	-	-	-	-	-
Stage 2	962	856	-	876	791	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	776	718	924	784	718	1033	1459	-	-	1570	-	-
Mov Cap-2 Maneuver	776	718	-	784	718	-	-	-	-	-	-	-
Stage 1	875	792	-	965	854	-	-	-	-	-	-	-
Stage 2	950	853	-	872	791	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	9.3	0.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1459	-	-	825	856	1570	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.015	-	-	-
HCM Control Delay (s)	7.5	0	-	9.4	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	287	3	19	321	13	11	15	4	28	54	30
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	-	-	-	120	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	2	2	2	2	2	2
Mvmt Flow	11	338	4	22	378	15	13	18	5	33	64	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	393	0	0	341	0	0	626	799	171	629	792	196
Stage 1	-	-	-	-	-	-	361	361	-	430	430	-
Stage 2	-	-	-	-	-	-	265	438	-	199	362	-
Critical Hdwy	4.2	-	-	4.2	-	-	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	2.25	-	-	2.25	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1141	-	-	1193	-	-	369	317	843	367	320	812
Stage 1	-	-	-	-	-	-	630	624	-	574	582	-
Stage 2	-	-	-	-	-	-	717	577	-	784	624	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1141	-	-	1193	-	-	304	307	843	345	310	812
Mov Cap-2 Maneuver	-	-	-	-	-	-	414	406	-	443	407	-
Stage 1	-	-	-	-	-	-	622	617	-	567	571	-
Stage 2	-	-	-	-	-	-	598	566	-	748	617	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.4	13.9	15.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	439	1141	-	-	1193	-	-	481
HCM Lane V/C Ratio	0.08	0.009	-	-	0.019	-	-	0.274
HCM Control Delay (s)	13.9	8.2	0	-	8.1	-	-	15.3
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	1.1

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	17	3	2	20	8	0	73	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	3	3	3
Mvmt Flow	6	18	3	2	21	8	0	77	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	202	188	104	198	189	77	105	0	0
Stage 1	110	110	-	77	77	-	-	-	-
Stage 2	92	78	-	121	112	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.227	-	-
Pot Cap-1 Maneuver	756	707	951	761	706	984	1480	-	-
Stage 1	895	804	-	932	831	-	-	-	-
Stage 2	915	830	-	883	803	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	731	706	951	743	705	984	1480	-	-
Mov Cap-2 Maneuver	731	706	-	743	705	-	-	-	-
Stage 1	895	802	-	932	831	-	-	-	-
Stage 2	884	830	-	859	801	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	10.1	9.9	0
HCM LOS	B	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1480	-	-	734	765	1514	-	-
HCM Lane V/C Ratio	-	-	-	0.037	0.041	0.002	-	-
HCM Control Delay (s)	0	-	-	10.1	9.9	7.4	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	3	97	3
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	95	95	95
Heavy Vehicles, %	3	3	3
Mvmt Flow	3	102	3

Major/Minor	Major2		
Conflicting Flow All	78	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.13	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.227	-	-
Pot Cap-1 Maneuver	1514	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1514	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.2
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	19	546	8	26	412	35	10	20	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	120	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	6	6	6	6	6	6	3	3	3
Mvmt Flow	20	575	8	27	434	37	11	21	14

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	471	0	0	583	0	0	914	1144	292
Stage 1	-	-	-	-	-	-	619	619	-
Stage 2	-	-	-	-	-	-	295	525	-
Critical Hdwy	4.22	-	-	4.22	-	-	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-
Follow-up Hdwy	2.26	-	-	2.26	-	-	3.53	4.03	3.33
Pot Cap-1 Maneuver	1059	-	-	960	-	-	227	197	701
Stage 1	-	-	-	-	-	-	440	476	-
Stage 2	-	-	-	-	-	-	686	525	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1059	-	-	960	-	-	182	186	701
Mov Cap-2 Maneuver	-	-	-	-	-	-	302	302	-
Stage 1	-	-	-	-	-	-	428	463	-
Stage 2	-	-	-	-	-	-	576	510	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0.5	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	365	1059	-	-	960	-	-	401
HCM Lane V/C Ratio	0.124	0.019	-	-	0.029	-	-	0.268
HCM Control Delay (s)	16.3	8.5	0.1	-	8.9	-	-	17.2
HCM Lane LOS	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	1.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	20	44	38
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	95	95	95
Heavy Vehicles, %	3	3	3
Mvmt Flow	21	46	40

Major/Minor	Minor2		
Conflicting Flow All	845	1130	235
Stage 1	507	507	-
Stage 2	338	623	-
Critical Hdwy	7.56	6.56	6.96
Critical Hdwy Stg 1	6.56	5.56	-
Critical Hdwy Stg 2	6.56	5.56	-
Follow-up Hdwy	3.53	4.03	3.33
Pot Cap-1 Maneuver	254	201	764
Stage 1	514	535	-
Stage 2	647	474	-
Platoon blocked, %			
Mov Cap-1 Maneuver	226	190	764
Mov Cap-2 Maneuver	344	301	-
Stage 1	500	520	-
Stage 2	589	461	-

Approach	SB
HCM Control Delay, s	17.2
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	1	2	3	3	5	3	33	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	2	4	4	6	4	39	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	179	175	128	175	174	39	128	0	0
Stage 1	128	128	-	46	46	-	-	-	-
Stage 2	51	47	-	129	128	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	783	718	922	788	719	1033	1458	-	-
Stage 1	876	790	-	968	857	-	-	-	-
Stage 2	962	856	-	875	790	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	774	716	922	783	717	1033	1458	-	-
Mov Cap-2 Maneuver	774	716	-	783	717	-	-	-	-
Stage 1	873	790	-	965	854	-	-	-	-
Stage 2	950	853	-	871	790	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	9.4	9.3	0.6
HCM LOS	A	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1458	-	-	823	856	1570	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.015	-	-	-
HCM Control Delay (s)	7.5	0	-	9.4	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	108	1
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	85	85	85
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	127	1

Major/Minor	Major2		
Conflicting Flow All	40	0	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	1570	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1570	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	9	293	3	19	327	13	11	15	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	120	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	2	2	2
Mvmt Flow	11	345	4	22	385	15	13	18	5

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	400	0	0	348	0	0	637	813	174
Stage 1	-	-	-	-	-	-	368	368	-
Stage 2	-	-	-	-	-	-	269	445	-
Critical Hdwy	4.2	-	-	4.2	-	-	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-
Follow-up Hdwy	2.25	-	-	2.25	-	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	1134	-	-	1186	-	-	362	311	839
Stage 1	-	-	-	-	-	-	624	620	-
Stage 2	-	-	-	-	-	-	713	573	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1134	-	-	1186	-	-	297	302	839
Mov Cap-2 Maneuver	-	-	-	-	-	-	409	402	-
Stage 1	-	-	-	-	-	-	617	613	-
Stage 2	-	-	-	-	-	-	593	562	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0.4	14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	435	1134	-	-	1186	-	-	476
HCM Lane V/C Ratio	0.081	0.009	-	-	0.019	-	-	0.279
HCM Control Delay (s)	14	8.2	0	-	8.1	-	-	15.5
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	1.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	28	55	30
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	85	85	85
Heavy Vehicles, %	2	2	2
Mvmt Flow	33	65	35

Major/Minor	Minor2		
Conflicting Flow All	639	806	200
Stage 1	437	437	-
Stage 2	202	369	-
Critical Hdwy	7.54	6.54	6.94
Critical Hdwy Stg 1	6.54	5.54	-
Critical Hdwy Stg 2	6.54	5.54	-
Follow-up Hdwy	3.52	4.02	3.32
Pot Cap-1 Maneuver	361	314	808
Stage 1	568	578	-
Stage 2	781	619	-
Platoon blocked, %			
Mov Cap-1 Maneuver	339	304	808
Mov Cap-2 Maneuver	438	403	-
Stage 1	561	567	-
Stage 2	745	612	-

Approach	SB
HCM Control Delay, s	15.5
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	17	3	2	21	8	0	74	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	3	3	3
Mvmt Flow	6	18	3	2	22	8	0	78	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	206	191	106	201	192	78	107	0	0
Stage 1	112	112	-	78	78	-	-	-	-
Stage 2	94	79	-	123	114	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.227	-	-
Pot Cap-1 Maneuver	752	704	948	757	703	983	1478	-	-
Stage 1	893	803	-	931	830	-	-	-	-
Stage 2	913	829	-	881	801	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	727	703	948	739	702	983	1478	-	-
Mov Cap-2 Maneuver	727	703	-	739	702	-	-	-	-
Stage 1	893	801	-	931	830	-	-	-	-
Stage 2	881	829	-	857	799	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	10.1	9.9	0
HCM LOS	B	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1478	-	-	730	761	1513	-	-
HCM Lane V/C Ratio	-	-	-	0.037	0.043	0.002	-	-
HCM Control Delay (s)	0	-	-	10.1	9.9	7.4	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	3	99	3
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	95	95	95
Heavy Vehicles, %	3	3	3
Mvmt Flow	3	104	3

Major/Minor	Major2		
Conflicting Flow All	79	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.13	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.227	-	-
Pot Cap-1 Maneuver	1513	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1513	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.2
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	19	556	8	27	420	36	10	20	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	120	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	6	6	6	6	6	6	3	3	3
Mvmt Flow	20	585	8	28	442	38	11	21	14

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	480	0	0	594	0	0	931	1166	297
Stage 1	-	-	-	-	-	-	629	629	-
Stage 2	-	-	-	-	-	-	302	537	-
Critical Hdwy	4.22	-	-	4.22	-	-	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-
Follow-up Hdwy	2.26	-	-	2.26	-	-	3.53	4.03	3.33
Pot Cap-1 Maneuver	1051	-	-	951	-	-	220	191	696
Stage 1	-	-	-	-	-	-	434	471	-
Stage 2	-	-	-	-	-	-	680	519	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1051	-	-	951	-	-	175	180	696
Mov Cap-2 Maneuver	-	-	-	-	-	-	295	297	-
Stage 1	-	-	-	-	-	-	422	458	-
Stage 2	-	-	-	-	-	-	567	504	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0.5	16.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	359	1051	-	-	951	-	-	396
HCM Lane V/C Ratio	0.126	0.019	-	-	0.03	-	-	0.276
HCM Control Delay (s)	16.5	8.5	0.1	-	8.9	-	-	17.5
HCM Lane LOS	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	1.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	20	45	39
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	95	95	95
Heavy Vehicles, %	3	3	3
Mvmt Flow	21	47	41

Major/Minor	Minor2		
Conflicting Flow All	861	1152	240
Stage 1	518	518	-
Stage 2	343	634	-
Critical Hdwy	7.56	6.56	6.96
Critical Hdwy Stg 1	6.56	5.56	-
Critical Hdwy Stg 2	6.56	5.56	-
Follow-up Hdwy	3.53	4.03	3.33
Pot Cap-1 Maneuver	248	195	758
Stage 1	506	529	-
Stage 2	643	469	-
Platoon blocked, %			
Mov Cap-1 Maneuver	220	184	758
Mov Cap-2 Maneuver	338	296	-
Stage 1	492	513	-
Stage 2	585	456	-

