

*Traffic Impact Study
For Submittal to City of North Port*



Sabal Trace Development

City of North Port, Florida

Prepared for:

Sabal Trace Development Partners, LLC.

Prepared by:

Kimley-Horn and Associates, Inc.
Orlando, Florida

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November 2018
148860000



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Date

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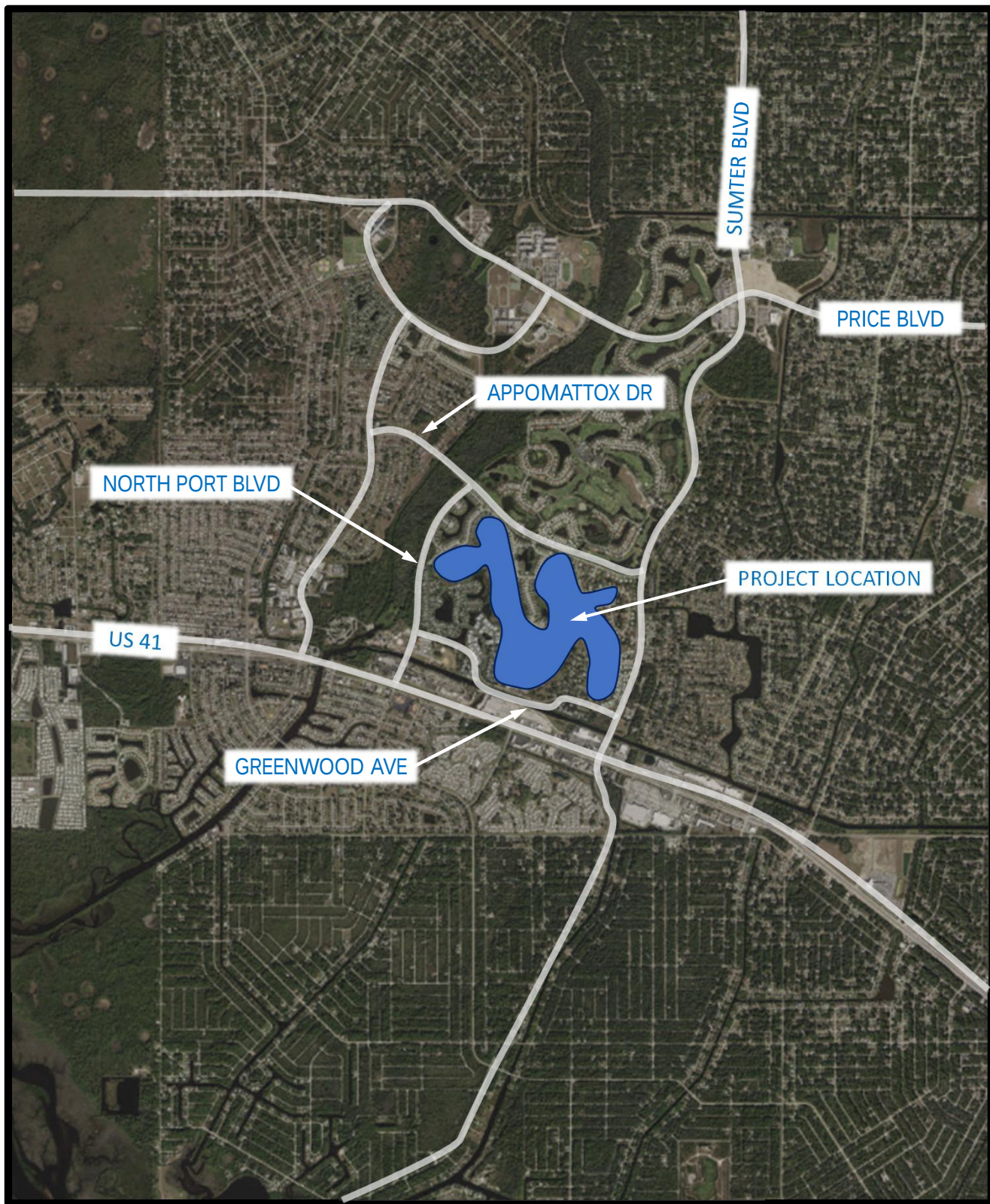
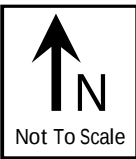
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INTRODUCTION

The purpose of this report is to document a transportation concurrency analysis for the proposed Sabal Trace Development. This report identifies the estimated traffic impacts of the proposed 200 single family homes, 300 multi-family homes, 300 senior living units, 30,000 square feet of medical office, 20,000 square feet of commercial uses and 50,000 square feet of mini-storage facility. In addition, this report summarizes the procedures and findings of this analysis and presents recommendations for transportation concurrency approval.

The proposed redevelopment site is located in the southwest quadrant of the intersection of Sumter Boulevard & Appomattox Drive in the City of North Port, Sarasota County, Florida. Figure 1 illustrates the location of the project site.

Access to the proposed site will include one access point on Greenwood Avenue and one access point along Appomattox Drive.



Prior to undertaking this analysis, a formal study methodology was prepared and submitted on April 16, 2018 to City of North Port staff. The methodology is summarized in a letter contained in Appendix A of this report. In general, the following procedural steps were undertaken:

- Traffic volumes anticipated to be generated by the proposed development were estimated using the Institute of Transportation Engineers' *Trip Generation Manual*, 10th Edition;
- Project traffic was distributed and assigned to the public roadway network based upon the Florida Standard Urban Transportation Model Structure (FSTUMS) District 1 transportation planning model, specifically the Existing plus Committed (E+C) network, with incorporation of the most current socio-economic and network data sets maintained by the Sarasota/Manatee MPO;
- The study area network was defined based upon all roadway segments for which the cumulative project traffic consumed 5.0 percent or greater of the total roadway capacity, per Section 5-8 of the "City of North Port Unified Land Development Code" (June 2010);
- Existing a.m. and p.m. peak-hour traffic volumes in the study area were collected and adjusted to reflect peak-season volumes using the Florida Department of Transportation's (FDOT) seasonal factor (SF), and were used as part of future background volumes;
- Work Programs of Sarasota County, City of North Port, and the Florida Department of Transportation (FDOT) were reviewed to identify scheduled road improvements in the area;
- Background traffic includes existing traffic grown using a rate derived from the Florida Department of Transportation (FDOT) Historic Annual Average Daily Traffic volumes (AADT) in the area; and

- Intersection and roadway segment level of service analyses within the study area for existing and future scenarios were completed using Synchro version 10 and analytical methods defined in the FDOT 2012 *Quality/Level of Service Handbook*.

PROJECT TRAFFIC

Project traffic used in this analysis is defined as the vehicle trips expected to be generated by the proposed mixed-use development. These trips were distributed and assigned throughout the study roadway network.

Existing and Proposed Land Uses

The proposed development site is located generally north of Greenwood Avenue, west of Sumter Boulevard, and east of North Port in the City of North Port, Sarasota County, Florida. Currently, the site is occupied by a 200-acre golf course, with a full access driveway located on Greenwood Avenue.

Project Trip Generation

The trip generation potential for the proposed mixed-use development for the a.m. and p.m. peak-hour was estimated using information contained in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition, for the following Land Use Codes (LUC):

- LUC 151 - Mini-Warehouse
- LUC 210 - Single-Family Housing
- LUC 220 - Multifamily Housing (Villas)
- LUC 251 - Senior Adult Housing
- LUC 720 - Medical-Dental Office
- LUC 820 - Shopping Center (Retail)

Internal capture was calculated per the procedures of the ITE Trip Generation Handbook, 3rd edition and deducted from total generated trips. Internal capture calculations are included in Appendix B.

Per the approved methodology, the average pass-by rate of 34 percent for a shopping center was assumed based on the Institute of Transportation Engineers' *Trip Generation Handbook*, 3rd Edition. These pass-by trips were subtracted from the total external trips to determine net, new project trips and are documented in Appendix C.

The estimated new external trips expected to be generated by the proposed mixed-use development is 541 two-way, trip-ends (222 entering/319 exiting) for the a.m. peak-hour and 602 two-way, trip-ends (333 entering/269 exiting) for the p.m. peak-hour. The a.m. and p.m. peak-hour trip generation potential is summarized in Table 1 and is documented in Appendix B.

Table 1: Project Trip Generation Potential

AM Peak Hour														
Land Use	ITE Code	Size	ITE Units	Entering	Exiting	Gross Volumes		Internal Capture		Pass-by Capture		Net New Trips		Total
						In	Out	%	Trips	%	Trips	In	Out	
Single Family Detached	210	200	DU ¹	25%	75%	37	110	1.9%	2	0%	0	36	109	145
Townhomes	220	300	DU ¹	23%	77%	31	104	1.9%	2	0%	0	30	103	133
Senior Adult Housing Detached	251	300	DU ¹	33%	67%	31	63	1.9%	2	0%	0	30	62	92
Shopping Center	820	20	KSF ²	62%	38%	100	62	7.2%	12	34%	52	68	30	98
Mini Storage	151	50	KSF ²	60%	40%	3	2	7.2%	0	0%	0	3	2	5
Medical Office	720	30	KSF ²	78%	22%	59	17	11.8%	8	0%	0	55	13	68
Net, New Project Trips												222	319	541
PM Peak Hour														
Land Use	ITE Code	Size	ITE Units	Entering	Exiting	Gross Volumes		Internal Capture		Pass-by Capture		Net New Trips		Total
						In	Out	%	Trips	%	Trips	In	Out	
Single Family Detached	210	200	DU ¹	63%	37%	125	73	8.8%	18	0%	0	116	64	180
Townhomes	220	300	DU ¹	63%	37%	99	58	8.8%	14	0%	0	92	51	143
Senior Adult Housing Detached	251	300	DU ¹	61%	39%	69	44	8.8%	10	0%	0	64	39	103
Shopping Center	820	20	KSF ²	48%	52%	79	86	23.6%	38	34%	44	38	45	83
Mini Storage	151	50	KSF ²	47%	53%	4	5	23.6%	2	0%	0	3	4	7
Medical Office	720	30	KSF ²	28%	72%	29	75	17.3%	18	0%	0	20	66	86
Net, New Project Trips												333	269	602

Notes:

¹ DU = Duelling Unit

² KSF = Thousand Square Feet

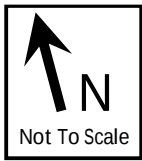
Source: ITE, Trip Generation Manual, 10th Edition

ITE Code	AM Trip Generation Equation	PM Trip Generation Equation
210	$Y = 0.71 * (X) + 4.8$	$LN(Y) = 0.96 * LN(X) + 0.2$
220	$LN(Y) = 0.95 * LN(X) + 0.51$	$LN(Y) = 0.89 * LN(X) + 0.02$
251	$LN(Y) = 0.76 * LN(X) + 0.21$	$LN(Y) = 0.78 * LN(X) + 0.28$
820	$Y = 0.5 * (X) + 151.78$	$LN(Y) = 0.74 * LN(X) + 2.89$
151	$Y = 0.1 * (X)$	$Y = 0.17 * (X)$
720	$LN(Y) = 0.89 * LN(X) + 1.31$	$Y = 3.39 * (X) + 2.02$

Project Trip Distribution

New traffic expected to be generated by the proposed Sabal Trace Development was distributed and assigned to the adjacent roadway network based upon the Florida Standard Urban Transportation Model Structure (FSUTMS) District 1 transportation planning model, specifically the Existing plus Committed (E+C) network, with incorporation of the most current socio-economic and network data sets maintained by the Sarasota/Manatee MPO. Adjustments to the distribution were made using engineering judgement. Existing travel patterns were determined through current traffic counts at adjacent intersections obtained by Kimley-Horn and described in later sections of this report.

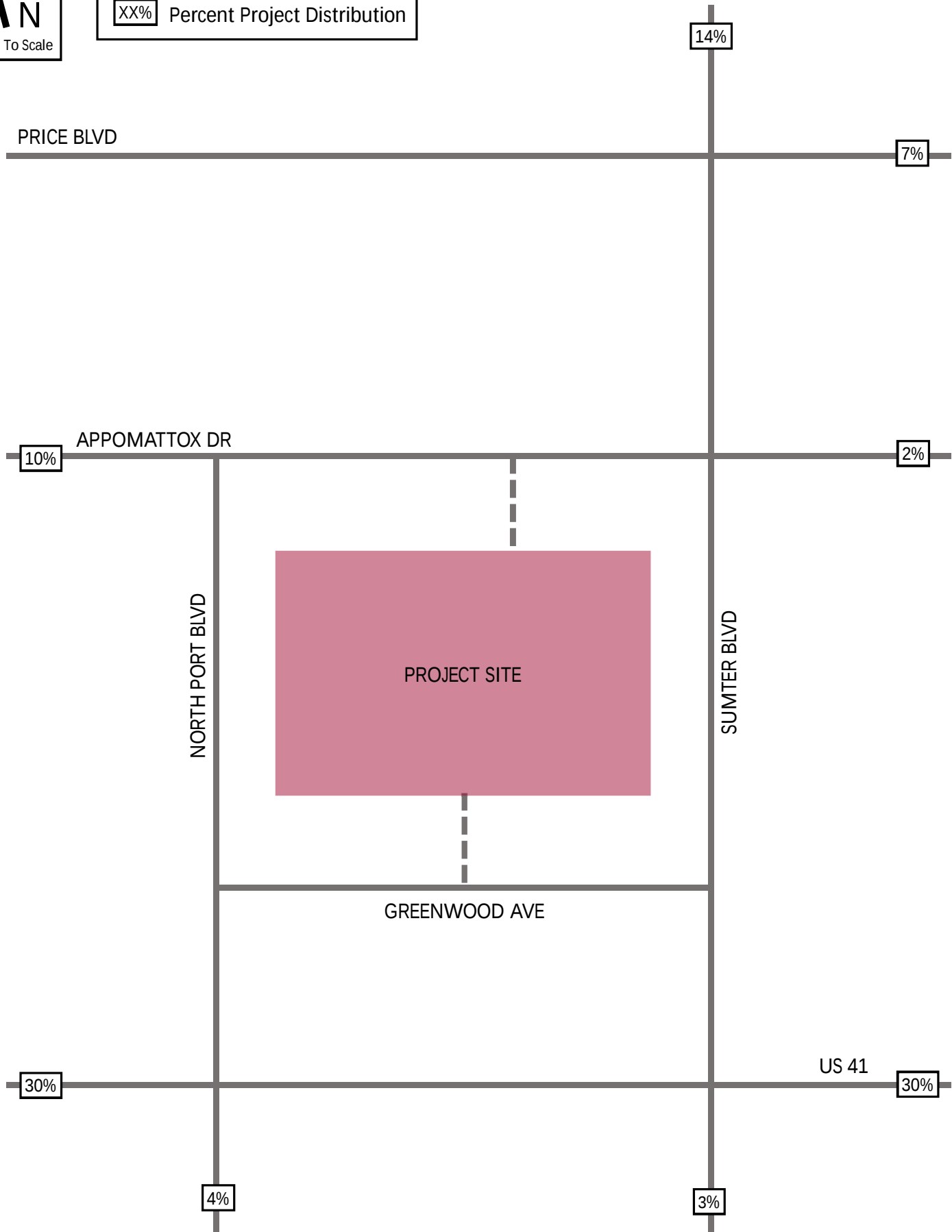
Approximately 67 percent of trips are expected to travel to/from the project site on Greenwood Avenue from US 41 (33 percent of trips are expected to travel to/from areas southeast and 34 percent of trips to/from areas southwest of the project). Approximately 33 percent of project trips are expected to travel to/from areas north of the project site on Appomattox Drive (21 percent of project trips are expected to travel to/from areas northeast and 10 percent of trips to/from areas northwest of the project). The project traffic distribution, in terms of trips, is documented in Figure 2.



Legend

XX%

Percent Project Distribution



SCHEDULED IMPROVEMENTS

A review of the Work Programs for Sarasota County, City of North Port, and FDOT District 1 revealed the following improvement projects near the project site.

US 41 from Salford Boulevard to just beyond Sumter Boulevard is scheduled to be widened from four lanes to six lanes (FDOT project #422710-5) with a completion date of 2019.

STUDY IMPACT AREA

The study area roadway segments are those that are defined as significantly impacted roadways, with the project traffic representing 5.0 percent or greater of the roadway capacity at LOS D as determined from Florida Department of Transportation's (FDOT's) Generalized Service Volume Tables, per the City of North Port Unified Land Development Code Section 5-8. Therefore, study roadway segments include those impacted greater than 5.0 percent of the roadway's capacity at LOS D two-way service volume or those that directly access the project. The study area determination is shown in Table 2. Based upon the trip generation and trip distribution analyses, the following roadway segments were determined to be in the study area:

- Sumter Boulevard from US 41 to Price Boulevard;
- Appomattox Drive from Pan American Boulevard to Sumter Boulevard;
- North Port Boulevard from US 41 to Appomattox Drive; and
- US 41 from River Road to Cranberry Boulevard.

In addition to the above study roadway segments, seven existing intersections were included in the study area. These study intersections are as follows:

- Sumter Boulevard & US 41;
- Sumter Boulevard & Greenwood Avenue;
- Sumter Boulevard & Appomattox Drive;
- Sumter Boulevard & Price Boulevard;
- North Port Boulevard & US 41;
- North Port Boulevard & Greenwood Avenue;
- North Port Boulevard & Appomattox Drive;

Table 2: Determination of Study Area

ROADWAY	FROM	TO	EXISTING + COMMITTED LANEAGE	LOS	P.M. PEAK HOUR TWO-WAY SERVICE VOLUME	PROJECT TRAFFIC ASSIGNMENT	PROJECT TRAFFIC TRIPS	PROJECT TRAFFIC % OF SERVICE VOLUME	WITHIN STUDY NETWORK?
Sumter Blvd	US 41	Greenwood Ave	4	D	3,580	33%	533	14.89%	Y
	Greenwood Ave	Appomattox Dr	4	D	3,580	2%	29	0.80%	N
	Appomattox Dr	Price Blvd	4	D	3,580	22%	354	9.88%	Y
	Price Blvd	I-75	4	D	3,580	14%	12	0.33%	N
Appomattox Drive*	Pan American Blvd	Project Dr	2	D	1,330	8%	46	3.43%	N
	Project Dr	Sumter Blvd	2	D	1,330	23%	130	9.77%	Y
North Port Blvd	US 41	Greenwood Ave	2	D	1,330	34%	153	11.50%	Y
	Greenwood Ave	Appomattox Dr	2	D	1,330	0%	0	0.00%	N
US 41	River Rd	Ortiz Blvd	4	D	3,401	17%	469	13.78%	Y
	Ortiz Blvd	Biscayne Dr	4	D	3,401	22%	606	17.83%	Y
	Biscayne Dr	Pan American Blvd	4	D	3,401	25%	689	20.26%	Y
	Pan American Blvd	North Port Blvd	4	D	3,401	30%	827	24.31%	Y
	North Port Blvd	Sumter Blvd	4	D	3,401	1%	28	0.82%	N
	Sumter Blvd	Salford Blvd	4	D	3,401	30%	875	25.71%	Y
	Salford Blvd	Cranberry Blvd	4	D	3,401	27%	787	23.14%	Y
	Cranberry Blvd	Chamberlain Blvd	4	D	3,401	17%	17	0.51%	N

*First directly accessed segment

**Total Daily Project Traffic Volume

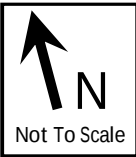
Source: City of North Port Comprehensive Plan Transportation Element

EXISTING TRAFFIC CONDITIONS

Existing traffic conditions were evaluated within the study network. The procedures used in this analysis are discussed below.

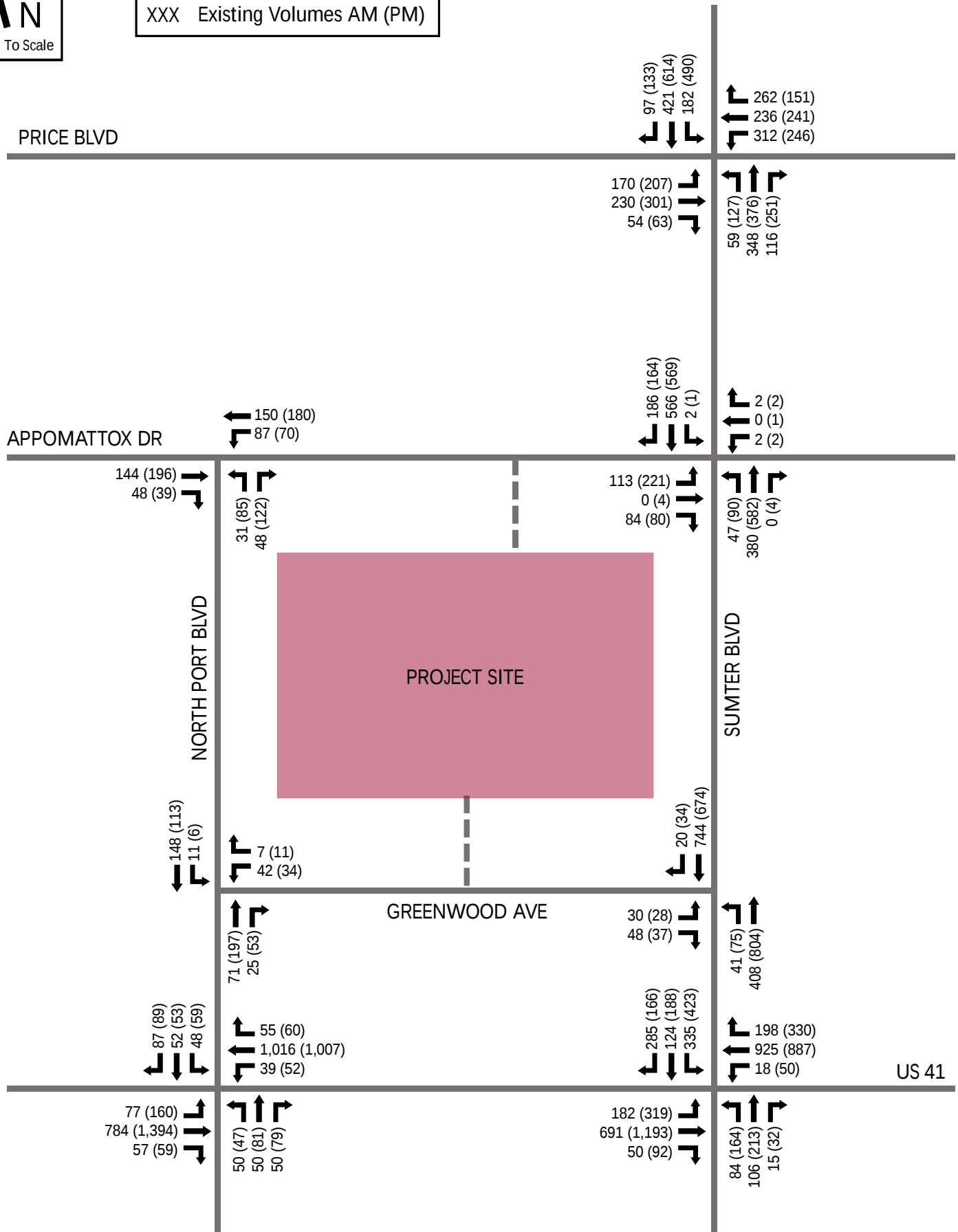
Vehicle turning movement volume counts were conducted by Kimley-Horn and Associates at the seven existing study intersections during the a.m. peak period (7:00 a.m. to 9:00 a.m.) and the p.m. peak period (4:00 p.m. to 6:00 p.m.) to quantify existing peak-hour conditions within the study area. The counts were conducted on Tuesday, June 12, 2018. The raw counts are provided in Appendix D. It should be noted that construction was active at US 41 & Sumter Boulevard, but did not affect any movements of the intersection.

The vehicle counts at the seven study intersections were adjusted to reflect peak-season conditions. This modification was performed using FDOT peak-season correction factor (PSCF) for Sarasota County. These factors are provided in Appendix D. The existing peak-season traffic volumes are shown in Figure 3 and provided in Appendix E.



Legend

XXX Existing Volumes AM (PM)



Using the existing peak-season traffic volumes identified in Figure 3, intersection analyses were conducted for the seven study intersections. The intersection analyses were performed using Synchro v.10 which utilizes the methodologies provided in the Highway Capacity Manual. As part of this analysis, existing lane geometry and traffic controls were used for the intersections.

The results of this analysis are summarized in Table 3 and indicate all intersections currently operate at an acceptable LOS during the a.m. and p.m. peak-hour with the exception of North Port Boulevard & US 41 in the p.m. peak-hour, which operates at an LOS E, and Sumter Boulevard & Greenwood Avenue. Summary worksheets of the intersection analysis are provided in Appendix F.

Table 3: 2018 Existing A.M. (P.M.) Peak-Hour Intersection Conditions

INTERSECTION	INTERSECTION TYPE	EXISTING TRAFFIC CONDITIONS AM (PM)					OVERALL LOS ³
		LANE GROUP LOS ¹					
		NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND		
Sumter Boulevard & US 41	Signalized	E (E)	D (E)	D (C)	C (D)	D (D)	
Sumter Boulevard & Greenwood Avenue	TWSC ²	A (A)	-	D (E)	-	-	
Sumter Boulevard & Appomattox Drive	Signalized	A (A)	B (B)	C (D)	A (C)	B (B)	
Sumter Boulevard & Price Boulevard	Signalized	B (B)	B (B)	D (D)	E (D)	C (C)	
North Port Boulevard & US 41	Signalized	C (C)	C (B)	C (F)	B (D)	C (E)	
North Port Boulevard & Greenwood Avenue	TWSC ²	-	A (A)	-	B (B)	-	
North Port Boulevard & Appomattox Drive	TWSC ²	B (C)	-	-	A (A)	-	

Notes:

¹ LOS = Level of Service

² TWSC = Two Way Stop Control

³ No Overall LOS available at unsignalized intersections

⁴ Background Analysis included FDOT project widening US 41 from 4 to 6 lanes as referenced in "Scheduled Improvements"

In addition to the intersection analysis, a roadway analysis was conducted for the study roadway segments. For the analysis of these roadway segments, intersection traffic volumes and service volumes found in the *FDOT 2013 Quality/Level of Service Handbook* were used for Sumter Boulevard, Appomattox Drive, and Northport Boulevard roadway segments. Sarasota County

2016 Generalized Level of Service Analysis service volumes were used to analyze US 41. Existing peak-hour directional volumes were based upon volume data collected at each of the study intersections.

The results of this roadway analysis are summarized in Table 4 and indicate that all study roadway segments currently operate at acceptable levels of service during the p.m. peak-hour.

Table 4: 2018 Existing P.M. Peak-Hour Roadway Conditions

EXISTING ROADWAY CHARACTERISTICS							
ROADWAY	FROM	TO	EXISTING LANEAGE	LOS STANDARD	P.M. PEAK-HOUR DIRECTIONAL SERVICE VOLUME	EXISTING P.M. PEAK-HOUR PEAK DIRECTION VOLUME	ROADWAY LOS
Sumter Boulevard	US 41	Greenwood Ave	4	D	2,000	871	C
	Greenwood Ave	Appomattox Dr	4	D	2,000	754	C
	Appomattox Dr	Price Blvd	4	D	2,000	829	C
Appomattox Drive	Pan American Blvd	North Port Blvd	2	D	750	265	C
	North Port Blvd	North Project Driveway	2	D	750	318	C
	North Project Driveway	Sumter Blvd	2	D	750	311	C
North Port Blvd	US 41	Greenwood Ave	2	D	750	276	C
	Greenwood Ave	Appomattox Dr	2	D	750	208	C
US 41	River Road	Ortiz Blvd	4	D	3,278	1613	C
	Ortiz Blvd	Biscayne Dr	4	D	3,278	1613	C
	Biscayne Dr	Pan American Blvd	4	D	3,278	1613	C
	Pan American Blvd	North Port Blvd	4	D	3,278	1613	C
	North Port Blvd	Sumter Blvd	4	D	3,278	1609	C
	Sumter Blvd	Salford Blvd	4	D	3,278	1648	C
	Salford Blvd	Cranberry Blvd	4	D	3,278	1648	C

*Source: FDOT Q/LOS Generalized Service Volume Tables and 2016 Generalized Level of Service Analysis tables from Sarasota County (for US 41)

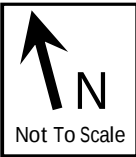
FUTURE TRAFFIC VOLUMES

Future traffic volumes consist of two components: project traffic and background (non-project) traffic estimates. Project traffic volumes for Sabal Trace Development have been previously identified in this report. Background traffic volumes, including the procedures used to develop these estimates, are provided below.

Future background traffic is defined as expected non-project traffic on the roadway network in the future year at buildout of the proposed project. For the purposes of this analysis, it was determined that 2020 would be the buildout year of the development and, thus, 2020 conditions would be evaluated as the “future” year scenario. The following procedures were undertaken to develop future 2020 a.m. and p.m. peak-hour background volume estimates.

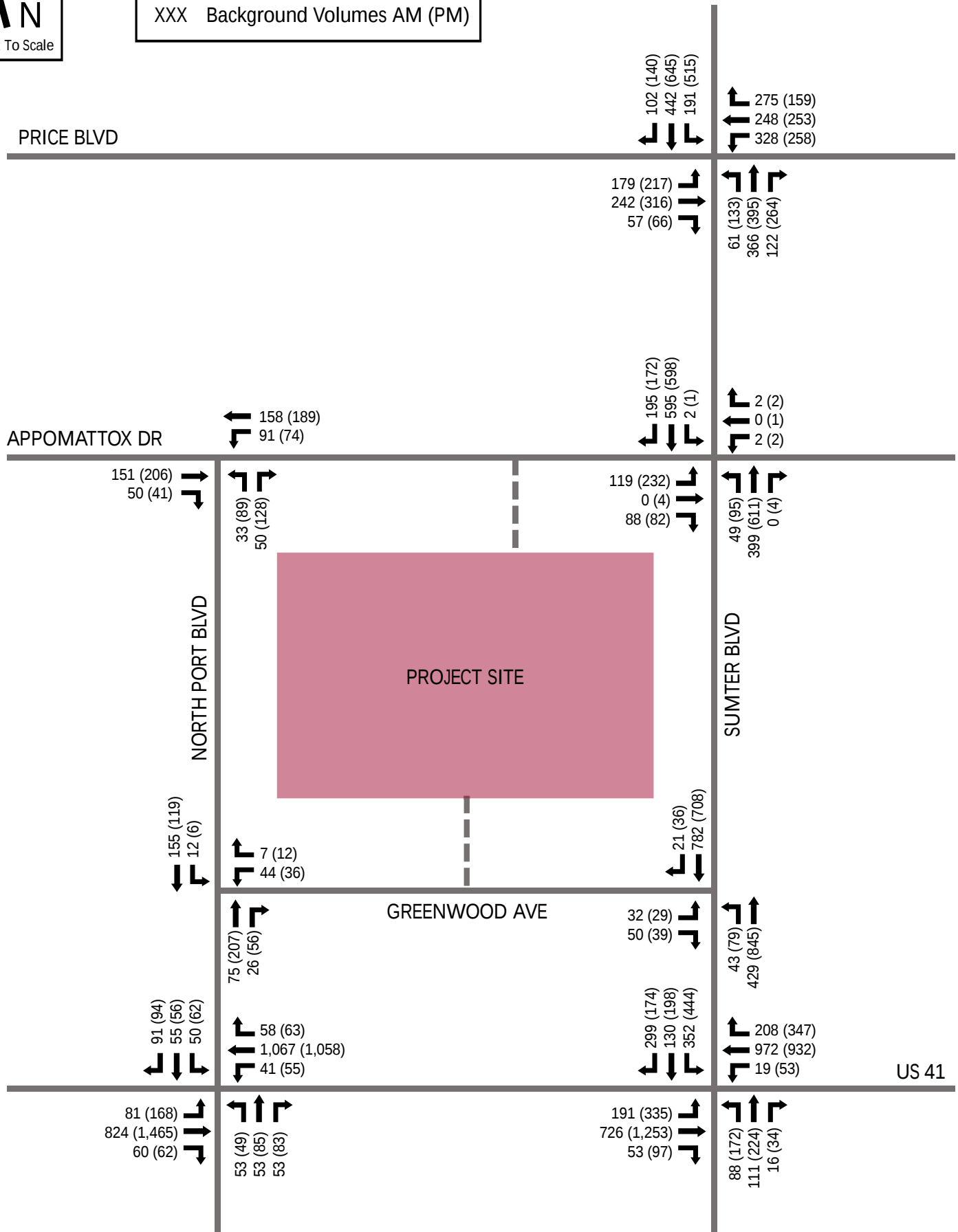
Using historical traffic volumes from FDOT as well as in coordination with City of Northport Staff, an annual background growth rate of 2.5 percent was applied. Existing peak-season volumes were increased by a 2.5 percent annual growth rate to reflect year 2020 future background traffic volumes.

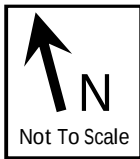
The total background traffic volumes are illustrated in Figure 4 and are documented in Appendix E. The project traffic volumes, as shown in Figure 5, were then added to these background traffic volumes to determine total traffic volumes.