Approach	SB
HCM Control Delay, s	17.5
HCM LOS	C

Minor Lane/Major Mvmt

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	293	3	19	327	13	11	15	4	28	55	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	181.0	181.0	190.0	181.0	181.0	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Adj Flow Rate, veh/h	11	345	4	22	385	15	13	18	5	33	65	35
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	483	1586	18	516	1566	61	251	332	84	180	341	166
Arrive On Green	0.01	0.46	0.46	0.02	0.46	0.46	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1723	3481	40	1723	3374	131	505	878	223	329	902	440
Grp Volume(v), veh/h	11	170	179	22	196	204	36	0	0	133	0	0
Grp Sat Flow(s),veh/h/ln	1723	1719	1802	1723	1719	1786	1605	0	0	1671	0	0
Q Serve(g_s), s	0.3	4.9	4.9	0.6	5.6	5.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	4.9	4.9	0.6	5.6	5.7	1.0	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.07	0.36		0.14	0.25		0.26
Lane Grp Cap(c), veh/h	483	783	821	516	798	829	668	0	0	687	0	0
V/C Ratio(X)	0.02	0.22	0.22	0.04	0.25	0.25	0.05	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	654	783	821	693	798	829	668	0	0	687	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.9	13.5	13.5	11.6	13.3	13.3	16.1	0.0	0.0	17.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.0	0.7	0.7	0.2	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.5	2.6	0.3	2.8	2.9	0.5	0.0	0.0	2.1	0.0	0.0
LnGrp Delay(d),s/veh	11.9	14.1	14.1	11.6	14.0	14.0	16.3	0.0	0.0	17.7	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		360			422			36			133	
Approach Delay, s/veh		14.0			13.9			16.3			17.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.6	49.4		35.0	4.9	50.1		35.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	37.0		31.0	9.0	38.0		31.0
Max Q Clear Time (g_c+I1), s	2.6	6.9		6.1	2.3	7.7		3.0
Green Ext Time (p_c), s	0.0	4.9		0.9	0.0	4.9		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	1	2	3	3	5	3	33	1	0	108	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	2	4	4	6	4	39	1	0	127	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	179	175	128	175	174	39	128	0	0	40	0	0
Stage 1	128	128	-	46	46	-	-	-	-	-	-	-
Stage 2	51	47	-	129	128	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	783	718	922	788	719	1033	1458	-	-	1570	-	-
Stage 1	876	790	-	968	857	-	-	-	-	-	-	-
Stage 2	962	856	-	875	790	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	774	716	922	783	717	1033	1458	-	-	1570	-	-
Mov Cap-2 Maneuver	774	716	-	783	717	-	-	-	-	-	-	-
Stage 1	873	790	-	965	854	-	-	-	-	-	-	-
Stage 2	950	853	-	871	790	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	9.3	0.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1458	-	-	823	856	1570	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.015	-	-	-
HCM Control Delay (s)	7.5	0	-	9.4	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	556	8	27	420	36	10	20	13	20	45	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	179.2	179.2	190.0	179.2	179.2	190.0	190.0	184.5	190.0	190.0	184.5	190.0
Adj Flow Rate, veh/h	20	585	8	28	442	38	11	21	14	21	47	41
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	513	1804	25	462	1681	144	143	262	154	119	252	193
Arrive On Green	0.02	0.52	0.52	0.02	0.53	0.53	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1707	3440	47	1707	3175	272	291	845	497	218	815	623
Grp Volume(v), veh/h	20	289	304	28	236	244	46	0	0	109	0	0
Grp Sat Flow(s),veh/h/ln	1707	1703	1784	1707	1703	1744	1632	0	0	1656	0	0
Q Serve(g_s), s	0.5	8.2	8.2	0.6	6.4	6.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	8.2	8.2	0.6	6.4	6.4	1.6	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.16	0.24		0.30	0.19		0.38
Lane Grp Cap(c), veh/h	513	893	935	462	901	924	559	0	0	564	0	0
V/C Ratio(X)	0.04	0.32	0.32	0.06	0.26	0.26	0.08	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	646	893	935	586	901	924	559	0	0	564	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.1	11.4	11.4	9.2	10.8	10.8	20.5	0.0	0.0	21.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.0	0.9	0.1	0.7	0.7	0.3	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.0	4.2	0.3	3.1	3.2	0.8	0.0	0.0	2.0	0.0	0.0
LnGrp Delay(d),s/veh	9.2	12.4	12.4	9.2	11.5	11.5	20.8	0.0	0.0	22.1	0.0	0.0
LnGrp LOS	A	B	B	A	B	B	C			C		
Approach Vol, veh/h		613			508			46			109	
Approach Delay, s/veh		12.3			11.4			20.8			22.1	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	54.1		30.0	5.5	54.5		30.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	44.0		26.0	8.0	44.0		26.0
Max Q Clear Time (g_c+I1), s	2.6	10.2		5.9	2.5	8.4		3.6
Green Ext Time (p_c), s	0.0	7.8		0.8	0.0	7.9		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	17	3	2	21	8	0	74	1	3	99	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	3	3	3	3	3	3
Mvmt Flow	6	18	3	2	22	8	0	78	1	3	104	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	206	191	106	201	192	78	107	0	0	79	0	0
Stage 1	112	112	-	78	78	-	-	-	-	-	-	-
Stage 2	94	79	-	123	114	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	752	704	948	757	703	983	1478	-	-	1513	-	-
Stage 1	893	803	-	931	830	-	-	-	-	-	-	-
Stage 2	913	829	-	881	801	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	727	703	948	739	702	983	1478	-	-	1513	-	-
Mov Cap-2 Maneuver	727	703	-	739	702	-	-	-	-	-	-	-
Stage 1	893	801	-	931	830	-	-	-	-	-	-	-
Stage 2	881	829	-	857	799	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	9.9	0	0.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1478	-	-	730	761	1513	-	-
HCM Lane V/C Ratio	-	-	-	0.037	0.043	0.002	-	-
HCM Control Delay (s)	0	-	-	10.1	9.9	7.4	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	294	3	19	333	13	11	15	4	28	55	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	181.0	181.0	190.0	181.0	181.0	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Adj Flow Rate, veh/h	11	346	4	22	392	15	13	18	5	33	65	35
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	479	1586	18	516	1567	60	251	332	84	180	341	166
Arrive On Green	0.01	0.46	0.46	0.02	0.46	0.46	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1723	3481	40	1723	3377	129	505	878	223	329	902	440
Grp Volume(v), veh/h	11	171	179	22	199	208	36	0	0	133	0	0
Grp Sat Flow(s),veh/h/ln	1723	1719	1802	1723	1719	1787	1605	0	0	1671	0	0
Q Serve(g_s), s	0.3	4.9	4.9	0.6	5.7	5.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	4.9	4.9	0.6	5.7	5.8	1.0	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.07	0.36		0.14	0.25		0.26
Lane Grp Cap(c), veh/h	479	783	821	516	798	829	668	0	0	687	0	0
V/C Ratio(X)	0.02	0.22	0.22	0.04	0.25	0.25	0.05	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	650	783	821	693	798	829	668	0	0	687	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.9	13.5	13.5	11.6	13.3	13.3	16.1	0.0	0.0	17.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.0	0.7	0.7	0.2	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.5	2.6	0.3	2.9	3.0	0.5	0.0	0.0	2.1	0.0	0.0
LnGrp Delay(d),s/veh	11.9	14.1	14.1	11.6	14.0	14.0	16.3	0.0	0.0	17.7	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		361			429			36			133	
Approach Delay, s/veh		14.0			13.9			16.3			17.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.6	49.4		35.0	4.9	50.1		35.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	37.0		31.0	9.0	38.0		31.0
Max Q Clear Time (g_c+I1), s	2.6	6.9		6.1	2.3	7.8		3.0
Green Ext Time (p_c), s	0.0	5.0		0.9	0.0	5.0		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	2	0	0	5	0	36	1	0	111	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yeild	-	-	Yeild	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	0	0	6	0	42	1	0	131	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	174	175	131	174	175	43	132	0	0	44	0	0
Stage 1	131	131	-	43	43	-	-	-	-	-	-	-
Stage 2	43	44	-	131	132	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	789	718	919	789	718	1027	1453	-	-	1564	-	-
Stage 1	873	788	-	971	859	-	-	-	-	-	-	-
Stage 2	971	858	-	873	787	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	784	718	919	787	718	1027	1453	-	-	1564	-	-
Mov Cap-2 Maneuver	784	718	-	787	718	-	-	-	-	-	-	-
Stage 1	873	788	-	971	859	-	-	-	-	-	-	-
Stage 2	965	858	-	871	787	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	8.5	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1453	-	-	919	1027	1564	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.006	-	-	-
HCM Control Delay (s)	0	-	-	8.9	8.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	573	8	27	443	36	10	20	13	20	45	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	179.2	179.2	190.0	179.2	179.2	190.0	190.0	184.5	190.0	190.0	184.5	190.0
Adj Flow Rate, veh/h	20	603	8	28	466	38	11	21	14	21	47	41
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	501	1805	24	454	1689	137	143	262	154	119	252	193
Arrive On Green	0.02	0.52	0.52	0.02	0.53	0.53	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1707	3442	46	1707	3190	259	291	845	497	218	815	623
Grp Volume(v), veh/h	20	298	313	28	248	256	46	0	0	109	0	0
Grp Sat Flow(s),veh/h/ln	1707	1703	1784	1707	1703	1747	1632	0	0	1656	0	0
Q Serve(g_s), s	0.5	8.5	8.5	0.6	6.7	6.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	8.5	8.5	0.6	6.7	6.8	1.6	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.15	0.24		0.30	0.19		0.38
Lane Grp Cap(c), veh/h	501	893	936	454	901	925	559	0	0	564	0	0
V/C Ratio(X)	0.04	0.33	0.33	0.06	0.28	0.28	0.08	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	633	893	936	577	901	925	559	0	0	564	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.1	11.5	11.5	9.2	10.9	10.9	20.5	0.0	0.0	21.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.0	1.0	0.1	0.8	0.7	0.3	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.2	4.4	0.3	3.4	3.5	0.8	0.0	0.0	2.0	0.0	0.0
LnGrp Delay(d),s/veh	9.2	12.5	12.5	9.2	11.6	11.6	20.8	0.0	0.0	22.1	0.0	0.0
LnGrp LOS	A	B	B	A	B	B	C			C		
Approach Vol, veh/h		631			532			46			109	
Approach Delay, s/veh		12.4			11.5			20.8			22.1	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	54.1		30.0	5.5	54.5		30.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	44.0		26.0	8.0	44.0		26.0
Max Q Clear Time (g_c+I1), s	2.6	10.5		5.9	2.5	8.8		3.6
Green Ext Time (p_c), s	0.0	8.2		0.8	0.0	8.3		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	3	0	0	8	0	74	1	0	101	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yeild	-	-	Yeild	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	3	3	3	3	3	3
Mvmt Flow	0	0	3	0	0	8	0	78	1	0	106	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	186	187	108	186	187	78	109	0	0	79	0	0
Stage 1	108	108	-	78	78	-	-	-	-	-	-	-
Stage 2	78	79	-	108	109	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	775	708	946	775	708	983	1475	-	-	1513	-	-
Stage 1	897	806	-	931	830	-	-	-	-	-	-	-
Stage 2	931	829	-	897	805	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	768	708	946	772	708	983	1475	-	-	1513	-	-
Mov Cap-2 Maneuver	768	708	-	772	708	-	-	-	-	-	-	-
Stage 1	897	806	-	931	830	-	-	-	-	-	-	-
Stage 2	923	829	-	894	805	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	8.7	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1475	-	-	946	983	1513	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.009	-	-	-
HCM Control Delay (s)	0	-	-	8.8	8.7	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

HCM Signalized Intersection Capacity Analysis
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	2	3	3	5	3	33	1	0	108	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.93			0.94			1.00			1.00	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1716			1730			1849			1861	
Flt Permitted		0.98			0.97			0.91			1.00	
Satd. Flow (perm)		1699			1695			1689			1861	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	1	1	2	4	4	6	4	39	1	0	127	1
RTOR Reduction (vph)	0	1	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3	0	0	10	0	0	44	0	0	128	0
Turn Type	Perm	NA		Perm	NA		custom	NA			NA	
Protected Phases		10			14			1 2 3 4			4	
Permitted Phases	10			14			8			4		
Actuated Green, G (s)		24.4			24.4			57.6			11.8	
Effective Green, g (s)		24.4			24.4			57.6			11.8	
Actuated g/C Ratio		0.27			0.27			0.64			0.13	
Clearance Time (s)		4.0			4.0						4.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		460			459			1080			243	
v/s Ratio Prot											c0.07	
v/s Ratio Perm		0.00			c0.01			c0.03				
v/c Ratio		0.01			0.02			0.04			0.53	
Uniform Delay, d1		23.9			24.0			6.0			36.5	
Progression Factor		1.00			1.00			0.14			1.00	
Incremental Delay, d2		0.0			0.1			0.0			2.1	
Delay (s)		24.0			24.1			0.9			38.6	
Level of Service		C			C			A			D	
Approach Delay (s)		24.0			24.1			0.9			38.6	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	15.7%	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)	9	293	3	19	327	13	11	15	4	28	55	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.98			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1719	3432		1719	3419			1795			1775	
Flt Permitted	0.49	1.00		0.44	1.00			0.87			0.92	
Satd. Flow (perm)	883	3432		804	3419			1592			1646	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	11	345	4	22	385	15	13	18	5	33	65	35
RTOR Reduction (vph)	0	1	0	0	3	0	0	4	0	0	17	0
Lane Group Flow (vph)	11	348	0	22	397	0	0	32	0	0	116	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.0	27.8		33.8	30.2			18.2			11.8	
Effective Green, g (s)	29.0	27.8		33.8	30.2			18.2			11.8	
Actuated g/C Ratio	0.32	0.31		0.38	0.34			0.20			0.13	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	295	1060		338	1147			321			215	
v/s Ratio Prot	0.00	0.10		c0.00	c0.12							
v/s Ratio Perm	0.01			0.02				c0.02			c0.07	
v/c Ratio	0.04	0.33		0.07	0.35			0.10			0.54	
Uniform Delay, d1	20.8	23.9		17.9	22.5			29.2			36.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			0.05	
Incremental Delay, d2	0.1	0.8		0.1	0.8			0.1			2.7	
Delay (s)	20.9	24.8		18.0	23.3			29.4			4.5	
Level of Service	C	C		B	C			C			A	
Approach Delay (s)		24.6			23.0			29.4			4.5	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Hodges Rd & Rice Ave