Legend

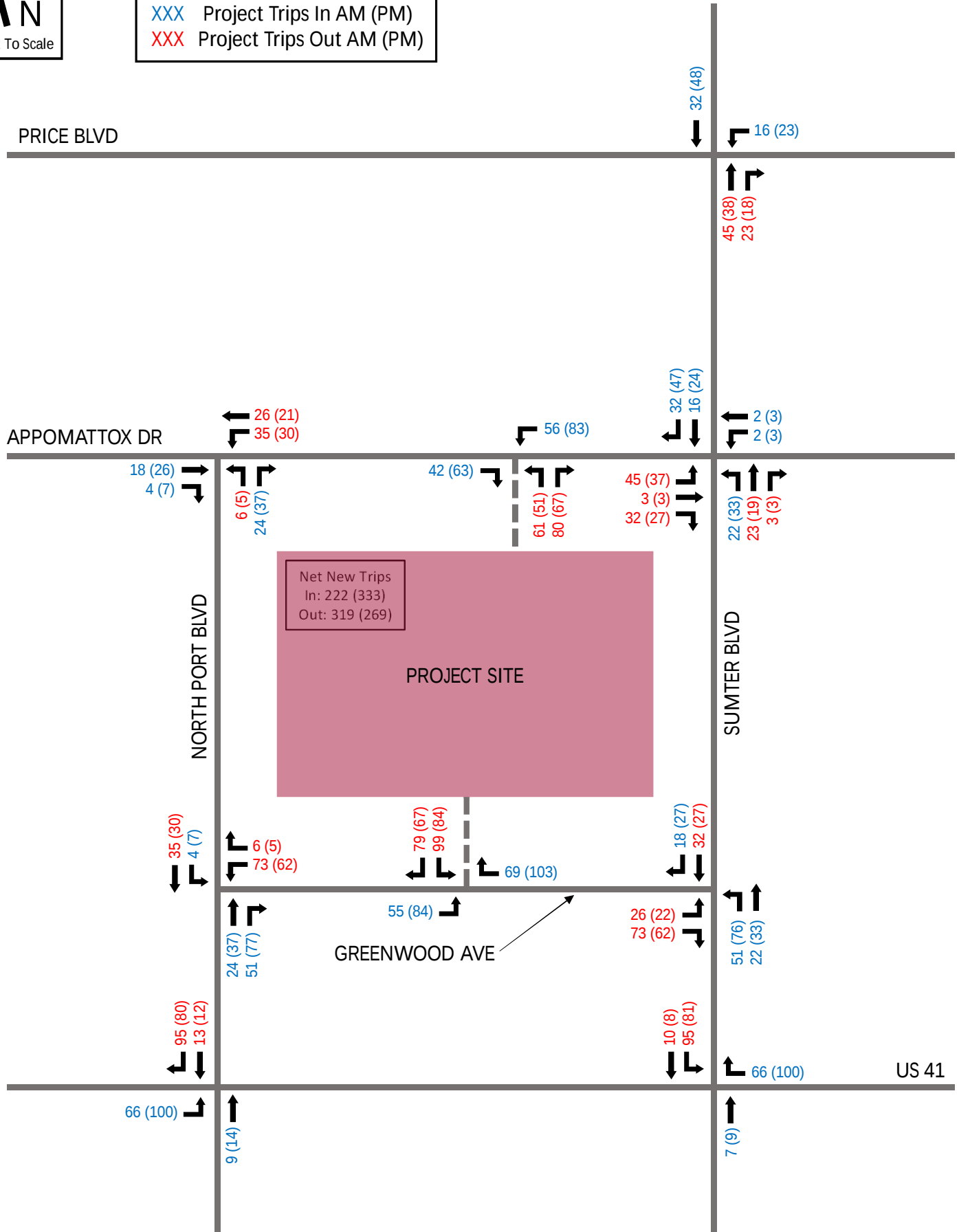
XXX Background Volumes AM (PM)





Legend

- XXX Project Trips In AM (PM)
- XXX Project Trips Out AM (PM)



FUTURE BACKGROUND TRAFFIC CONDITIONS

Future background traffic conditions were evaluated for the 2020 buildout year of the development during the a.m. and p.m. peak-hour. For this analysis, future background traffic estimates and scenarios for planned and funded lane geometry and traffic controls were considered including the FDOT planned and funded roadway widening project along US 41 adjacent to the project site from North Port Boulevard to Sumter Avenue. A determination of the impact of the non-project background traffic on the roadway network was made, including LOS conditions for the intersections and roadway segments within the study area.

Similar to existing conditions an intersection analysis was conducted for future background a.m. and p.m. peak-hour conditions at the study intersections. The results of these analyses are summarized in Table 5 and indicate that all intersections are anticipated to operate at an acceptable overall LOS during the future 2020 a.m. and p.m. peak-hour (without project traffic) with the exception of North Port Boulevard & US 41 in the p.m. peak-hour, which operates at an overall intersection LOS E, and Sumter Boulevard & Greenwood Avenue.

Table 5: 2020 Background A.M. (P.M.) Peak-Hour Intersection Conditions

INTERSECTION	INTERSECTION TYPE	BACKGROUND TRAFFIC CONDITIONS AM (PM) ⁴				
		LANE GROUP LOS ¹				OVERALL LOS ³
		NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND	
Sumter Boulevard & US 41	Signalized	E (E)	D (E)	D (C)	C (D)	D (D)
Sumter Boulevard & Greenwood Avenue	TWSC ²	A (A)	-	D (F)	-	-
Sumter Boulevard & Appomattox Drive	Signalized	A (A)	B (B)	C (E)	A (C)	B (B)
Sumter Boulevard & Price Boulevard	Signalized	B (B)	B (B)	D (D)	E (E)	D (C)
North Port Boulevard & US 41	Signalized	C (C)	C (D)	C (F)	C (D)	C (E)
North Port Boulevard & Greenwood Avenue	TWSC ²	-	A (A)	-	B (B)	-
North Port Boulevard & Appomattox Drive	TWSC ²	B (C)	-	-	A (A)	-

Notes:

¹ LOS = Level of Service

² TWSC = Two Way Stop Control

³ No Overall LOS available at unsignalized intersections

⁴ Background Analysis included FDOT project widening US 41 from 4 to 6 lanes as referenced in "Scheduled Improvements"

Based on Table 5, improvements are necessary at the intersection of North Port Boulevard & US 41 for the intersection to operate at an acceptable level of service in future background conditions during the p.m. peak-hour. Signal timings were adjusted to improve overall intersection level of service. The results of this improvement are summarized in Table 6.

Table 6: Future Background A.M. (P.M.) Peak-Hour Intersection Conditions Plus Mitigation

INTERSECTION	INTERSECTION TYPE	BACKGROUND TRAFFIC CONDITIONS AM (PM)				
		LANE GROUP LOS ¹				OVERALL LOS
		NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND	
North Port Boulevard & US 41	Signalized	C (C)	C (C)	C (D)	C (D)	C (D)

Notes:

¹ LOS = Level of Service

The intersection of Sumter Boulevard & Greenwood Avenue has an unacceptable LOS. However, the volume to capacity ratio is below 1.0, which is consistent with low vehicular volumes.

In addition to the intersection analysis, a roadway analysis was undertaken on the previously identified study roadway segments. The analysis procedures for this evaluation were similar to those used to evaluate existing conditions and includes the previously mentioned roadway widening project of US 41 from Salford Boulevard to Sumter Boulevard. The results of the future background roadway analysis are summarized in Table 7 and indicate all roadway segments are anticipated to operate at an acceptable level of service during the p.m. peak-hour.

Table 7: 2020 Background P.M. Peak-Hour Roadway Conditions

2020 BACKGROUND ROADWAY CHARACTERISTICS							
ROADWAY	FROM	TO	LANEAGE	LOS STANDARD	P.M. PEAK-HOUR DIRECTIONAL SERVICE VOLUME	BACKGROUND P.M. PEAK-HOUR PEAK DIRECTION VOLUME	ROADWAY LOS
Sumter Boulevard	US 41	Greenwood Ave	4	D	2,000	915	C
	Greenwood Ave	Appomattox Dr	4	D	2,000	792	C
	Appomattox Dr	Price Blvd	4	D	2,000	870	C
Appomattox Drive	Pan American Blvd	North Port Blvd	2	D	750	279	C
	North Port Blvd	North Project Driveway	2	D	750	334	C
	North Project Driveway	Sumter Blvd	2	D	750	327	C
North Port Blvd	US 41	Greenwood Ave	2	D	750	290	C
	Greenwood Ave	Appomattox Dr	2	D	750	218	C
US 41	River Road	Ortiz Blvd	4	D	3,278	1694	D
	Ortiz Blvd	Biscayne Dr	4	D	3,278	1694	D
	Biscayne Dr	Pan American Blvd	4	D	3,278	1694	D
	Pan American Blvd	North Port Blvd	4	D	3,278	1694	D
	North Port Blvd	Sumter Blvd	6	D	3,278	1689	D
	Sumter Blvd	Salford Blvd	6	D	3,278	1731	D
	Salford Blvd	Cranberry Blvd	6	D	3,278	1731	D

*Source: FDOT Q/LOS Generalized Service Volume Tables and 2016 Generalized Level of Service Analysis tables from Sarasota County (for US 41)

Analysis is consistent with widening US 41 from 4 to 6 lanes as referenced in "Scheduled Improvements"

FUTURE TOTAL TRAFFIC CONDITIONS

Future traffic conditions were evaluated for the 2020 buildout year for Sabal Trace Development during the a.m. and p.m. peak-hour. A determination of the impact of the project traffic on the roadway network was made, including conditions for intersections and roadway segments within the study area. Using the total traffic volumes, as shown in Figure 6, intersection analyses were conducted at the study intersections. The total traffic volumes are documented in Appendix E.

The results of these analyses are summarized in Table 8 and indicate that the seven study intersections are expected to operate acceptably in future total 2020 a.m. and p.m. peak-hour conditions with the exceptions of North Port Boulevard & US 41 and Sumter Boulevard & Greenwood Avenue during the p.m. peak hour.

Table 8: 2020 Total A.M. (P.M.) Peak-Hour Intersection Conditions

INTERSECTION	INTERSECTION TYPE	BUILDOUT TRAFFIC CONDITIONS AM (PM) ⁴				
		LANE GROUP LOS ¹				OVERALL LOS ³
		NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND	
Sumter Boulevard & US 41	Signalized	E (E)	E (E)	D (C)	C (C)	D (D)
Sumter Boulevard & Greenwood Avenue	TWSC ²	B (B)	-	F (F)	-	-
Sumter Boulevard & Appomattox Drive	Signalized	A (A)	B (B)	D (F)	C (C)	B (C)
Sumter Boulevard & Price Boulevard	Signalized	B (B)	B (C)	D (D)	E (D)	D (C)
North Port Boulevard & US 41	Signalized	C (C)	C (B)	D (F)	C (D)	C (F)
North Port Boulevard & Greenwood Avenue	TWSC ²	-	A (A)	-	B (B)	-
North Port Boulevard & Appomattox Drive	TWSC ²	B (C)	-	-	A (A)	-
Greenwood Avenue & South Project Driveway	TWSC ²	-	B (B)	A (A)	-	-
Appomattox Drive & North Project Driveway	TWSC ²	B (B)	-	-	A (A)	-

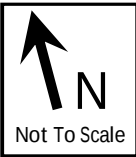
Notes:

¹ LOS = Level of Service

² TWSC = Two Way Stop Control

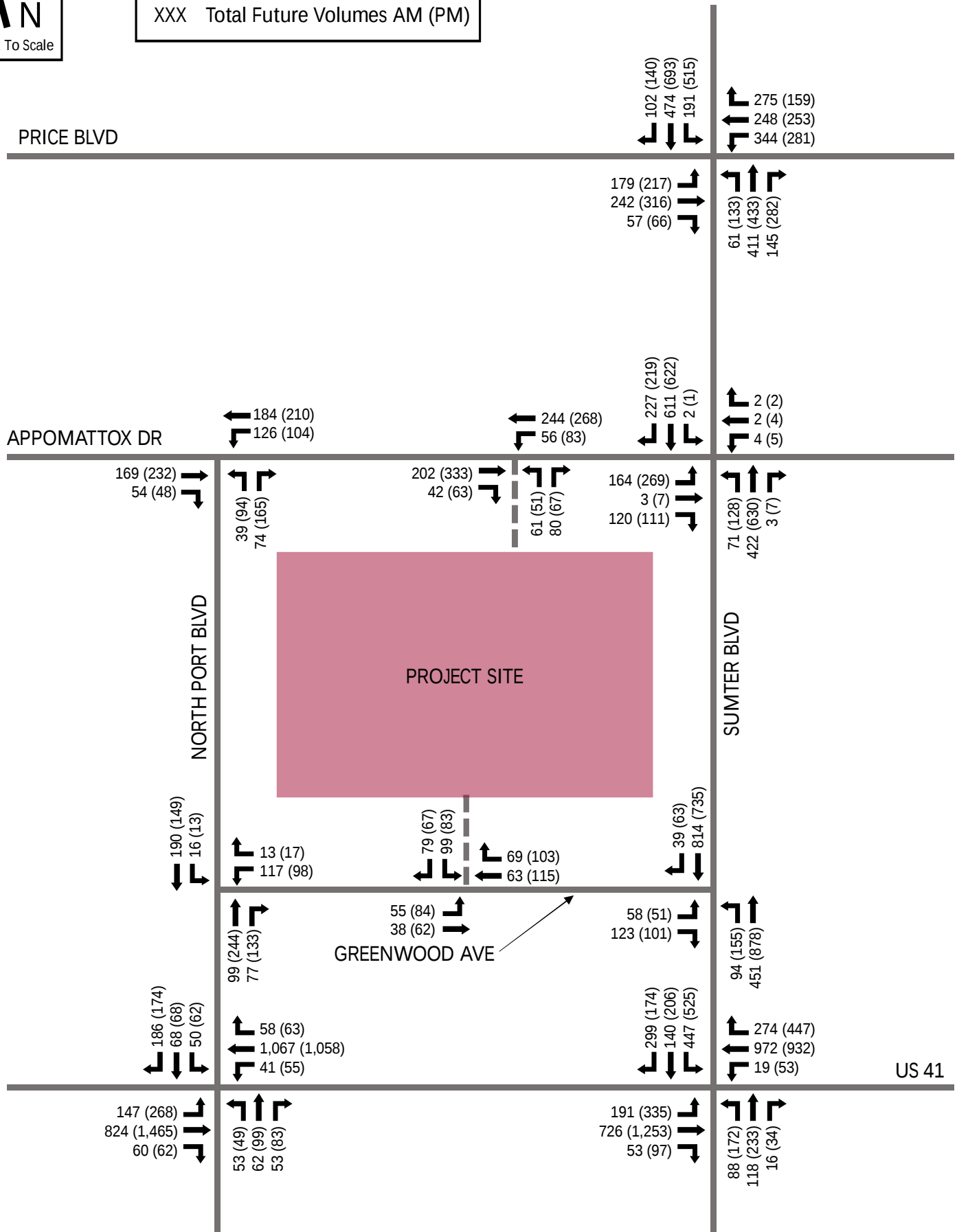
³ No Overall LOS available at unsignalized intersections

⁴ Background Analysis included FDOT project widening US 41 from 4 to 6 lanes as referenced in "Scheduled Improvements"



Legend

XXX Total Future Volumes AM (PM)



Similar to future background conditions, improvements are necessary at the intersection of North Port Boulevard & US 41 for the intersection to operate at an acceptable level of service in future total conditions during the p.m. peak-hour. Signal timings were adjusted to improve overall intersection level of service. The results of this improvement are summarized in Table 9.

Table 9: Future Total A.M. (P.M.) Peak-Hour Intersection Conditions Plus Improvements

INTERSECTION	INTERSECTION TYPE	TOTAL TRAFFIC CONDITIONS AM (PM)				
		LANE GROUP LOS ¹				OVERALL LOS
		NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND	
North Port Boulevard & US 41	Signalized	C (C)	C (C)	D (D)	C (D)	C (D)

Notes:

¹ LOS = Level of Service

The intersection of Sumter Boulevard & Greenwood Avenue operates at an unacceptable LOS. Because the volume to capacity ratio is below 1.0, which is consistent with low vehicular volumes, the increased delay per vehicle results in a lower LOS.

In addition to the intersection analyses, roadway analyses were undertaken on the previously identified study roadway segments for future total traffic conditions. The analysis procedures for this evaluation were identical to those used to evaluate background traffic conditions.

The results of the future total conditions roadway analyses are summarized in Table 10 and indicate that all study roadway segments are expected to operate at an acceptable LOS with project traffic during the future 2020 p.m. peak-hour.

Table 10: 2020 Total P.M. Peak-Hour Roadway Conditions

2020 FUTURE ROADWAY CHARACTERISTICS										
ROADWAY	FROM	TO	LANEAGE	LOS STANDARD	P.M. PEAK-HOUR DIRECTIONAL SERVICE VOLUME	BACKGROUND P.M. PEAK-HOUR TWO-WAY VOLUME	P.M. PEAK-HOUR PROJECT TRIPS		FUTURE P.M. PEAK-HOUR PEAK DIRECTION VOLUME	ROADWAY LOS
							NB/EB	SB/WB		
Sumter Boulevard	US 41	Greenwood Ave	4	D	2,000	915	109	89	1,024	C
	Greenwood Ave	Appomattox Dr	4	D	2,000	792	55	54	847	C
	Appomattox Dr	Price Blvd	4	D	2,000	870	56	71	941	C
Appomattox Drive	Pan American Blvd	North Port Blvd	2	D	750	279	33	21	312	C
	North Port Blvd	North Project Driveway	2	D	750	334	63	51	397	D
	North Project Driveway	Sumter Blvd	2	D	750	327	67	83	410	D
North Port Blvd	US 41	Greenwood Ave	2	D	750	290	114	92	404	D
	Greenwood Ave	Appomattox Dr	2	D	750	213	42	37	260	C
US 41	River Road	Ortiz Blvd	4	D	3,278	1,694	48	39	1,742	D
	Ortiz Blvd	Biscayne Dr	4	D	3,278	1,694	71	56	1,765	D
	Biscayne Dr	Pan American Blvd	4	D	3,278	1,694	83	67	1,777	D
	Pan American Blvd	North Port Blvd	4	D	3,278	1,694	100	80	1,794	D
	North Port Blvd	Sumter Blvd	6	D	3,278	1,689	0	0	1,689	D
	Sumter Blvd	Salford Blvd	6	D	3,278	1,731	81	100	1,831	D
	Salford Blvd	Cranberry Blvd	6	D	3,278	1,731	73	90	1,821	D

*Source: FDOT Q/LOS Generalized Service Volume Tables and 2016 Generalized Level of Service Analysis tables from Sarasota County (for US 41)

Analysis is consistent with widening US 41 from 4 to 6 lanes as referenced in "Scheduled Improvements"

RIGHT TURN LANE WARRANT ANALYSIS

The need for exclusive right-turn lanes at the access points to the proposed mixed-use facility was evaluated per the National Cooperative Highway Research Program Report (NCHRP) 279 Figure 4-23 (relevant pages included in Appendix H).

Right-turn lane warrant analyses were performed at the following locations and shown in Table 11 below:

- Southbound Sumter Boulevard to westbound Greenwood Avenue
- Southbound Sumter Boulevard to westbound Appomattox Drive
- Northbound North Port Boulevard to eastbound Greenwood Avenue
- Northbound North Port Boulevard to eastbound Appomattox Drive
- Eastbound Appomattox Drive at proposed north driveway entrance
- Westbound Greenwood Avenue at proposed south main driveway

Table 11: Right-Turn Lane Warrant Analyses

LOCATION	# OF LANES	APPROACH VOLUME	RIGHT-TURN LANE VOLUME	FULL RIGHT-TURN LANE WARRANTED
Southbound Sumter Blvd To Westbound Greenwood Ave	4	771	36	NO
Southbound Sumter Blvd To Westbound Appomattox Dr	4	841	219	YES
Northbound North Port Blvd To Eastbound Greenwood Ave	2	377	133	YES
Northbound North Port Blvd To Eastbound Appomattox Dr	2	259	165	YES
Eastbound Appomattox Dr To proposed north driveway entrance	2	396	63	NO
Westbound Greenwood Ave To proposed south driveway entrance	2	218	103	YES

Volumes based on Total Future PM Peak Hour Volumes

LEFT TURN LANE WARRANT ANALYSIS

The need for exclusive left-turn lanes at the access points to the proposed mixed-use facility was evaluated per the National Cooperative Highway Research Program Report (NCHRP) 745 *Figure 4* and *Table 3* (relevant pages included in Appendix I).

Left-turn lane warrant analyses were performed at the following locations and shown in Table 12 below:

- Eastbound Greenwood Avenue to proposed south main driveway
- Westbound Appomattox Drive to proposed north driveway entrance
- Westbound Appomattox Drive to North Port Boulevard

Table 12: Left-turn Lane Warrants

LOCATION	# OF LANES	APPROACH VOLUME	LEFT-TURN LANE VOLUME	LEFT TURN LANE WARRANTED
Eastbound Greenwood Ave To proposed south main driveway	2	145	83	YES
Westbound Appomattox Dr To proposed north driveway entrance	2	351	83	YES
Westbound Appomattox Dr To North Port Blvd	2	315	104	YES

Volumes based on Total Future PM Peak Hour Volumes

Based on a request from the City, a review of the northbound left-turn lanes along Sumter Boulevard at Greenwood Avenue and Appomattox Drive have been performed. Table 13 below details the results of this evaluation and indicate that the existing turn lane lengths (approximately 175 feet) are sufficient to accommodate anticipated future total volumes without spillback into the adjacent northbound through lanes.

Table 13: 2020 Future Total Turn Lane Review

LOCATION	ROUNDED 95TH PERCENTILE QUEUE (FT)	EXISTING LEFT- TURN LANE QUEUE LENGTH
Northbound Sumter Blvd To Westbound Greenwood Ave	25	125
Northbound Sumter Blvd To Westbound Appomattox Dr	50	125

BRIDGE ALTERNATIVE CONFIGURATION

Based on correspondence with the City of Northport, an additional bridge alternative was analyzed under 2020 future buildout traffic conditions. The potential bridge over Cocoplum would connect Tuscola Boulevard from US 41 to Greenwood Avenue. The intersection of Tuscola Boulevard & US 41 was analyzed as part of this alternative. All project traffic traveling south of the development was assumed to access the bridge, instead of Greenwood Avenue, to reach US 41. Using the revised peak hour project traffic volumes, as shown in Figure 7, and total traffic volumes, shown in Figure 8, intersection analyses were conducted at the study intersections. The total traffic volumes are documented in Appendix G.

The results of these analyses are summarized in Table 14 and indicate that the eight study intersections are expected to operate acceptably in future total 2020 a.m. and p.m. peak-hour conditions with the exceptions of North Port Boulevard & US 41 and Sumter Boulevard & Greenwood Avenue during the p.m. peak hour.

Table 14: Bridge Alternative 2020 Total A.M. (P.M.) Peak-Hour Intersection Conditions

INTERSECTION	INTERSECTION TYPE	BUILDOUT TRAFFIC CONDITIONS AM (PM) ⁴				OVERALL LOS ³
		LANE GROUP LOS ¹				
		NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND	
Sumter Boulevard & US 41	Signalized	E (E)	D (E)	D (C)	C (D)	D (D)
Sumter Boulevard & Greenwood Avenue	TWSC ²	B (B)	-	E (F)	-	-
Sumter Boulevard & Appomattox Drive	Signalized	A (A)	B (B)	D (F)	C (C)	B (C)
Sumter Boulevard & Price Boulevard	Signalized	B (B)	B (C)	D (D)	E (D)	D (C)
North Port Boulevard & US 41	Signalized	C (C)	C (B)	C (F)	C (D)	C (F)
North Port Boulevard & Greenwood Avenue	TWSC ²	-	A (A)	-	B (B)	-
North Port Boulevard & Appomattox Drive	TWSC ²	B (C)	-	-	A (A)	-
Greenwood Avenue & South Project Driveway/Tuscola Boulevard	TWSC ²	B (B)	B (B)	A (A)	A (A)	-
Appomattox Drive & North Project Driveway	TWSC ²	B (C)	-		A (A)	-
Tuscola Boulevard & US 41	Signalized	C (C)	D (E)	E (A)	C (C)	C (B)

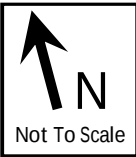
Notes:

¹ LOS = Level of Service

² TWSC = Two Way Stop Control

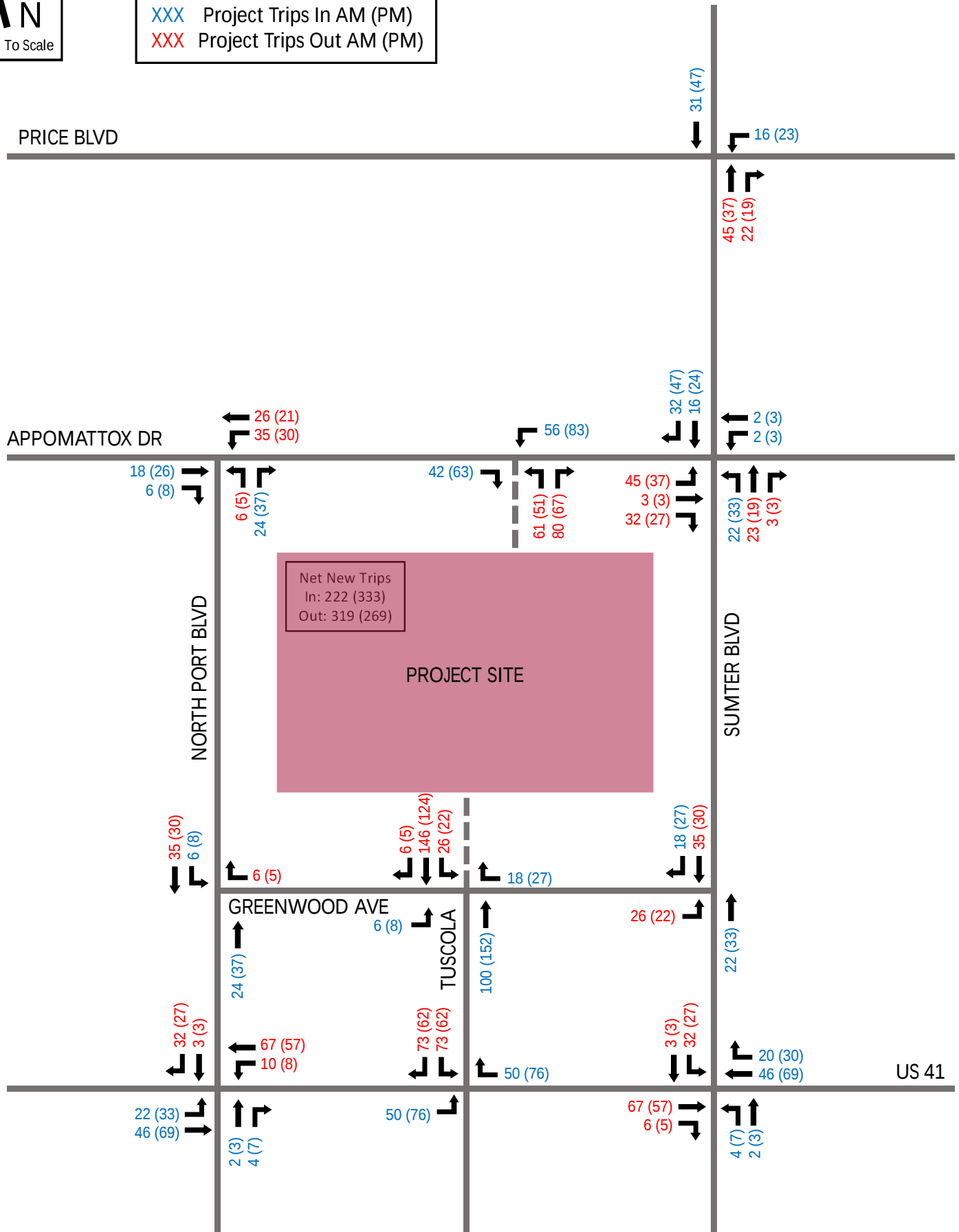
³ No Overall LOS available at unsignalized intersections

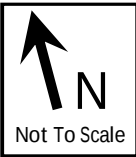
⁴ Background Analysis included FDOT project widening US 41 from 4 to 6 lanes as referenced in "Scheduled Improvements"



Legend

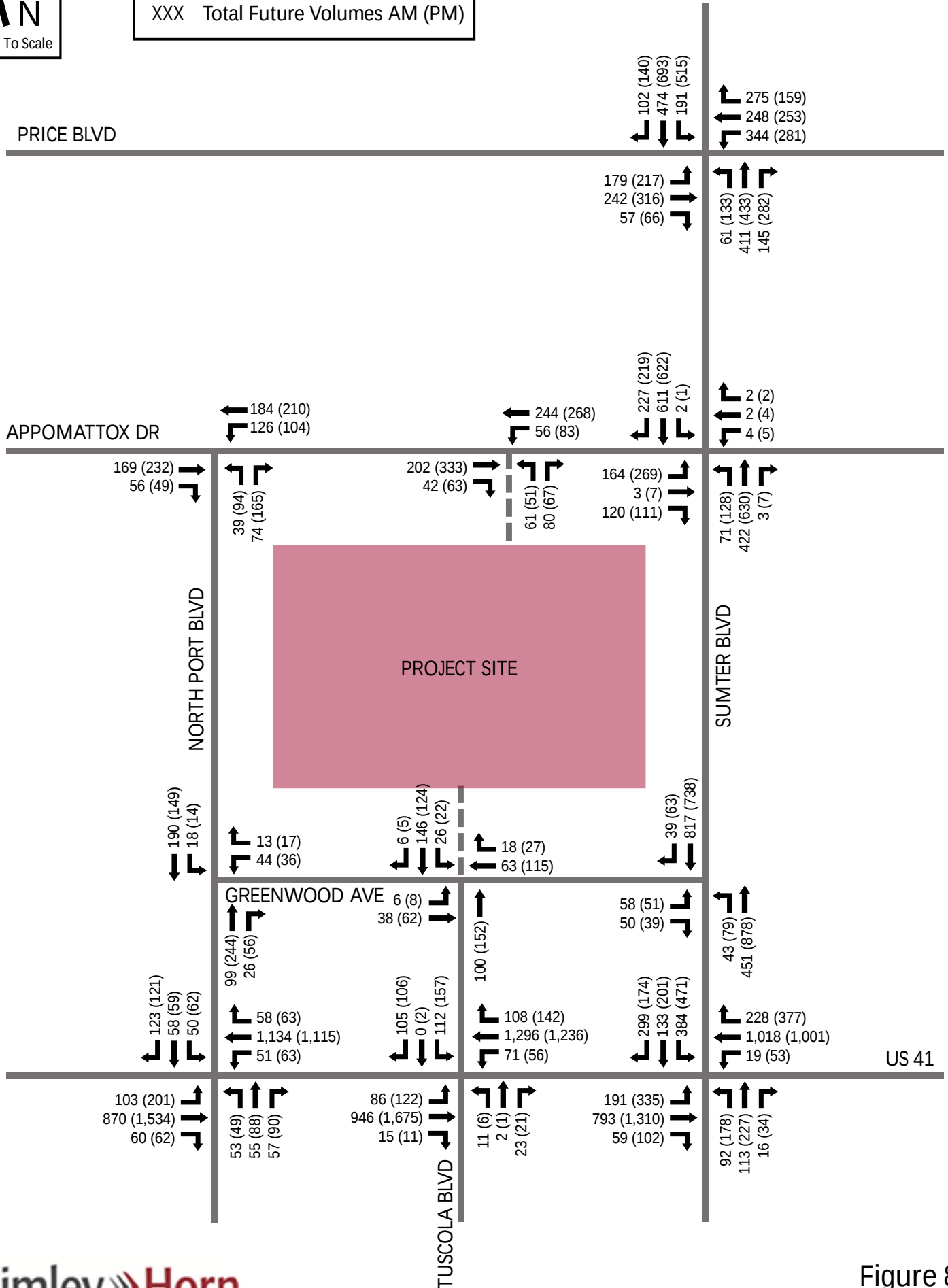
- XXX Project Trips In AM (PM)
- XXX Project Trips Out AM (PM)





Legend

XXX Total Future Volumes AM (PM)



Similar to the no-build alternative in future total conditions, improvements are necessary at the intersection of North Port Boulevard & US 41 for the intersection to operate at an acceptable level of service in future total conditions during the p.m. peak-hour. Signal timings were adjusted to improve overall intersection level of service. The results of this improvement are summarized in Table 15.

Table 15: Bridge Alternative Future Total A.M. (P.M.) Peak-Hour Intersection Conditions Plus Improvements

INTERSECTION	INTERSECTION TYPE	TOTAL TRAFFIC CONDITIONS AM (PM)				
		LANE GROUP LOS ¹				OVERALL LOS
		NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND	
North Port Boulevard & US 41	Signalized	C (C)	C (C)	D (D)	C (D)	C (D)

Notes:

¹ LOS = Level of Service

The intersection of Sumter Boulevard & Greenwood Avenue has an unacceptable LOS. Because the volume to capacity ratio is below 1.0, which is consistent with low vehicular volumes, the increased delay per vehicle results in a lower LOS.

In addition to the intersection analyses, roadway analyses were undertaken on the previously identified study roadway segments for future total traffic conditions. The analysis procedures for this evaluation were identical to those used to evaluate the first alternative traffic conditions.

The results of the future total conditions roadway analyses are summarized in Table 16 and indicate that all study roadway segments are expected to operate at an acceptable LOS with project traffic during the future 2020 p.m. peak-hour.

Table 16: Bridge Alternative 2020 Total P.M. Peak-Hour Roadway Conditions

2020 FUTURE ROADWAY CHARACTERISTICS										
ROADWAY	FROM	TO	LANEAGE	LOS STANDARD	P.M. PEAK-HOUR DIRECTIONAL SERVICE VOLUME	BACKGROUND P.M. PEAK-HOUR TWO-WAY VOLUME	P.M. PEAK-HOUR PROJECT TRIPS		FUTURE P.M. PEAK-HOUR PEAK DIRECTION VOLUME	ROADWAY LOS
							NB/EB	SB/WB		
Sumter Boulevard	US 41	Greenwood Ave	4	D	2,000	915	33	30	948	C
	Greenwood Ave	Appomattox Dr	4	D	2,000	792	55	57	849	C
	Appomattox Dr	Price Blvd	4	D	2,000	870	56	71	941	C
Appomattox Drive	Pan American Blvd	North Port Blvd	2	D	750	279	34	51	330	C
	North Port Blvd	North Project Driveway	2	D	750	334	63	51	397	D
	North Project Driveway	Sumter Blvd	2	D	750	327	67	83	410	D
North Port Blvd	US 41	Greenwood Ave	2	D	750	290	37	38	328	C
	Greenwood Ave	Appomattox Dr	2	D	750	238	42	38	260	C
US 41	River Road	Ortiz Blvd	4	D	3,278	1694	49	41	1743	D
	Ortiz Blvd	Biscayne Dr	4	D	3,278	1694	72	59	1766	D
	Biscayne Dr	Pan American Blvd	4	D	3,278	1694	85	70	1779	D
	Pan American Blvd	North Port Blvd	4	D	3,278	1694	102	84	1796	D
	North Port Blvd	Sumter Blvd	6	D	3,278	1689	76	76	1765	D
	Sumter Blvd	Salford Blvd	6	D	3,278	1731	84	99	1830	D
	Salford Blvd	Cranberry Blvd	6	D	3,278	1731	76	89	1820	D

*Source: FDOT Q/LOS Generalized Service Volume Tables and 2016 Generalized Level of Service Analysis tables from Sarasota County (for US 41)
Analysis is consistent with widening US 41 from 4 to 6 lanes as referenced in "Scheduled Improvements"

BRIDGE ALTERNATIVE RIGHT TURN LANE WARRANT ANALYSIS

The need for exclusive right-turn lanes was reevaluated due to a bridge over Cocoplum connecting Tuscola Boulevard from US 41 to Greenwood Avenue. Right-turn lanes to access points of the proposed mixed-use facility was evaluated per the National Cooperative Highway Research Program Report (NCHRP) 279 Figure 4-23 (relevant pages included in Appendix H).

Right-turn lane warrant analyses were performed at the following locations and shown in Table 17 below:

- Southbound Sumter Boulevard to westbound Greenwood Avenue
- Southbound Sumter Boulevard to westbound Appomattox Drive
- Northbound North Port Boulevard to eastbound Greenwood Avenue
- Northbound North Port Boulevard to eastbound Appomattox Drive
- Eastbound Appomattox Drive at proposed north driveway entrance
- Westbound Greenwood Avenue at proposed south main driveway

Table 17: Bridge Alternative Right-Turn Lane Warrant Analyses

LOCATION	# OF LANES	APPROACH VOLUME	RIGHT-TURN LANE VOLUME	FULL RIGHT-TURN LANE WARRANTED
Southbound Sumter Blvd To Westbound Greenwood Ave	4	801	63	NO
Southbound Sumter Blvd To Westbound Appomattox Dr	4	842	219	YES
Northbound North Port Blvd To Eastbound Greenwood Ave	2	300	56	NO
Northbound North Port Blvd To Eastbound Appomattox Dr	2	259	165	YES
Eastbound Appomattox Dr To proposed north driveway entrance	2	396	63	NO
Westbound Greenwood Ave To proposed south driveway entrance	2	142	27	NO

Volumes based on Total Future PM Peak Hour Volumes

BRIDGE ALTERNATIVE LEFT TURN LANE WARRANT ANALYSIS

The need for exclusive left-turn lanes was reevaluated due to a bridge over Cocoplum connecting Tuscola Boulevard from US 41 to Greenwood Avenue. Left-turn lanes to access points of the proposed mixed-use facility was evaluated per the National Cooperative Highway Research Program Report (NCHRP) 745 *Figure 4* and *Table 3* (relevant pages included in Appendix I).

Left-turn lane warrant analyses were performed at the following locations and shown in Table 18 below:

- Eastbound Greenwood Avenue to proposed south main driveway
- Westbound Appomattox Drive to proposed north driveway entrance
- Westbound Appomattox Drive to North Port Boulevard

Table 18: Left-turn Lane Warrants

LOCATION	# OF LANES	APPROACH VOLUME	LEFT-TURN LANE VOLUME	LEFT TURN LANE WARRANTED
Eastbound Greenwood Ave To proposed south main driveway	2	70	8	YES
Westbound Appomattox Dr To proposed north driveway entrance	2	351	83	YES
Westbound Appomattox Dr To North Port Blvd	2	314	104	YES

Volumes based on Total Future PM Peak Hour Volumes

CONCLUSION

The proposed Sabal Trace Development is located generally north of US 41, west of Sumter Boulevard, and east of North Port Boulevard in the City of North Port, Sarasota County, Florida. Access to the project site will be provided by two full access driveways located on Greenwood Avenue, just south of the site, and Appomattox Drive, just north of the site. The proposed development will consist of 200 single family homes, 300 multi-family (Villa) homes, 300 senior living units, 30,000 square feet of medical office, 20,000 square feet of commercial uses and 50,000 square feet of mini-storage facility by 2020 (buildout date). The estimated new external trips expected to be generated by the proposed mixed-use development is 541 two-way, trip-ends (222 entering / 319 exiting) for the a.m. peak-hour and 602 two-way, trip-ends (333 entering / 269 exiting) for the p.m. peak-hour.

Based upon the results of the analyses all study intersections are anticipated to operate acceptably in 2020 a.m. and p.m. peak-hours. The intersection of North Port Boulevard & US 41 is expected to operate acceptably during the p.m. peak-hour in future total conditions with minor adjustments to signal timings. All study roadway segments are anticipated to operate acceptably in future total conditions.

Right-turn lanes are warranted at the following locations:

- Southbound Sumter Boulevard to westbound Appomattox Drive,
- Northbound North Port Boulevard to eastbound Greenwood Avenue,
- Northbound North Port Boulevard to eastbound Appomattox Drive, and
- Westbound Greenwood Avenue to the proposed north driveway entrance

Left-turn lanes are warranted at the following locations:

- Eastbound Greenwood Avenue to the proposed south main driveway,
- Westbound Appomattox Drive to the proposed north driveway entrance, and
- Westbound Appomattox Drive to North Port Boulevard

An additional bridge alternative was examined to analyze 2020 future buildout traffic conditions with a bridge over Cocoplum to connect Tuscola Boulevard from US 41 to Greenwood Avenue. Project traffic traveling south of the development to US 41 was distributed to travel over the bridge instead of Greenwood Avenue.

Based upon the results of the additional bridge alternative all study intersections are anticipated to operate acceptably in 2020 a.m. and p.m. peak-hours. The intersection of North Port Boulevard & US 41 is expected to operate acceptably during the p.m. peak-hour in future total conditions with minor adjustments to signal timings. All study roadway segments are anticipated to operate acceptably in future total conditions.

Right and left-turn lanes were reevaluated based on the reconfiguration of traffic over the bridge.

Right-turn lanes are warranted at the following locations:

- Southbound Sumter Boulevard to westbound Appomattox Drive,
- Northbound North Port Boulevard to eastbound Appomattox Drive, and

Left-turn lanes are warranted at the following locations:

- Eastbound Greenwood Avenue to the proposed south main driveway,
- Westbound Appomattox Drive to the proposed north driveway entrance, and
- Westbound Appomattox Drive to North Port Boulevard

Under this alternative, right-turn lanes are warranted at the locations of northbound North Port Boulevard to eastbound Greenwood Avenue and westbound Greenwood Avenue to the proposed north driveway entrance.

APPENDIX A

TRANSPORTATION METHODOLOGY

April 16, 2018

Mr. Jerry Traverso
Engineering Division Manager
City of North Port Department of Public Works
North Port City Hall
4970 City Hall Boulevard
North Port, Florida 34286-4100

■
Suite 150
655 North Franklin Street
Tampa, Florida
33602

Re: Sabal Trace Development
City of North Port, Florida
Traffic Impact Study (TIS) Methodology

Dear Mr. Traverso,

The purpose of this letter is to document the proposed methodology for the transportation analysis that will be conducted for the Sabal Trace development. The project site is located in the southwest quadrant of the intersection of Sumter Boulevard & Appomattox Drive in North Port, Florida. The project location map is shown in Figure 1 as an attachment. The proposed transportation methodology is provided below for your review and comments.

The Applicant is seeking concurrency approval for the project. The subject property is proposed to include up to 200 Single Family homes, 450 Multi Family homes, 150 Senior Living units, 30,000 square feet of medical office, 20,000 square feet of commercial uses and 50,000 square feet of mini-storage facility.

To appropriately address transportation issues related to this mixed-use development, Kimley-Horn will conduct a transportation concurrency analysis assuming a build-out year of 2020.

Project Trip Generation: Trip generation for the proposed mixed-use project was estimated based upon the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition, for the following Land Use Codes (LUC):

- LUC 151 (Mini-Warehouse)
- LUC 210 (Single-Family Housing)
- LUC 220 (Multifamily Housing)
- LUC 251 (Senior Adult Housing).
- LUC 720 (Medical-Dental Office)
- LUC 820 (Shopping Center)

Pass-by rates and internally captured trips were assumed and were based upon the Institute of Transportation Engineers' (ITE) *Trip Generation Handbook*, 3rd Edition. The trip generation rates and values are provided below in Table 1.

Table 1: Project Trip Generation

DAILY PROJECT TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS							DIRECTIONAL DISTRIBUTION		GROSS TRIPS			INTERNAL CAPTURE		TOTAL EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	ITE Edition	ITE Code	Scale	ITE Units	ITE Rate/Formula	R ²	Percent		In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
							In	Out													
Single Family Detached	10	210	200	DU	909	909	50%	50%	984	984	1,968	7.6%	150	909	909	1,818	0.0%	0	909	909	1,818
Townhomes	10	220	450	DU	1553	1553	50%	50%	1,681	1,681	3,362	7.6%	256	1,553	1,553	3,106	0.0%	0	1,553	1,553	3,106
Senior Adult Housing Detached	10	251	100	DU	260	260	50%	50%	281	281	562	7.6%	42	260	260	520	0.0%	0	260	260	520
Shopping Center	10	820	20	KSF	731	731	50%	50%	1,006	1,006	2,012	27.3%	550	731	731	1,462	0.0%	0	731	731	1,462
Mini Storage	10	151	50	KSF	28	28	50%	50%	38	38	76	27.3%	20	28	28	56	0.0%	0	28	28	56
Medical Office	10	720	30	KSF	374	374	50%	50%	532	532	1,064	29.7%	316	374	374	748	0.0%	0	374	374	748
Total:									4,522	4,522	9,044	14.8%	1,334	3,855	3,855	7,710			3,855	3,855	7,710

A.M. PEAK-HOUR PROJECT TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS							DIRECTIONAL DISTRIBUTION		GROSS TRIPS			INTERNAL CAPTURE		TOTAL EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	ITE Edition	ITE Code	Scale	ITE Units	ITE Rate/Formula	R ²	Percent		In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
							In	Out													
Single Family Detached	10	210	200	DU			25%	75%	37	110	147	1.8%	2	36	109	145	0.0%	0	36	109	145
Townhomes	10	220	450	DU			23%	77%	46	153	199	1.8%	4	44	151	195	0.0%	0	44	151	195
Senior Adult Housing Detached	10	251	100	DU			33%	67%	14	27	41	1.8%	0	14	27	41	0.0%	0	14	27	41
Shopping Center	10	820	20	KSF			62%	38%	100	62	162	7.2%	12	94	56	150	34.0%	52	68	30	98
Mini Storage	10	151	50	KSF			60%	40%	3	2	5	7.2%	0	3	2	5	0.0%	0	3	2	5
Medical Office	10	720	30	KSF			78%	22%	59	17	76	12.0%	10	54	12	66	0.0%	0	54	12	66
Total:									259	371	630	4.4%	28	245	357	602	8.6%	52	219	331	550

P.M. PEAK-HOUR PROJECT TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS							DIRECTIONAL DISTRIBUTION		DRIVEWAY TRIPS			INTERNAL CAPTURE		TOTAL EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	ITE Edition	ITE Code	Scale	ITE Units	ITE Rate/Formula	R ²	Percent		In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
							In	Out													
Single Family Detached	10	210	200	DU			63%	37%	125	73	198	8.7%	18	116	64	180	0.0%	0	116	64	180
Townhomes	10	220	450	DU			63%	37%	142	83	225	8.7%	20	132	73	205	0.0%	0	132	73	205
Senior Adult Housing Detached	10	251	100	DU			61%	39%	29	19	48	8.7%	4	27	17	44	0.0%	0	27	17	44
Shopping Center	10	820	20	KSF			48%	52%	79	86	165	23.6%	38	60	67	127	34.0%	44	38	45	83
Mini Storage	10	151	50	KSF			47%	53%	4	5	9	23.6%	2	3	4	7	0.0%	0	3	4	7
Medical Office	10	720	30	KSF			28%	72%	29	75	104	17.3%	18	20	66	86	0.0%	0	20	66	86
Total:									408	341	749	13.4%	100	358	291	649	6.8%	44	336	269	605

Scheduled Improvements: The Work Programs for the City of North Port, Sarasota County, Sarasota/Manatee MPO and Florida Department of Transportation (FDOT) District 1, were reviewed to determine if improvements are currently planned and funded for construction within the buildout time frame in the immediate vicinity of the project site.

FDOT currently has a project within the area, to widen US 41 from Sumter Boulevard to Salford Boulevard from 4-lanes to 6-lanes. No other capacity improvements are expected in the area.

Project Trip Distribution: Project traffic was assigned to the road network using the Florida Standard Urban Transportation Model Structure (FSUTMS) District 1 transportation planning model, specifically the Existing plus Committed (E+C) network, with incorporation of the most current socio-economic and network data sets maintained by the Sarasota/Manatee MPO. This model distribution is provided in Figure 2 as an attachment.

Study Area: The study area roadway segments are those that are defined as significantly impacted roadways, with the project traffic representing 5% or greater of the roadway capacity at LOS D as determined from Florida Department of Transportation's (FDOT's) Generalized Service Volume Tables, per the City of North Port Unified Land Development Code Section 5-8. Therefore, study roadway segments include those impacted greater than 5% of the roadway's capacity at LOS D service volume or those that directly access the project. The project impact calculations are shown in the Study Area Determination shown below in Table 2. Based upon the trip generation and trip distribution analyses, the following roadway segments were determined to be in the study area:

- Sumter Boulevard from US 41 to Price Boulevard;
- Appomattox Drive from Pan American Boulevard to Sumter Boulevard;
- North Port Boulevard from US 41 to Appomattox Drive; and
- US 41 from River Road to Cranberry Boulevard.

In addition to the study roadway segments, the following existing intersections located along the study area roadway segments were included in the study area. These study intersections are as follows:

- Sumter Boulevard & US 41;
- Sumter Boulevard & Greenwood Avenue;
- Sumter Boulevard & Appomattox Drive;
- Sumter Boulevard & Price Boulevard;
- North Port Boulevard & US 41;
- North Port Boulevard & Greenwood Avenue;
- North Port Boulevard & Appomattox Drive;

Analysis Year Scenarios: A transportation concurrency will be conducted during the p.m. peak hour assuming a build-out year of 2020. The analysis will be conducted for p.m. peak hour, peak-season conditions utilizing Sarasota County's most recent published seasonal factor (SF).

Data Collection: Data collection will be performed at the following study intersections along each of the study area roadway segments:

- Sumter Boulevard & US 41;
- Sumter Boulevard & Greenwood Avenue;
- Sumter Boulevard & Appomattox Drive;
- Sumter Boulevard & Price Boulevard;
- North Port Boulevard & US 41;
- North Port Boulevard & Greenwood Avenue;
- North Port Boulevard & Appomattox Drive;

Background Traffic: Background (non-project) traffic for the future year (2020) scenario will consist of existing traffic as identified in the traffic counts to be collected plus vested or background growth. To determine an appropriate amount of background growth, calculated historical growth will be compared to the vested traffic information provided by the City of North Port. Background growth will be the greater of the calculated historical growth or vested traffic volumes along each roadway segment and study area intersection. The historical growth will be calculated using historical traffic volumes taken from the nearest FDOT count station (175064), located on US 41. A growth rate of 1% was calculated and will be assumed for background growth unless vested traffic provided by the City is determined to be greater.

Table 2: Study Area Determination

Roadway	From	To	Existing + Committed Laneage	LOS	Average Daily Volumes	Project Traffic Assignment	Project Traffic Volume	Project Traffic % of Service Volume	Within Study Network?
Sumter Blvd	US 41	Greenwood Ave	4	D	31,100	33%	2,544	8.18%	Y
	Greenwood Ave	Appomattox Dr	4	D	31,100	2%	154	0.50%	N
	Appomattox Dr	Price Blvd	4	D	31,100	22%	1,696	5.45%	Y
	Price Blvd	I-75	4	D	31,100	14%	1,079	3.47%	N
Appomattox Drive*	Pan American Blvd	Project Dr	2	D	10,000	8%	617	6.17%	Y
	Project Dr	Sumter Blvd	2	D	10,000	23%	1,773	17.73%	Y
North Port Blvd	US 41	Greenwood Ave	2	D	10,000	34%	2,621	26.21%	Y
	Greenwood Ave	Appomattox Dr	2	D	10,000	0%	0	0.00%	N
US 41	River Rd	Ortiz Blvd	4	D	32,700	17%	1,311	4.01%	N
	Ortiz Blvd	Biscayne Dr	4	D	32,700	22%	1,696	5.19%	Y
	Biscayne Dr	Pan American Blvd	4	D	32,700	25%	1,928	5.89%	Y
	Pan American Blvd	North Port Blvd	4	D	32,700	30%	2,313	7.07%	Y
	North Port Blvd	Sumter Blvd	4	D	32,700	1%	77	0.24%	N
	Sumter Blvd	Salford Blvd	4	D	32,700	30%	2,313	7.07%	Y
	Salford Blvd	Cranberry Blvd	4	D	32,700	27%	2,082	6.37%	Y
	Cranberry Blvd	Chamberlain Blvd	4	D	32,700	17%	1,311	4.01%	N

*First directly accessed segment

Source: City of North Port Comprehensive Plan Transportation Element

Traffic Analysis: Roadway analysis procedures for this study will evaluate two-way study roadway segments using the City of North Port's Comprehensive Plan Transportation Element LOS "D" Table. If necessary, a detailed roadway capacity analyses using FDOT ARTPLAN and/or Synchro version 10 arterial analyses will be conducted for any generalized deficient roadway segments.

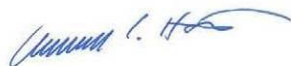
Analysis procedures for this study will evaluate p.m. peak hour intersection performance under the following scenarios:

Scenario	Network	Traffic Volumes
Existing (2018) Traffic	Existing Geometry (E) + Committed Improvements (C)	Current Volumes
Future (2021) Background (without project) Traffic	Existing Geometry (E) + Committed Improvements (C)	Current Volumes + Reserved Trips
Future (2021) Background Traffic Improvements (without project)	Existing Geometry (E) + Committed Improvements (C) + Background Traffic Improvements (BTI)	Current Volumes + Reserved Trips
Future (2021) Buildout/Total Traffic Volumes (with project)	Existing Geometry (E) + Committed Improvements (C) + Background Traffic Improvements (BTI)	Current Volumes + Reserved Trips + Project Trips
Future (2021) Buildout/Total Traffic Volumes (with project) with Project Triggered Improvements	Existing Geometry (E) + Committed Improvements (C) + Background Traffic Improvements (BTI) + Project Triggered Improvements (PTI)	Current Volumes + Reserved Trips + Project Trips

We will follow-up with you to determine if you have any questions or comments regarding this transportation methodology. We look forward to working with you on this traffic study.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.



Christopher Hatton, P.E.
 Senior Vice-President



Kenneth Siu, P.E.
 Project Manager

Attachments: Figure 1 – Project Location map
 Figure 2 – Project Trip Distribution

CC: Peter Van Buskirk

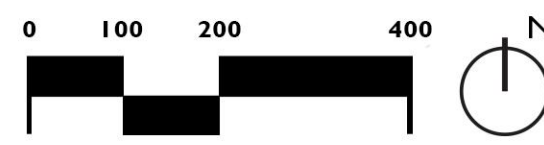


SITE STATISTICS		
TOTAL AREA:	+/- 207.5 AC.	(100%)
MIXED USE #1 AREA:	+/- 19.8 AC.	(10%)
MIXED USE #2 AREA:	+/- 8.5 AC.	(4%)
SINGLE FAMILY AREA:	+/- 85.8 AC.	(41%)
RIGHT-OF-WAY AREA:	+/- 25.2 AC.	(12%)
RETENTION AREA:	+/- 35.1 AC.	(17%)
OPEN SPACE/ PRESERVE AREA:	+/- 33.1 AC.	(16%)
LINEAR LOT WIDTH:	+/- 23,152 LLW	

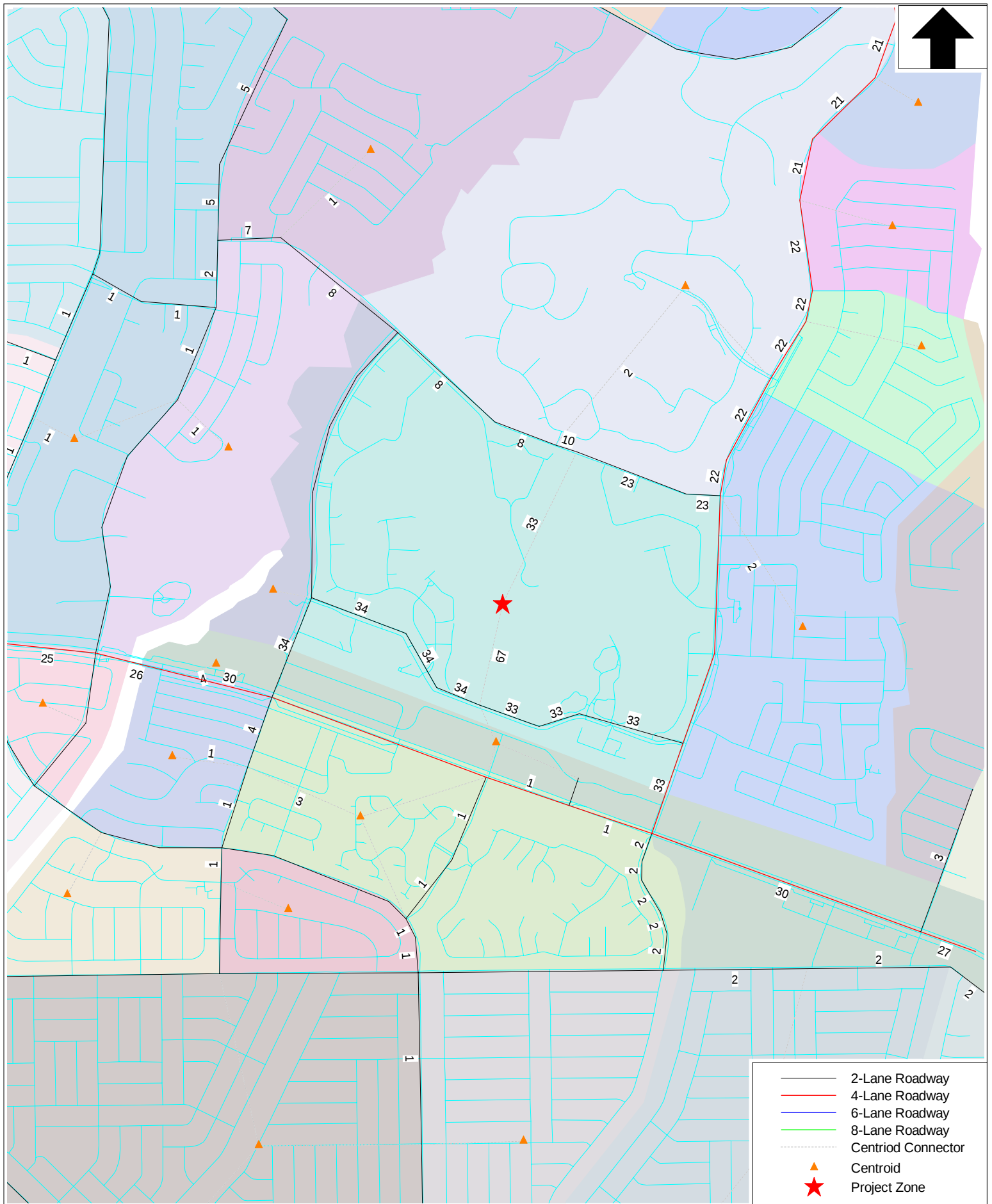
SABAL TRACE
NORTH PORT, FLORIDA

CONCEPTUAL SKETCH PLAN

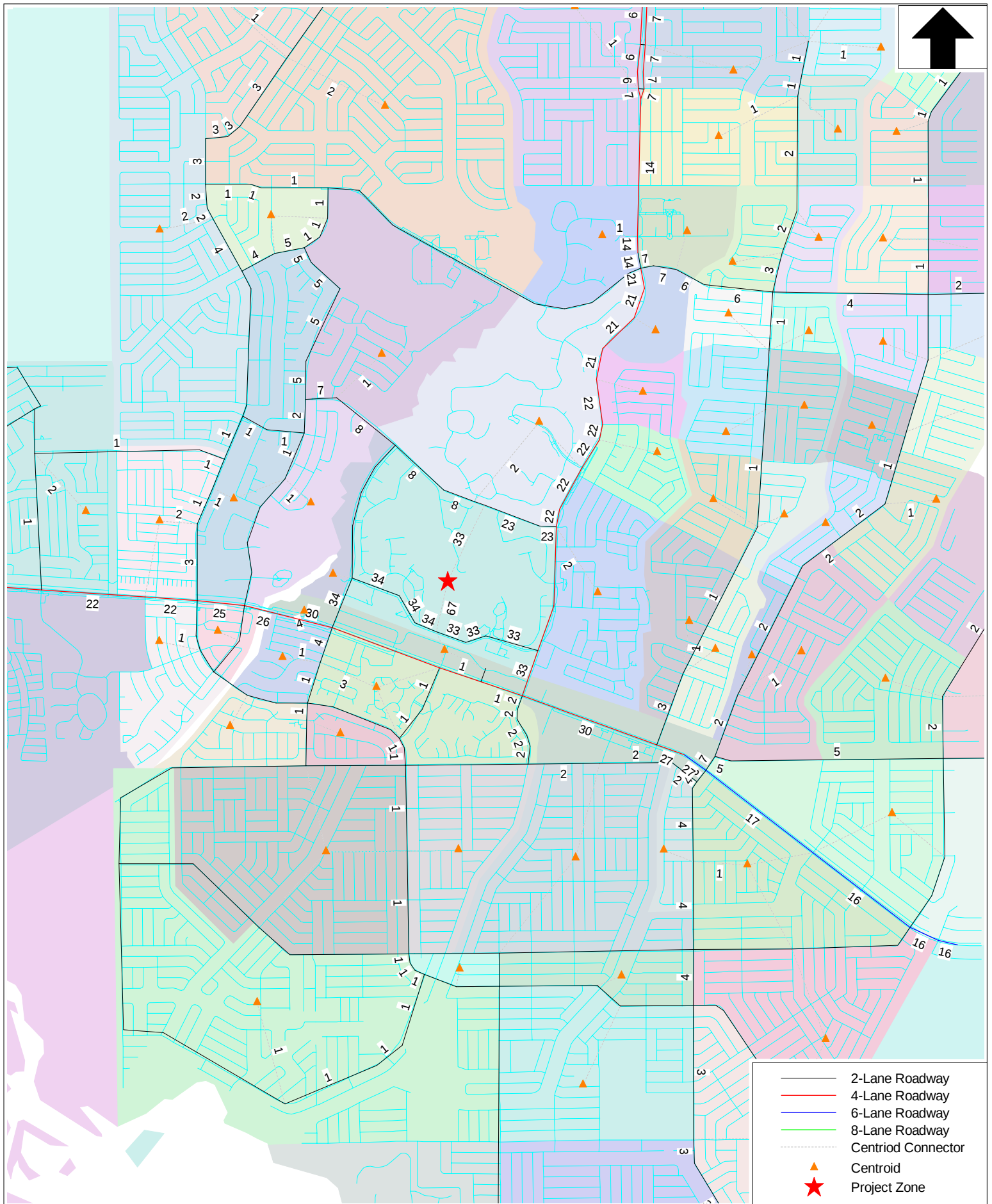
02/12/2018 • CONTACT: PETER VANBUSKIRK, PE, AICP (239) 271-2635 • AERIAL DATA: © GOOGLE EARTH 2017



Kimley»Horn



Sabal Tracer % Percent Distribution
 D1RPMv1.0.2 - Year 2020 w/ E+C Network
 C:\FSUTMSID1\D1RPM_v1.0.2\YR2010\EC\Sabal_2020\HWYLOAD_18B.NET 3/31/2018



Sabal Tracer % Percent Distribution
 D1RPMv1.0.2 - Year 2020 w/ E+C Network
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APPENDIX B

PROJECT TRIP GENERATION WORKSHEET

DAILY PROJECT TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS							DIRECTIONAL DISTRIBUTION		GROSS TRIPS			INTERNAL CAPTURE		TOTAL EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	ITE Edition	ITE Code	Scale	ITE Units	ITE Rate/Formula	R ²	Percent		In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
							In	Out													
Single Family Detached	10	210	200	DU	909	909	50%	50%	984	984	1,968	7.8%	154	907	907	1,814	0.0%	0	907	907	1,814
Townhomes	10	220	300	DU	1029	1029	50%	50%	1,114	1,114	2,228	7.8%	174	1,027	1,027	2,054	0.0%	0	1,027	1,027	2,054
Senior AdultHousing Detached	10	251	300	DU	684	684	50%	50%	740	740	1,480	7.8%	116	682	682	1,364	0.0%	0	682	682	1,364
Shopping Center	10	820	20	KSF	731	731	50%	50%	1,006	1,006	2,012	27.3%	550	731	731	1,462	0.0%	0	731	731	1,462
Mini Storage	10	151	50	KSF	28	28	50%	50%	38	38	76	27.3%	20	28	28	56	0.0%	0	28	28	56
Medical Office	10	720	30	KSF	374	374	50%	50%	532	532	1,064	29.5%	314	375	375	750	0.0%	0	375	375	750
Total:									4,414	4,414	8,828	15.0%	1,328	3,750	3,750	7,500			3,750	3,750	7,500

A.M. PEAK-HOUR PROJECT TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS							DIRECTIONAL DISTRIBUTION		GROSS TRIPS			INTERNAL CAPTURE		TOTAL EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	ITE Edition	ITE Code	Scale	ITE Units	ITE Rate/Formula	R ²	Percent		In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
							In	Out													
Single Family Detached	10	210	200	DU			25%	75%	37	110	147	1.9%	2	36	109	145	0.0%	0	36	109	145
Townhomes	10	220	300	DU			23%	77%	31	104	135	1.9%	2	30	103	133	0.0%	0	30	103	133
Senior AdultHousing Detached	10	251	300	DU			33%	67%	31	63	94	1.9%	2	30	62	92	0.0%	0	30	62	92
Shopping Center	10	820	20	KSF			62%	38%	100	62	162	7.2%	12	94	56	150	34.0%	52	68	30	98
Mini Storage	10	151	50	KSF			60%	40%	3	2	5	7.2%	0	3	2	5	0.0%	0	3	2	5
Medical Office	10	720	30	KSF			78%	22%	59	17	76	11.8%	8	55	13	68	0.0%	0	55	13	68
Total:									261	358	619	4.2%	26	248	345	593	8.8%	52	222	319	541

P.M. PEAK-HOUR PROJECT TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS							DIRECTIONAL DISTRIBUTION		GROSS TRIPS			INTERNAL CAPTURE		TOTAL EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	ITE Edition	ITE Code	Scale	ITE Units	ITE Rate/Formula	R ²	Percent		In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
							In	Out													
Single Family Detached	10	210	200	DU			63%	37%	125	73	198	8.8%	18	116	64	180	0.0%	0	116	64	180
Townhomes	10	220	300	DU			63%	37%	99	58	157	8.8%	14	92	51	143	0.0%	0	92	51	143
Senior AdultHousing Detached	10	251	300	DU			61%	39%	69	44	113	8.8%	10	64	39	103	0.0%	0	64	39	103
Shopping Center	10	820	20	KSF			48%	52%	79	86	165	23.6%	38	60	67	127	34.0%	44	38	45	83
Mini Storage	10	151	50	KSF			47%	53%	4	5	9	23.6%	2	3	4	7	0.0%	0	3	4	7
Medical Office	10	720	30	KSF			28%	72%	29	75	104	17.3%	18	20	66	86	0.0%	0	20	66	86
Total:									405	341	746	13.4%	100	355	291	646	6.8%	44	333	269	602

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

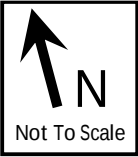
Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY (EXISTING)

GROSS TRIP GENERATION							
INPUT	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
	Office	532	532	59	17	29	75
	Retail	1,044	1,044	103	64	83	91
	Restaurant						
	Cinema/Entertainment						
	Residential	2,838	2,838	99	277	293	175
	Hotel						
		4,414	4,414	261	358	405	341
INTERNAL TRIPS							
OUTPUT	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
	Office	178	136	4	5	9	9
	Retail	269	302	8	4	15	26
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	217	226	2	5	26	15
	Hotel	0	0	0	0	0	0
		664	664	14	14	50	50
OUTPUT	Total % Reduction	15.0%		4.5%		13.4%	
	Office	29.5%		11.8%		17.3%	
	Retail	27.3%		7.2%		23.6%	
	Restaurant						
	Cinema/Entertainment						
	Residential	7.8%		1.9%		8.8%	
	Hotel						
EXTERNAL TRIPS							
OUTPUT	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
	Office	354	396	55	12	20	66
	Retail	775	742	95	60	68	65
	Restaurant	0	0	0	0	0	0
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	2,621	2,612	97	272	267	160
	Hotel	0	0	0	0	0	0
		3,750	3,750	247	344	355	291

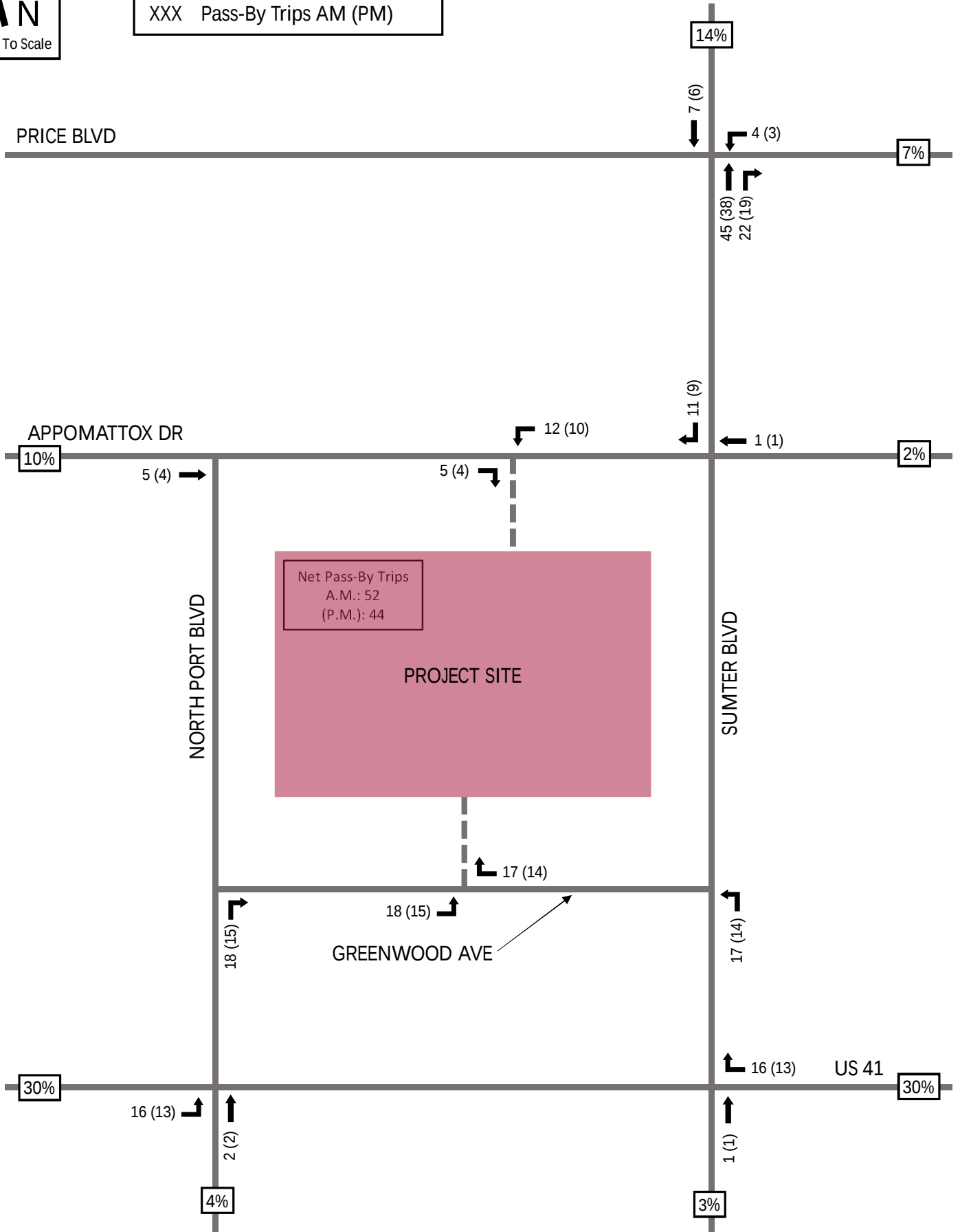
APPENDIX C

PASS BY ASSIGNMENT FIGURE



Legend

XXX Pass-By Trips AM (PM)