8/15/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	17	3	2	21	8	0	74	1	3	99	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.97			1.00			1.00	
Flt Protected		0.99			1.00			1.00			1.00	
Satd. Flow (prot)		1815			1794			1842			1835	
Flt Permitted		0.97			0.99			1.00			0.99	
Satd. Flow (perm)		1774			1787			1842			1825	
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)	6	18	3	2	22	8	0	78	1	3	104	3
RTOR Reduction (vph)	0	2	0	0	6	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	25	0	0	26	0	0	79	0	0	109	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		10			14			1 2 3 4			4	
Permitted Phases	10			14			8			4		
Actuated Green, G (s)		25.8			25.8			56.2			10.8	
Effective Green, g (s)		25.8			25.8			56.2			10.8	
Actuated g/C Ratio		0.29			0.29			0.62			0.12	
Clearance Time (s)		4.0			4.0						4.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		508			512			1150			219	
v/s Ratio Prot								c0.04				
v/s Ratio Perm		0.01			c0.01						c0.06	
v/c Ratio		0.05			0.05			0.07			0.50	
Uniform Delay, d1		23.2			23.2			6.6			37.1	
Progression Factor		1.00			1.00			0.11			1.00	
Incremental Delay, d2		0.2			0.2			0.0			1.8	
Delay (s)		23.4			23.4			0.7			38.8	
Level of Service		C			C			A			D	
Approach Delay (s)		23.4			23.4			0.7			38.8	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	17.8%	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)	19	556	8	27	420	36	10	20	13	20	45	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.96			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1703	3399		1703	3365			1748			1734	
Flt Permitted	0.40	1.00		0.27	1.00			0.92			0.94	
Satd. Flow (perm)	716	3399		477	3365			1635			1640	
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)	20	585	8	28	442	38	11	21	14	21	47	41
RTOR Reduction (vph)	0	1	0	0	7	0	0	11	0	0	26	0
Lane Group Flow (vph)	20	592	0	28	473	0	0	35	0	0	83	0
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	28.6	27.0		31.8	28.6			18.0			10.8	
Effective Green, g (s)	28.6	27.0		31.8	28.6			18.0			10.8	
Actuated g/C Ratio	0.32	0.30		0.35	0.32			0.20			0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	245	1019		212	1069			327			196	
v/s Ratio Prot	0.00	c0.17		c0.00	0.14							
v/s Ratio Perm	0.02			0.04				c0.02			c0.05	
v/c Ratio	0.08	0.58		0.13	0.44			0.11			0.43	
Uniform Delay, d1	21.3	26.7		19.8	24.4			29.4			36.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			0.03	
Incremental Delay, d2	0.1	2.4		0.3	1.3			0.1			1.4	
Delay (s)	21.4	29.1		20.1	25.7			29.6			2.4	
Level of Service	C	C		C	C			C			A	
Approach Delay (s)		28.9			25.4			29.6			2.4	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	36.3%	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 (veh/h)	10	296	3	19	333	18	14	15	5	28	55	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	181.0	181.0	190.0	181.0	181.0	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Adj Flow Rate, veh/h	12	348	4	22	392	21	16	18	6	33	65	36
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	477	1588	18	515	1539	82	275	296	90	178	339	170
Arrive On Green	0.01	0.46	0.46	0.02	0.46	0.46	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1723	3482	40	1723	3320	177	563	783	238	326	895	449
Grp Volume(v), veh/h	12	172	180	22	202	211	40	0	0	134	0	0
Grp Sat Flow(s),veh/h/ln	1723	1719	1802	1723	1719	1778	1584	0	0	1670	0	0
Q Serve(g_s), s	0.3	4.9	5.0	0.6	5.9	5.9	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	4.9	5.0	0.6	5.9	5.9	1.1	0.0	0.0	4.2	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.10	0.40		0.15	0.25		0.27
Lane Grp Cap(c), veh/h	477	784	822	515	797	824	661	0	0	686	0	0
V/C Ratio(X)	0.03	0.22	0.22	0.04	0.25	0.26	0.06	0.00	0.00	0.20	0.00	0.00
Avail Cap(c_a), veh/h	646	784	822	692	797	824	661	0	0	686	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.9	13.5	13.5	11.6	13.4	13.4	16.2	0.0	0.0	17.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.0	0.8	0.7	0.2	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.5	2.6	0.3	2.9	3.0	0.6	0.0	0.0	2.2	0.0	0.0
LnGrp Delay(d),s/veh	11.9	14.1	14.1	11.6	14.1	14.1	16.4	0.0	0.0	17.8	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		364			435			40			134	
Approach Delay, s/veh		14.0			14.0			16.4			17.8	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.6	49.4		35.0	5.0	50.0		35.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	37.0		31.0	9.0	38.0		31.0
Max Q Clear Time (g_c+I1), s	2.6	7.0		6.2	2.3	7.9		3.1
Green Ext Time (p_c), s	0.0	5.0		1.0	0.0	5.0		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	576	8	27	443	44	10	20	14	23	45	42
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	179.2	179.2	190.0	179.2	179.2	190.0	190.0	184.5	190.0	190.0	184.5	190.0
Adj Flow Rate, veh/h	26	606	8	28	466	46	11	21	15	24	47	44
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	499	1805	24	452	1646	162	140	257	161	127	239	195
Arrive On Green	0.02	0.52	0.52	0.02	0.53	0.53	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1707	3442	45	1707	3133	308	282	828	520	243	773	629
Grp Volume(v), veh/h	26	300	314	28	253	259	47	0	0	115	0	0
Grp Sat Flow(s),veh/h/ln	1707	1703	1784	1707	1703	1738	1631	0	0	1645	0	0
Q Serve(g_s), s	0.6	8.5	8.5	0.6	6.9	7.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	8.5	8.5	0.6	6.9	7.0	1.6	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.18	0.23		0.32	0.21		0.38
Lane Grp Cap(c), veh/h	499	893	936	452	895	913	558	0	0	562	0	0
V/C Ratio(X)	0.05	0.34	0.34	0.06	0.28	0.28	0.08	0.00	0.00	0.20	0.00	0.00
Avail Cap(c_a), veh/h	625	893	936	576	895	913	558	0	0	562	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.1	11.5	11.5	9.2	11.1	11.1	20.5	0.0	0.0	21.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.0	1.0	0.1	0.8	0.8	0.3	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.2	4.4	0.3	3.4	3.5	0.8	0.0	0.0	2.1	0.0	0.0
LnGrp Delay(d),s/veh	9.1	12.5	12.5	9.3	11.9	11.9	20.8	0.0	0.0	22.2	0.0	0.0
LnGrp LOS	A	B	B	A	B	B	C			C		
Approach Vol, veh/h		640			540			47			115	
Approach Delay, s/veh		12.4			11.7			20.8			22.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	54.1		30.0	5.8	54.2		30.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	44.0		26.0	8.0	44.0		26.0
Max Q Clear Time (g_c+I1), s	2.6	10.5		6.1	2.6	9.0		3.6
Green Ext Time (p_c), s	0.0	8.3		0.8	0.0	8.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	1	2	4	4	6	3	41	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	2	5	5	7	4	48	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	217	211	155	212	211	49	155	0	0
Stage 1	155	155	-	56	56	-	-	-	-
Stage 2	62	56	-	156	155	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	739	686	891	745	686	1020	1425	-	-
Stage 1	847	769	-	956	848	-	-	-	-
Stage 2	949	848	-	846	769	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	728	684	891	740	684	1020	1425	-	-
Mov Cap-2 Maneuver	728	684	-	740	684	-	-	-	-
Stage 1	844	769	-	953	845	-	-	-	-
Stage 2	934	845	-	842	769	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	9.6	9.5	0.5
HCM LOS	A	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1425	-	-	787	817	1558	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.02	-	-	-
HCM Control Delay (s)	7.5	0	-	9.6	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	131	1
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	85	85	85
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	154	1

Major/Minor	Major2		
Conflicting Flow All	49	0	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	1558	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1558	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	11	353	4	23	394	16	13	18	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	120	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	2	2	2
Mvmt Flow	13	415	5	27	464	19	15	21	6

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	482	0	0	420	0	0	769	980	210
Stage 1	-	-	-	-	-	-	444	444	-
Stage 2	-	-	-	-	-	-	325	536	-
Critical Hdwy	4.2	-	-	4.2	-	-	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-
Follow-up Hdwy	2.25	-	-	2.25	-	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	1056	-	-	1114	-	-	291	248	796
Stage 1	-	-	-	-	-	-	563	574	-
Stage 2	-	-	-	-	-	-	661	522	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1056	-	-	1114	-	-	221	238	796
Mov Cap-2 Maneuver	-	-	-	-	-	-	341	349	-
Stage 1	-	-	-	-	-	-	554	565	-
Stage 2	-	-	-	-	-	-	516	509	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0.4	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	375	1056	-	-	1114	-	-	417
HCM Lane V/C Ratio	0.113	0.012	-	-	0.024	-	-	0.387
HCM Control Delay (s)	15.8	8.5	0.1	-	8.3	-	-	19
HCM Lane LOS	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	1.8

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	34	66	37
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	85	85	85
Heavy Vehicles, %	2	2	2
Mvmt Flow	40	78	44

Major/Minor	Minor2		
Conflicting Flow All	771	973	241
Stage 1	527	527	-
Stage 2	244	446	-
Critical Hdwy	7.54	6.54	6.94
Critical Hdwy Stg 1	6.54	5.54	-
Critical Hdwy Stg 2	6.54	5.54	-
Follow-up Hdwy	3.52	4.02	3.32
Pot Cap-1 Maneuver	290	251	760
Stage 1	502	527	-
Stage 2	738	572	-
Platoon blocked, %			
Mov Cap-1 Maneuver	266	241	760
Mov Cap-2 Maneuver	375	349	-
Stage 1	494	514	-
Stage 2	694	563	-

Approach	SB
HCM Control Delay, s	19
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	8	20	4	2	25	10	0	89	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	3	3	3
Mvmt Flow	8	21	4	2	26	11	0	94	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	249	231	127	242	232	94	129	0	0
Stage 1	136	136	-	94	94	-	-	-	-
Stage 2	113	95	-	148	138	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.227	-	-
Pot Cap-1 Maneuver	705	669	923	712	668	963	1451	-	-
Stage 1	867	784	-	913	817	-	-	-	-
Stage 2	892	816	-	855	782	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	675	667	923	690	666	963	1451	-	-
Mov Cap-2 Maneuver	675	667	-	690	666	-	-	-	-
Stage 1	867	782	-	913	817	-	-	-	-
Stage 2	854	816	-	826	780	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	10.5	10.2	0
HCM LOS	B	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1451	-	-	693	728	1493	-	-
HCM Lane V/C Ratio	-	-	-	0.049	0.053	0.003	-	-
HCM Control Delay (s)	0	-	-	10.5	10.2	7.4	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	4	119	4
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	95	95	95
Heavy Vehicles, %	3	3	3
Mvmt Flow	4	125	4

Major/Minor	Major2		
Conflicting Flow All	95	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.13	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.227	-	-
Pot Cap-1 Maneuver	1493	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1493	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.2
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	23	671	10	32	506	43	12	24	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	120	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	6	6	6	6	6	6	3	3	3
Mvmt Flow	24	706	11	34	533	45	13	25	17

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	578	0	0	717	0	0	1122	1405	358
Stage 1	-	-	-	-	-	-	760	760	-
Stage 2	-	-	-	-	-	-	362	645	-
Critical Hdwy	4.22	-	-	4.22	-	-	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-
Follow-up Hdwy	2.26	-	-	2.26	-	-	3.53	4.03	3.33
Pot Cap-1 Maneuver	965	-	-	854	-	-	159	137	636
Stage 1	-	-	-	-	-	-	362	410	-
Stage 2	-	-	-	-	-	-	626	463	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	965	-	-	854	-	-	114	126	636
Mov Cap-2 Maneuver	-	-	-	-	-	-	232	243	-
Stage 1	-	-	-	-	-	-	347	393	-
Stage 2	-	-	-	-	-	-	489	445	-