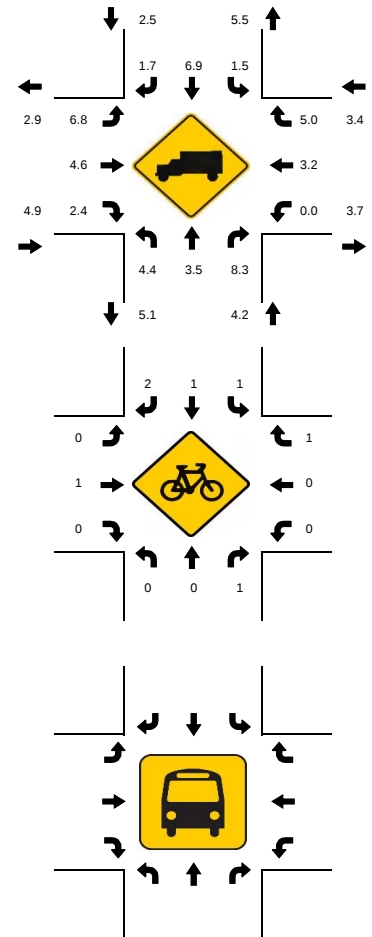
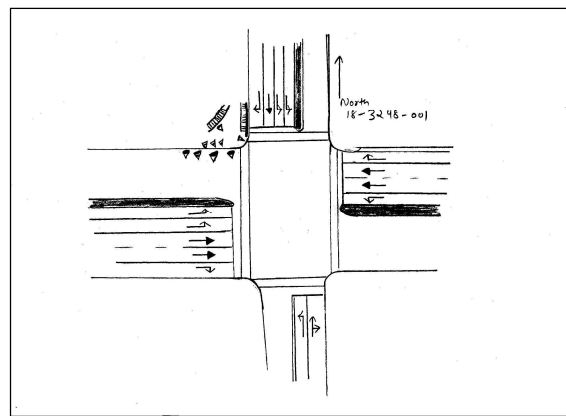
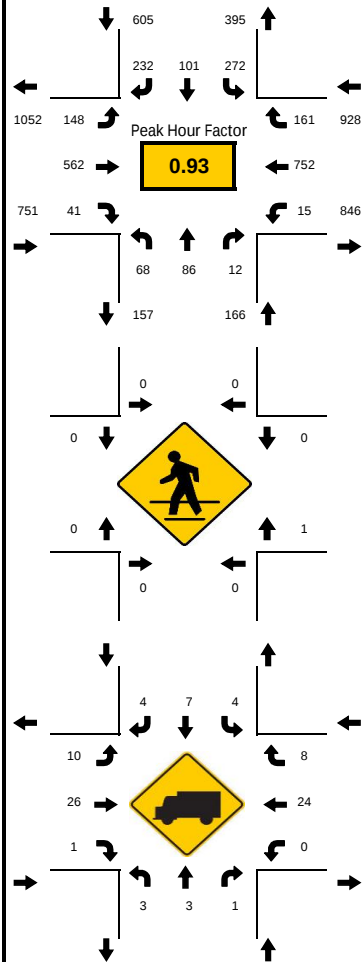
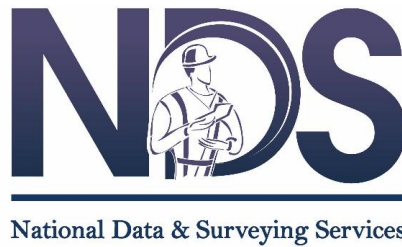
APPENDIX D

RAW TRAFFIC COUNT REPORTS, INTERSECTION DIAGRAMS,
FDOT SEASONAL FACTOR DATA, AND SIGNAL TIMING PLANS

LOCATION: Sumter Blvd & US 41
CITY/STATE: North Port, FL

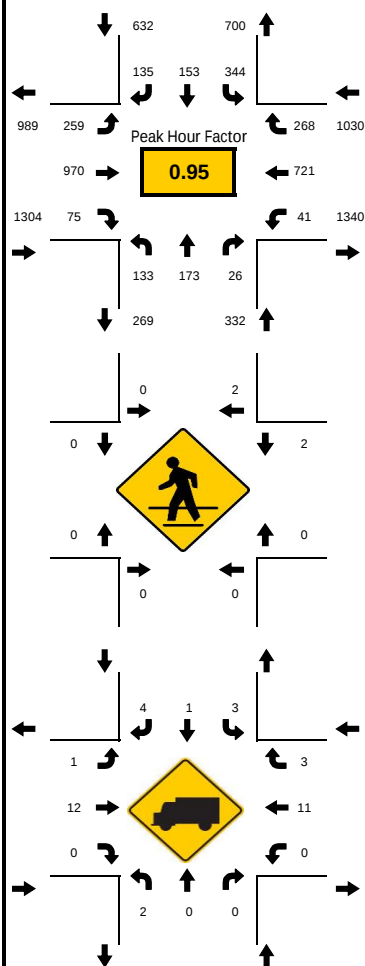
PROJECT ID: 18-03298-001
DATE: 06/12/2018

Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:45 AM - 09:00 AM



15-Min Count Period Beginning At	Sumter Blvd Northbound					Sumter Blvd Southbound					US 41 Eastbound					US 41 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	14	12	2	0		32	10	52	0		11	86	6	2		1	177	8	0		413	2032
07:15 AM	19	8	4	0		59	18	55	0		24	101	6	1		1	173	19	0		488	2195
07:30 AM	16	28	3	0		62	26	76	0		31	108	4	1		3	176	34	0		568	2273
07:45 AM	22	22	2	0		54	15	45	0		23	126	13	5		4	195	36	1		563	2357
08:00 AM	15	18	1	0		60	19	69	0		23	133	10	0		2	180	46	0		576	2450
08:15 AM	14	15	3	0		87	22	44	0		25	123	7	3		4	177	42	0		566	1874
08:30 AM	21	25	1	0		69	33	77	0		40	141	6	4		3	197	34	1		652	1308
08:45 AM	18	28	7	0		56	27	42	0		46	165	18	7		5	198	39	0		656	656
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
All Vehicles	84	112	28	0		348	132	308	0		184	660	72	28		20	792	184	4		2956	
Heavy Trucks	4	8	4			8	12	12			12	32	4			0	44	12			152	
Pedestrians	0					0					0					4					4	
Bicycles	0	0	4			4	4	4			0	4	0			0	0	4			24	
Railroad																						
Stopped Buses																						

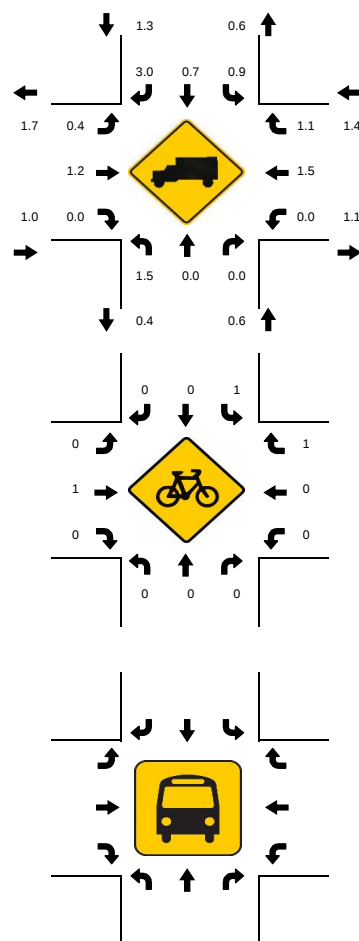
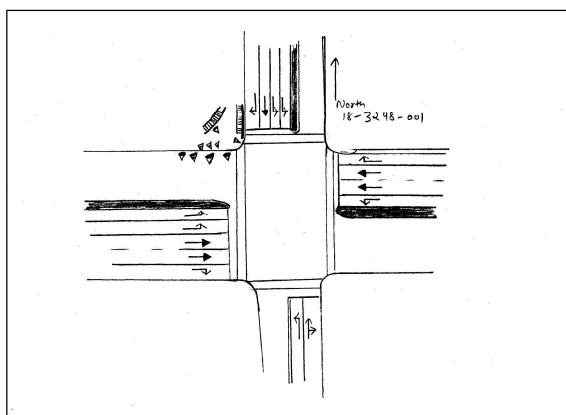
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DATE: 06/12/2018



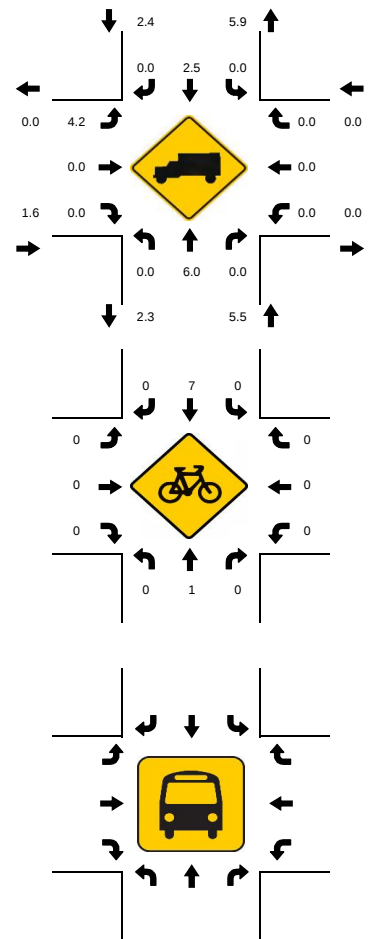
Peak-Hour: 04:45 PM - 05:45 PM
Peak 15-Minute: 05:00 PM - 05:15 PM



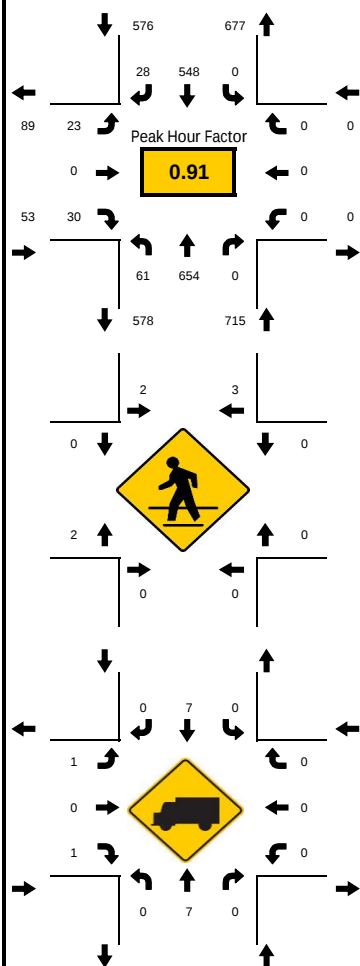
National Data & Surveying Services

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PROJECT ID: 18-03298-002
DATE: 06/12/2018

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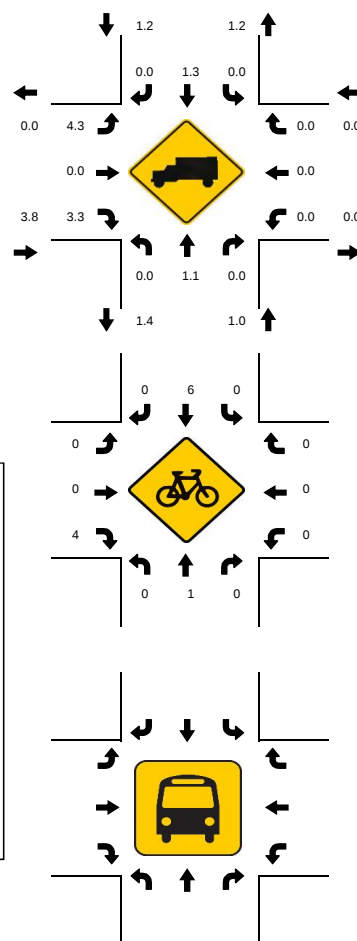
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DATE: 06/12/2018



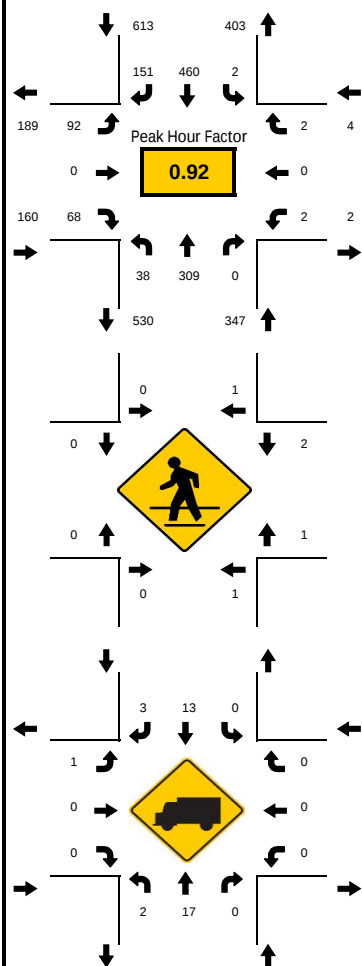
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Peak 15-Minute: 05:30 PM - 05:45 PM



National Data & Surveying Services

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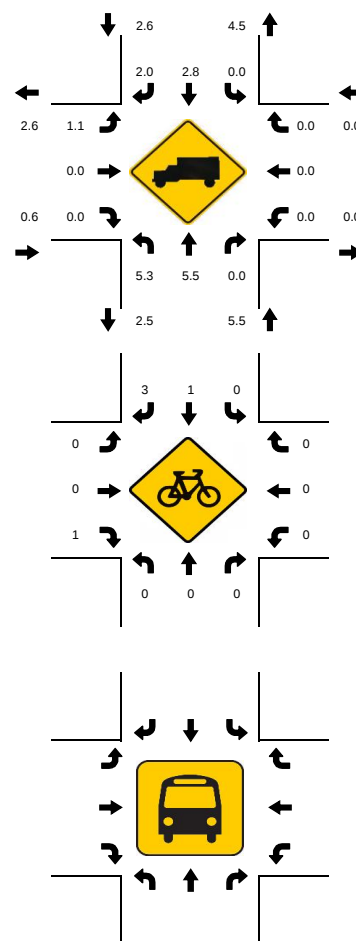
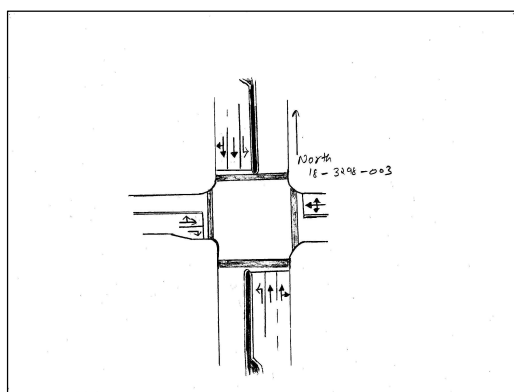
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DATE: 06/12/2018



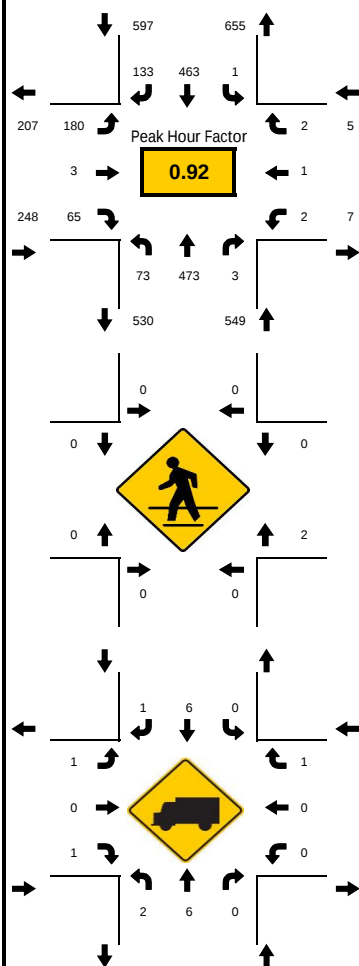
Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:30 AM - 08:45 AM



National Data & Surveying Services

[illegible]

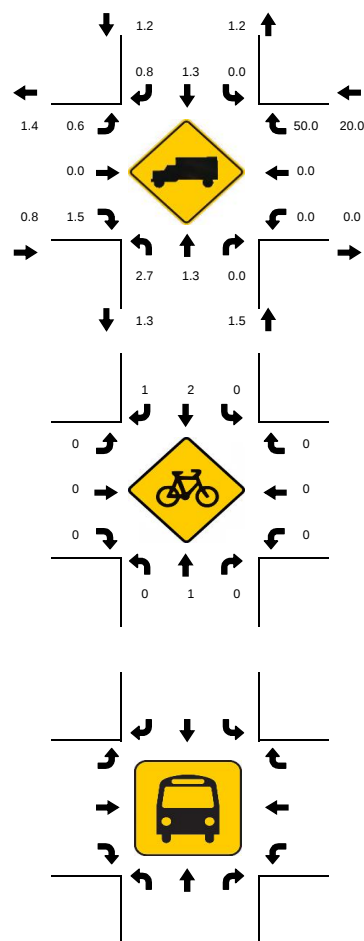
PROJECT ID: 18-03298-003
DATE: 06/12/2018



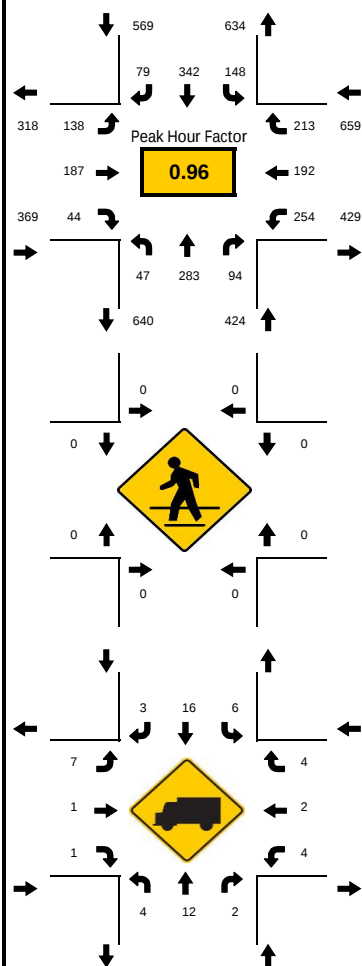
Peak-Hour: 04:45 PM - 05:45 PM
Peak 15-Minute: 05:30 PM - 05:45 PM



National Data & Surveying Services

[illegible]

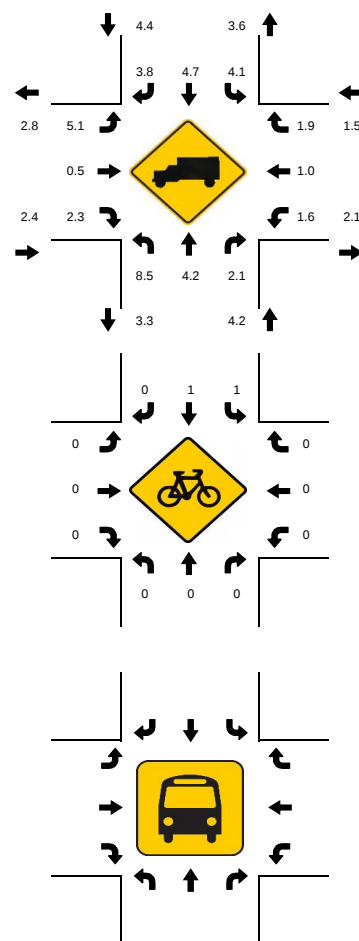
PROJECT ID: 18-03298-004
DATE: 06/12/2018



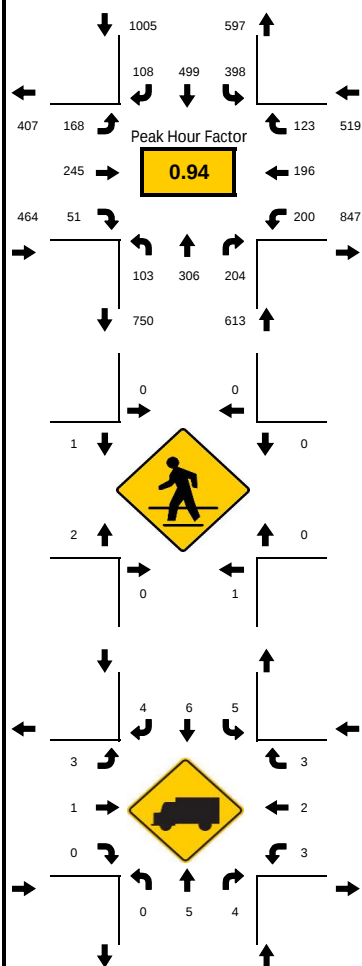
Peak-Hour: 07:45 AM - 08:45 AM
Peak 15-Minute: 07:45 AM - 08:00 AM



National Data & Surveying Services

[illegible]

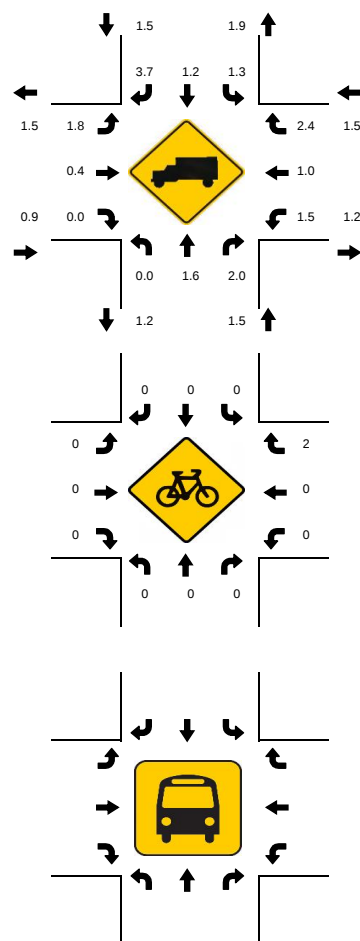
PROJECT ID: 18-03298-004
DATE: 06/12/2018



Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:15 PM - 05:30 PM



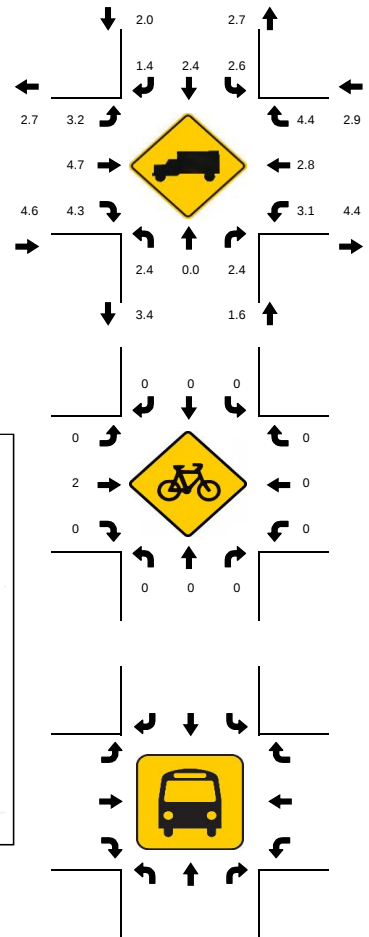
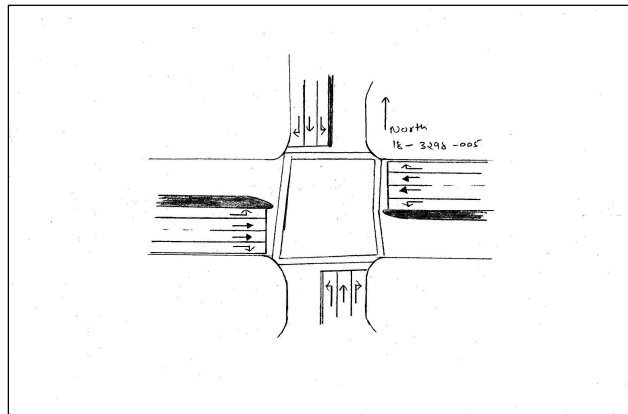
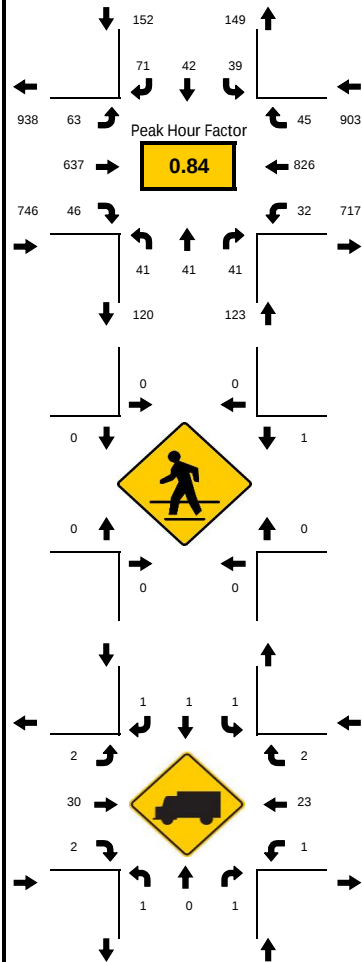
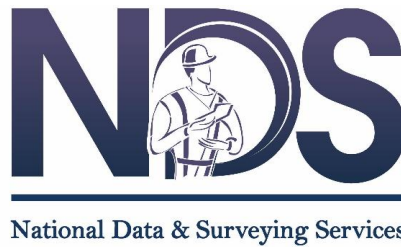
National Data & Surveying Services

[illegible]

LOCATION: N Port Blvd & US 41
CITY/STATE: North Port, FL

PROJECT ID: 18-03298-005
DATE: 06/12/2018

Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:30 AM - 08:45 AM



15-Min Count Period Beginning At	N Port Blvd Northbound					N Port Blvd Southbound					US 41 Eastbound					US 41 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	7	2	7	0		4	3	17	0		5	92	5	0		2	205	5	0		354	1717
07:15 AM	8	6	10	0		4	5	12	0		12	140	7	0		5	216	9	0		434	1797
07:30 AM	10	5	13	0		3	7	14	0		8	151	7	0		5	238	6	0		467	1787
07:45 AM	13	10	11	0		5	9	22	0		14	141	10	1		5	216	5	0		462	1892
08:00 AM	8	9	11	0		7	9	18	1		9	148	9	0		9	190	6	0		434	1924
08:15 AM	5	5	9	0		8	15	18	0		6	158	12	1		3	175	9	0		424	1490
08:30 AM	15	11	12	0		8	8	14	0		15	162	16	1		5	291	12	2		572	1066
08:45 AM	13	16	9	0		15	10	21	0		30	169	9	1		11	170	18	2		494	494
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
All Vehicles	60	64	48	0		60	60	84	4		120	676	64	4		44	1164	72	8		2532	
Heavy Trucks	4	0	4			4	4	4			8	52	4			4	48	4			140	
Pedestrians	0					0					0					4					4	
Bicycles	0	0	0			0	0	0			0	4	0			0	0	0			4	
Railroad																						
Stopped Buses																						

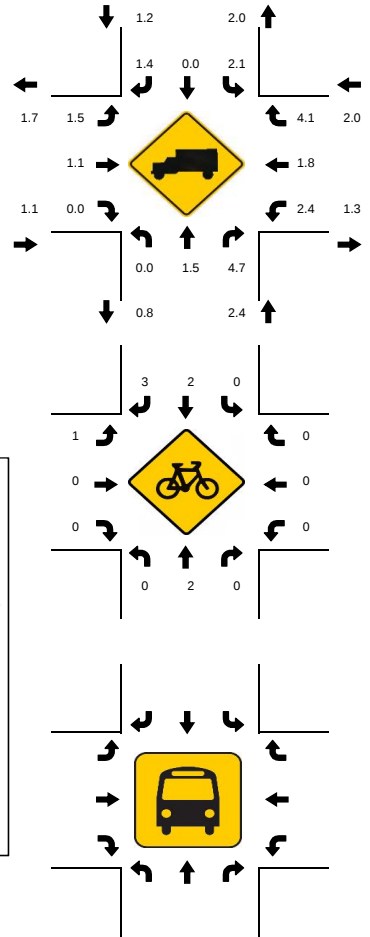
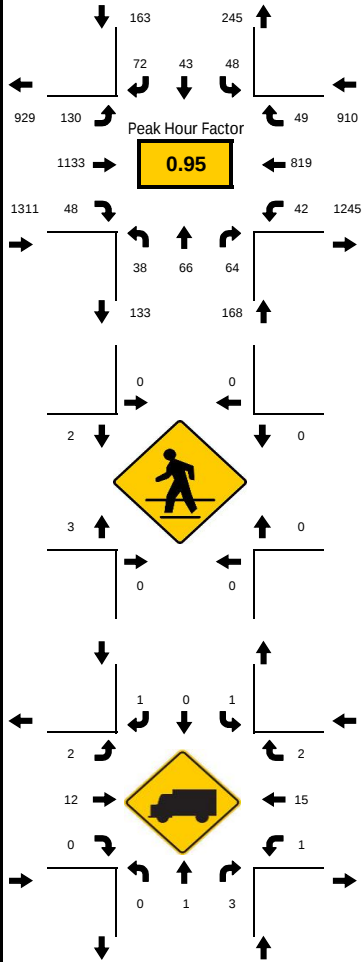
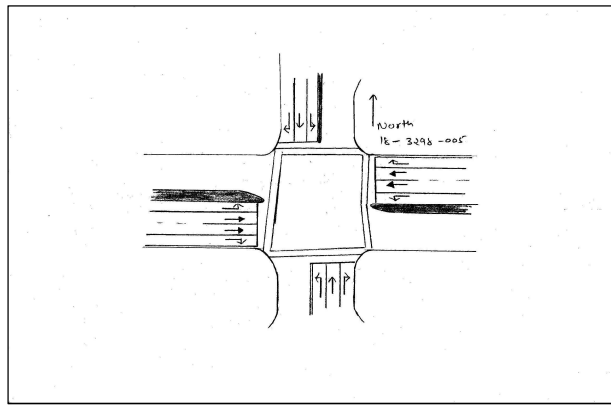
LOCATION: N Port Blvd & US 41
CITY/STATE: North Port, FL

PROJECT ID: 18-03298-005
DATE: 06/12/2018

Peak-Hour: 04:30 PM - 05:30 PM
Peak 15-Minute: 05:00 PM - 05:15 PM



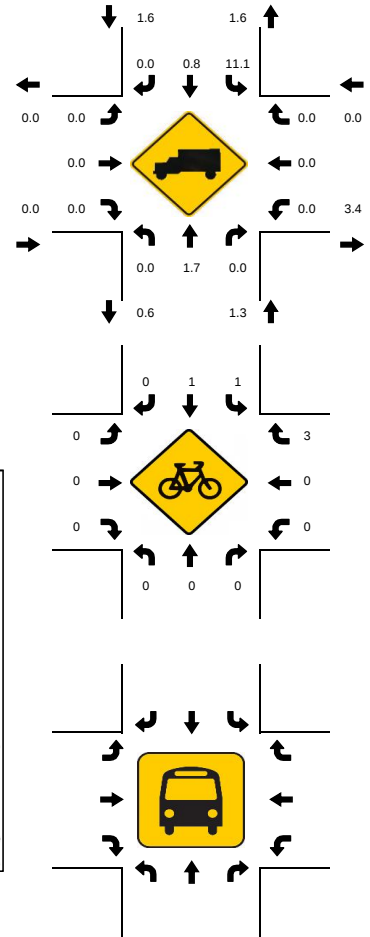
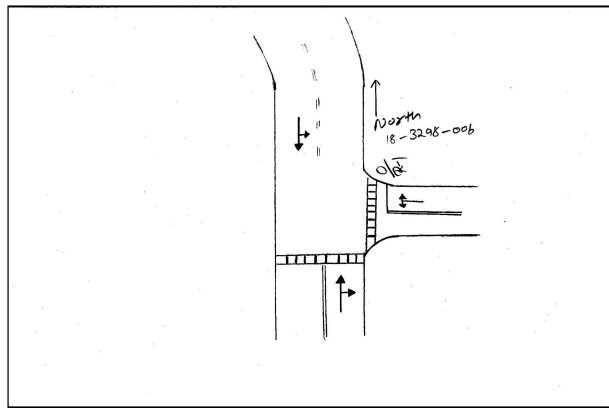
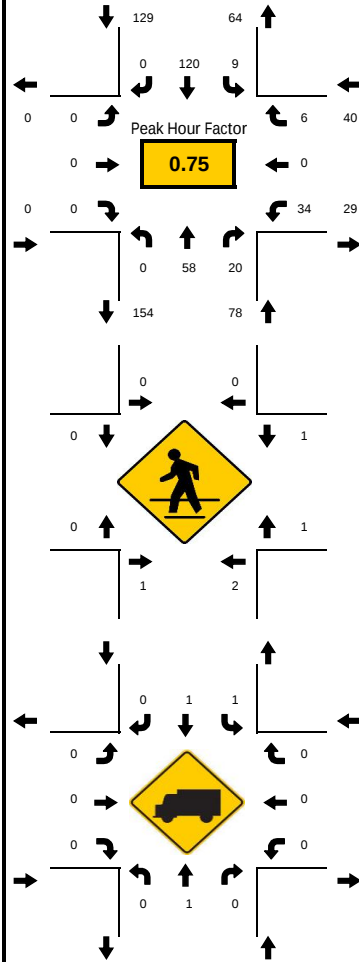
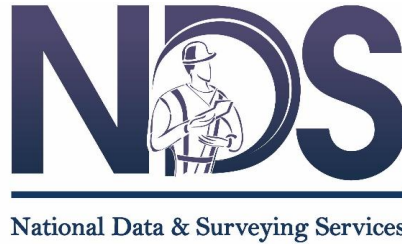
National Data & Surveying Services