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0.5	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	296	965	-	-	854	-	-	330
HCM Lane V/C Ratio	0.185	0.025	-	-	0.039	-	-	0.399
HCM Control Delay (s)	19.9	8.8	0.2	-	9.4	-	-	23
HCM Lane LOS	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0.1	-	-	1.9

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	24	54	47
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	95	95	95
Heavy Vehicles, %	3	3	3
Mvmt Flow	25	57	49

Major/Minor	Minor2		
Conflicting Flow All	1037	1388	289
Stage 1	623	623	-
Stage 2	414	765	-
Critical Hdwy	7.56	6.56	6.96
Critical Hdwy Stg 1	6.56	5.56	-
Critical Hdwy Stg 2	6.56	5.56	-
Follow-up Hdwy	3.53	4.03	3.33
Pot Cap-1 Maneuver	184	140	705
Stage 1	438	474	-
Stage 2	584	408	-
Platoon blocked, %			
Mov Cap-1 Maneuver	155	129	705
Mov Cap-2 Maneuver	274	240	-
Stage 1	420	455	-
Stage 2	510	391	-

Approach	SB
HCM Control Delay, s	23
HCM LOS	C

Minor Lane/Major Mvmt

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	353	4	23	394	16	13	18	5	34	66	37
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	181.0	181.0	190.0	181.0	181.0	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Adj Flow Rate, veh/h	13	415	5	27	464	19	15	21	6	40	78	44
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	452	1618	19	491	1599	65	242	325	85	174	328	167
Arrive On Green	0.01	0.47	0.47	0.02	0.47	0.47	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1723	3479	42	1723	3367	138	498	878	229	327	888	453
Grp Volume(v), veh/h	13	205	215	27	237	246	42	0	0	162	0	0
Grp Sat Flow(s),veh/h/ln	1723	1719	1802	1723	1719	1785	1606	0	0	1668	0	0
Q Serve(g_s), s	0.3	6.1	6.1	0.7	7.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	6.1	6.1	0.7	7.0	7.1	1.3	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.08	0.36		0.14	0.25		0.27
Lane Grp Cap(c), veh/h	452	799	838	491	816	848	652	0	0	670	0	0
V/C Ratio(X)	0.03	0.26	0.26	0.05	0.29	0.29	0.06	0.00	0.00	0.24	0.00	0.00
Avail Cap(c_a), veh/h	595	799	838	617	816	848	652	0	0	670	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.8	13.6	13.6	11.4	13.4	13.4	17.1	0.0	0.0	18.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.7	0.0	0.9	0.9	0.2	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.0	3.2	0.3	3.5	3.7	0.7	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	11.8	14.4	14.4	11.5	14.3	14.3	17.2	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		433			510			42			162	
Approach Delay, s/veh		14.3			14.1			17.2			19.2	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	49.1		35.0	5.0	50.0		35.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	39.0		31.0	8.0	39.0		31.0
Max Q Clear Time (g_c+I1), s	2.3	8.1		7.3	2.3	9.1		3.3
Green Ext Time (p_c), s	0.0	6.2		1.1	0.0	6.1		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	1	2	4	4	6	3	41	1	0	131	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	2	5	5	7	4	48	1	0	154	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	217	211	155	212	211	49	155	0	0	49	0	0
Stage 1	155	155	-	56	56	-	-	-	-	-	-	-
Stage 2	62	56	-	156	155	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	739	686	891	745	686	1020	1425	-	-	1558	-	-
Stage 1	847	769	-	956	848	-	-	-	-	-	-	-
Stage 2	949	848	-	846	769	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	728	684	891	740	684	1020	1425	-	-	1558	-	-
Mov Cap-2 Maneuver	728	684	-	740	684	-	-	-	-	-	-	-
Stage 1	844	769	-	953	845	-	-	-	-	-	-	-
Stage 2	934	845	-	842	769	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	9.5	0.5	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1425	-	-	787	817	1558	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.02	-	-	-
HCM Control Delay (s)	7.5	0	-	9.6	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	671	10	32	506	43	12	24	16	24	54	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	179.2	179.2	190.0	179.2	179.2	190.0	190.0	184.5	190.0	190.0	184.5	190.0
Adj Flow Rate, veh/h	24	706	11	34	533	45	13	25	17	25	57	49
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	467	1794	28	411	1680	142	141	259	155	117	254	191
Arrive On Green	0.02	0.52	0.52	0.03	0.53	0.53	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1707	3432	53	1707	3180	268	285	839	503	215	821	619
Grp Volume(v), veh/h	24	350	367	34	285	293	55	0	0	131	0	0
Grp Sat Flow(s),veh/h/ln	1707	1703	1783	1707	1703	1745	1627	0	0	1656	0	0
Q Serve(g_s), s	0.5	10.4	10.4	0.8	8.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	10.4	10.4	0.8	8.0	8.0	1.9	0.0	0.0	4.8	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.15	0.24		0.31	0.19		0.37
Lane Grp Cap(c), veh/h	467	890	932	411	900	922	555	0	0	562	0	0
V/C Ratio(X)	0.05	0.39	0.39	0.08	0.32	0.32	0.10	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	594	890	932	529	900	922	555	0	0	562	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	12.1	12.1	9.4	11.3	11.3	20.8	0.0	0.0	21.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.3	1.2	0.1	0.9	0.9	0.4	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.2	5.4	0.4	3.9	4.1	1.0	0.0	0.0	2.4	0.0	0.0
LnGrp Delay(d),s/veh	9.3	13.4	13.3	9.5	12.2	12.2	21.1	0.0	0.0	22.7	0.0	0.0
LnGrp LOS	A	B	B	A	B	B	C			C		
Approach Vol, veh/h		741			612			55			131	
Approach Delay, s/veh		13.2			12.0			21.1			22.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	53.8		30.0	5.7	54.3		30.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	44.0		26.0	8.0	44.0		26.0
Max Q Clear Time (g_c+I1), s	2.5	12.4		6.8	2.5	10.0		3.9
Green Ext Time (p_c), s	0.0	9.9		1.0	0.0	10.1		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	8	20	4	2	25	10	0	89	1	4	119	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	3	3	3	3	3	3
Mvmt Flow	8	21	4	2	26	11	0	94	1	4	125	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	249	231	127	242	232	94	129	0	0	95	0	0
Stage 1	136	136	-	94	94	-	-	-	-	-	-	-
Stage 2	113	95	-	148	138	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	705	669	923	712	668	963	1451	-	-	1493	-	-
Stage 1	867	784	-	913	817	-	-	-	-	-	-	-
Stage 2	892	816	-	855	782	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	675	667	923	690	666	963	1451	-	-	1493	-	-
Mov Cap-2 Maneuver	675	667	-	690	666	-	-	-	-	-	-	-
Stage 1	867	782	-	913	817	-	-	-	-	-	-	-
Stage 2	854	816	-	826	780	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	10.2	0	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1451	-	-	693	728	1493	-	-
HCM Lane V/C Ratio	-	-	-	0.049	0.053	0.003	-	-
HCM Control Delay (s)	0	-	-	10.5	10.2	7.4	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	354	4	23	402	16	13	18	5	34	66	37
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	181.0	181.0	190.0	181.0	181.0	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Adj Flow Rate, veh/h	13	416	5	27	473	19	15	21	6	40	78	44
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	448	1618	19	491	1600	64	242	325	85	174	328	167
Arrive On Green	0.01	0.47	0.47	0.02	0.47	0.47	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1723	3479	42	1723	3370	135	498	878	229	327	888	453
Grp Volume(v), veh/h	13	205	216	27	241	251	42	0	0	162	0	0
Grp Sat Flow(s),veh/h/ln	1723	1719	1802	1723	1719	1786	1606	0	0	1668	0	0
Q Serve(g_s), s	0.3	6.1	6.1	0.7	7.2	7.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	6.1	6.1	0.7	7.2	7.2	1.3	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.08	0.36		0.14	0.25		0.27
Lane Grp Cap(c), veh/h	448	799	838	491	816	848	652	0	0	670	0	0
V/C Ratio(X)	0.03	0.26	0.26	0.06	0.30	0.30	0.06	0.00	0.00	0.24	0.00	0.00
Avail Cap(c_a), veh/h	591	799	838	617	816	848	652	0	0	670	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.8	13.6	13.6	11.4	13.5	13.5	17.1	0.0	0.0	18.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.7	0.0	0.9	0.9	0.2	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.0	3.2	0.3	3.6	3.8	0.7	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	11.8	14.4	14.4	11.5	14.4	14.3	17.2	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		434			519			42			162	
Approach Delay, s/veh		14.3			14.2			17.2			19.2	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	49.1		35.0	5.0	50.0		35.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	39.0		31.0	8.0	39.0		31.0
Max Q Clear Time (g_c+I1), s	2.3	8.1		7.3	2.3	9.2		3.3
Green Ext Time (p_c), s	0.0	6.2		1.1	0.0	6.2		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	2	0	0	6	0	44	1	0	135	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yeild	-	-	Yeild	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	0	0	7	0	52	1	0	159	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	211	212	159	211	212	52	160	0	0	53	0	0
Stage 1	159	159	-	52	52	-	-	-	-	-	-	-
Stage 2	52	53	-	159	160	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	746	685	886	746	685	1016	1419	-	-	1553	-	-
Stage 1	843	766	-	961	852	-	-	-	-	-	-	-
Stage 2	961	851	-	843	766	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	741	685	886	744	685	1016	1419	-	-	1553	-	-
Mov Cap-2 Maneuver	741	685	-	744	685	-	-	-	-	-	-	-
Stage 1	843	766	-	961	852	-	-	-	-	-	-	-
Stage 2	954	851	-	841	766	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	8.6	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1419	-	-	886	1016	1553	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.007	-	-	-
HCM Control Delay (s)	0	-	-	9.1	8.6	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	691	10	32	533	43	12	24	16	24	54	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	179.2	179.2	190.0	179.2	179.2	190.0	190.0	184.5	190.0	190.0	184.5	190.0
Adj Flow Rate, veh/h	24	727	11	34	561	45	13	25	17	25	57	49
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	454	1795	27	402	1687	135	141	259	155	117	254	191
Arrive On Green	0.02	0.52	0.52	0.03	0.53	0.53	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1707	3434	52	1707	3194	256	285	839	503	215	821	619
Grp Volume(v), veh/h	24	360	378	34	299	307	55	0	0	131	0	0
Grp Sat Flow(s),veh/h/ln	1707	1703	1783	1707	1703	1747	1627	0	0	1656	0	0
Q Serve(g_s), s	0.5	10.8	10.8	0.8	8.4	8.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	10.8	10.8	0.8	8.4	8.5	1.9	0.0	0.0	4.8	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.15	0.24		0.31	0.19		0.37
Lane Grp Cap(c), veh/h	454	890	932	402	900	923	555	0	0	562	0	0
V/C Ratio(X)	0.05	0.41	0.41	0.08	0.33	0.33	0.10	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	581	890	932	520	900	923	555	0	0	562	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	12.2	12.2	9.5	11.4	11.4	20.8	0.0	0.0	21.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.4	1.3	0.1	1.0	1.0	0.4	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.3	5.6	0.4	4.2	4.3	1.0	0.0	0.0	2.4	0.0	0.0
LnGrp Delay(d),s/veh	9.4	13.5	13.5	9.6	12.4	12.3	21.1	0.0	0.0	22.7	0.0	0.0
LnGrp LOS	A	B	B	A	B	B	C			C		
Approach Vol, veh/h		762			640			55			131	
Approach Delay, s/veh		13.4			12.2			21.1			22.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	53.8		30.0	5.7	54.3		30.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	44.0		26.0	8.0	44.0		26.0
Max Q Clear Time (g_c+I1), s	2.8	12.8		6.8	2.5	10.5		3.9
Green Ext Time (p_c), s	0.0	10.4		1.0	0.0	10.6		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	4	0	0	10	0	89	1	0	121	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yeild	-	-	Yeild	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	3	3	3	3	3	3
Mvmt Flow	0	0	4	0	0	11	0	94	1	0	127	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	223	224	129	223	226	94	132	0	0	95	0	0
Stage 1	129	129	-	94	94	-	-	-	-	-	-	-
Stage 2	94	95	-	129	132	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	733	675	921	733	673	963	1447	-	-	1493	-	-
Stage 1	875	789	-	913	817	-	-	-	-	-	-	-
Stage 2	913	816	-	875	787	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	725	675	921	730	673	963	1447	-	-	1493	-	-
Mov Cap-2 Maneuver	725	675	-	730	673	-	-	-	-	-	-	-
Stage 1	875	789	-	913	817	-	-	-	-	-	-	-
Stage 2	903	816	-	871	787	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	8.8	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1447	-	-	921	963	1493	-	-
HCM Lane V/C Ratio	-	-	-	0.005	0.011	-	-	-
HCM Control Delay (s)	0	-	-	8.9	8.8	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

HCM Signalized Intersection Capacity Analysis
5: Hodges Rd & Rice Ave

8/15/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	2	4	4	6	3	41	1	0	131	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.93			0.94			1.00			1.00	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1716			1734			1851			1861	
Flt Permitted		0.98			0.96			0.92			1.00	
Satd. Flow (perm)		1694			1689			1702			1861	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	1	1	2	5	5	7	4	48	1	0	154	1
RTOR Reduction (vph)	0	2	0	0	5	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	12	0	0	53	0	0	155	0
Turn Type	Perm	NA		Perm	NA		custom	NA			NA	
Protected Phases		10			14			1 2 3 4			4	
Permitted Phases	10			14			8			4		
Actuated Green, G (s)		20.9			20.9			61.1			13.7	
Effective Green, g (s)		20.9			20.9			61.1			13.7	
Actuated g/C Ratio		0.23			0.23			0.68			0.15	
Clearance Time (s)		4.0			4.0						4.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		393			392			1155			283	
v/s Ratio Prot											c0.08	
v/s Ratio Perm		0.00			c0.01			c0.03				
v/c Ratio		0.01			0.03			0.05			0.55	
Uniform Delay, d1		26.6			26.7			4.8			35.3	
Progression Factor		1.00			1.00			0.13			1.00	
Incremental Delay, d2		0.0			0.1			0.0			2.2	
Delay (s)		26.6			26.9			0.6			37.4	
Level of Service		C			C			A			D	
Approach Delay (s)		26.6			26.9			0.6			37.4	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	17.0%	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)	11	353	4	23	394	16	13	18	5	34	66	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.98			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1719	3432		1719	3418			1795			1773	
Flt Permitted	0.44	1.00		0.37	1.00			0.86			0.92	
Satd. Flow (perm)	796	3432		669	3418			1563			1642	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	13	415	5	27	464	19	15	21	6	40	78	44
RTOR Reduction (vph)	0	1	0	0	3	0	0	5	0	0	17	0
Lane Group Flow (vph)	13	419	0	27	480	0	0	37	0	0	145	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	28.6	27.4		35.8	31.0			20.9			13.7	
Effective Green, g (s)	28.6	27.4		35.8	31.0			20.9			13.7	
Actuated g/C Ratio	0.32	0.30		0.40	0.34			0.23			0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	265	1044		322	1177			362			249	
v/s Ratio Prot	0.00	0.12		c0.00	c0.14							
v/s Ratio Perm	0.01			0.03				c0.02			c0.09	
v/c Ratio	0.05	0.40		0.08	0.41			0.10			0.58	
Uniform Delay, d1	21.1	24.8		17.0	22.5			27.2			35.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			0.06	
Incremental Delay, d2	0.1	1.2		0.1	1.0			0.1			3.3	
Delay (s)	21.2	26.0		17.1	23.5			27.3			5.4	
Level of Service	C	C		B	C			C			A	
Approach Delay (s)		25.8			23.2			27.3			5.4	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Hodges Rd & Rice Ave

8/15/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	20	4	2	25	10	0	89	1	4	119	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.96			1.00			1.00	
Flt Protected		0.99			1.00			1.00			1.00	
Satd. Flow (prot)		1810			1787			1842			1834	
Flt Permitted		0.96			0.99			1.00			0.99	
Satd. Flow (perm)		1757			1781			1842			1822	
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)	8	21	4	2	26	11	0	94	1	4	125	4
RTOR Reduction (vph)	0	3	0	0	8	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	30	0	0	31	0	0	95	0	0	131	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		10			14			1 2 3 4			4	
Permitted Phases	10			14			8			4		
Actuated Green, G (s)		24.9			24.9			57.1			11.7	
Effective Green, g (s)		24.9			24.9			57.1			11.7	
Actuated g/C Ratio		0.28			0.28			0.63			0.13	
Clearance Time (s)		4.0			4.0						4.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		486			492			1168			236	
v/s Ratio Prot								c0.05				
v/s Ratio Perm		0.02			c0.02						c0.07	
v/c Ratio		0.06			0.06			0.08			0.56	
Uniform Delay, d1		24.0			24.0			6.3			36.7	
Progression Factor		1.00			1.00			0.13			1.00	
Incremental Delay, d2		0.2			0.2			0.0			2.8	
Delay (s)		24.2			24.2			0.9			39.5	
Level of Service		C			C			A			D	
Approach Delay (s)		24.2			24.2			0.9			39.5	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	20.8%	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)	23	671	10	32	506	43	12	24	16	24	54	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.96			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1703	3398		1703	3366			1747			1735	
Flt Permitted	0.32	1.00		0.19	1.00			0.90			0.93	
Satd. Flow (perm)	580	3398		339	3366			1594			1637	
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)	24	706	11	34	533	45	13	25	17	25	57	49
RTOR Reduction (vph)	0	1	0	0	7	0	0	13	0	0	25	0
Lane Group Flow (vph)	24	716	0	34	571	0	0	42	0	0	106	0
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	28.6	27.0		31.8	28.6			18.9			11.7	
Effective Green, g (s)	28.6	27.0		31.8	28.6			18.9			11.7	
Actuated g/C Ratio	0.32	0.30		0.35	0.32			0.21			0.13	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	204	1019		168	1069			334			212	
v/s Ratio Prot	0.00	c0.21		c0.01	0.17							
v/s Ratio Perm	0.04			0.06				c0.03			c0.06	
v/c Ratio	0.12	0.70		0.20	0.53			0.12			0.50	
Uniform Delay, d1	21.5	27.9		20.4	25.2			28.8			36.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			0.03	
Incremental Delay, d2	0.3	4.0		0.6	1.9			0.2			1.7	
Delay (s)	21.8	32.0		21.0	27.1			29.0			2.9	
Level of Service	C	C		C	C			C			A	
Approach Delay (s)		31.6			26.8			29.0			2.9	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	41.1%	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 (veh/h)	12	356	4	23	402	22	16	18	6	34	66	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	181.0	181.0	190.0	181.0	181.0	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Adj Flow Rate, veh/h	14	419	5	27	473	26	19	21	7	40	78	45
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	445	1618	19	489	1571	86	270	286	87	173	326	170
Arrive On Green	0.01	0.47	0.47	0.02	0.47	0.47	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1723	3480	41	1723	3315	182	566	773	234	324	883	460
Grp Volume(v), veh/h	14	207	217	27	245	254	47	0	0	163	0	0
Grp Sat Flow(s),veh/h/ln	1723	1719	1802	1723	1719	1777	1573	0	0	1667	0	0
Q Serve(g_s), s	0.4	6.1	6.1	0.7	7.3	7.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	6.1	6.1	0.7	7.3	7.4	1.4	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.10	0.40		0.15	0.25		0.28
Lane Grp Cap(c), veh/h	445	799	838	489	815	843	642	0	0	670	0	0
V/C Ratio(X)	0.03	0.26	0.26	0.06	0.30	0.30	0.07	0.00	0.00	0.24	0.00	0.00
Avail Cap(c_a), veh/h	586	799	838	615	815	843	642	0	0	670	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.8	13.6	13.6	11.4	13.5	13.5	17.1	0.0	0.0	18.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.7	0.0	0.9	0.9	0.2	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.0	3.2	0.3	3.7	3.8	0.7	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	11.8	14.4	14.4	11.5	14.5	14.5	17.3	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B			B		
Approach Vol, veh/h		438			526			47			163	
Approach Delay, s/veh		14.3			14.3			17.3			19.2	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	49.1		35.0	5.1	49.9		35.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	39.0		31.0	8.0	39.0		31.0
Max Q Clear Time (g_c+I1), s	2.7	8.1		7.3	2.4	9.4		3.4
Green Ext Time (p_c), s	0.0	6.3		1.2	0.0	6.3		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	695	10	32	533	53	12	24	17	28	54	51
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	179.2	179.2	190.0	179.2	179.2	190.0	190.0	184.5	190.0	190.0	184.5	190.0
Adj Flow Rate, veh/h	33	732	11	34	561	56	13	25	18	29	57	54
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	452	1795	27	400	1637	163	138	255	161	126	238	196
Arrive On Green	0.03	0.52	0.52	0.03	0.52	0.52	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1707	3435	52	1707	3129	312	277	825	522	240	769	634
Grp Volume(v), veh/h	33	363	380	34	305	312	56	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1707	1703	1783	1707	1703	1737	1625	0	0	1643	0	0
Q Serve(g_s), s	0.7	10.9	10.9	0.8	8.8	8.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	10.9	10.9	0.8	8.8	8.8	1.9	0.0	0.0	5.1	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.18	0.23		0.32	0.21		0.39
Lane Grp Cap(c), veh/h	452	890	932	400	891	909	555	0	0	559	0	0
V/C Ratio(X)	0.07	0.41	0.41	0.08	0.34	0.34	0.10	0.00	0.00	0.25	0.00	0.00
Avail Cap(c_a), veh/h	571	890	932	518	891	909	555	0	0	559	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.2	12.2	12.2	9.5	11.7	11.7	20.8	0.0	0.0	21.9	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.4	1.3	0.1	1.0	1.0	0.4	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.4	5.6	0.4	4.3	4.4	1.0	0.0	0.0	2.6	0.0	0.0
LnGrp Delay(d),s/veh	9.3	13.6	13.5	9.6	12.7	12.7	21.1	0.0	0.0	23.0	0.0	0.0
LnGrp LOS	A	B	B	A	B	B	C			C		
Approach Vol, veh/h		776			651			56			140	
Approach Delay, s/veh		13.4			12.5			21.1			23.0	
Approach LOS		B			B			C			C	

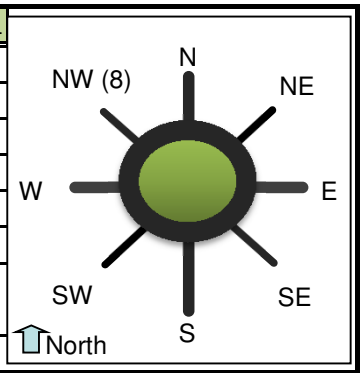
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	53.8		30.0	6.2	53.8		30.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	44.0		26.0	8.0	44.0		26.0
Max Q Clear Time (g_c+I1), s	2.8	12.9		7.1	2.7	10.8		3.9
Green Ext Time (p_c), s	0.0	10.5		1.0	0.0	10.7		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B

General & Site Information

v2.1

Analyst:	Graham Malone
Agency/Co:	Pond & Company
Date:	8/15/2014
Project or PI#:	US 80 at Hodges St. PI #0012216
Year, Peak Hour:	2015, AM Peak
County/District:	Laurens County
Intersection:	US 80 at Hodges St.



Volumes

Entry Legs (FROM)	N1 (1)	N2 (1)	NE1 (2)	NE2 (2)	E1 (3)	E2 (3)	SE1 (4)	SE2 (4)
Lane Designation	Lf-Th-Rt	SELECT	SELECT	SELECT	Left-Thru	Right-Thru	SELECT	SELECT
Exit Legs (TO) N (1), vph						13		
NE (2), vph								
E (3), vph	28							
SE (4), vph								
S (5), vph	55				19			
SW (6), vph								
W (7), vph	30				150	177		
NW (8), vph								
Entry Volume, vph	113	0	0	0	169	190	0	0

	S1 (5)	S2 (5)	SW1 (6)	SW2 (6)	W1 (7)	W2 (7)	NW1 (8)	NW2 (8)
Lane Designation	Lf-Th-Rt	SELECT	SELECT	SELECT	Left-Thru	Right-Thru	SELECT	SELECT
N (1), vph	15				9			
NE (2), vph								
E (3), vph	4				134	159		
SE (4), vph								
S (5), vph						3		
SW (6), vph								
W (7), vph	11							
NW (8), vph								
Entry Volume, vph	30	0	0	0	143	162	0	0

	N	NE	E	SE	S	SW	W	NW
# of Entry Flow Lanes	1	0	2	0	1	0	2	0
# of Conflict Flow Lanes	2	2	2	2	2	2	2	2

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	98%	100%	95%	100%	98%	100%	95%	100%
% Heavy Vehicles	2%	0%	5%	0%	2%	0%	5%	0%
% Bicycles	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians **(ped/hr)**	0	0	0	0	0	0	0	0
PHF	*0.85*	*0.85*	*0.85*	*0.85*	*0.85*	*0.85*	*0.85*	*0.85*
F_{hv}	0.980	1.000	0.952	1.000	0.980	1.000	0.952	1.000
F_{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to N (1), pcu/h	0	0	16	0	18	0	11	0

Leg #								
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	34	0	0	0	5	0	362	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	66	0	23	0	0	0	4	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	36	0	404	0	13	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	136	0	443	0	36	0	377	0
Entry flow Lane 1, pcu/h	136	0	209	0	36	0	177	0
Entry flow Lane 2, pcu/h	0	0	235	0	0	0	200	0
Conflicting flow, pcu/h	441	0	42	0	407	0	123	0

Results: Approach Measures of Effectiveness

HCM 2010 Model *(build yr)*	**N**		**E**		**S**		**W**	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*
Entry Capacity, veh/h	814	NA	1043	1045	833	NA	981	987
Entry Flow Rates, veh/h	133	NA	199	224	35	NA	168	191
V/C ratio	**0.16**	#VALUE!	**0.19**	**0.21**	**0.04**	#VALUE!	**0.17**	**0.19**
Control Delay, s/veh	**6.1**	#VALUE!	**5.2**	**5.5**	**4.7**	#VALUE!	**5.3**	**5.5**
LOS	A	#VALUE!	A	A	A	#VALUE!	A	A
95th % Queue (ft)	**15**	#VALUE!	**18**	**21**	**3**	#VALUE!	**16**	**19**
Approach Delay, LOS	6.1 sec, LOS A		5.3 sec, LOS A		4.7 sec, LOS A		5.4 sec, LOS A	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#VALUE!				#VALUE!	