[illegible]

LOCATION: N Port Blvd & Greenwood Ave
CITY/STATE: North Port, FL

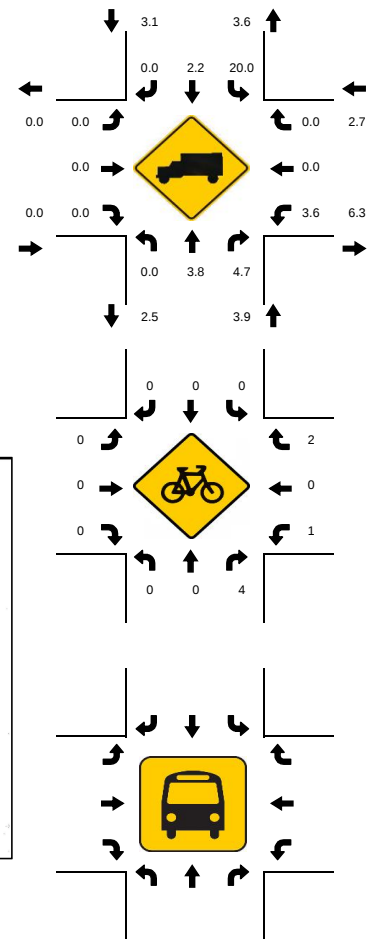
PROJECT ID: 18-03298-006
DATE: 06/12/2018

Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:45 AM - 09:00 AM



15-Min Count Period Beginning At	N Port Blvd Northbound					N Port Blvd Southbound					Greenwood Ave Eastbound					Greenwood Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	0	0	4	0		2	14	0	0		0	0	0	0		7	0	0	0		27	173
07:15 AM	0	12	8	0		0	23	0	0		0	0	0	0		8	0	0	0		51	192
07:30 AM	0	4	4	0		3	18	0	0		0	0	0	0		14	0	2	0		45	205
07:45 AM	0	9	5	0		1	23	0	0		0	0	0	0		10	0	2	0		50	215
08:00 AM	0	8	1	0		2	23	0	0		0	0	0	0		10	0	2	0		46	247
08:15 AM	0	10	6	0		3	32	0	0		0	0	0	0		9	0	4	0		64	201
08:30 AM	0	15	3	0		1	28	0	0		0	0	0	0		8	0	0	0		55	137
08:45 AM	0	25	10	0		3	37	0	0		0	0	0	0		7	0	0	0		82	82
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
All Vehicles	0	100	40	0		12	148	0	0		0	0	0	0		40	0	16	0		356	
Heavy Trucks	0	4	0			4	4	0			0	0	0			0	0	0			12	
Pedestrians		8					0					0					4				12	
Bicycles	0	0	0			4	4	0			0	0	0			0	0	8			16	
Railroad																						
Stopped Buses																						

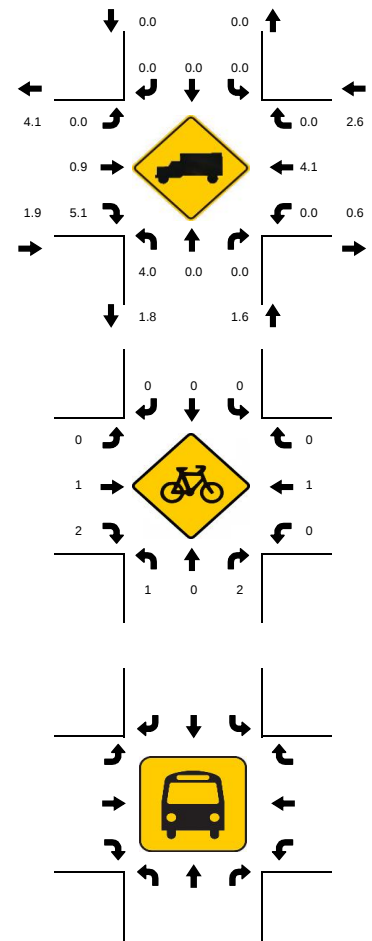
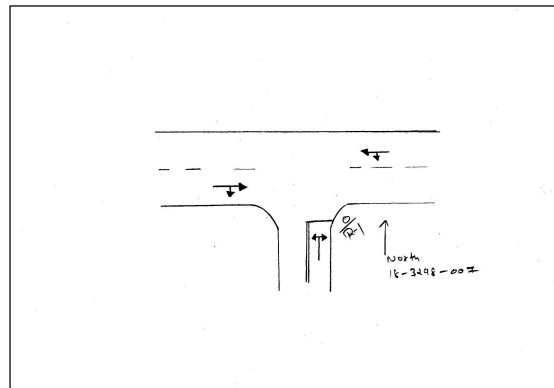
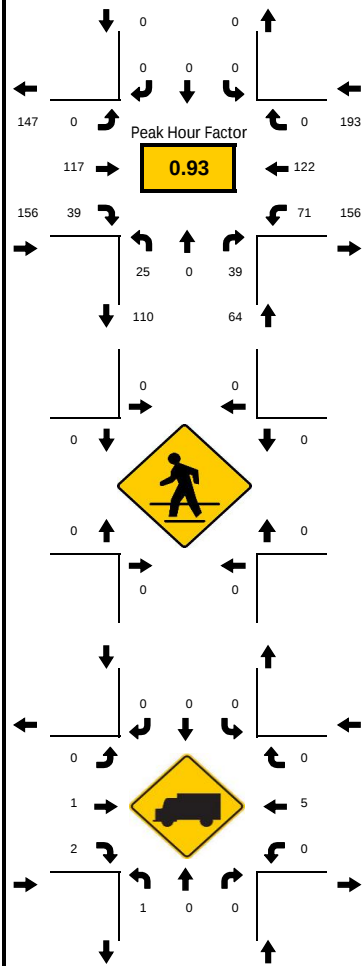
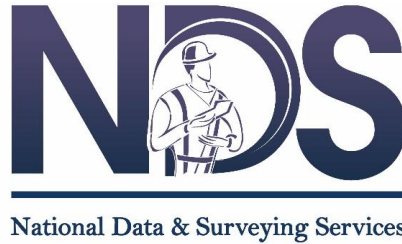
PROJECT ID: 18-03298-006
DATE: 06/12/2018

[illegible]

LOCATION: N Port Blvd & Appomattox Dr
CITY/STATE: North Port, FL

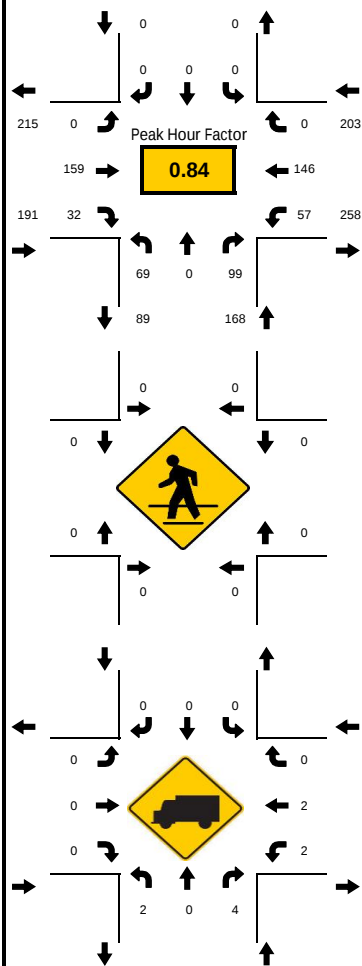
PROJECT ID: 18-03298-007
DATE: 06/12/2018

Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:45 AM - 09:00 AM

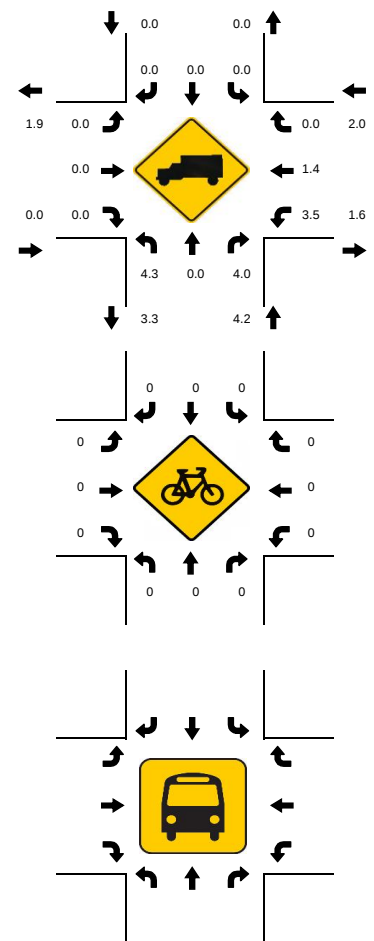


15-Min Count Period Beginning At	N Port Blvd Northbound					N Port Blvd Southbound					Appomattox Dr Eastbound					Appomattox Dr Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	1	0	0	0	0	0	0	0	0	0	0	12	6	0	0	9	19	0	0	0	47	288
07:15 AM	4	0	6	0	0	0	0	0	0	0	0	30	7	0	0	13	29	0	0	0	89	334
07:30 AM	1	0	7	0	0	0	0	0	0	0	0	28	9	0	0	10	20	0	0	0	75	352
07:45 AM	2	0	7	0	0	0	0	0	0	0	0	27	6	0	0	14	21	0	0	0	77	379
08:00 AM	4	0	5	0	0	0	0	0	0	0	0	28	8	0	0	13	35	0	0	0	93	413
08:15 AM	6	0	9	0	0	0	0	0	0	0	0	32	10	0	0	17	33	0	0	0	107	320
08:30 AM	6	0	9	0	0	0	0	0	0	0	0	28	13	0	0	21	25	0	0	0	102	213
08:45 AM	9	0	16	0	0	0	0	0	0	0	0	29	8	0	0	20	29	0	0	0	111	111
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
All Vehicles	36	0	64	0	0	0	0	0	0	0	0	128	52	0	0	84	140	0	0	0	504	
Heavy Trucks	4	0	0	0	0	0	0	0	0	0	0	4	8	0	0	0	8	0	0	0	24	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	4	0	8	0	0	0	0	0	0	0	0	4	4	0	0	0	4	0	0	0	24	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

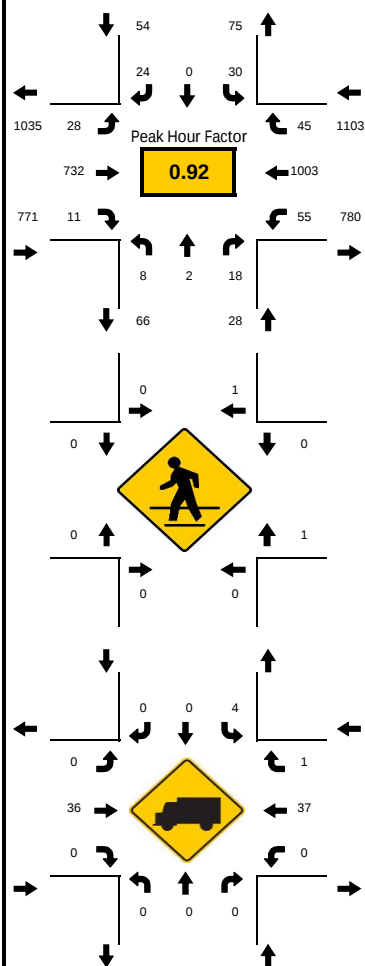
PROJECT ID: 18-03298-007
DATE: 06/12/2018



NDS
National Data & Surveying Services

[illegible]

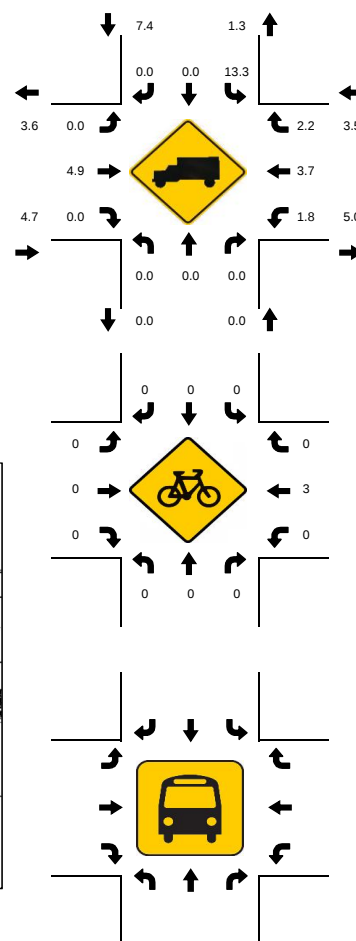
PROJECT ID: 18-03444-001
DATE: 09/25/2018



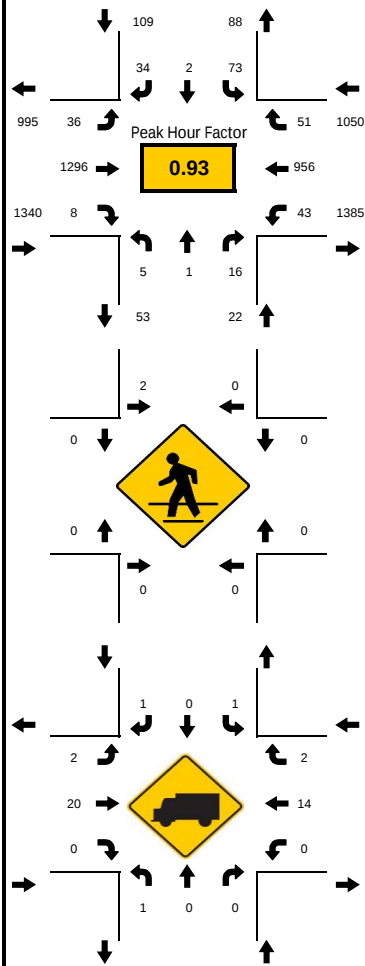
Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:45 AM - 09:00 AM



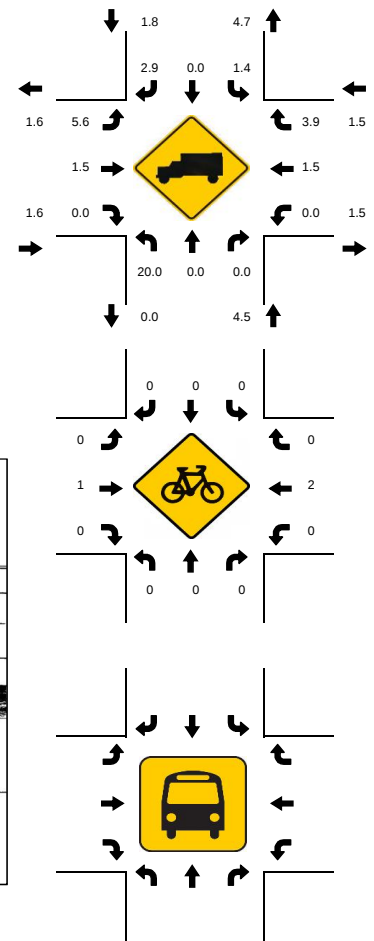
National Data & Surveying Services

[illegible]

PROJECT ID: 18-03444-001
DATE: 09/25/2018



NDS
National Data & Surveying Services

[illegible]

2017 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 1700 SARASOTA COUNTYWIDE

WEEK	DATES	SF	MOCF: 0.88 PSCF
1	01/01/2017 - 01/07/2017	1.00	1.14
2	01/08/2017 - 01/14/2017	0.97	1.10
3	01/15/2017 - 01/21/2017	0.95	1.08
* 4	01/22/2017 - 01/28/2017	0.93	1.06
* 5	01/29/2017 - 02/04/2017	0.91	1.03
* 6	02/05/2017 - 02/11/2017	0.89	1.01
* 7	02/12/2017 - 02/18/2017	0.87	0.99
* 8	02/19/2017 - 02/25/2017	0.87	0.99
* 9	02/26/2017 - 03/04/2017	0.86	0.98
*10	03/05/2017 - 03/11/2017	0.86	0.98
*11	03/12/2017 - 03/18/2017	0.85	0.97
*12	03/19/2017 - 03/25/2017	0.86	0.98
*13	03/26/2017 - 04/01/2017	0.88	1.00
*14	04/02/2017 - 04/08/2017	0.89	1.01
*15	04/09/2017 - 04/15/2017	0.91	1.03
*16	04/16/2017 - 04/22/2017	0.92	1.05
17	04/23/2017 - 04/29/2017	0.94	1.07
18	04/30/2017 - 05/06/2017	0.96	1.09
19	05/07/2017 - 05/13/2017	0.98	1.11
20	05/14/2017 - 05/20/2017	1.00	1.14
21	05/21/2017 - 05/27/2017	1.02	1.16
22	05/28/2017 - 06/03/2017	1.04	1.18
23	06/04/2017 - 06/10/2017	1.06	1.20
24	06/11/2017 - 06/17/2017	1.08	1.23
25	06/18/2017 - 06/24/2017	1.07	1.22
26	06/25/2017 - 07/01/2017	1.07	1.22
27	07/02/2017 - 07/08/2017	1.07	1.22
28	07/09/2017 - 07/15/2017	1.07	1.22
29	07/16/2017 - 07/22/2017	1.08	1.23
30	07/23/2017 - 07/29/2017	1.09	1.24
31	07/30/2017 - 08/05/2017	1.09	1.24
32	08/06/2017 - 08/12/2017	1.10	1.25
33	08/13/2017 - 08/19/2017	1.11	1.26
34	08/20/2017 - 08/26/2017	1.15	1.31
35	08/27/2017 - 09/02/2017	1.19	1.35
36	09/03/2017 - 09/09/2017	1.23	1.40
37	09/10/2017 - 09/16/2017	1.28	1.45
38	09/17/2017 - 09/23/2017	1.23	1.40
39	09/24/2017 - 09/30/2017	1.19	1.35
40	10/01/2017 - 10/07/2017	1.14	1.30
41	10/08/2017 - 10/14/2017	1.10	1.25
42	10/15/2017 - 10/21/2017	1.06	1.20
43	10/22/2017 - 10/28/2017	1.05	1.19
44	10/29/2017 - 11/04/2017	1.04	1.18
45	11/05/2017 - 11/11/2017	1.03	1.17
46	11/12/2017 - 11/18/2017	1.02	1.16
47	11/19/2017 - 11/25/2017	1.02	1.16
48	11/26/2017 - 12/02/2017	1.01	1.15
49	12/03/2017 - 12/09/2017	1.01	1.15
50	12/10/2017 - 12/16/2017	1.00	1.14
51	12/17/2017 - 12/23/2017	0.98	1.11
52	12/24/2017 - 12/30/2017	0.96	1.09
53	12/31/2017 - 12/31/2017	0.95	1.08

* PEAK SEASON

02-MAR-2018 15:35:05

830UPD

1_1700_PKSEASON.TXT

FDOT District 1

Signal System Timing Report

System ID: 17010A



Section: 1010000
From: Cranberry/Cornelius
To: Cranberry/Cornelius

Arterial: US 41/Tamiami Trail
MP: 25.854
MP: 25.854

Section: 17010000
From: Salford Blvd
To: Ortiz Blvd

Arterial: SR 45/US 41/Tamiami Trail
MP: 0.214
MP: 3.631

Implementation Date - June 29, 2015

Timing Report

Timing Report

District-Wide Traffic Signal Retiming

Contract Number: C9807

Financial Project: 421907-1-32-02

Task Work Order 15

SR 45/US 41/Tamiami Trail
Between Cranberry/Cornelius and Ortiz Blvd
Sarasota County, Florida

Prepared for:

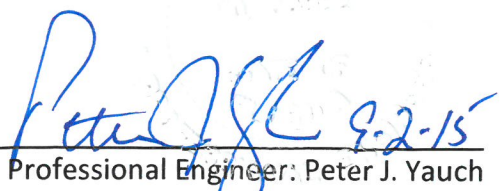


Florida Department of Transportation
District 1

Prepared by:

Albeck Gerken, Inc.
1911 North US 301, Suite 410
Tampa, Florida 33619

July 2015


Professional Engineer: Peter J. Yauch
Florida PE No.: 33922

FDOT District 1 Basic Timing Parameter Updates

Section: 1010000
From: Cranberry/Cornelius
To: Cranberry/Cornelius

Arterial: US 41/Tamiami Trail
MP: 25.854
MP: 25.854

Section: 17010000
From: Salford Blvd
To: Ortiz Blvd

Arterial: SR 45/US 41/Tamiami Trail
MP: 0.214
MP: 3.631

Revisions		Date:	06/2015
30	US 41/Tamiami Trl & Cranberry/Cornelius	Updated controller timing parameters in accordance with the June 2014 D1 Guidelines. Adjusted Detection Delay and Extension intervals.	
851	SR 45/US 41/Tamiami Trl & Salford Blvd	Updated controller timing parameters in accordance with the June 2014 D1 Guidelines. Adjusted Detection Delay and Extension intervals. Adjusted preemption settings.	
852	SR 45/US 41/Tamiami Trl & Home Depot Entrance	Updated controller timing parameters in accordance with the June 2014 D1 Guidelines. Adjusted Detection Delay and Extension intervals. Adjusted preemption settings.	
853	SR 45/US 41/Tamiami Trl & Sumter Blvd	Updated controller timing parameters in accordance with the June 2014 D1 Guidelines. Adjusted Detection Delay and Extension intervals. Adjusted preemption settings.	
1050	SR 45/US 41/Tamiami Trl & Tuscola Blvd	Updated controller timing parameters in accordance with the June 2014 D1 Guidelines. Adjusted Detection Delay and Extension intervals. Adjusted preemption settings.	
854	SR 45/US 41/Tamiami Trl & North Port Blvd	Updated controller timing parameters in accordance with the June 2014 D1 Guidelines. Adjusted Detection Delay and Extension intervals. Adjusted preemption settings.	
855	SR 45/US 41/Tamiami Trl & S Pan American Blvd	Updated controller timing parameters in accordance with the June 2014 D1 Guidelines. Adjusted Detection Delay and Extension intervals. Adjusted preemption settings.	
856	SR 45/US 41/Tamiami Trl & Biscayne Dr	Updated controller timing parameters in accordance with the June 2014 D1 Guidelines. Adjusted Detection Delay and Extension intervals. Adjusted preemption settings.	
857	SR 45/US 41/Tamiami Trl & Ortiz Blvd	Updated controller timing parameters in accordance with the June 2014 D1 Guidelines. Adjusted Detection Delay and Extension intervals.	

Disclaimer Statement

The revisions noted above are the only timing parameters being approved. The remaining data was previously approved as part of previous revisions or as part of previous retiming efforts.

Time of Day Plan

Designed By: Existing
 Date:
 Checked By:
 Date:

System ID: **17010A**

Section: **1010000, 17010000**

Arterial: **US 41/Tamiami Trl, SR 45/US 41/Tamiami Trl**

From: **Cranberry/Cornelius, Salford Blvd**

To: **Cranberry/Cornelius, Ortiz Blvd**

ALL SEASON PLAN

Day	Time	Pattern (C/S/O)	Cycle Length
Monday Thru Friday	0000 - 0600	-	FREE
	0600 - 0930	1 (1/1/1)	130
	0930 - 1330	2 (2/1/1)	140
	1330 - 1830	3 (2/2/2)	140
	1830 - 2200	4 (3/1/1)	120
	2200 - 2359	-	FREE
Saturday	0000 - 0730	-	FREE
	0730 - 1000	5 (4/1/1)	130
	1000 - 1800	6 (4/2/2)	130
	1800 - 2200	7 (4/3/3)	130
	2200 - 2359	-	FREE
Sunday	0000 - 0830	-	FREE
	0830 - 1130	8 (5/1/1)	130
	1130 - 1700	9 (5/2/2)	130
	1700 - 2000	10 (5/3/3)	130
	2000 - 2359	-	FREE

*Ortiz Blvd operates in Free Mode:

Weekdays 0600-0700 and 1830-2200

Saturdays 0730-1000 and 1800-2200

Sundays 0830-1130 and 1700-2000

Designed By:	TS
Date:	6/23/2015
Checked By:	PY
Date:	6/23/2015

Location Details	
Section: 17010000	Mile Post: 0.974
Major Street: SR 45/US 41/Tamiami Trail	Orientation: N-S (considered)
Minor Street: Sumter Blvd	Orientation: E-W (considered)
Signal ID: 853	System ID: 17010A

Controller Timings (seconds)									
Movement # (Controller Phase Ø)	1	2	3	4	5	6	7	8	Notes
Direction	<i>SBLT</i>	<i>NB</i>	<i>WBLT</i>	<i>EB</i>	<i>NBLT</i>	<i>SB</i>	<i>EBLT</i>	<i>WB</i>	
Turn Type	<i>Prot</i>		<i>Prot</i>		<i>Prot</i>		<i>Prot</i>		
Min Green	5	12	5	7	5	12	5	7	
Ext	3.0	5.0	3.0	3.0	3.0	5.0	3.0	3.0	
Yellow	4.8	4.8	4.9	3.7	4.8	4.8	3.7	4.9	
All Red	2.2	2.0	2.0	2.7	3.0	2.0	2.0	2.0	
Max I	25	50	20	15	20	50	20	15	
Max II	25	65	35	50	20	70	35	45	
Max Plan I				21				21	
Walk		7		7		7		7	
Flashing Don't Walk		27		35		21		37	
Detector Memory									
Det. Cross Switch.									
Vehicle Recall		MIN				MIN			
CNA									
Rest in Walk									
Coord Phase		YES				YES			

Coordination Timings (seconds)												
Pattern	C-S-O	Cycle Length	Splits								Offset	Sequence
1	1-1-1	130	20	55	29	26	18	57	24	31	109	1
2	2-1-1	140	24	62	32	22	19	67	34	20	113	1
3	2-2-2	140	25	42	27	46	18	49	28	45	3	1
4	3-1-1	120	20	56	21	23	20	56	21	23	75	1
5	4-1-1	130	25	54	26	25	18	61	26	25	41	1
6	4-2-2	130	21	56	29	24	18	59	29	24	52	1
7	4-3-3	130	25	56	25	24	18	63	27	22	37	1
8	5-1-1	130	22	63	22	23	18	67	22	23	40	1
9	5-2-2	130	22	55	27	26	18	59	29	24	52	1
10	5-3-3	130	20	59	26	25	18	61	26	25	42	1

Offset Reference Point
End of Main Street Green

Notes:

1) Use 'Max I' during FREE Operation and 'Max II' during coordination.

2) Use Fixed Force Offs.

3) Sequence 1 used during FREE operation.

4) Max recall Ø2 and Ø6 during coordination

5) Program 8 seconds detection delay for minor street right turn movements.

6) Program 3 seconds detection delay for minor street leftt turn movements.

7) Max plan 1 used during pattern 2-2-2.

8) Controller type: LMD

SOP 10 (Sequence 1)

Ring - 1	1	2	3	4
Ring - 2	5	6	7	8

Page 12 of 38

Designed By: TS
Date: 6/23/2015

Checked By: PY
Date: 6/23/2015

Major Street: SR 45/US 41/Tamiami Trail

Minor Street: Sumter Blvd

Signal ID: 853

Pattern	C-S-O	Cycle Length	Force Offs (seconds) - CNA Inactive							
			1	2	3	4	5	6	7	8
			SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB
1	1-1-1	130	75	0	28	55	74	0	23	55
2	2-1-1	140	78	0	31	54	74	0	33	54
3	2-2-2	140	98	0	26	73	92	0	27	73
4	3-1-1	120	64	0	20	44	65	0	20	44
5	4-1-1	130	76	0	25	51	70	0	25	51
6	4-2-2	130	74	0	28	53	72	0	28	53
7	4-3-3	130	74	0	24	49	68	0	26	49
8	5-1-1	130	67	0	21	45	64	0	21	45
9	5-2-2	130	75	0	26	53	72	0	28	53
10	5-3-3	130	71	0	25	51	70	0	25	51

Pattern	C-S-O	Cycle Length	Force Offs (seconds)- CNA Active							
			1	2	3	4	5	6	7	8
			SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB

Pattern	C-S-O	Cycle Length	End of Permissives (seconds)							
			1	2	3	4	5	6	7	8
			SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB
1	1-1-1	130	63	0	16	41	62	0	11	41
2	2-1-1	140	66	0	19	40	62	0	21	40
3	2-2-2	140	86	0	14	59	80	0	15	59
4	3-1-1	120	52	0	8	30	53	0	8	30
5	4-1-1	130	64	0	13	37	58	0	13	37
6	4-2-2	130	62	0	16	39	60	0	16	39
7	4-3-3	130	62	0	12	35	56	0	14	35
8	5-1-1	130	55	0	9	31	52	0	9	31
9	5-2-2	130	63	0	14	39	60	0	16	39
10	5-3-3	130	59	0	13	37	58	0	13	37

Designed By:	TS
Date:	6/23/2015
Checked By:	PY
Date:	6/23/2015

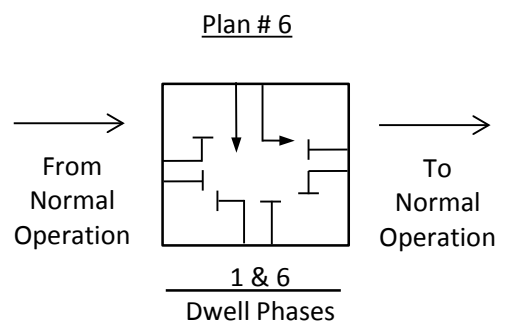
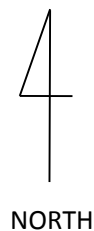
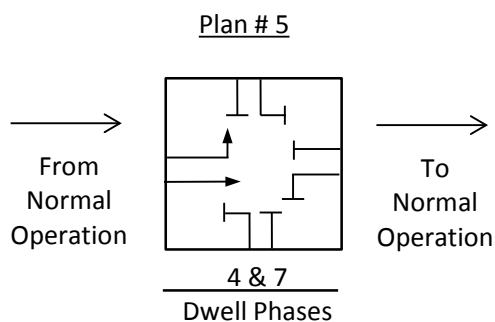
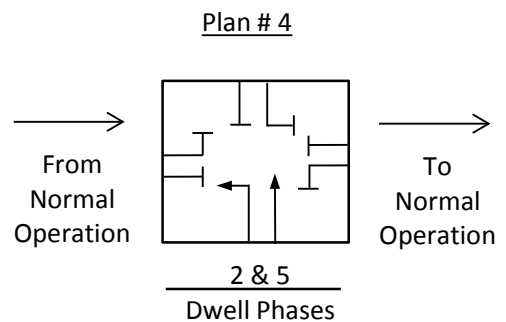
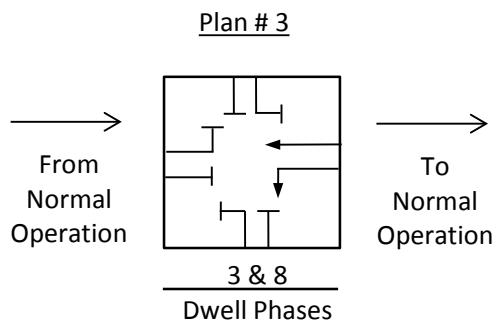
Major Street: **SR 45/US 41/Tamiami Trail**

Minor Street: **Sumter Blvd**

Signal ID: **853**

Emergency Vehicle Pre-Emption

Preemption Timing Plan	1	2	3 (WB)	4 (NB)	5 (EB)	6 (SB)
Priority			6	6	6	6
Delay Before Preemption (Sec)			0	0	0	0
Minimum Green Before Preemption (Sec)			*	*	*	*
Lock Call			OFF	OFF	OFF	OFF
Maximum Presence (sec)			120	120	120	120
Yellow Clearance (Sec)			**	**	**	**
Red Clearance (Sec)			**	**	**	**
Dwell Phase(s)			3 & 8	2 & 5	4 & 7	1 & 6
Minimum Dwell (Sec)			10	10	7	10
Yellow Clearance (Sec)			**	**	**	**
Red Clearance (Sec)			**	**	**	**
Exit Phases			2 & 6	2 & 6	2 & 6	2 & 6



Notes:

* Entry into preemption shall not violate Minimum green or pedestrian clearance intervals.