Calibrated Model *(future yr)*	**N**		**E**		**S**		**W**	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*
Entry Capacity, veh/h	1081	NA	1497	1504	1115	NA	1381	1398
Entry Flow Rates, veh/h	133	NA	199	224	35	NA	168	191
V/C ratio	**0.12**	#VALUE!	**0.13**	**0.15**	**0.03**	#VALUE!	**0.12**	**0.14**
Control Delay, s/veh	**4.4**	#VALUE!	**3.4**	**3.6**	**3.5**	#VALUE!	**3.6**	**3.7**
LOS	A	#VALUE!	A	A	A	#VALUE!	A	A
95th % Queue (ft)	**11**	#VALUE!	**12**	**14**	**2**	#VALUE!	**11**	**12**
Approach Delay, LOS	4.4 sec, LOS A		3.5 sec, LOS A		3.5 sec, LOS A		3.6 sec, LOS A	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#N/A				#N/A	

v2.1

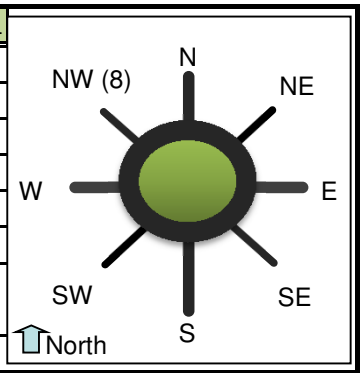
Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
# of Conflicting Exit Flow Lanes	**2**	**2**	**2**	**2**	**2**	**2**
Volumes						
Entry Leg: Insert Right Turn Volume						
Exit Leg: ***(Select Input Method)***						
*Lane Flow in Exit Leg****						
Sum of inner circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
Sum of outer circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
*Critical Lane Flow (Manual) in Exit Leg****						
Volume Characteristics						
PHF (Entry Leg)						
F_{HV} (Entry Leg)						
F_{ped}						
PHF (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
F_{HV} (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
Volume Characteristics are already taken into account for Default method ONLY. Insert Values above if Manual method.						
Entry/Conflicting Flows						
Entry Flow						
Conflicting Critical Flow						
Bypass Lane Results						
Entry Capacity of Bypass, veh/h						
Flow Rates of Exiting Traffic, veh/h						
V/C ratio						
Control Delay, sec/pcu						
LOS						
95th % Queue (ft)						

General & Site Information

v2.1

Analyst:	Graham Malone
Agency/Co:	Pond & Company
Date:	8/15/2014
Project or PI#:	US 80 at Hodges St. PI #0012216
Year, Peak Hour:	2015, PM Peak
County/District:	Laurens County
Intersection:	US 80 at Hodges St.



Volumes

Entry Legs (FROM)	N1 (1)	N2 (1)	NE1 (2)	NE2 (2)	E1 (3)	E2 (3)	SE1 (4)	SE2 (4)
Lane Designation	Lf-Th-Rt	SELECT	SELECT	SELECT	Left-Thru	Right-Thru	SELECT	SELECT
Exit Legs (TO) N (1), vph						36		
NE (2), vph								
E (3), vph	20							
SE (4), vph								
S (5), vph	45				27			
SW (6), vph								
W (7), vph	39				200	220		
NW (8), vph								
Entry Volume, vph	104	0	0	0	227	256	0	0

	S1 (5)	S2 (5)	SW1 (6)	SW2 (6)	W1 (7)	W2 (7)	NW1 (8)	NW2 (8)
Lane Designation	Lf-Th-Rt	SELECT	SELECT	SELECT	Left-Thru	Right-Thru	SELECT	SELECT
N (1), vph	20				19			
NE (2), vph								
E (3), vph	13				255	301		
SE (4), vph								
S (5), vph						8		
SW (6), vph								
W (7), vph	10							
NW (8), vph								
Entry Volume, vph	43	0	0	0	274	309	0	0

	N	NE	E	SE	S	SW	W	NW
# of Entry Flow Lanes	1	0	2	0	1	0	2	0
# of Conflict Flow Lanes	2	2	2	2	2	2	2	2

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	97%	100%	94%	100%	97%	100%	94%	100%
% Heavy Vehicles	3%	0%	6%	0%	3%	0%	6%	0%
% Bicycles	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians **(ped/hr)**	0	0	0	0	0	0	0	0
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
F_{hv}	0.971	1.000	0.943	1.000	0.971	1.000	0.943	1.000
F_{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to N (1), pcu/h	0	0	40	0	22	0	21	0

Leg #								
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	22	0	0	0	14	0	620	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	49	0	30	0	0	0	9	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	42	0	469	0	11	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	113	0	539	0	47	0	651	0
Entry flow Lane 1, pcu/h	113	0	253	0	47	0	306	0
Entry flow Lane 2, pcu/h	0	0	286	0	0	0	345	0
Conflicting flow, pcu/h	510	0	54	0	663	0	101	0

Results: Approach Measures of Effectiveness

HCM 2010 Model *(build yr)*	**N**		**E**		**S**		**W**	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*
Entry Capacity, veh/h	768	NA	1024	1027	690	NA	989	994
Entry Flow Rates, veh/h	109	NA	239	269	45	NA	288	325
V/C ratio	**0.14**	#VALUE!	**0.23**	**0.26**	**0.07**	#VALUE!	**0.29**	**0.33**
Control Delay, s/veh	**6.2**	#VALUE!	**5.7**	**6.1**	**5.9**	#VALUE!	**6.6**	**7.0**
LOS	A	#VALUE!	A	A	A	#VALUE!	A	A
95th % Queue (ft)	**13**	#VALUE!	**24**	**28**	**5**	#VALUE!	**32**	**38**
Approach Delay, LOS	6.2 sec, LOS A		5.9 sec, LOS A		5.9 sec, LOS A		6.8 sec, LOS A	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#VALUE!				#VALUE!	

Calibrated Model *(future yr)*	**N**		**E**		**S**		**W**	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*
Entry Capacity, veh/h	1007	NA	1466	1474	877	NA	1399	1413
Entry Flow Rates, veh/h	109	NA	239	269	45	NA	288	325
V/C ratio	**0.11**	#VALUE!	**0.16**	**0.18**	**0.05**	#VALUE!	**0.21**	**0.23**
Control Delay, s/veh	**4.6**	#VALUE!	**3.7**	**3.9**	**4.6**	#VALUE!	**4.3**	**4.5**
LOS	A	#VALUE!	A	A	A	#VALUE!	A	A
95th % Queue (ft)	**9**	#VALUE!	**15**	**18**	**4**	#VALUE!	**21**	**24**
Approach Delay, LOS	4.6 sec, LOS A		3.8 sec, LOS A		4.6 sec, LOS A		4.4 sec, LOS A	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#N/A				#N/A	

v2.1

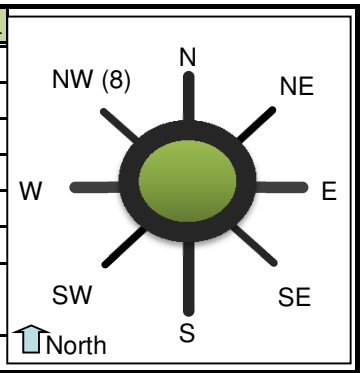
Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
# of Conflicting Exit Flow Lanes	**2**	**2**	**2**	**2**	**2**	**2**
Volumes						
Entry Leg: Insert Right Turn Volume						
Exit Leg: ***(Select Input Method)***						
*Lane Flow in Exit Leg****						
Sum of inner circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
Sum of outer circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
*Critical Lane Flow (Manual) in Exit Leg****						
Volume Characteristics						
PHF (Entry Leg)						
F_{HV} (Entry Leg)						
F_{ped}						
PHF (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
F_{HV} (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
Volume Characteristics are already taken into account for Default method ONLY. Insert Values above if Manual method.						
Entry/Conflicting Flows						
Entry Flow						
Conflicting Critical Flow						
Bypass Lane Results						
Entry Capacity of Bypass, veh/h						
Flow Rates of Exiting Traffic, veh/h						
V/C ratio						
Control Delay, sec/pcu						
LOS						
95th % Queue (ft)						

General & Site Information

v2.1

Analyst:	Graham Malone
Agency/Co:	Pond & Company
Date:	8/15/2014
Project or PI#:	US 80 at Hodges St. PI #0012216
Year, Peak Hour:	2025 AM Peak
County/District:	Laurens County
Intersection:	US 80 at Hodges St.



Volumes

Entry Legs (FROM)	N1 (1)	N2 (1)	NE1 (2)	NE2 (2)	E1 (3)	E2 (3)	SE1 (4)	SE2 (4)
Lane Designation	Lf-Th-Rt	SELECT	SELECT	SELECT	Left-Thru	Right-Thru	SELECT	SELECT
Exit Legs (TO) N (1), vph						16		
NE (2), vph								
E (3), vph	34							
SE (4), vph								
S (5), vph	66				23			
SW (6), vph								
W (7), vph	37				181	213		
NW (8), vph								
Entry Volume, vph	137	0	0	0	204	229	0	0

	S1 (5)	S2 (5)	SW1 (6)	SW2 (6)	W1 (7)	W2 (7)	NW1 (8)	NW2 (8)
Lane Designation	Lf-Th-Rt	SELECT	SELECT	SELECT	Left-Thru	Right-Thru	SELECT	SELECT
N (1), vph	18				11			
NE (2), vph								
E (3), vph	5				162	191		
SE (4), vph								
S (5), vph						4		
SW (6), vph								
W (7), vph	13							
NW (8), vph								
Entry Volume, vph	36	0	0	0	173	195	0	0

	N	NE	E	SE	S	SW	W	NW
# of Entry Flow Lanes	1	0	2	0	1	0	2	0
# of Conflict Flow Lanes	2	2	2	2	2	2	2	2

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	98%	100%	95%	100%	98%	100%	95%	100%
% Heavy Vehicles	2%	0%	5%	0%	2%	0%	5%	0%
% Bicycles	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians **(ped/hr)**	0	0	0	0	0	0	0	0
PHF	*0.85*	*0.85*	*0.85*	*0.85*	*0.85*	*0.85*	*0.85*	*0.85*
F_{hv}	0.980	1.000	0.952	1.000	0.980	1.000	0.952	1.000
F_{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to N (1), pcu/h	0	0	20	0	22	0	14	0

Leg #								
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	41	0	0	0	6	0	436	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	79	0	28	0	0	0	5	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	44	0	487	0	16	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	164	0	535	0	43	0	455	0
Entry flow Lane 1, pcu/h	164	0	252	0	43	0	214	0
Entry flow Lane 2, pcu/h	0	0	283	0	0	0	241	0
Conflicting flow, pcu/h	531	0	51	0	490	0	148	0

Results: Approach Measures of Effectiveness

HCM 2010 Model *(build yr)*	**N**		**E**		**S**		**W**	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*
Entry Capacity, veh/h	764	NA	1036	1039	786	NA	963	970
Entry Flow Rates, veh/h	161	NA	240	269	42	NA	204	229
V/C ratio	**0.21**	#VALUE!	**0.23**	**0.26**	**0.05**	#VALUE!	**0.21**	**0.24**
Control Delay, s/veh	**7.0**	#VALUE!	**5.7**	**6.0**	**5.1**	#VALUE!	**5.8**	**6.0**
LOS	A	#VALUE!	A	A	A	#VALUE!	A	A
95th % Queue (ft)	**20**	#VALUE!	**24**	**27**	**4**	#VALUE!	**21**	**24**
Approach Delay, LOS	7 sec, LOS A		5.8 sec, LOS A		5.1 sec, LOS A		5.9 sec, LOS A	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#VALUE!				#VALUE!	