** YELLOW and ALL RED intervals during preemption shall be the same values used during normal controller operations.

Designed By:	TS
Date:	6/23/2015
Checked By:	PY
Date:	6/23/2015

Location Details	
Section: 17010000	Mile Post: 1.440
Major Street: SR 45/US 41/Tamiami Trail	Orientation: N-S (considered)
Minor Street: Tuscola Blvd	Orientation: E-W (considered)
Signal ID: 1050	System ID: 17010A

Controller Timings (seconds)												
Movement # (Controller Phase Ø)			1	2	3	4	5	6	7	8	Notes	
Direction				NB		EB		SB		WB		
Turn Type												
Min Green				12		7		12		7		
Ext				5.0		3.0		5.0		3.0		
Yellow				4.8		3.7		4.8		3.7		
All Red				3.0		6.0		3.0		6.0		
Max I				60		30		60		30		
Max II				115		35		115		35		
Walk				7		7		7		7		
Flashing Don't Walk				21		36		20		34		
Detector Memory												
Det. Cross Switch.												
Vehicle Recall				MIN				MIN				
CNA												
Rest in Walk												
Coord Phase				YES				YES				
Coordination Timings (seconds)												
Pattern	C-S-O	Cycle Length	Splits								Offset	Sequence
1	1-1-1	130		106		24		106		24	73	1
2	2-1-1	140		107		33		107		33	60	1
3	2-2-2	140		112		28		112		28	100	1
4	3-1-1	120		88		32		88		32	91	1
5	4-1-1	130		95		35		95		35	84	1
6	4-2-2	130		102		28		102		28	75	1
7	4-3-3	130		105		25		105		25	82	1
8	5-1-1	130		99		31		99		31	81	1
9	5-2-2	130		105		25		105		25	75	1
10	5-3-3	130		97		33		97		33	85	1

Offset Reference Point
End of Main Street Green

- Notes:
- 1) Use 'Max I' during FREE Operation and 'Max II' during coordination.
 - 2) Use Fixed Force Offs.
 - 3) Sequence 1 used during FREE operation.
 - 4) Max recall Ø2 and Ø6 during coordination
 - 5) Program 8 seconds detection delay for minor street right turn movements.
 - 6) Program 3 seconds detection delay for minor street leftt turn movements.
 - 7) Controller type: LMD

	SOP 1 (Sequence 1)	
Ring - 1	2	4
Ring - 2	6	8

Designed By: TS
Date: 6/23/2015

Checked By: PY
Date: 6/23/2015

Major Street: SR 45/US 41/Tamiami Trail

Minor Street: Tuscola Blvd

Signal ID: 1050

Pattern	C-S-O	Cycle Length	Force Offs (seconds) - CNA Inactive							
			1	2	3	4	5	6	7	8
				NB		EB		SB		WB
1	1-1-1	130		0		22		0		22
2	2-1-1	140		0		31		0		31
3	2-2-2	140		0		26		0		26
4	3-1-1	120		0		30		0		30
5	4-1-1	130		0		33		0		33
6	4-2-2	130		0		26		0		26
7	4-3-3	130		0		23		0		23
8	5-1-1	130		0		29		0		29
9	5-2-2	130		0		23		0		23
10	5-3-3	130		0		31		0		31

Pattern	C-S-O	Cycle Length	Force Offs (seconds)- CNA Active							
			1	2	3	4	5	6	7	8
				NB		EB		SB		WB

Pattern	C-S-O	Cycle Length	End of Permissives (seconds)							
			1	2	3	4	5	6	7	8
				NB		EB		SB		WB
1	1-1-1	130		0		7		0		7
2	2-1-1	140		0		16		0		16
3	2-2-2	140		0		11		0		11
4	3-1-1	120		0		15		0		15
5	4-1-1	130		0		18		0		18
6	4-2-2	130		0		11		0		11
7	4-3-3	130		0		8		0		8
8	5-1-1	130		0		14		0		14
9	5-2-2	130		0		8		0		8
10	5-3-3	130		0		16		0		16

Designed By:	TS
Date:	6/23/2015
Checked By:	PY
Date:	6/23/2015

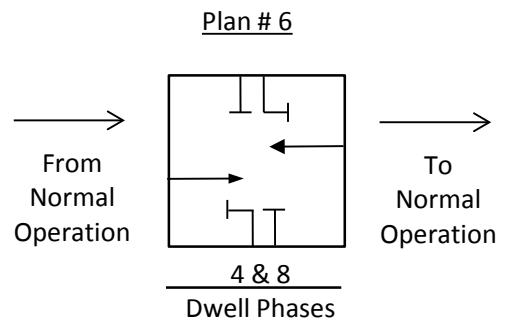
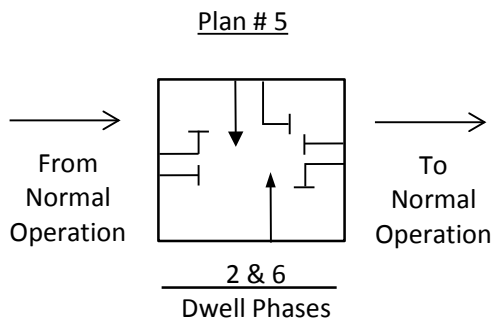
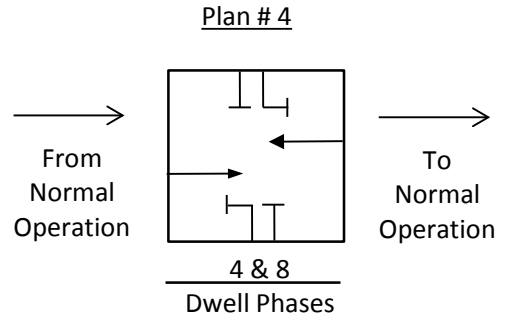
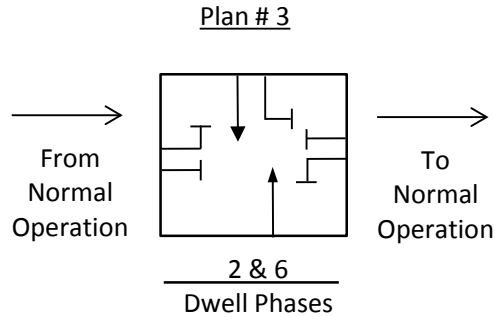
Major Street: **SR 45/US 41/Tamiami Trail**

Minor Street: **Tuscola Blvd**

Signal ID: **1050**

Emergency Vehicle Pre-Emption

Preemption Timing Plan	1	2	3 (NB)	4 (EB)	5 (SB)	6 (WB)
Priority			6	6	6	6
Delay Before Preemption (Sec)			0	0	0	0
Minimum Green Before Preemption (Sec)			*	*	*	*
Lock Call			OFF	OFF	OFF	OFF
Maximum Presence (sec)			120	120	120	120
Yellow Clearance (Sec)			**	**	**	**
Red Clearance (Sec)			**	**	**	**
Dwell Phase(s)			2 & 6	4 & 8	2 & 6	4 & 8
Minimum Dwell (Sec)			10	7	10	7
Yellow Clearance (Sec)			**	**	**	**
Red Clearance (Sec)			**	**	**	**
Exit Phases			2 & 6	2 & 6	2 & 6	2 & 6



Notes:

* Entry into preemption shall not violate Minimum green or pedestrian clearance intervals.

** YELLOW and ALL RED intervals during preemption shall be the same values used during normal controller operations.

Designed By:	TS
Date:	6/23/2015
Checked By:	PY
Date:	6/23/2015

Location Details	
Section: 17010000	Mile Post: 2.050
Major Street: SR 45/US 41/Tamiami Trail	Orientation: N-S (considered)
Minor Street: North Port Blvd	Orientation: E-W (considered)
Signal ID: 854	System ID: 17010A

Controller Timings (seconds)												
Movement # (Controller Phase Ø)			1	2	3	4	5	6	7	8	Notes	
Direction			NBLT	SB	EBLT	WB	SBLT	NB	WBLT	EB		
Turn Type			Prot		Prot/Perm		Prot		Prot/Perm			
Min Green			5	12	5	7	5	12	5	7		
Ext			3.0	5.0	3.0	3.0	3.0	5.0	3.0	3.0		
Yellow			4.8	4.8	3.7	3.7	4.8	4.8	3.7	3.7		
All Red			2.6	2.0	2.0	2.8	2.5	2.0	2.0	2.8		
Max I			20	65	15	25	20	65	15	25		
Max II			20	75	20	55	35	75	25	55		
Max Plan I						12				12		
Walk				10		10		10		10		
Flashing Don't Walk				35		47		29		46		
Detector Memory												
Det. Cross Switch.					Ø8				Ø4			
Vehicle Recall				MIN				MIN				
CNA												
Rest in Walk												
Coord Phase				YES				YES				
Coordination Timings (seconds)												
Pattern	C-S-O	Cycle Length	Splits								Offset	Sequence
1	1-1-1	130	18	74	18	20	18	74	18	20	66	1
2	2-1-1	140	18	50	18	54	25	43	18	54	57	1
3	2-2-2	140	18	59	17	46	32	45	18	45	87	1
4	3-1-1	120	19	63	19	19	19	63	19	19	21	1
5	4-1-1	130	17	72	17	24	25	64	22	19	28	1
6	4-2-2	130	18	75	17	20	28	65	18	19	125	1
7	4-3-3	130	18	71	20	21	22	67	20	21	27	1
8	5-1-1	130	18	71	20	21	20	69	20	21	25	1
9	5-2-2	130	18	67	19	26	20	65	18	27	125	1
10	5-3-3	130	20	70	17	23	28	62	20	20	26	1

Offset Reference Point
End of Main Street Green

Notes:

1) Use 'Max I' during FREE Operation and 'Max II' during coordination.

2) Use Fixed Force Offs.

3) Sequence 1 used during FREE operation.

4) Max recall Ø2 and Ø6 during coordination

5) Program 8 seconds detection delay for minor street right turn movements.

6) Program 3 seconds detection delay for minor street left turn movements.

7) Max Plan 1 used during 2-1-1 and 2-2-2

8) Controller type: LMD

SOP 10 (Sequence 1)

Ring - 1	1	2	3	4
Ring - 2	5	6	7	8

Page 18 of 38

Designed By: TS
Date: 6/23/2015

Checked By: PY
Date: 6/23/2015

Major Street: SR 45/US 41/Tamiami Trail

Minor Street: North Port Blvd

Signal ID: 854

Pattern	C-S-O	Cycle Length	Force Offs (seconds) - CNA Inactive							
			1	2	3	4	5	6	7	8
			NBLT	SB	EBLT	WB	SBLT	NB	WBLT	EB
1	1-1-1	130	57	0	19	38	57	0	18	38
2	2-1-1	140	91	0	19	72	98	0	18	72
3	2-2-2	140	82	0	18	63	96	0	18	63
4	3-1-1	120	58	0	20	38	58	0	19	38
5	4-1-1	130	59	0	18	41	67	0	22	41
6	4-2-2	130	56	0	18	37	66	0	18	37
7	4-3-3	130	60	0	21	41	64	0	20	41
8	5-1-1	130	60	0	21	41	62	0	20	41
9	5-2-2	130	64	0	20	45	66	0	18	45
10	5-3-3	130	61	0	18	40	69	0	20	40

Pattern	C-S-O	Cycle Length	Force Offs (seconds)- CNA Active							
			1	2	3	4	5	6	7	8
			NBLT	SB	EBLT	WB	SBLT	NB	WBLT	EB

Pattern	C-S-O	Cycle Length	End of Permissives (seconds)							
			1	2	3	4	5	6	7	8
			NBLT	SB	EBLT	WB	SBLT	NB	WBLT	EB
1	1-1-1	130	45	0	7	24	45	0	6	24
2	2-1-1	140	79	0	7	58	86	0	6	58
3	2-2-2	140	70	0	6	49	84	0	6	49
4	3-1-1	120	46	0	8	24	46	0	7	24
5	4-1-1	130	47	0	6	27	55	0	10	27
6	4-2-2	130	44	0	6	23	54	0	6	23
7	4-3-3	130	48	0	9	27	52	0	8	27
8	5-1-1	130	48	0	9	27	50	0	8	27
9	5-2-2	130	52	0	8	31	54	0	6	31
10	5-3-3	130	49	0	6	26	57	0	8	26

Designed By:	TS
Date:	6/23/2015
Checked By:	PY
Date:	6/23/2015

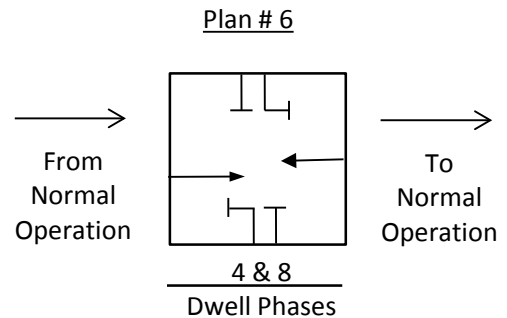
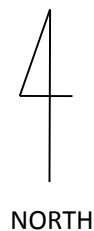
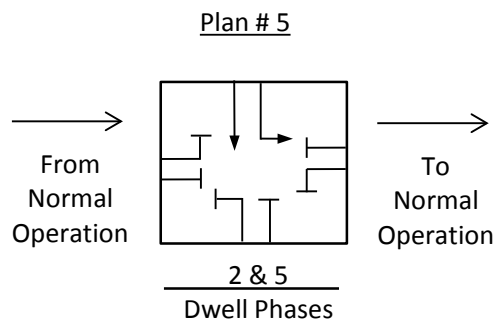
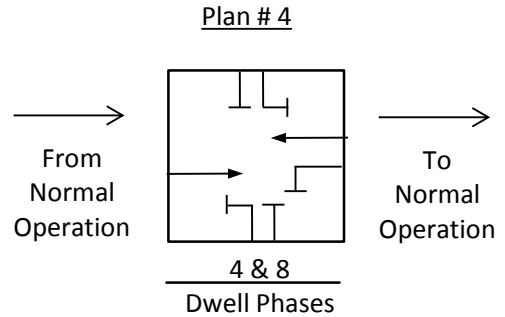
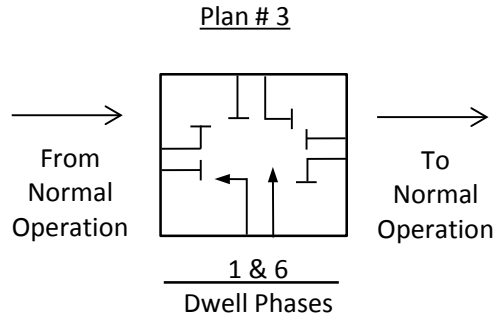
Major Street: **SR 45/US 41/Tamiami Trail**

Minor Street: **North Port Blvd**

Signal ID: **854**

Emergency Vehicle Pre-Emption

Preemption Timing Plan	1	2	3 (NB)	4 (EB)	5 (SB)	6 (WB)
Priority			6	6	6	6
Delay Before Preemption (Sec)			0	0	0	0
Minimum Green Before Preemption (Sec)			*	*	*	*
Lock Call			OFF	OFF	OFF	OFF
Maximum Presence (sec)			120	120	120	120
Yellow Clearance (Sec)			**	**	**	**
Red Clearance (Sec)			**	**	**	**
Dwell Phase(s)			1 & 6	4 & 8	2 & 5	4 & 8
Minimum Dwell (Sec)			10	7	10	7
Yellow Clearance (Sec)			**	**	**	**
Red Clearance (Sec)			**	**	**	**
Exit Phases			2 & 6	2 & 6	2 & 6	2 & 6



Notes:

* Entry into preemption shall not violate Minimum green or pedestrian clearance intervals.

** YELLOW and ALL RED intervals during preemption shall be the same values used during normal controller operations.

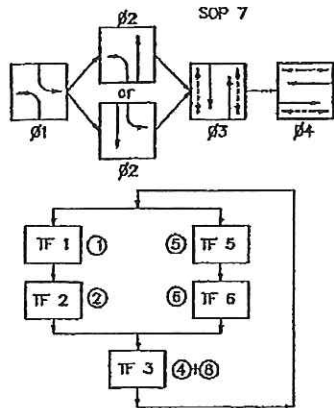
CONTROLLER OPERATIONS

- 1. MAJOR STREET IS SUMTER BOULEVARD, MOVEMENTS 2 AND 6, AND MINOR STREET IS APPOMATTOX DRIVE, MOVEMENTS 4 AND 8.
- 2. CONTROLLER TIMINGS ARE INITIAL AND MAY REQUIRE FIELD ADJUSTMENT.
- 3. FLASHING OPERATION SHALL BE YELLOW FOR MOVEMENTS 2 AND 6, RED FOR ALL OTHERS.

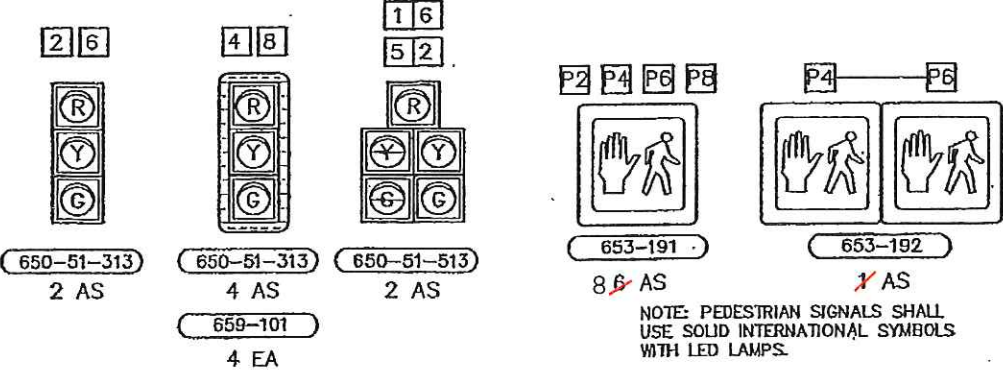
CONTROLLER TIMING PLAN									
MOVEMENT(S)	1	2	3	4	5	6	7	8	
MINIMUM GREEN (INITIAL)	10	25	7	10	10	25	7	10	
EXTENSION (PASSAGE)	2.7	4.0	2.7	2.7	2.7	4.0	2.7	2.7	
MAXIMUM GREEN 1	20	55	20	25	20	55	20	25	
MAXIMUM GREEN 2	-	-	-	-	-	-	-	-	
YELLOW	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0	
ALL RED	1.0	1.5	1.0	2.0	1.0	1.5	1.0	2.0	
PEDESTRIAN WALK	-	7	-	-	-	10	-	7	
FLASH DON'T WALK	-	20	-	-	-	15	-	27	
RECALL	-	MIN	-	-	-	MIN	-	-	

DETECTORS FOR LOOPS									
LOOP	NO. OF LOOPS	NO. OF DETS.	SIZE	DETECTOR OPERATION	TIMING FUNCTION	SECONDS OF DELAY			
L1	1	1	8' x 40'	NORMAL	1				
L2	2	2	8' x 40'	NORMAL	2				
L3	2	2	8' x 40'	NORMAL	3				
L4	1	1	8' x 40'	NORMAL	4				
L5	1	1	8' x 40'	NORMAL	5				
L6	2	2	8' x 40'	NORMAL	6				
L4R	1	1	8' x 40'	DELAY	4	10			
L6	1	1	8' x 40'	NORMAL	6				

SIGNAL OPERATING PLAN

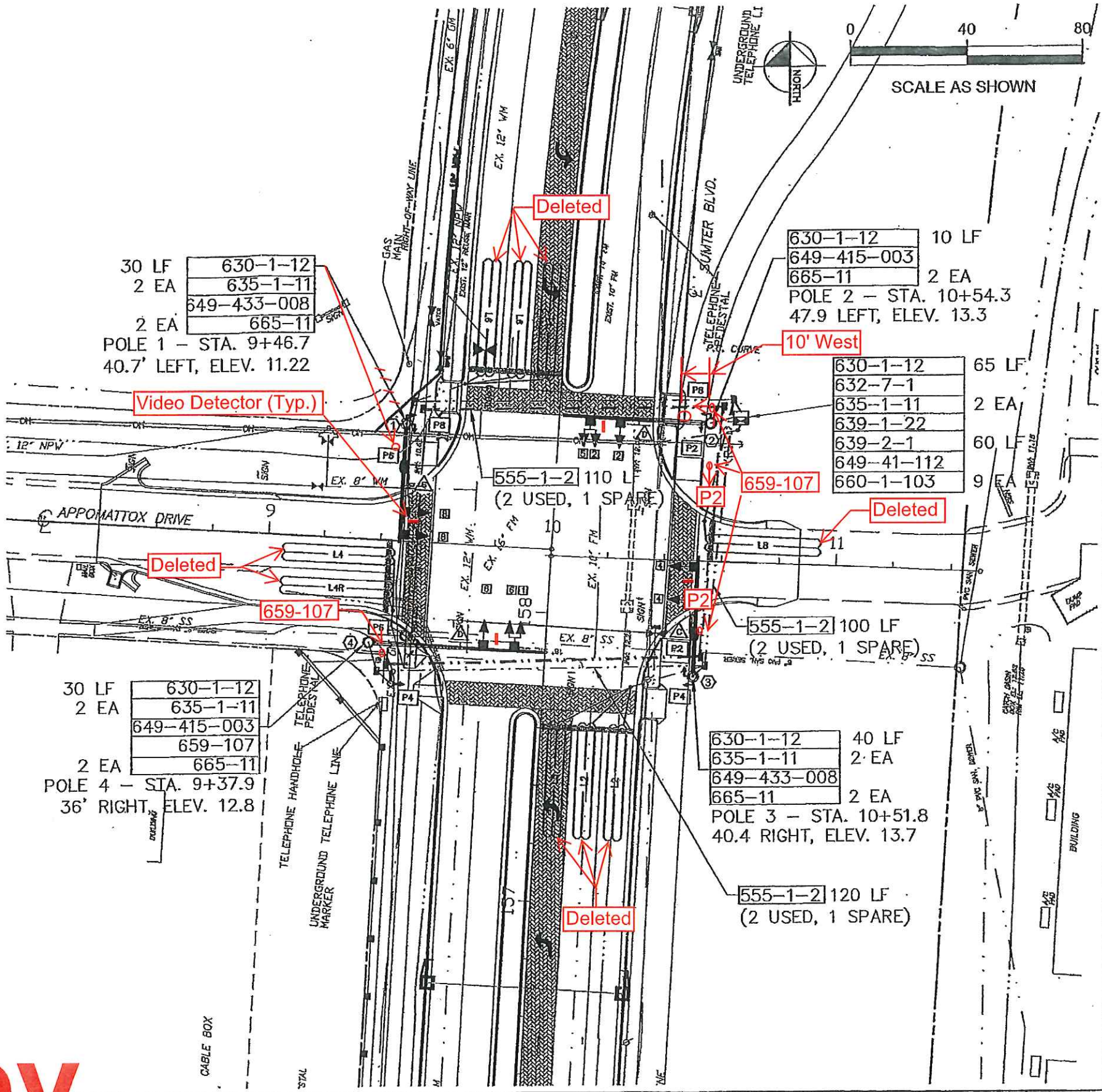
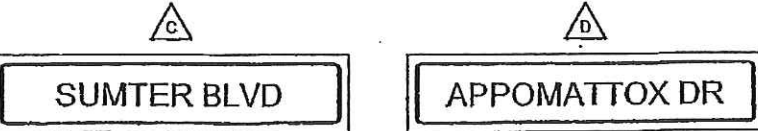


SIGNAL DISPLAY DETAILS



STREET NAME SIGN DETAILS

NOTE: STREET SIGNS TO BE INTERNALLY ILLUMINATED, WITH WHITE LETTERS ON BLUE BACKGROUND.



As Built Copy

Kimley-Horn and Associates, Inc.
2700 BOBCAT VILLAGE CENTER ROAD
NORTH PORT, FL 34288
(941) 423-4343
CA Number: 00000595

CITY OF NORTH PORT
SUMTER BOULEVARD

SIGNALIZATION OF
APPOMATTOX DRIVE
AND SUMTER BOULEVARD

SHEET NO.
T-4

CONTROLLER OPERATIONS

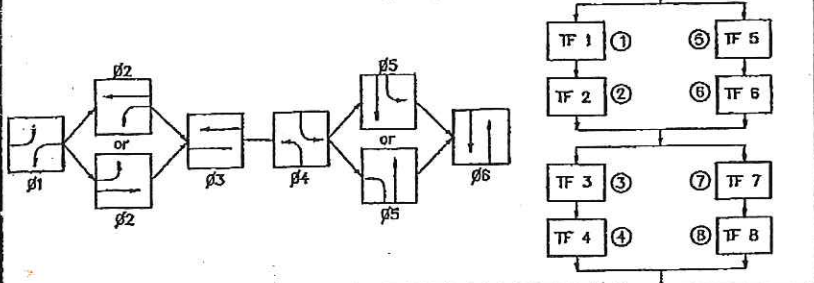
1. MAJOR STREET IS TAMiami TRAIL (U.S. HWY. 41), MOVEMENTS 2 AND 6, AND MINOR STREET IS SUMTER BOULEVARD, MOVEMENTS 4 AND 8.
2. CONTROLLER TIMINGS ARE INITIAL AND MAY REQUIRE FIELD ADJUSTMENT.
3. FLASHING OPERATION SHALL BE YELLOW FOR MOVEMENTS 2 AND 6, RED FOR ALL OTHERS.
4. CONCURRENT/ACTUATED PEDESTRIANS FOR MOVEMENTS 2 (P2), 4 (P4), 6 (P6) AND 8 (P8). THE FORCE-OFF FUNCTION FOR PHASE 2 AND 6 SHALL NOT BE EFFECTIVE DURING THE TIMING OF PEDESTRIAN CLEARANCE INTERVAL FOR P4 AND P8. SYNCHRONIZATION SHALL BE MAINTAINED. THE CONTROLLER SHALL REMAIN IN THE COORDINATED MODE AND SHALL NOT REVERT TO ISOLATED OPERATIONS AS A RESULT OF PEDESTRIAN ACTUATION.
5. COORDINATION PHASE 2 (MOVEMENTS 2 AND 6) WITH BACK-UP TIME-BASE COORDINATION. SIGNAL IS COORDINATED WITH SUMTER CROSSINGS, THEN SALTFOUR BOULEVARD, BOTH TO THE EAST.

CONTROLLER TIMING PLAN								
TIME FUNCTION	1	2	3	4	5	6	7	8
MINIMUM GREEN (INITIAL)	10	25	7	10	10	25	7	10
EXTENSION (PASSAGE)	2.7	4.0	2.7	2.7	4.0	2.7	2.7	4.0
MAXIMUM GREEN 1	20	65	20	25	20	65	20	25
MAXIMUM GREEN 2	—	—	—	—	—	—	—	—
YELLOW	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
ALL RED	1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5
PEDESTRIAN WALK	—	7	—	7	—	7	—	7
FLASH DON'T WALK	—	27	—	10	—	27	—	10
RECALL	—	—	—	—	—	—	—	—

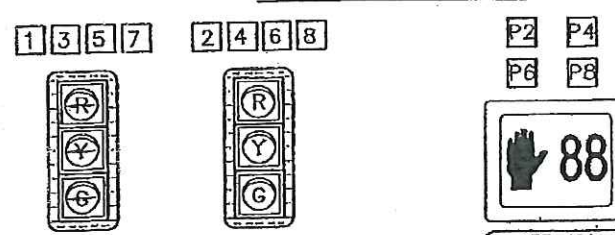
DETECTORS FOR LOOPS								
LOOP NO.	NO. OF LAMPS	SIZE	DETECTOR FUNCTION	TIMING	SECONDS OF DELAY			
L1	2	6' x 40'	NORMAL	1	1			
L2	2	15' x 5'	NORMAL	2	2			
L3	2	6' x 40'	NORMAL	3	3			
L4	1	6' x 40'	NORMAL	4	4			
L5	1	6' x 40'	NORMAL	5	5			
L6	2	15' x 5'	NORMAL	6	6			
L7	1	6' x 40'	NORMAL	7	7			
L8	1	6' x 40'	NORMAL	8	8			
L9	1	6' x 40'	NORMAL	9	9			

SIGNAL OPERATING PLAN

SOP 10



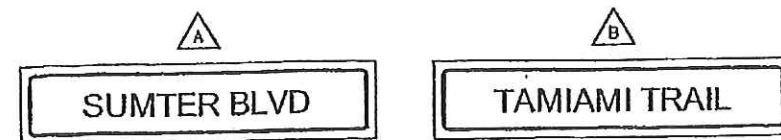
SIGNAL DISPLAY DETAILS



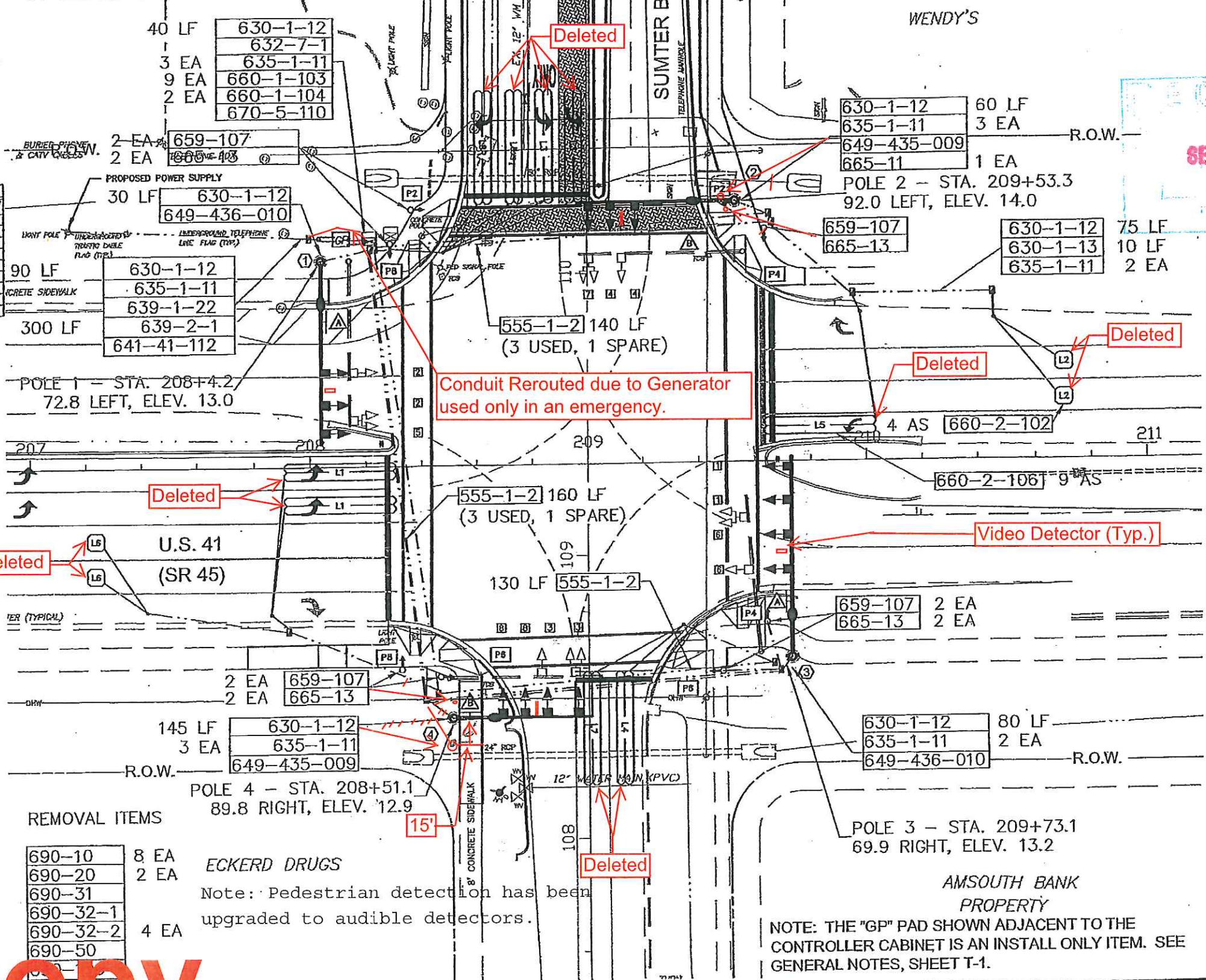
NOTE: PEDESTRIAN SIGNALS SHALL USE SOLID INTERNATIONAL SYMBOLS WITH LED LAMPS.

STREET NAME SIGN DETAILS

NOTE: STREET SIGNS TO BE INTERNALLY ILLUMINATED, WITH WHITE LETTERS ON GREEN BACKGROUND.



SERVICE POLE SHALL BE 12' IN LENGTH WITH AN IN-GROUND DEPTH OF 5'.



REMOVAL ITEMS

690-10	8 EA
690-20	2 EA
690-31	
690-32-1	
690-32-2	4 EA
690-50	

ECKERD DRUGS

Note: Pedestrian detection has been upgraded to audible detectors.

Kimley-Horn and Associates, Inc.
2700 BOBCAT VILLAGE CENTER ROAD
NORTH PORT, FL 34288
(941) 425-4343
CA Number: 00000595

CITY OF NORTH PORT
SUMTER BOULEVARD

SIGNALIZATION OF
US 41 AND SUMTER BOULEVARD

SHEET NO.
T-3

As Built Copy

DATE	BY	DESCRIPTION
6/27/05	DAJ	PER FDOT COMMENTS (5/26/05)
1/19/06	DAJ	PER FDOT COMMENTS (12/17/05)
4/19/06	DAJ	PER FDOT COMMENTS (4/10/06)
8/9/06	DAJ	PER FDOT COMMENTS (7/6/06)

Phase 2 US41 - Heron Creek

COMPONENTS OF CONTRACT PLANS SET
ROADWAY PLANS

A DETAILED INDEX APPEARS ON THE
KEY SHEET OF EACH COMPONENT

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
R-1	KEY SHEET
R-2 - R-3	SUMMARY OF PAY ITEMS
R-4 - R-9	SUMMARY OF DRAINAGE STRUCTURES
R-10	GENERAL NOTES
R-11 - R-14	TYPICAL SECTIONS
R-15 - R-19	HORIZONTAL AND VERTICAL CONTROL
R-20 - R-51	ROADWAY PLAN & PROFILES
R-52 - R-53	INTERSECTION DETAIL
R-54 - R-58	ROADWAY / DRAINAGE DETAILS
R-59 - R-84	DRAINAGE STRUCTURES
R-85 - R-132	ROADWAY CROSS SECTIONS
R-133 - R-139	DRIVEWAY HALF SECTIONS
E-1 - E-18	EROSION CONTROL PLANS
U-1 - U-39	CONSTRUCTION PHASING PLANS
LI-1 - LI-31	LIGHTING PLANS (SHEETS LI-19 THRU LI-24 NOT INCLUDED)
I-1 - I-15	IRRIGATION PLANS
LD-0 - LD-12	LANDSCAPE PLANS
D-1 - D-6	LANDSCAPE DETAILS
S-1 - S-14	SIGNING & MARKING PLANS
T-1 - T-5	SIGNALIZATION PLANS
U-1 - U-32	UTILITY PLANS

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED 2003, AND DIVISION II
AND III OF THE STANDARD SPECIFICATIONS FOR
ROAD AND BRIDGE CONSTRUCTION DATED 2003,
AS AMENDED BY CONTRACT DOCUMENTS.

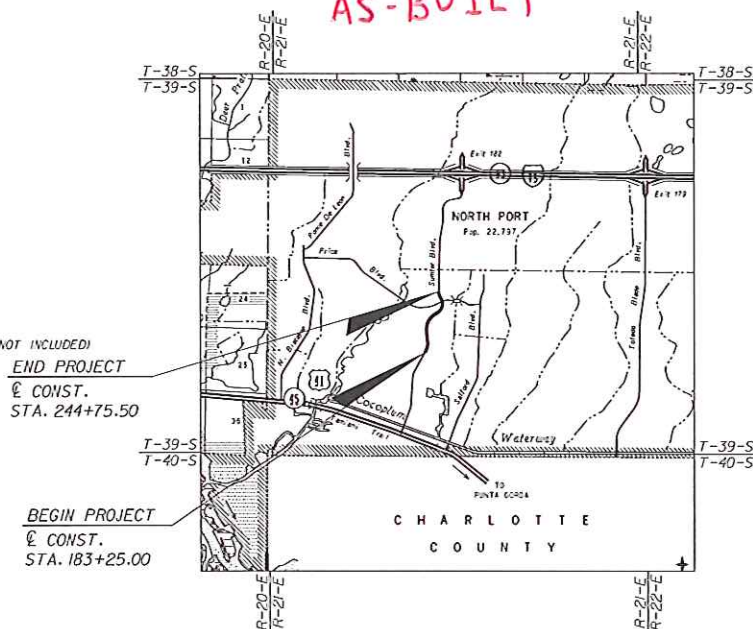
APPLICABLE DESIGN STANDARDS MODIFICATIONS: 6-1-10
FOR DESIGN MODIFICATIONS CHECK ON "DESIGN STANDARDS"
AT THE FOLLOWING WEB SITE:
[HTTP://WWW.DOT.STATE.FL.US/DESIGN](http://www.dot.state.fl.us/DESIGN)

CITY OF NORTH PORT
NORTH PORT CITY COMMISSION

CONTRACT PLANS

SUMTER BOULEVARD
IMPROVEMENTS
HERON CREEK BOULEVARD
TO CITY CENTER BOULEVARD

AS-BUILT



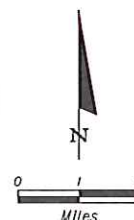
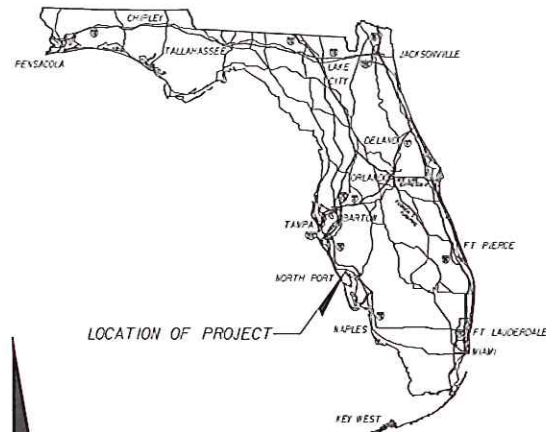
END PROJECT
@ CONST.
STA. 244+75.50

BEGIN PROJECT
@ CONST.
STA. 183+25.00

PROJECT LENGTH IS BASED ON @ SURVEY & @ OF CONSTRUCTION

LENGTH OF PROJECT		
	LINEAR FEET	MILES
ROADWAY	6150.50	1.165
BRIDGES	0.00	0.000
NET LENGTH OF PROJECT	6150.50	1.165
EXCEPTIONS	N/A	N/A
GROSS LENGTH OF PROJECT	6150.50	1.165

CITY OF NORTH PORT CITY ENGINEER: BEN NEWMAN, P.E.



PLANS PREPARED BY:

Kimley-Horn and Associates, Inc.
2601 CATTLEVEN ROAD SUITE 200
SARASOTA, FL 34232
(941) 379-1600
PROJECT NUMBER: 043285003
CERTIFICATE OF AUTHORIZATION: 00000696

NOTE: THE SCALE OF THESE PLANS MAY
HAVE CHANGED DUE TO REPRODUCTION.

100%
BID SET

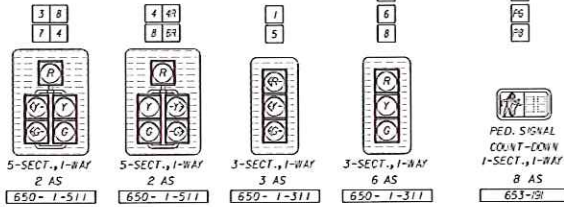
KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

ROADWAY PLANS
ENGINEER OF RECORD: GARY J. NALCZAK, P.E.

P.E. NO. 43629

FISCAL YEAR	SHEET NO.
	R-1

SIGNAL DISPLAY DETAIL



BUILT
PER
PLAN

CONTROLLER OPERATION NOTES

- THE MAJOR STREET IS SUMTER BOULEVARD AND THE MINOR STREET IS PRICE BOULEVARD.
- CONTROLLER TIMINGS ARE INITIAL AND MAY REQUIRE FIELD ADJUSTMENT.
- FLASHING OPERATION: MOVEMENTS 2 AND 6 YELLOW, ALL OTHER MOVEMENTS RED.
- CONCURRENT/ACTUATED PEDESTRIAN PHASE P2 (MOVEMENT 2), P4 (MOVEMENT 4), P6 (MOVEMENT 6), AND P8 (MOVEMENT 8).
- IF 3 SHALL BE OMITTED WHEN TF 4 IS ACTIVE, AND TF 7 SHALL BE OMITTED WHEN TF 8 IS ACTIVE.
- FOR PAVEMENT MARKINGS, SEE SIGNING AND MARKING PLANS.

CONTROLLER TIMINGS

TIMING FUNCTION	1	2	3	4	5	6	7	8
MOVEMENT NUMBER	1	2	3	4	5	6	7	8
MINIMUM GREEN	10	25	7	10	10	25	7	10
EXTENSION	2	1	2	2	2	1	2	2
MAXIMUM GREEN 1	17	32	15	28	18	31	13	30
MAXIMUM GREEN 2	13	35	16	28	18	30	15	29
YELLOW CLEARANCE	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
ALL RED	3.6	3.6	3.5	3.4	3.6	3.6	3.4	3.5
PEDESTRIAN WALK	-	7	-	7	-	7	-	7
FLASHING DON'T WALK	-	23	-	21	-	20	-	22
RECALL	-	MIN	-	MIN	-	MIN	-	MIN

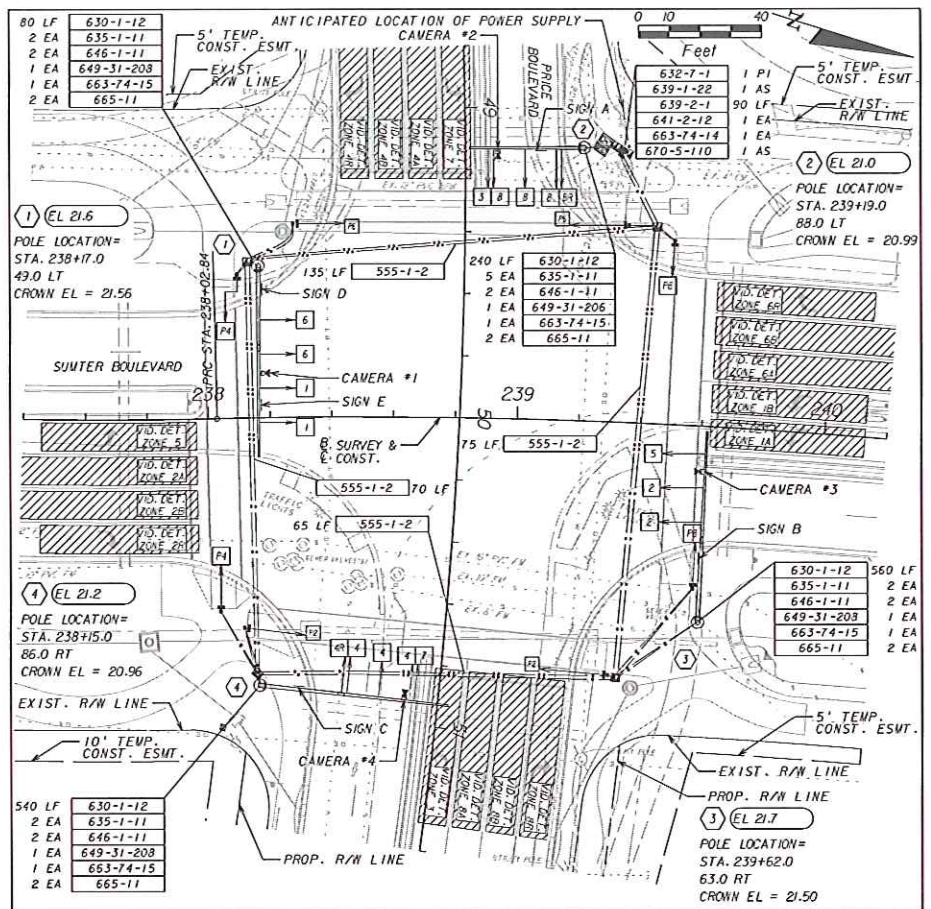
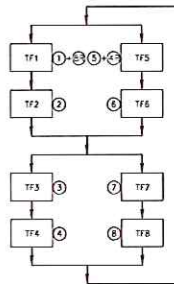
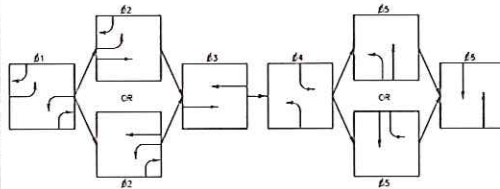
MAX GREEN 2 SHALL OPERATE M-F 6:30-9:00 AM
MAX GREEN 1 SHALL OPERATE AT ALL OTHER TIMES

VIDEO CAMERA ASSIGNMENTS

CAMERA	DETECTION ZONE	SIZE	DETECTOR OPERATION	TIMING FUNCTION	SECONDS OF DELAY
1	1A	9' x 50'	NORMAL	1	
1	1B	9' x 50'	NORMAL	1	
1	6A	9' x 100'	NORMAL	6	
1	6B	9' x 100'	NORMAL	6	
1	6R	9' x 50'	DELAY	6	10
2	3	9' x 50'	NORMAL	3	
2	8A	9' x 50'	NORMAL	8	
2	8B	9' x 50'	NORMAL	8	
2	8R	9' x 50'	DELAY	8	10
3	5	9' x 50'	NORMAL	5	
3	2A	9' x 100'	NORMAL	2	
3	2B	9' x 100'	NORMAL	2	
3	2R	9' x 50'	DELAY	2	10
4	7	9' x 50'	NORMAL	7	
4	4A	9' x 50'	NORMAL	4	
4	4B	9' x 50'	NORMAL	4	
4	4R	9' x 50'	DELAY	4	10

VIDEO CAMERA ASSIGNMENTS AND DETECTION ZONE AREAS ARE PRELIMINARY AND MAY REQUIRE FIELD ADJUSTMENT BY THE CONTRACTOR DURING INSTALLATION.

SIGNAL OPERATION DETAIL S.O.P. 10 (MODIFIED)



OVERHEAD SIGN DETAIL



SIGN A (1EA)
24'X72'



SIGN B (1EA)
24'X72'



SIGN C (1EA)
24'X72'



SIGN D (1EA)
24'X72'



SIGN E
R3-4
36'X36'

700-4B-1B 1EA

SIGN DETAIL



FTP 68A-06 (8 EA)
9'X15'
(INCLUDED WITH PAY ITEM 665-11)

REMOVAL ITEMS

690-10	8 EA
690-20	8 EA
690-31	2 EA
690-32-2	4 EA
690-50	1 EA
690-60	4 EA
690-70	8 EA
690-90	1 PI
690-100	1 PI

Kimley-Horn
and Associates, Inc.
RONALD C. WILDERMAN, P.E.
P.E. LICENSE NUMBER 4936
250 CATTLEMAN ROAD SUITE 200
SAN ANTONIO, TX 78232
(214) 379-7000
CERTIFICATE OF AUTHORIZATION 00000006

CITY OF NORTH PORT
SUMTER BOULEVARD
ROADWAY IMPROVEMENTS

SIGNALIZATION PLAN

SHEET
NO.

T-2

APPENDIX E

INTERSECTION VOLUME DEVELOPMENT WORKSHEETS

INTERSECTION VOLUME DEVELOPMENT

Sumter Blvd & US 41

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	68	86	12	272	101	232	148	562	41	15	752	161
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	84	106	15	335	124	285	182	691	50	18	925	198
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	2	2	0	7	2	6	4	14	1	0	19	4
Project Traffic % Assignment		3%		30%	3%							30%
Project Traffic Direction	N/A	In	N/A	Out	Out	N/A	N/A	N/A	N/A	N/A	N/A	In
Project Traffic		7		95	10							66
2020 Background Traffic	86	108	15	342	126	291	186	705	51	18	944	202
2020 Total Traffic	86	115	15	437	136	291	186	705	51	18	944	268

WEEKDAY PM PEAK HOUR (4:45 PM to 5:45 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	133	173	26	344	153	135	259	970	75	41	721	268
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	164	213	32	423	188	166	319	1,193	92	50	887	330
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	3	4	1	9	4	3	6	24	2	1	18	7
Project Traffic % Assignment		3%		30%	3%							30%
Project Traffic Direction	N/A	In	N/A	Out	Out	N/A	N/A	N/A	N/A	N/A	N/A	In
Project Traffic		10		81	8							100
2020 Background Traffic	167	217	33	432	192	169	325	1,217	94	51	905	337
2020 Total Traffic	167	227	33	513	200	169	325	1,217	94	51	905	437

INTERSECTION VOLUME DEVELOPMENT

Sumter Blvd & Greenwood Ave

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	33	332	0	0	605	16	24	0	39	0	0	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	41	408	0	0	744	20	30	0	48	0	0	0
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	1	8	0	0	15	0	1	0	1	0	0	0
Project Traffic % Assignment	33%								33%			
Project Traffic Direction	In	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Out	N/A	N/A	N/A
Project Traffic	73								105			
2020 Background Traffic	42	416	0	0	759	20	31	0	49	0	0	0
2020 Total Traffic	115	416	0	0	759	20	31	0	154	0	0	0

WEEKDAY PM PEAK HOUR (4:45 PM to 5:45 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	61	654	0	0	548	28	23	0	30	0	0	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	75	804	0	0	674	34	28	0	37	0	0	0
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	2	16	0	0	14	1	1	0	1	0	0	0
Project Traffic % Assignment	33%								33%			
Project Traffic Direction	In	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Out	N/A	N/A	N/A
Project Traffic	110								89			
2020 Background Traffic	77	820	0	0	688	35	29	0	38	0	0	0
2020 Total Traffic	187	820	0	0	688	35	29	0	127	0	0	0

INTERSECTION VOLUME DEVELOPMENT

Sumter Blvd & Appomattox Dr

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	38	309	0	2	460	151	92	0	68	2	0	2
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	47	380	0	2	566	186	113	0	84	2	0	2
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	1	8	0	0	11	4	2	0	2	0	0	0
Project Traffic % Assignment						21%	21%	2%			2%	
Project Traffic Direction	N/A	N/A	N/A	N/A	N/A	In	Out	Out	N/A	N/A	In	N/A
Project Traffic						47	67	6			4	
2020 Background Traffic	48	388	0	2	577	190	115	0	86	2	0	2
2020 Total Traffic	48	388	0	2	577	237	182	6	86	2	4	2

WEEKDAY PM PEAK HOUR (4:45 PM to 5:45 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	73	473	3	1	463	133	180	3	65	2	1	2
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	90	582	4	1	569	164	221	4	80	2	1	2
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	2	12	0	0	11	3	4	0	2	0	0	0
Project Traffic % Assignment						21%	21%	2%			2%	
Project Traffic Direction	N/A	N/A	N/A	N/A	N/A	In	Out	Out	N/A	N/A	In	N/A
Project Traffic						70	57	5			7	
2020 Background Traffic	92	594	4	1	580	167	225	4	82	2	1	2
2020 Total Traffic	92	594	4	1	580	237	282	9	82	2	8	2

INTERSECTION VOLUME DEVELOPMENT

Sumter Blvd & Price Blvd

WEEKDAY AM PEAK HOUR (7:45 AM to 8:45 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	47	283	94	148	342	79	138	187	44	254	192	213
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	58	348	116	182	421	97	170	230	54	312	236	262
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	1	7	2	4	8	2	3	5	1	6	5	5
Project Traffic % Assignment		14%	7%		14%					7%		
Project Traffic Direction	N/A	Out	Out	N/A	In	N/A	N/A	N/A	N/A	In	N/A	N/A
Project Traffic		45	22		31					16		
2020 Background Traffic	59	355	118	186	429	99	173	235	55	318	241	267
2020 Total Traffic	59	400	140	186	460	99	173	235	55	334	241	267

WEEKDAY PM PEAK HOUR (5:00 PM to 6:00 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	103	306	204	398	499	108	168	245	51	200	196	123
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	127	376	251	490	614	133	207	301	63	246	241	151
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	3	8	5	10	12	3	4	6	1	5	5	3
Project Traffic % Assignment		14%	7%		14%					7%		
Project Traffic Direction	N/A	Out	Out	N/A	In	N/A	N/A	N/A	N/A	In	N/A	N/A
Project Traffic		38	19		47					23		
2020 Background Traffic	130	384	256	500	626	136	211	307	64	251	246	154
2020 Total Traffic	130	422	275	500	673	136	211	307	64	274	246	154

INTERSECTION VOLUME DEVELOPMENT

North Port Blvd & US 41

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	41	41	41	39	42	71	63	637	46	32	826	45
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	50	50	50	48	52	87	77	784	57	39	1,016	55
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	1	1	1	1	1	2	2	16	1	1	20	1
Project Traffic % Assignment		4%			4%	30%	30%					
Project Traffic Direction	N/A	In	N/A	N/A	Out	Out	In	N/A	N/A	N/A	N/A	N/A
Project Traffic		9			13	95	66					
2020 Background Traffic	51	51	51	49	53	89	79	800	58	40	1,036	56
2020 Total Traffic	51	60	51	49	66	184	145	800	58	40	1,036	56

WEEKDAY PM PEAK HOUR (4:30 PM to 5:30 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	38	66	64	48	43	72	130	1,133	48	42	819	49
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	47	81	79	59	53	89	160	1,394	59	52	1,007	60
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	1	2	2	1	1	2	3	28	1	1	20	1
Project Traffic % Assignment		4%			4%	30%	30%					
Project Traffic Direction	N/A	In	N/A	N/A	Out	Out	In	N/A	N/A	N/A	N/A	N/A
Project Traffic		13			11	80	100					
2020 Background Traffic	48	83	81	60	54	91	163	1,422	60	53	1,027	61
2020 Total Traffic	48	96	81	60	65	171	263	1,422	60	53	1,027	61

INTERSECTION VOLUME DEVELOPMENT

North Port Blvd & Greenwood Ave

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	58	20	9	120	0	0	0	0	34	0	6
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	0	71	25	11	148	0	0	0	0	42	0	7
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	0	1	1	0	3	0	0	0	0	1	0	0
Project Traffic % Assignment			34%							34%		
Project Traffic Direction	N/A	N/A	In	N/A	N/A	N/A	N/A	N/A	N/A	Out	N/A	N/A
Project Traffic			75							108		
2020 Background Traffic	0	72	26	11	151	0	0	0	0	43	0	7
2020 Total Traffic	0	72	101	11	151	0	0	0	0	151	0	7

WEEKDAY PM PEAK HOUR (4:30 PM to 5:30 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	160	43	5	92	0	0	0	0	28	0	9
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	0	197	53	6	113	0	0	0	0	34	0	11
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	0	4	1	0	2	0	0	0	0	1	0	0
Project Traffic % Assignment			34%							34%		
Project Traffic Direction	N/A	N/A	In	N/A	N/A	N/A	N/A	N/A	N/A	Out	N/A	N/A
Project Traffic			113							91		
2020 Background Traffic	0	201	54	6	115	0	0	0	0	35	0	11
2020 Total Traffic	0	201	167	6	115	0	0	0	0	126	0	11

INTERSECTION VOLUME DEVELOPMENT

North Port Blvd & Appomattox Dr

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	25	0	39	0	0	0	0	117	39	71	122	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	31	0	48	0	0	0	0	144	48	87	150	0
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	1	0	1	0	0	0	0	3	1	2	3	0
Project Traffic % Assignment								10%			10%	
Project Traffic Direction	N/A	N/A	N/A	N/A	N/A	N/A	N/A	In	N/A	N/A	Out	N/A
Project Traffic								22			32	
2020 Background Traffic	32	0	49	0	0	0	0	147	49	89	153	0
2020 Total Traffic	32	0	49	0	0	0	0	169	49	89	185	0

WEEKDAY PM PEAK HOUR (4:30 PM to 5:30 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	69	0	99	0	0	0	0	159	32	57	146	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	85	0	122	0	0	0	0	196	39	70	180	0
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	2	0	2	0	0	0	0	4	1	1	4	0
Project Traffic % Assignment								10%			10%	
Project Traffic Direction	N/A	N/A	N/A	N/A	N/A	N/A	N/A	In	N/A	N/A	Out	N/A
Project Traffic								33			27	
2020 Background Traffic	87	0	124	0	0	0	0	200	40	71	184	0
2020 Total Traffic	87	0	124	0	0	0	0	233	40	71	211	0

INTERSECTION VOLUME DEVELOPMENT

South Driveway & Greenwood Ave

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	0	0	0	0	0	0	29	0	0	49	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	0	0	0	0	0	0	0	36	0	0	60	0
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	0	0	0	0	0	0	0	1	0	0	1	0
Project Traffic % Assignment				33%		34%	34%					33%
Project Traffic Direction	N/A	N/A	N/A	Out	N/A	Out	In	N/A	N/A	N/A	N/A	In
Project Traffic				105		108	75					73
2020 Background Traffic	0	0	0	0	0	0	0	37	0	0	61	0
2020 Total Traffic	0	0	0	105	0	108	75	37	0	0	61	73

WEEKDAY PM PEAK HOUR (4:30 PM to 5:30 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	0	0	0	0	0	0	48	0	0	89	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	0	0	0	0	0	0	0	59	0	0	109	0
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	0	0	0	0	0	0	0	1	0	0	2	0
Project Traffic % Assignment				33%		34%	34%					33%
Project Traffic Direction	N/A	N/A	N/A	Out	N/A	Out	In	N/A	N/A	N/A	N/A	In
Project Traffic				89		91	113					110
2020 Background Traffic	0	0	0	0	0	0	0	60	0	0	111	0
2020 Total Traffic	0	0	0	89	0	91	113	60	0	0	111	110

INTERSECTION VOLUME DEVELOPMENT

North Driveway & Appomattox Dr

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	0	0	0	0	0	0	156	0	0	189	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	0	0	0	0	0	0	0	192	0	0	232	0
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	0	0	0	0	0	0	0	4	0	0	5	0
Project Traffic % Assignment	10%		23%						10%	23%		
Project Traffic Direction	Out	N/A	Out	N/A	N/A	N/A	N/A	N/A	In	In	N/A	N/A
Project Traffic	32		73						22	51		
2020 Background Traffic	0	0	0	0	0	0	0	196	0	0	237	0
2020 Total Traffic	32	0	73	0	0	0	0	196	22	51	237	0

WEEKDAY PM PEAK HOUR (4:30 PM to 5:30 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	0	0	0	0	0	0	258	0	0	207	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	0	0	0	0	0	0	0	317	0	0	255	0
Annual Growth Rate	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2020 Background Growth	0	0	0	0	0	0	0	6	0	0	5	0
Project Traffic % Assignment	10%		23%						10%	23%		
Project Traffic Direction	Out	N/A	Out	N/A	N/A	N/A	N/A	N/A	In	In	N/A	N/A
Project Traffic	27		62						33	77		
2020 Background Traffic	0	0	0	0	0	0	0	323	0	0	260	0
2020 Total Traffic	27	0	62	0	0	0	0	323	33	77	260	0

APPENDIX F

SYNCHRO REPORTS

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Existing AM Peak Hour
10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.66	0.41	0.06	0.11	0.65	0.27	0.31	0.39		0.75	0.75	0.47

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 109 (84%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 40.3

Intersection LOS: D

Intersection Capacity Utilization 71.0%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Sumter Blvd & US 41

 Ø1	 Ø2 (R)	 Ø3	 Ø4
20 s	55 s	29 s	26 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
18 s	57 s	24 s	31 s

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	48	41	408	744	20
Future Vol, veh/h	30	48	41	408	744	20
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	0	0	6	2	0
Mvmt Flow	32	52	44	439	800	22
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1120	412	823	0	-	0
Stage 1	812	-	-	-	-	-
Stage 2	308	-	-	-	-	-
Critical Hdwy	6.88	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	197	595	816	-	-	-
Stage 1	392	-	-	-	-	-
Stage 2	713	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	186	594	815	-	-	-
Mov Cap-2 Maneuver	186	-	-	-	-	-
Stage 1	370	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	18.1		0.9		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	815	-	186	594	-	-
HCM Lane V/C Ratio	0.054	-	0.173	0.087	-	-
HCM Control Delay (s)	9.7	-	28.4	11.6	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	0.3	-	-

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Existing AM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	0	84	2	0	2	47	380	0	2	566	186
Future Volume (vph)	113	0	84	2	0	2	47	380	0	2	566	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		0	120		0	130		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					0.99					1.00		
Frt			0.850		0.932						0.963	
Flt Protected		0.950			0.976		0.950			0.950		
Satd. Flow (prot)	0	1787	1615	0	1717	0	1719	3406	0	1805	3383	0
Flt Permitted		0.755			0.872		0.290			0.510		
Satd. Flow (perm)	0	1420	1615	0	1532	0	525	3406	0	967	3383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			91		87						63	
Link Speed (mph)		35			30			40			40	
Link Distance (ft)		5307			991			3533			7761	
Travel Time (s)		103.4			22.5			60.2			132.3	
Confl. Peds. (#/hr)				1		1			1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	5%	6%	0%	0%	3%	2%
Adj. Flow (vph)	123	0	91	2	0	2	51	413	0	2	615	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	123	91	0	4	0	51	413	0	2	817	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	25.0		10.0	25.0	
Minimum Split (s)	16.0	16.0	16.0	40.0	40.0		15.0	33.0		15.0	31.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0		20.0	55.0		20.0	55.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		20.0%	55.0%		20.0%	55.0%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0		15.0	49.0		15.0	49.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.5		4.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		5.0	6.0		5.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.7	4.0		2.7	4.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)	0.0	0.0	0.0	7.0	7.0			7.0			10.0	
Flash Dont Walk (s)	0.0	0.0	0.0	27.0	27.0			20.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		13.1	13.1		13.1		61.1	58.2		59.1	52.5	
Actuated g/C Ratio		0.15	0.15		0.15		0.71	0.68		0.69	0.61	
v/c Ratio		0.57	0.28		0.01		0.10	0.18		0.00	0.39	
Control Delay		45.1	9.8		0.0		4.6	6.7		4.5	10.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		45.1	9.8		0.0		4.6	6.7		4.5	10.3	
LOS		D	A		A		A	A		A	B	
Approach Delay		30.1						6.5			10.2	
Approach LOS		C						A			B	
Queue Length 50th (ft)		66	0		0		6	32		0	120	
Queue Length 95th (ft)		121	40		0		19	96		2	189	
Internal Link Dist (ft)		5227			911			3453			7681	
Turn Bay Length (ft)			50				120			130		
Base Capacity (vph)		316	430		408		587	2301		842	2084	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Existing AM Peak Hour
10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.39	0.21		0.01		0.09	0.18		0.00	0.39	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 86.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 11.9

Intersection LOS: B

Intersection Capacity Utilization 56.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Sumter Blvd & Appomattox Dr

 Ø1	 Ø2	 Ø4
20 s	55 s	25 s
 Ø5	 Ø6	 Ø8
20 s	55 s	25 s

Intersection Summary

Area Type: Other

Cycle Length: 92

Actuated Cycle Length: 87.2

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 32.5

Intersection LOS: C

Intersection Capacity Utilization 78.5%

ICU Level of Service D

Analysis Period (min) 15

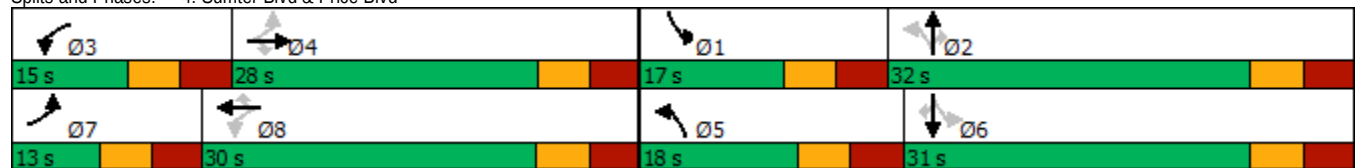
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Sumter Blvd & Price Blvd



Lanes, Volumes, Timings
5: North Port Blvd & US 41

Existing AM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.49	0.07	0.32	0.66	0.07	0.17	0.21	0.17	0.17	0.23	0.29

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 66 (51%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 21.9

Intersection LOS: C

Intersection Capacity Utilization 59.0%

ICU Level of Service B

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: North Port Blvd & US 41

	Ø1		Ø2 (R)		Ø3		Ø4
18 s		74 s		18 s		20 s	
	Ø5		Ø6 (R)		Ø7		Ø8
18 s		74 s		18 s		20 s	

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	42	7	71	25	11	148
Future Vol, veh/h	42	7	71	25	11	148
Conflicting Peds, #/hr	0	3	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	2	0	11	1
Mvmt Flow	56	9	95	33	15	197
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	340	116	0	0	129	0
Stage 1	113	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.21	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.299	-
Pot Cap-1 Maneuver	660	942	-	-	1403	-
Stage 1	917	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	651	938	-	-	1402	-
Mov Cap-2 Maneuver	651	-	-	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.8	0		0.5		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	681	1402	-	
HCM Lane V/C Ratio	-	-	0.096	0.01	-	
HCM Control Delay (s)	-	-	10.8	7.6	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0	-	

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	144	48	87	150	31	48
Future Vol, veh/h	144	48	87	150	31	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	5	0	4	4	0
Mvmt Flow	155	52	94	161	33	52
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	207	0	530	181
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	349	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	1376	-	506	867
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	710	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1376	-	468	867
Mov Cap-2 Maneuver	-	-	-	-	468	-
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	710	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.9		11.4	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	650	-	-	1376	-	
HCM Lane V/C Ratio	0.131	-	-	0.068	-	
HCM Control Delay (s)	11.4	-	-	7.8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-	

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Existing PM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	319	1193	92	50	887	330	164	213	32	423	188	166
Future Volume (vph)	319	1193	92	50	887	330	164	213	32	423	188	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	700		310	360		390	185		0	480		210
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	75			80			50			50		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	0.95	0.95
Ped Bike Factor							1.00			1.00		
Frts			0.850			0.850		0.980			0.987	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	3574	1615	1805	3539	1599	1770	1862	0	3467	1761	1490
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	3574	1615	1805	3539	1599	1767	1862	0	3459	1761	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			347		5			3	157
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		5683			3139			1562			1377	
Travel Time (s)		86.1			47.6			35.5			23.5	
Confl. Peds. (#/hr)							2			2		
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
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	2%	0%	0%	1%	1%	3%
Adj. Flow (vph)	336	1256	97	53	934	347	173	224	34	445	198	175
Shared Lane Traffic (%)												10%
Lane Group Flow (vph)	336	1256	97	53	934	347	173	258	0	445	216	157
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0		5.0	7.0	7.0
Minimum Split (s)	12.8	40.8	40.8	12.0	34.8	34.8	11.9	50.9		10.7	48.4	48.4
Total Split (s)	18.0	42.0	42.0	25.0	49.0	49.0	27.0	45.0		28.0	46.0	46.0
Total Split (%)	12.9%	30.0%	30.0%	17.9%	35.0%	35.0%	19.3%	32.1%		20.0%	32.9%	32.9%
Maximum Green (s)	10.2	35.2	35.2	18.0	42.2	42.2	20.1	38.1		22.3	39.6	39.6
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9		3.7	3.7	3.7
All-Red Time (s)	3.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0		2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.8	6.8	6.8	7.0	6.8	6.8	6.9	6.9		5.7	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		27.0	27.0		21.0	21.0		37.0			35.0	35.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	23.2	61.1	61.1	9.5	44.0	44.0	17.6	24.4		21.2	27.4	27.4
Actuated g/C Ratio	0.17	0.44	0.44	0.07	0.31	0.31	0.13	0.17		0.15	0.20	0.20
v/c Ratio	0.58	0.81	0.12	0.43	0.84	0.47	0.78	0.78		0.85	0.62	0.38
Control Delay	84.5	24.1	1.7	72.8	53.0	5.8	82.4	70.4		73.4	58.6	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	84.5	24.1	1.7	72.8	53.0	5.8	82.4	70.4		73.4	58.6	8.9
LOS	F	C	A	E	D	A	F	E		E	E	A
Approach Delay		34.8			41.5			75.2			57.1	
Approach LOS		C			D			E			E	
Queue Length 50th (ft)	166	190	4	47	421	0	153	223		204	189	0
Queue Length 95th (ft)	m170	m#626	m5	92	#517	73	#237	303		#270	267	61
Internal Link Dist (ft)		5603			3059			1482			1297	
Turn Bay Length (ft)	700		310	360		390	185			480		210
Base Capacity (vph)	579	1558	786	232	1111	740	254	510		552	500	534
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Existing PM Peak Hour
10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.58	0.81	0.12	0.23	0.84	0.47	0.68	0.51		0.81	0.43	0.29

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 3 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 45.2

Intersection LOS: D

Intersection Capacity Utilization 84.4%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Sumter Blvd & US 41

				
Ø1	Ø2 (R)	Ø3	Ø4	
25 s	42 s	27 s	46 s	
				
Ø5	Ø6 (R)	Ø7	Ø8	
18 s	49 s	28 s	45 s	

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	37	75	804	674	34
Future Vol, veh/h	28	37	75	804	674	34
Conflicting Peds, #/hr	5	0	2	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	3	0	1	1	0
Mvmt Flow	31	41	82	884	741	37
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1373	391	780	0	-	0
Stage 1	762	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Critical Hdwy	6.88	6.96	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.33	2.2	-	-	-
Pot Cap-1 Maneuver	134	605	846	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	120	604	844	-	-	-
Mov Cap-2 Maneuver	120	-	-	-	-	-
Stage 1	375	-	-	-	-	-
Stage 2	498	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	25.9		0.8		0	
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	844	-	120	604	-	-
HCM Lane V/C Ratio	0.098	-	0.256	0.067	-	-
HCM Control Delay (s)	9.7	-	45	11.4	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	1	0.2	-	-

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Existing PM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	4	80	2	1	2	90	582	4	1	569	164
Future Volume (vph)	221	4	80	2	1	2	90	582	4	1	569	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		0	120		0	130		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					0.99			1.00		1.00		
Frt			0.850		0.946			0.999			0.966	
Flt Protected		0.953			0.980		0.950			0.950		
Satd. Flow (prot)	0	1793	1583	0	1460	0	1752	3570	0	1805	3453	0
Flt Permitted		0.727			0.893		0.277			0.410		
Satd. Flow (perm)	0	1368	1583	0	1330	0	511	3570	0	778	3453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87		2			1			52	
Link Speed (mph)		35			30			40			40	
Link Distance (ft)		1900			991			3533			7761	
Travel Time (s)		37.0			22.5			60.2			132.3	
Confl. Peds. (#/hr)				1		1			1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	2%	0%	0%	50%	3%	1%	0%	0%	1%	1%
Adj. Flow (vph)	240	4	87	2	1	2	98	633	4	1	618	178
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	244	87	0	5	0	98	637	0	1	796	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	25.0		10.0	25.0	
Minimum Split (s)	16.0	16.0	16.0	40.0	40.0		15.0	33.0		15.0	31.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0		20.0	55.0		20.0	55.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		20.0%	55.0%		20.0%	55.0%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0		15.0	49.0		15.0	49.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.5		4.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		5.0	6.0		5.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.7	4.0		2.7	4.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)	0.0	0.0	0.0	7.0	7.0			7.0			10.0	
Flash Dont Walk (s)	0.0	0.0	0.0	27.0	27.0			20.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		18.5	18.5		18.5		60.9	58.0		58.0	49.3	
Actuated g/C Ratio		0.20	0.20		0.20		0.67	0.63		0.63	0.54	
v/c Ratio		0.88	0.22		0.02		0.21	0.28		0.00	0.42	
Control Delay		69.2	9.0		26.2		6.2	8.6		5.0	13.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		69.2	9.0		26.2		6.2	8.6		5.0	13.3	
LOS		E	A		C		A	A		A	B	
Approach Delay		53.4			26.2			8.3			13.3	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)		144	0		2		17	71		0	140	
Queue Length 95th (ft)		#285	39		11		33	151		2	186	
Internal Link Dist (ft)		1820			911			3453			7681	
Turn Bay Length (ft)			50				120			130		
Base Capacity (vph)		285	399		279		550	2263		695	1885	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Existing PM Peak Hour
10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.86	0.22		0.02		0.18	0.28		0.00	0.42	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 91.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 18.5