Calibrated Model *(future yr)*	**N**		**E**		**S**		**W**	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*
Entry Capacity, veh/h	997	NA	1485	1492	1034	NA	1346	1367
Entry Flow Rates, veh/h	161	NA	240	269	42	NA	204	229
V/C ratio	**0.16**	#VALUE!	**0.16**	**0.18**	**0.04**	#VALUE!	**0.15**	**0.17**
Control Delay, s/veh	**5.1**	#VALUE!	**3.7**	**3.8**	**3.8**	#VALUE!	**3.9**	**4.0**
LOS	A	#VALUE!	A	A	A	#VALUE!	A	A
95th % Queue (ft)	**15**	#VALUE!	**15**	**17**	**3**	#VALUE!	**14**	**16**
Approach Delay, LOS	5.1 sec, LOS A		3.8 sec, LOS A		3.8 sec, LOS A		4 sec, LOS A	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#N/A				#N/A	

v2.1

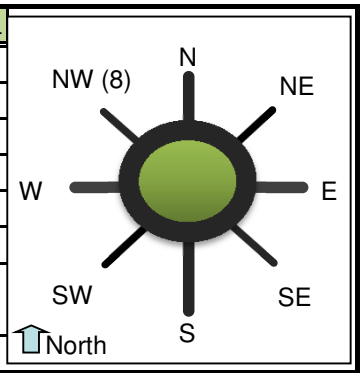
Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
# of Conflicting Exit Flow Lanes	**2**	**2**	**2**	**2**	**2**	**2**
Volumes						
Entry Leg: Insert Right Turn Volume						
Exit Leg: ***(Select Input Method)***						
*Lane Flow in Exit Leg****						
Sum of inner circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
Sum of outer circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
*Critical Lane Flow (Manual) in Exit Leg****						
Volume Characteristics						
PHF (Entry Leg)						
F_{HV} (Entry Leg)						
F_{ped}						
PHF (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
F_{HV} (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
Volume Characteristics are already taken into account for Default method ONLY. Insert Values above if Manual method.						
Entry/Conflicting Flows						
Entry Flow						
Conflicting Critical Flow						
Bypass Lane Results						
Entry Capacity of Bypass, veh/h						
Flow Rates of Exiting Traffic, veh/h						
V/C ratio						
Control Delay, sec/pcu						
LOS						
95th % Queue (ft)						

General & Site Information

v2.1

Analyst:	Graham Malone
Agency/Co:	Pond & Company
Date:	8/15/2014
Project or PI#:	US 80 at Hodges St. PI 0012216
Year, Peak Hour:	2025, PM Peak
County/District:	Laurens County
Intersection:	US 80 at Hodges St.



Volumes

Entry Legs (FROM)	N1 (1)	N2 (1)	NE1 (2)	NE2 (2)	E1 (3)	E2 (3)	SE1 (4)	SE2 (4)
Lane Designation	Lf-Th-Rt	SELECT	SELECT	SELECT	Left-Thru	Right-Thru	SELECT	SELECT
Exit Legs (TO) N (1), vph						43		
NE (2), vph								
E (3), vph	24							
SE (4), vph								
S (5), vph	54				32			
SW (6), vph								
W (7), vph	47				241	265		
NW (8), vph								
Entry Volume, vph	125	0	0	0	273	308	0	0

	S1 (5)	S2 (5)	SW1 (6)	SW2 (6)	W1 (7)	W2 (7)	NW1 (8)	NW2 (8)
Lane Designation	Lf-Th-Rt	SELECT	SELECT	SELECT	Left-Thru	Right-Thru	SELECT	SELECT
N (1), vph	24				23			
NE (2), vph								
E (3), vph	16				308	363		
SE (4), vph								
S (5), vph						10		
SW (6), vph								
W (7), vph	12							
NW (8), vph								
Entry Volume, vph	52	0	0	0	331	373	0	0

	N	NE	E	SE	S	SW	W	NW
# of Entry Flow Lanes	1	0	2	0	1	0	2	0
# of Conflict Flow Lanes	2	2	2	2	2	2	2	2

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	97%	100%	94%	100%	97%	100%	94%	100%
% Heavy Vehicles	3%	0%	6%	0%	3%	0%	6%	0%
% Bicycles	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians **(ped/hr)**	0	0	0	0	0	0	0	0
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
F_{hv}	0.971	1.000	0.943	1.000	0.971	1.000	0.943	1.000
F_{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to N (1), pcu/h	0	0	48	0	26	0	26	0

Leg #								
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	26	0	0	0	17	0	749	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	59	0	36	0	0	0	11	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	51	0	565	0	13	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	136	0	648	0	56	0	786	0
Entry flow Lane 1, pcu/h	136	0	305	0	56	0	369	0
Entry flow Lane 2, pcu/h	0	0	344	0	0	0	416	0
Conflicting flow, pcu/h	613	0	65	0	800	0	120	0

Results: Approach Measures of Effectiveness

HCM 2010 Model *(build yr)*	**N**		**E**		**S**		**W**	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*
Entry Capacity, veh/h	714	NA	1016	1019	627	NA	974	980
Entry Flow Rates, veh/h	132	NA	287	324	55	NA	348	393
V/C ratio	**0.18**	#VALUE!	**0.28**	**0.32**	**0.09**	#VALUE!	**0.36**	**0.40**
Control Delay, s/veh	**7.1**	#VALUE!	**6.4**	**6.8**	**6.7**	#VALUE!	**7.5**	**8.1**
LOS	A	#VALUE!	A	A	A	#VALUE!	A	A
95th % Queue (ft)	**17**	#VALUE!	**31**	**37**	**7**	#VALUE!	**43**	**52**
Approach Delay, LOS	7.1 sec, LOS A		6.6 sec, LOS A		6.7 sec, LOS A		7.8 sec, LOS A	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#VALUE!				#VALUE!	

Calibrated Model *(future yr)*	**N**		**E**		**S**		**W**	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right-Thru*
Entry Capacity, veh/h	917	NA	1450	1460	775	NA	1372	1388
Entry Flow Rates, veh/h	132	NA	287	324	55	NA	348	393
V/C ratio	**0.14**	#VALUE!	**0.20**	**0.22**	**0.07**	#VALUE!	**0.25**	**0.28**
Control Delay, s/veh	**5.3**	#VALUE!	**4.1**	**4.3**	**5.4**	#VALUE!	**4.8**	**5.0**
LOS	A	#VALUE!	A	A	A	#VALUE!	A	A
95th % Queue (ft)	**13**	#VALUE!	**20**	**23**	**6**	#VALUE!	**27**	**31**
Approach Delay, LOS	5.3 sec, LOS A		4.2 sec, LOS A		5.4 sec, LOS A		4.9 sec, LOS A	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#N/A				#N/A	

v2.1

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
# of Conflicting Exit Flow Lanes	**2**	**2**	**2**	**2**	**2**	**2**
Volumes						
Entry Leg: Insert Right Turn Volume						
Exit Leg: ***(Select Input Method)***						
*Lane Flow in Exit Leg****						
Sum of inner circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
Sum of outer circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
*Critical Lane Flow (Manual) in Exit Leg****						
Volume Characteristics						
PHF (Entry Leg)						
F_{HV} (Entry Leg)						
F_{ped}						
PHF (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
F_{HV} (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
Volume Characteristics are already taken into account for Default method ONLY. Insert Values above if Manual method.						
Entry/Conflicting Flows						
Entry Flow						
Conflicting Critical Flow						
Bypass Lane Results						
Entry Capacity of Bypass, veh/h						
Flow Rates of Exiting Traffic, veh/h						
V/C ratio						
Control Delay, sec/pcu						
LOS						
95th % Queue (ft)						

Appendix C:
2015, 2018 and 2025 Signal Warrant Analysis Reports

HCS+: MUTCD Signal Warrants Release 5.5

Analyst: Pond & Company
Agency: Pond & Company
Date: 8/13/2014
Project ID:
EW Street: US 80

Intersection: US 80 at Hodges St.
Jurisdiction: City of Dublin, GA
Units: U.S. Customary
Analysis Year: 2015
NS Street: Hodges St.

General Information

Major St. Speed (mph): 40
Nearest Signal (ft): 1200
Crashes per Yr: 0

Population: Not less than 10000
Coordinated Signal System: N

School Crossing

Students in Highest Hour: 0
Adequate Gaps in Period: 0
Minutes in Period: 0

Roadway Network

Two Major Routes: 0
Weekend Count: 0
5-yr Growth Factor: 0

Geometry and Traffic

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	0	1	0	0	1	0
LaneUsage	L	TR		L	TR			LTR			LTR	

Results

Warrant 1: Eight-Hour Vehicular Volume [ ]
1 A. Minimum Vehicular Volumes [ ]
1 B. Interruption of Continuous Traffic [ ]
1 80% Vehicular --and-- Interruption Volumes [ ]

Warrant 2: Four-Hour Vehicular Volume
2 A. Four-Hour Vehicular Volumes [ ]

Warrant 3: Peak Hour [ ]
3 A. Peak-Hour Conditions [ ]
3 B. Peak-Hour Vehicular Volume Hours Met [ ]

Warrant 4: Pedestrian Volume [ ]
4 A. Pedestrian Volumes [ ]
4 B. Gaps Same Period [ ]

Warrant 5: School Crossing [ ]
5 A. Student Volumes [ ]
5 B. Gaps Same Period [ ]

Warrant 6: Coordinated Signal System
6 Degree of Platooning [ ]

Warrant 7: Crash Experience [ ]
7 A. Adequate trials of alternatives [ ]

7 B. Reported crashes [ ]
7 80% Volumes for Warrants 1A, 1B --or-- 4 [X]

Warrant 8: Roadway Network [ ]
8 A. Weekday Volume [ ]
8 B. Weekend Volume [ ]

Summary

Hours	Major Volume	Minor Volume	Total Volume	Delay (Veh-hr)	1A 100%	1A 80%	1B 100%	1B 80%	2 100%	3A 100%	3B 100%
07-08	589	85	691	0.0	No	No	No	No	No	No	No
08-09	661	90	775	0.0	No	No	No	No	No	No	No
09-10	707	71	802	0.0	No	No	No	No	No	No	No
10-11	859	78	957	0.0	No	No	No	Yes	No	No	No
11-12	1168	79	1275	0.0	No	No	Yes	Yes	No	No	No
12-13	1322	97	1452	0.0	No	No	Yes	Yes	Yes	No	No
13-14	1039	103	1167	0.0	No	No	Yes	Yes	No	No	No
14-15	995	87	1114	0.0	No	No	Yes	Yes	No	No	No
15-16	985	79	1099	0.0	No	No	Yes	Yes	No	No	No
16-17	1131	105	1262	0.0	No	No	Yes	Yes	No	No	No
17-18	1017	93	1146	0.0	No	No	Yes	Yes	No	No	No
18-19	716	71	813	0.0	No	No	No	No	No	No	No
Total	11189	1038	12553		0	0	7	8	1	0	0

Traffic Volumes (vph)

Eastbound			Westbound			Northbound			Southbound		
L	T	R	L	T	R	L	T	R	L	T	R
6	255	7	22	286	13	6	11	0	21	34	30
11	274	1	15	345	15	10	14	0	29	44	17
10	343	4	24	316	10	4	20	0	20	36	15
17	379	6	37	397	23	8	12	0	16	38	24
26	536	12	62	509	23	17	11	0	14	34	31
32	611	24	47	578	30	14	19	0	33	36	28
28	542	12	42	396	19	12	13	0	31	40	32
21	464	13	40	439	18	13	19	0	20	41	26
27	478	14	26	419	21	10	25	0	22	26	31
24	597	9	25	438	38	9	17	0	22	41	42
24	513	7	40	392	41	12	24	0	22	47	24
36	322	7	28	307	16	4	22	0	17	37	17

Pedestrian Volumes and Gaps (Per Hour)

Volume	Gap	Volume	Gap	Volume	Gap	Volume	Gap
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

!

Delay	sec/veh	veh-hrs	sec/veh	veh-hrs	sec/veh	veh-hrs	sec/veh	veh-hrs
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

HCS+: MUTCD Signal Warrants Release 5.5

Analyst: Pond & Company
Agency: Pond & Company
Date: 8/13/2014
Project ID:
EW Street: US 80

Intersection: US 80 at Hodges St.
Jurisdiction: City of Dublin, GA
Units: U.S. Customary
Analysis Year: 2018
NS Street: Hodges St.

General Information

Major St. Speed (mph): 40
Nearest Signal (ft): 1200
Crashes per Yr: 0

Population: Not less than 10000
Coordinated Signal System: N

School Crossing

Students in Highest Hour: 0
Adequate Gaps in Period: 0
Minutes in Period: 0

Roadway Network

Two Major Routes: 0
Weekend Count: 0
5-yr Growth Factor: 0

Geometry and Traffic

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	0	1	0	0	1	0
LaneUsage	L	TR		L	TR			LTR			LTR	

Results

Warrant 1: Eight-Hour Vehicular Volume [X]
1 A. Minimum Vehicular Volumes [ ]
1 B. Interruption of Continuous Traffic [X]
1 80% Vehicular --and-- Interruption Volumes [ ]

Warrant 2: Four-Hour Vehicular Volume
2 A. Four-Hour Vehicular Volumes [ ]

Warrant 3: Peak Hour [ ]
3 A. Peak-Hour Conditions [ ]
3 B. Peak-Hour Vehicular Volume Hours Met [ ]

Warrant 4: Pedestrian Volume [ ]
4 A. Pedestrian Volumes [ ]
4 B. Gaps Same Period [ ]

Warrant 5: School Crossing [ ]
5 A. Student Volumes [ ]
5 B. Gaps Same Period [ ]

Warrant 6: Coordinated Signal System
6 Degree of Platooning [ ]

Warrant 7: Crash Experience [ ]
7 A. Adequate trials of alternatives [ ]

7 B. Reported crashes [ ]
7 80% Volumes for Warrants 1A, 1B --or-- 4 [X]

Warrant 8: Roadway Network [ ]
8 A. Weekday Volume [ ]
8 B. Weekend Volume [ ]

Summary

Hours	Major Volume	Minor Volume	Total Volume	Delay (Veh-hr)	1A 100%	1A 80%	1B 100%	1B 80%	2 100%	3A 100%	3B 100%
07-08	623	90	732	0.0	No	No	No	No	No	No	No
08-09	700	94	826	0.0	No	No	No	No	No	No	No
09-10	749	75	859	0.0	No	No	No	Yes	No	No	No
10-11	909	83	1025	0.0	No	No	Yes	Yes	No	No	No
11-12	1236	84	1372	0.0	No	No	Yes	Yes	No	No	No
12-13	1400	102	1560	0.0	No	No	Yes	Yes	Yes	No	No
13-14	1099	109	1258	0.0	No	No	Yes	Yes	No	No	No
14-15	1052	92	1195	0.0	No	No	Yes	Yes	No	No	No
15-16	1043	85	1178	0.0	No	No	Yes	Yes	No	No	No
16-17	1197	110	1342	0.0	No	No	Yes	Yes	Yes	No	No
17-18	1075	99	1230	0.0	No	No	Yes	Yes	No	No	No
18-19	755	75	875	0.0	No	No	No	Yes	No	No	No
Total	11838	1098	13452		0	0	8	10	2	0	0

Traffic Volumes (vph)

Eastbound			Westbound			Northbound			Southbound		
L	T	R	L	T	R	L	T	R	L	T	R
6	269	8	24	302	14	6	12	1	22	36	32
12	290	1	16	365	16	11	15	6	30	46	18
11	363	4	26	334	11	4	22	9	21	38	16
18	401	6	39	421	24	9	13	11	17	40	26
28	566	13	66	539	24	18	12	22	15	36	33
33	647	26	50	612	32	15	20	23	34	38	30
30	573	13	44	419	20	13	14	23	33	42	34
22	491	14	42	464	19	14	20	17	21	43	28
29	506	15	28	443	22	11	27	12	24	28	33
26	631	10	27	463	40	10	18	7	23	43	44
25	543	8	42	414	43	13	26	17	23	50	26
37	340	8	29	324	17	4	24	17	18	39	18

Pedestrian Volumes and Gaps (Per Hour)

Volume	Gap	Volume	Gap	Volume	Gap	Volume	Gap
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

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Delay	sec/veh	veh-hrs	sec/veh	veh-hrs	sec/veh	veh-hrs	sec/veh	veh-hrs
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

HCS+: MUTCD Signal Warrants Release 5.5

Analyst: Pond & Company
Agency: Pond & Company
Date: 8/13/2014
Project ID:
EW Street: US 80

Intersection: US 80 at Hodges St.
Jurisdiction: City of Dublin, GA
Units: U.S. Customary
Analysis Year: 2025
NS Street: Hodges St.

General Information

Major St. Speed (mph): 40
Nearest Signal (ft): 1200
Crashes per Yr: 0

Population: Not less than 10000
Coordinated Signal System: N

School Crossing

Students in Highest Hour: 0
Adequate Gaps in Period: 0
Minutes in Period: 0

Roadway Network

Two Major Routes: 0
Weekend Count: 0
5-yr Growth Factor: 0

Geometry and Traffic

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	0	1	0	0	1	0
LaneUsage	L	TR		L	TR			LTR			LTR	

Results

Warrant 1: Eight-Hour Vehicular Volume [X]
1 A. Minimum Vehicular Volumes [ ]
1 B. Interruption of Continuous Traffic [X]
1 80% Vehicular --and-- Interruption Volumes [ ]

Warrant 2: Four-Hour Vehicular Volume
2 A. Four-Hour Vehicular Volumes [X]

Warrant 3: Peak Hour [ ]
3 A. Peak-Hour Conditions [ ]
3 B. Peak-Hour Vehicular Volume Hours Met [ ]

Warrant 4: Pedestrian Volume [ ]
4 A. Pedestrian Volumes [ ]
4 B. Gaps Same Period [ ]

Warrant 5: School Crossing [ ]
5 A. Student Volumes [ ]
5 B. Gaps Same Period [ ]

Warrant 6: Coordinated Signal System
6 Degree of Platooning [ ]

Warrant 7: Crash Experience [ ]
7 A. Adequate trials of alternatives [ ]

7 B. Reported crashes [ ]
7 80% Volumes for Warrants 1A, 1B --or-- 4 [X]

Warrant 8: Roadway Network [ ]
8 A. Weekday Volume [ ]
8 B. Weekend Volume [ ]

Summary

Hours	Major Volume	Minor Volume	Total Volume	Delay (Veh-hr)	1A 100%	1A 80%	1B 100%	1B 80%	2 100%	3A 100%	3B 100%
07-08	709	103	832	0.0	No	No	No	No	No	No	No
08-09	796	109	934	0.0	No	No	No	Yes	No	No	No
09-10	854	85	968	0.0	No	No	No	Yes	No	No	No
10-11	1036	94	1153	0.0	No	No	Yes	Yes	No	No	No
11-12	1407	94	1534	0.0	No	No	Yes	Yes	Yes	No	No
12-13	1595	116	1751	0.0	No	No	Yes	Yes	Yes	No	No
13-14	1252	124	1406	0.0	No	Yes	Yes	Yes	Yes	No	No
14-15	1200	105	1343	0.0	No	No	Yes	Yes	Yes	No	No
15-16	1188	95	1325	0.0	No	No	Yes	Yes	No	No	No
16-17	1363	127	1522	0.0	No	Yes	Yes	Yes	Yes	No	No
17-18	1225	112	1380	0.0	No	No	Yes	Yes	Yes	No	No
18-19	863	85	980	0.0	No	No	No	Yes	No	No	No
Total	13488	1249	15128		0	2	8	11	6	0	0

Traffic Volumes (vph)

Eastbound			Westbound			Northbound			Southbound		
L	T	R	L	T	R	L	T	R	L	T	R
7	307	8	27	344	16	7	13	0	26	41	36
13	330	1	18	416	18	12	17	0	35	53	21
12	414	5	29	382	12	5	24	0	24	43	18
20	457	7	45	479	28	9	14	0	19	46	29
31	646	14	75	613	28	20	13	0	16	41	37
38	737	29	57	697	37	17	23	0	40	43	33
33	653	14	51	478	23	14	16	0	37	48	39
25	560	16	48	529	22	15	23	0	24	49	32
33	576	17	31	506	25	12	30	0	27	31	37
29	719	11	30	528	46	11	21	0	27	49	51
29	618	8	48	473	49	14	29	0	26	57	29
43	388	8	34	370	20	5	27	0	20	45	20

Pedestrian Volumes and Gaps (Per Hour)

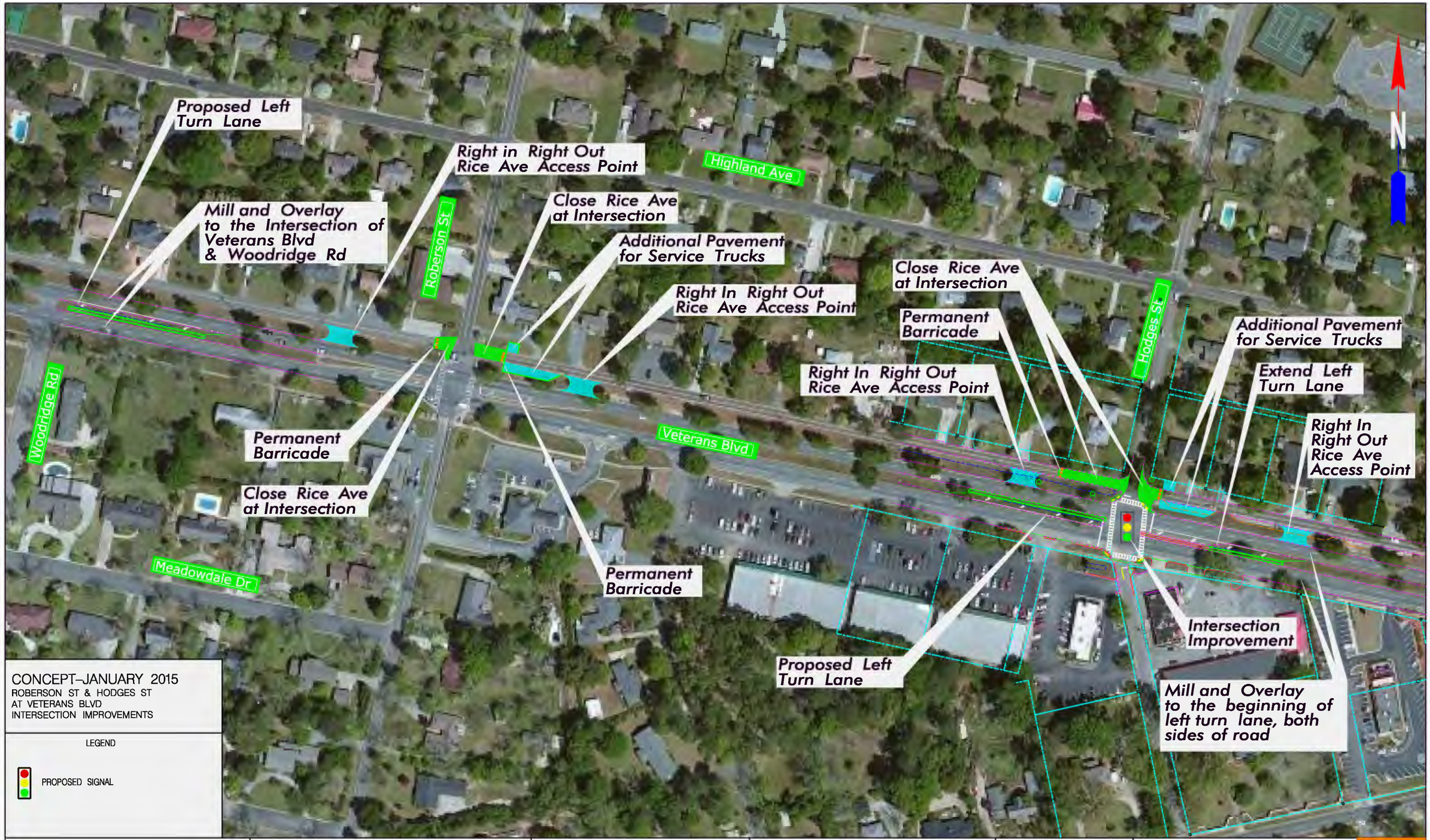
Volume	Gap	Volume	Gap	Volume	Gap	Volume	Gap
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

!

Delay	sec/veh	veh-hrs	sec/veh	veh-hrs	sec/veh	veh-hrs	sec/veh	veh-hrs
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Appendix D:
Concept Drawing



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REVISION DATES

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INTERSECTION IMPROVEMENTS

ALT 1