Intersection LOS: B

Intersection Capacity Utilization 64.1%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Sumter Blvd & Appomattox Dr

 Ø1	 Ø2	 Ø4
20 s	55 s	25 s
 Ø5	 Ø6	 Ø8
20 s	55 s	25 s

Lanes, Volumes, Timings
4: Sumter Blvd & Price Blvd

Existing PM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	301	63	246	241	151	127	376	251	490	614	133
Future Volume (vph)	207	301	63	246	241	151	127	376	251	490	614	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		225	400		515	210		650	330		400
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (ft)	50			50			50			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor									0.99			
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3610	1615	1770	3574	1583	1805	3539	1583	3467	3574	1553
Flt Permitted	0.593			0.446			0.308			0.514		
Satd. Flow (perm)	1105	3610	1615	831	3574	1583	585	3539	1561	1876	3574	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			218			267			217
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		2204			1860			7761			1590	
Travel Time (s)		33.4			36.2			176.4			36.1	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	0%	0%	2%	1%	2%	0%	2%	2%	1%	1%	4%
Adj. Flow (vph)	220	320	67	262	256	161	135	400	267	521	653	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	320	67	262	256	161	135	400	267	521	653	141
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	10.0	25.0	25.0	10.0	25.0	25.0
Minimum Split (s)	14.0	35.0	35.0	14.1	36.1	36.1	17.2	37.2	37.2	17.2	34.2	34.2
Total Split (s)	13.0	28.0	28.0	15.0	30.0	30.0	18.0	32.0	32.0	17.0	31.0	31.0
Total Split (%)	14.1%	30.4%	30.4%	16.3%	32.6%	32.6%	19.6%	34.8%	34.8%	18.5%	33.7%	33.7%
Maximum Green (s)	6.0	21.0	21.0	7.9	22.9	22.9	10.8	24.8	24.8	9.8	23.8	23.8
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	7.2	7.2	7.2	7.2	7.2	7.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	2.0	1.0	1.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		22.0	22.0		23.0	23.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	18.4	12.4	12.4	22.2	14.3	14.3	40.2	30.0	30.0	39.5	29.7	29.7
Actuated g/C Ratio	0.21	0.14	0.14	0.25	0.16	0.16	0.45	0.34	0.34	0.45	0.33	0.33
v/c Ratio	0.80	0.63	0.16	0.90	0.44	0.37	0.33	0.33	0.38	0.52	0.55	0.21
Control Delay	50.5	41.9	0.8	61.6	36.0	4.1	13.8	23.2	4.7	14.6	26.5	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	41.9	0.8	61.6	36.0	4.1	13.8	23.2	4.7	14.6	26.5	1.3
LOS	D	D	A	E	D	A	B	C	A	B	C	A
Approach Delay		40.5			38.3			15.5			19.1	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	96	90	0	118	68	0	36	86	0	77	153	0
Queue Length 95th (ft)	#179	133	0	#242	105	22	71	132	53	119	223	8
Internal Link Dist (ft)		2124			1780			7681			1510	
Turn Bay Length (ft)	400		225	400		515	210		650	330		400
Base Capacity (vph)	274	855	549	291	923	570	417	1197	705	1010	1195	663
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
4: Sumter Blvd & Price Blvd

Existing PM Peak Hour
10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.37	0.12	0.90	0.28	0.28	0.32	0.33	0.38	0.52	0.55	0.21

Intersection Summary

Area Type: Other

Cycle Length: 92

Actuated Cycle Length: 88.7

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 25.9

Intersection LOS: C

Intersection Capacity Utilization 84.7%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Sumter Blvd & Price Blvd

 Ø3	 Ø4	 Ø1	 Ø2
15 s	28 s	17 s	32 s
 Ø7	 Ø8	 Ø5	 Ø6
13 s	30 s	18 s	31 s

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Existing PM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	1394	59	52	1007	60	47	81	79	59	53	89
Future Volume (vph)	160	1394	59	52	1007	60	47	81	79	59	53	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	390		350	350		360	260		90	165		380
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	50			100			25			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				1.00			1.00					0.99
Frts			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3574	1615	1770	3539	1553	1805	1863	1538	1770	1900	1599
Flt Permitted	0.950			0.950			0.720			0.693		
Satd. Flow (perm)	1770	3574	1615	1769	3539	1553	1366	1863	1538	1291	1900	1579
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			186			129			189			189
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		1410			5683			1003			1463	
Travel Time (s)		21.4			86.1			22.8			24.9	
Confl. Peds. (#/hr)				1			2					1
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
Heavy Vehicles (%)	2%	1%	0%	2%	2%	4%	0%	2%	5%	2%	0%	1%
Adj. Flow (vph)	168	1467	62	55	1060	63	49	85	83	62	56	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	168	1467	62	55	1060	63	49	85	83	62	56	94
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	12.4	45.8	45.8	12.3	51.8	51.8	10.7	63.5	63.5	10.7	62.5	62.5
Total Split (s)	18.0	45.0	45.0	32.0	59.0	59.0	18.0	46.0	46.0	17.0	45.0	45.0
Total Split (%)	12.9%	32.1%	32.1%	22.9%	42.1%	42.1%	12.9%	32.9%	32.9%	12.1%	32.1%	32.1%
Maximum Green (s)	10.6	38.2	38.2	24.7	52.2	52.2	12.3	39.5	39.5	11.3	38.5	38.5
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.6	2.0	2.0	2.5	2.0	2.0	2.0	2.8	2.8	2.0	2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	5.7	6.5	6.5	5.7	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		29.0	29.0		35.0	35.0		47.0	47.0		46.0	46.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	10.6	55.8	55.8	9.7	52.2	52.2	52.1	44.6	44.6	53.4	45.3	45.3
Actuated g/C Ratio	0.08	0.40	0.40	0.07	0.37	0.37	0.37	0.32	0.32	0.38	0.32	0.32
v/c Ratio	1.25	1.03	0.08	0.45	0.80	0.10	0.09	0.14	0.13	0.12	0.09	0.15
Control Delay	211.6	73.2	0.2	75.3	40.6	3.9	25.9	36.8	0.5	26.2	35.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	211.6	73.2	0.2	75.3	40.6	3.9	25.9	36.8	0.5	26.2	35.8	0.5
LOS	F	E	A	E	D	A	C	D	A	C	D	A
Approach Delay		84.2			40.2			20.5			17.3	
Approach LOS		F			D			C			B	
Queue Length 50th (ft)	~191	~783	0	53	278	2	27	57	0	34	36	0
Queue Length 95th (ft)	#342	#971	0	m70	368	m8	54	104	0	66	73	0
Internal Link Dist (ft)		1330			5603			923			1383	
Turn Bay Length (ft)	390		350	350		360	260		90	165		380
Base Capacity (vph)	134	1425	755	312	1319	659	577	593	619	546	614	638
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Existing PM Peak Hour
10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	1.03	0.08	0.18	0.80	0.10	0.08	0.14	0.13	0.11	0.09	0.15

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 66 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.25

Intersection Signal Delay: 60.0

Intersection LOS: E

Intersection Capacity Utilization 106.5%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

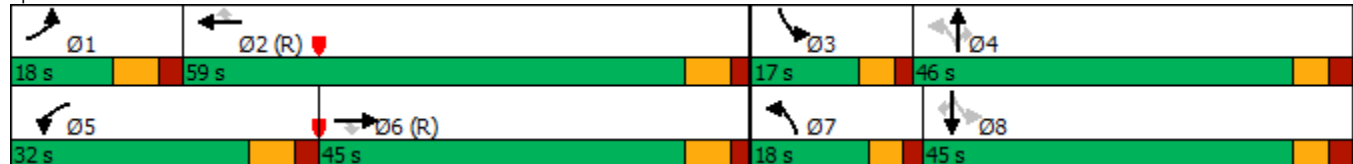
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: North Port Blvd & US 41



Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	11	197	53	6	113
Future Vol, veh/h	34	11	197	53	6	113
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	4	0	4	5	20	2
Mvmt Flow	39	13	226	61	7	130
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	401	257	0	0	287	0
Stage 1	257	-	-	-	-	-
Stage 2	144	-	-	-	-	-
Critical Hdwy	6.44	6.2	-	-	4.3	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.3	-	-	2.38	-
Pot Cap-1 Maneuver	601	787	-	-	1179	-
Stage 1	781	-	-	-	-	-
Stage 2	878	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	597	787	-	-	1179	-
Mov Cap-2 Maneuver	597	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	878	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.2	0		0.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	634	1179	-	
HCM Lane V/C Ratio	-	-	0.082	0.006	-	
HCM Control Delay (s)	-	-	11.2	8.1	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0	-	

Intersection						
Int Delay, s/veh	5.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	196	39	70	180	85	122
Future Vol, veh/h	196	39	70	180	85	122
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	4	1	4	4
Mvmt Flow	233	46	83	214	101	145
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	281	0	638	258
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1270	-	438	776
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1268	-	405	775
Mov Cap-2 Maneuver	-	-	-	-	405	-
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	687	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.3		16.2	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	564	-	-	1268	-	
HCM Lane V/C Ratio	0.437	-	-	0.066	-	
HCM Control Delay (s)	16.2	-	-	8	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	2.2	-	-	0.2	-	

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Background AM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	726	53	19	972	208	88	111	16	352	130	299
Future Volume (vph)	191	726	53	19	972	208	88	111	16	352	130	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	700		310	360		390	185		0	480		210
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	75			80			50			50		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.97	0.95	0.95
Ped Bike Factor								1.00				
Fr't			0.850			0.850		0.981			0.936	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4940	1509	1805	5036	1538	1736	1781	0	3433	1611	1504
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4940	1509	1805	5036	1538	1736	1781	0	3433	1611	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			146			224		5			24	219
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		5683			3139			1562			1377	
Travel Time (s)		86.1			47.6			35.5			23.5	
Confl. Peds. (#/hr)									1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	5%	7%	0%	3%	5%	4%	4%	8%	2%	7%	2%
Adj. Flow (vph)	205	781	57	20	1045	224	95	119	17	378	140	322
Shared Lane Traffic (%)												32%
Lane Group Flow (vph)	205	781	57	20	1045	224	95	136	0	378	243	219
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0		5.0	7.0	7.0
Minimum Split (s)	12.8	40.8	40.8	12.0	34.8	34.8	11.9	50.9		10.7	48.4	48.4
Total Split (s)	18.0	55.0	55.0	20.0	57.0	57.0	29.0	31.0		24.0	26.0	26.0
Total Split (%)	13.8%	42.3%	42.3%	15.4%	43.8%	43.8%	22.3%	23.8%		18.5%	20.0%	20.0%
Maximum Green (s)	10.2	48.2	48.2	13.0	50.2	50.2	22.1	24.1		18.3	19.6	19.6
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9		3.7	3.7	3.7
All-Red Time (s)	3.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0		2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.8	6.8	6.8	7.0	6.8	6.8	6.9	6.9		5.7	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		27.0	27.0		21.0	21.0		37.0			35.0	35.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	11.1	67.6	67.6	7.0	54.8	54.8	12.4	19.4		17.5	23.8	23.8
Actuated g/C Ratio	0.09	0.52	0.52	0.05	0.42	0.42	0.10	0.15		0.13	0.18	0.18
v/c Ratio	0.70	0.30	0.07	0.21	0.49	0.29	0.58	0.51		0.82	0.78	0.48
Control Delay	60.0	37.8	6.6	63.2	29.3	4.2	69.2	54.6		69.6	62.4	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	60.0	37.8	6.6	63.2	29.3	4.2	69.2	54.6		69.6	62.4	9.5
LOS	E	D	A	E	C	A	E	D		E	E	A
Approach Delay		40.5			25.5			60.6			51.9	
Approach LOS		D			C			E			D	
Queue Length 50th (ft)	90	195	3	16	246	0	78	102		160	184	0
Queue Length 95th (ft)	#146	268	24	44	293	52	132	164		#225	#311	73
Internal Link Dist (ft)		5603			3059			1482			1297	
Turn Bay Length (ft)	700		310	360		390	185			480		210
Base Capacity (vph)	295	2568	854	180	2123	778	295	334		483	317	456
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.69	0.30	0.07	0.11	0.49	0.29	0.32	0.41		0.78	0.77	0.48

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 109 (84%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 39.0

Intersection LOS: D

Intersection Capacity Utilization 65.3%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Sumter Blvd & US 41

 Ø1	 Ø2 (R)	 Ø3	 Ø4
20 s	55 s	29 s	26 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
18 s	57 s	24 s	31 s

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	50	43	429	782	21
Future Vol, veh/h	32	50	43	429	782	21
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	0	0	6	2	0
Mvmt Flow	34	54	46	461	841	23
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1177	433	865	0	-	0
Stage 1	854	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Critical Hdwy	6.88	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	181	576	787	-	-	-
Stage 1	373	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	170	575	786	-	-	-
Mov Cap-2 Maneuver	170	-	-	-	-	-
Stage 1	351	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	19.5		0.9		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	786	-	170	575	-	-
HCM Lane V/C Ratio	0.059	-	0.202	0.094	-	-
HCM Control Delay (s)	9.9	-	31.5	11.9	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	0.3	-	-

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Background AM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	0	88	2	0	2	49	399	0	2	595	195
Future Volume (vph)	119	0	88	2	0	2	49	399	0	2	595	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		0	120		0	130		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					0.99					1.00		
Frt			0.850		0.932						0.963	
Flt Protected		0.950			0.976		0.950			0.950		
Satd. Flow (prot)	0	1787	1615	0	1717	0	1719	3406	0	1805	3383	0
Flt Permitted		0.755			0.873		0.273			0.500		
Satd. Flow (perm)	0	1420	1615	0	1534	0	494	3406	0	948	3383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96		87						62	
Link Speed (mph)		35			30			40			40	
Link Distance (ft)		5307			991			3533			7761	
Travel Time (s)		103.4			22.5			60.2			132.3	
Confl. Peds. (#/hr)				1		1			1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	5%	6%	0%	0%	3%	2%
Adj. Flow (vph)	129	0	96	2	0	2	53	434	0	2	647	212
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	129	96	0	4	0	53	434	0	2	859	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	25.0		10.0	25.0	
Minimum Split (s)	16.0	16.0	16.0	40.0	40.0		15.0	33.0		15.0	31.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0		20.0	55.0		20.0	55.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		20.0%	55.0%		20.0%	55.0%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0		15.0	49.0		15.0	49.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.5		4.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		5.0	6.0		5.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.7	4.0		2.7	4.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)	0.0	0.0	0.0	7.0	7.0			7.0			10.0	
Flash Dont Walk (s)	0.0	0.0	0.0	27.0	27.0			20.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		13.5	13.5		13.5		61.1	58.2		59.1	52.5	
Actuated g/C Ratio		0.16	0.16		0.16		0.71	0.67		0.68	0.61	
v/c Ratio		0.58	0.29		0.01		0.11	0.19		0.00	0.41	
Control Delay		45.3	9.6		0.0		4.8	6.9		4.5	10.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		45.3	9.6		0.0		4.8	6.9		4.5	10.7	
LOS		D	A		A		A	A		A	B	
Approach Delay		30.1						6.7			10.7	
Approach LOS		C						A			B	
Queue Length 50th (ft)		69	0		0		7	34		0	131	
Queue Length 95th (ft)		127	41		0		20	102		2	204	
Internal Link Dist (ft)		5227			911			3453			7681	
Turn Bay Length (ft)			50				120			130		
Base Capacity (vph)		314	432		407		567	2290		827	2074	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Background AM Peak Hour
10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.41	0.22		0.01		0.09	0.19		0.00	0.41	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 86.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 12.2

Intersection LOS: B

Intersection Capacity Utilization 56.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Sumter Blvd & Appomattox Dr

 Ø1	 Ø2	 Ø4
20 s	55 s	25 s
 Ø5	 Ø6	 Ø8
20 s	55 s	25 s

Lanes, Volumes, Timings
4: Sumter Blvd & Price Blvd

Background AM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	242	57	328	248	275	61	366	122	191	442	102
Future Volume (vph)	179	242	57	328	248	275	61	366	122	191	442	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		225	400		515	210		650	330		400
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (ft)	50			50			50			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3610	1583	1770	3574	1583	1671	3471	1583	3367	3438	1553
Flt Permitted	0.592			0.504			0.487			0.498		
Satd. Flow (perm)	1071	3610	1583	939	3574	1583	857	3471	1583	1765	3438	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			286			217			217
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		2204			1860			7761			1590	
Travel Time (s)		33.4			36.2			176.4			36.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	0%	2%	2%	1%	2%	8%	4%	2%	4%	5%	4%
Adj. Flow (vph)	186	252	59	342	258	286	64	381	127	199	460	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	252	59	342	258	286	64	381	127	199	460	106
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	10.0	25.0	25.0	10.0	25.0	25.0
Minimum Split (s)	14.0	35.0	35.0	14.1	36.1	36.1	17.2	37.2	37.2	17.2	34.2	34.2
Total Split (s)	13.0	28.0	28.0	15.0	30.0	30.0	18.0	32.0	32.0	17.0	31.0	31.0
Total Split (%)	14.1%	30.4%	30.4%	16.3%	32.6%	32.6%	19.6%	34.8%	34.8%	18.5%	33.7%	33.7%
Maximum Green (s)	6.0	21.0	21.0	7.9	22.9	22.9	10.8	24.8	24.8	9.8	23.8	23.8
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	7.2	7.2	7.2	7.2	7.2	7.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	2.0	1.0	1.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		22.0	22.0		23.0	23.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	17.1	11.1	11.1	21.0	13.0	13.0	40.0	30.0	30.0	41.1	33.3	33.3
Actuated g/C Ratio	0.20	0.13	0.13	0.24	0.15	0.15	0.46	0.34	0.34	0.47	0.38	0.38
v/c Ratio	0.73	0.55	0.15	1.14	0.48	0.60	0.13	0.32	0.19	0.20	0.35	0.15
Control Delay	45.3	40.5	0.8	125.8	37.3	10.0	11.1	22.3	0.6	11.0	21.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	40.5	0.8	125.8	37.3	10.0	11.1	22.3	0.6	11.0	21.8	0.4
LOS	D	D	A	F	D	A	B	C	A	B	C	A
Approach Delay		37.6			62.6			16.2			16.0	
Approach LOS		D			E			B			B	
Queue Length 50th (ft)	80	69	0	~195	69	0	16	78	0	25	98	0
Queue Length 95th (ft)	#148	107	0	#385	107	68	37	122	1	45	147	0
Internal Link Dist (ft)		2124			1780			7681			1510	
Turn Bay Length (ft)	400		225	400		515	210		650	330		400
Base Capacity (vph)	254	868	546	300	937	625	500	1192	686	1010	1310	725
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.29	0.11	1.14	0.28	0.46	0.13	0.32	0.19	0.20	0.35	0.15

Intersection Summary

Area Type: Other

Cycle Length: 92

Actuated Cycle Length: 87.4

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.14

Intersection Signal Delay: 35.2

Intersection LOS: D

Intersection Capacity Utilization 79.4%

ICU Level of Service D

Analysis Period (min) 15

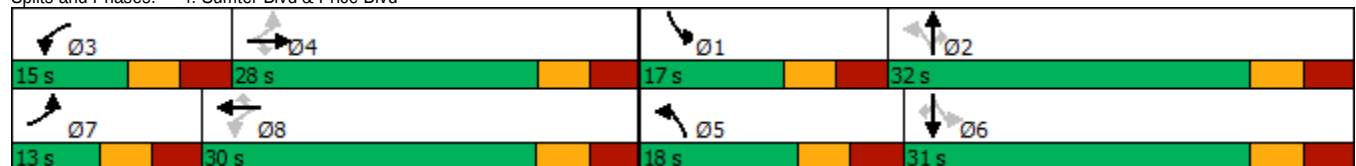
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Sumter Blvd & Price Blvd



Lanes, Volumes, Timings
5: North Port Blvd & US 41

Background AM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	824	60	41	1067	58	53	53	53	50	55	91
Future Volume (vph)	81	824	60	41	1067	58	53	53	53	50	55	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	390		350	350		0	260		90	165		380
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	50			100			25			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										1.00		
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3438	1553	1752	3505	1553	1770	1900	1583	1752	1863	1599
Flt Permitted	0.950			0.950			0.711			0.716		
Satd. Flow (perm)	1752	3438	1553	1752	3505	1553	1324	1900	1583	1320	1863	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			139			142			142
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		1410			5683			1003			1463	
Travel Time (s)		21.4			86.1			22.8			24.9	
Confl. Peds. (#/hr)										1		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	4%	3%	3%	4%	2%	0%	2%	3%	2%	1%
Adj. Flow (vph)	96	981	71	49	1270	69	63	63	63	60	65	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	981	71	49	1270	69	63	63	63	60	65	108
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	12.4	45.8	45.8	12.3	51.8	51.8	10.7	63.5	63.5	10.7	62.5	62.5
Total Split (s)	18.0	74.0	74.0	18.0	74.0	74.0	18.0	20.0	20.0	18.0	20.0	20.0
Total Split (%)	13.8%	56.9%	56.9%	13.8%	56.9%	56.9%	13.8%	15.4%	15.4%	13.8%	15.4%	15.4%
Maximum Green (s)	10.6	67.2	67.2	10.7	67.2	67.2	12.3	13.5	13.5	12.3	13.5	13.5
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.6	2.0	2.0	2.5	2.0	2.0	2.0	2.8	2.8	2.0	2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	5.7	6.5	6.5	5.7	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		29.0	29.0		35.0	35.0		47.0	47.0		46.0	46.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	10.1	71.8	71.8	8.7	67.7	67.7	27.9	19.2	19.2	27.6	19.0	19.0
Actuated g/C Ratio	0.08	0.55	0.55	0.07	0.52	0.52	0.21	0.15	0.15	0.21	0.15	0.15
v/c Ratio	0.71	0.52	0.08	0.42	0.70	0.08	0.20	0.23	0.18	0.19	0.24	0.30
Control Delay	85.9	20.3	0.2	96.7	18.8	0.3	40.1	54.3	1.1	40.0	54.7	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.9	20.3	0.2	96.7	18.8	0.3	40.1	54.3	1.1	40.0	54.7	5.8
LOS	F	C	A	F	B	A	D	D	A	D	D	A
Approach Delay		24.6			20.7			31.8			28.2	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	80	276	0	43	488	0	42	48	0	40	50	0
Queue Length 95th (ft)	#141	314	0	m81	534	m0	75	90	0	73	92	19
Internal Link Dist (ft)		1330			5603			923			1383	
Turn Bay Length (ft)	390		350	350			260		90	165		380
Base Capacity (vph)	142	1899	920	144	1825	875	345	280	354	341	272	355
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Background AM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.52	0.08	0.34	0.70	0.08	0.18	0.23	0.18	0.18	0.24	0.30

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 66 (51%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 23.5

Intersection LOS: C

Intersection Capacity Utilization 60.8%

ICU Level of Service B

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: North Port Blvd & US 41

	Ø1		Ø2 (R)		Ø3		Ø4
18 s		74 s		18 s		20 s	
	Ø5		Ø6 (R)		Ø7		Ø8
18 s		74 s		18 s		20 s	

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	7	75	26	12	155
Future Vol, veh/h	44	7	75	26	12	155
Conflicting Peds, #/hr	0	3	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	2	0	11	1
Mvmt Flow	59	9	100	35	16	207
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	358	122	0	0	136	0
Stage 1	119	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.21	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.299	-
Pot Cap-1 Maneuver	644	935	-	-	1394	-
Stage 1	911	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	635	931	-	-	1393	-
Mov Cap-2 Maneuver	635	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11	0		0.5		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	664	1393	-	
HCM Lane V/C Ratio	-	-	0.102	0.011	-	
HCM Control Delay (s)	-	-	11	7.6	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0	-	

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	151	50	91	158	33	50
Future Vol, veh/h	151	50	91	158	33	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	5	0	4	4	0
Mvmt Flow	162	54	98	170	35	54
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	216	0	555	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	366	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	1366	-	489	858
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	697	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1366	-	450	858
Mov Cap-2 Maneuver	-	-	-	-	450	-
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	697	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	2.9		11.6		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	631	-	-	1366	-	
HCM Lane V/C Ratio	0.141	-	-	0.072	-	
HCM Control Delay (s)	11.6	-	-	7.8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-	

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Background PM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	335	1253	97	53	932	347	172	224	34	444	198	174
Future Volume (vph)	335	1253	97	53	932	347	172	224	34	444	198	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	700		310	360		390	185		0	480		210
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	75			80			50			50		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.97	0.95	0.95
Ped Bike Factor							1.00			1.00		
Frts			0.850			0.850		0.980			0.988	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	1805	5085	1599	1770	1862	0	3467	1763	1490
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	5136	1615	1805	5085	1599	1767	1862	0	3462	1763	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			365		5			3	165
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		5683			3139			1562			1377	
Travel Time (s)		86.1			47.6			35.5			23.5	
Confl. Peds. (#/hr)							2			2		
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
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	2%	0%	0%	1%	1%	3%
Adj. Flow (vph)	353	1319	102	56	981	365	181	236	36	467	208	183
Shared Lane Traffic (%)												10%
Lane Group Flow (vph)	353	1319	102	56	981	365	181	272	0	467	226	165
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0		5.0	7.0	7.0
Minimum Split (s)	12.8	40.8	40.8	12.0	34.8	34.8	11.9	50.9		10.7	48.4	48.4
Total Split (s)	18.0	42.0	42.0	25.0	49.0	49.0	27.0	45.0		28.0	46.0	46.0
Total Split (%)	12.9%	30.0%	30.0%	17.9%	35.0%	35.0%	19.3%	32.1%		20.0%	32.9%	32.9%
Maximum Green (s)	10.2	35.2	35.2	18.0	42.2	42.2	20.1	38.1		22.3	39.6	39.6
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9		3.7	3.7	3.7
All-Red Time (s)	3.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0		2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.8	6.8	6.8	7.0	6.8	6.8	6.9	6.9		5.7	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		27.0	27.0		21.0	21.0		37.0			35.0	35.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	23.5	59.4	59.4	9.7	42.2	42.2	18.0	25.5		21.6	28.4	28.4
Actuated g/C Ratio	0.17	0.42	0.42	0.07	0.30	0.30	0.13	0.18		0.15	0.20	0.20
v/c Ratio	0.60	0.61	0.13	0.45	0.64	0.50	0.80	0.80		0.87	0.63	0.38
Control Delay	83.4	20.9	1.9	73.1	44.6	6.0	83.6	70.1		75.4	57.9	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	83.4	20.9	1.9	73.1	44.6	6.0	83.6	70.1		75.4	57.9	8.6
LOS	F	C	A	E	D	A	F	E		E	E	A
Approach Delay		32.2			35.7			75.5			58.0	
Approach LOS		C			D			E			E	
Queue Length 50th (ft)	175	138	4	50	283	0	160	235		215	198	0
Queue Length 95th (ft)	m170	m141	m6	94	334	75	#259	317		#297	275	61
Internal Link Dist (ft)		5603			3059			1482			1297	
Turn Bay Length (ft)	700		310	360		390	185			480		210
Base Capacity (vph)	588	2179	769	232	1532	736	254	510		552	500	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.60	0.61	0.13	0.24	0.64	0.50	0.71	0.53		0.85	0.45	0.31

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 3 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 42.6

Intersection LOS: D

Intersection Capacity Utilization 76.9%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Sumter Blvd & US 41

			
Ø1	Ø2 (R)	Ø3	Ø4
25 s	42 s	27 s	46 s
			
Ø5	Ø6 (R)	Ø7	Ø8
18 s	49 s	28 s	45 s

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	39	79	845	708	36
Future Vol, veh/h	29	39	79	845	708	36
Conflicting Peds, #/hr	5	0	2	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	3	0	1	1	0
Mvmt Flow	32	43	87	929	778	40
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1444	411	820	0	-	0
Stage 1	800	-	-	-	-	-
Stage 2	644	-	-	-	-	-
Critical Hdwy	6.88	6.96	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.33	2.2	-	-	-
Pot Cap-1 Maneuver	121	587	818	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	479	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	108	586	816	-	-	-
Mov Cap-2 Maneuver	108	-	-	-	-	-
Stage 1	355	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	28.7	0.8		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	816	-	108	586	-	-
HCM Lane V/C Ratio	0.106	-	0.295	0.073	-	-
HCM Control Delay (s)	9.9	-	51.7	11.6	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.4	-	1.1	0.2	-	-

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Background PM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	4	84	2	1	2	95	611	4	1	598	172
Future Volume (vph)	232	4	84	2	1	2	95	611	4	1	598	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		0	120		0	130		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					0.99			1.00		1.00		
Frt			0.850		0.946			0.999			0.966	
Flt Protected		0.953			0.980		0.950			0.950		
Satd. Flow (prot)	0	1793	1583	0	1460	0	1752	3570	0	1805	3453	0
Flt Permitted		0.727			0.893		0.259			0.398		
Satd. Flow (perm)	0	1368	1583	0	1330	0	478	3570	0	755	3453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87		2			1			52	
Link Speed (mph)		35			30			40			40	
Link Distance (ft)		1900			991			3533			7761	
Travel Time (s)		37.0			22.5			60.2			132.3	
Confl. Peds. (#/hr)				1		1			1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	2%	0%	0%	50%	3%	1%	0%	0%	1%	1%
Adj. Flow (vph)	252	4	91	2	1	2	103	664	4	1	650	187
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	256	91	0	5	0	103	668	0	1	837	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	25.0		10.0	25.0	
Minimum Split (s)	16.0	16.0	16.0	40.0	40.0		15.0	33.0		15.0	31.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0		20.0	55.0		20.0	55.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		20.0%	55.0%		20.0%	55.0%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0		15.0	49.0		15.0	49.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.5		4.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		5.0	6.0		5.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.7	4.0		2.7	4.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)	0.0	0.0	0.0	7.0	7.0			7.0			10.0	
Flash Dont Walk (s)	0.0	0.0	0.0	27.0	27.0			20.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		19.1	19.1		19.1		60.9	57.9		58.0	49.2	
Actuated g/C Ratio		0.21	0.21		0.21		0.66	0.63		0.63	0.53	
v/c Ratio		0.90	0.23		0.02		0.23	0.30		0.00	0.45	
Control Delay		72.5	9.7		26.2		6.4	8.9		5.0	13.8	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		72.5	9.7		26.2		6.4	8.9		5.0	13.8	
LOS		E	A		C		A	A		A	B	
Approach Delay		56.0			26.2			8.5			13.8	
Approach LOS		E			C			A			B	
Queue Length 50th (ft)		153	2		2		18	74		0	150	
Queue Length 95th (ft)		#303	42		11		34	159		2	198	
Internal Link Dist (ft)		1820			911			3453			7681	
Turn Bay Length (ft)			50				120			130		
Base Capacity (vph)		283	397		277		530	2249		679	1872	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Background PM Peak Hour
10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.90	0.23		0.02		0.19	0.30		0.00	0.45	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 92

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 19.2

Intersection LOS: B

Intersection Capacity Utilization 64.7%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Sumter Blvd & Appomattox Dr

 Ø1	 Ø2	 Ø4
20 s	55 s	25 s
 Ø5	 Ø6	 Ø8
20 s	55 s	25 s

Lanes, Volumes, Timings
4: Sumter Blvd & Price Blvd

Background PM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	316	66	258	253	159	133	395	264	515	645	140
Future Volume (vph)	217	316	66	258	253	159	133	395	264	515	645	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		225	400		515	210		650	330		400
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (ft)	50			50			50			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor									0.99			
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3610	1615	1770	3574	1583	1805	3539	1583	3467	3574	1553
Flt Permitted	0.586			0.426			0.286			0.495		
Satd. Flow (perm)	1092	3610	1615	794	3574	1583	543	3539	1561	1807	3574	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			218			281			217
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		2204			1860			7761			1590	
Travel Time (s)		33.4			36.2			176.4			36.1	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	0%	0%	2%	1%	2%	0%	2%	2%	1%	1%	4%
Adj. Flow (vph)	231	336	70	274	269	169	141	420	281	548	686	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	231	336	70	274	269	169	141	420	281	548	686	149
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	10.0	25.0	25.0	10.0	25.0	25.0
Minimum Split (s)	14.0	35.0	35.0	14.1	36.1	36.1	17.2	37.2	37.2	17.2	34.2	34.2
Total Split (s)	13.0	28.0	28.0	15.0	30.0	30.0	18.0	32.0	32.0	17.0	31.0	31.0
Total Split (%)	14.1%	30.4%	30.4%	16.3%	32.6%	32.6%	19.6%	34.8%	34.8%	18.5%	33.7%	33.7%
Maximum Green (s)	6.0	21.0	21.0	7.9	22.9	22.9	10.8	24.8	24.8	9.8	23.8	23.8
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	7.2	7.2	7.2	7.2	7.2	7.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	2.0	1.0	1.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		22.0	22.0		23.0	23.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	18.8	12.8	12.8	22.6	14.7	14.7	40.2	30.0	30.0	39.5	29.7	29.7
Actuated g/C Ratio	0.21	0.14	0.14	0.25	0.17	0.17	0.45	0.34	0.34	0.44	0.33	0.33
v/c Ratio	0.84	0.65	0.17	0.95	0.46	0.38	0.36	0.35	0.39	0.56	0.58	0.23
Control Delay	54.7	42.2	0.9	72.6	36.1	4.5	14.4	23.6	4.8	15.4	27.2	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	42.2	0.9	72.6	36.1	4.5	14.4	23.6	4.8	15.4	27.2	1.7
LOS	D	D	A	E	D	A	B	C	A	B	C	A
Approach Delay		42.2			42.6			15.8			19.8	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	102	95	0	125	72	0	38	92	0	83	164	0
Queue Length 95th (ft)	#194	139	0	#267	110	27	75	140	55	126	238	12
Internal Link Dist (ft)		2124			1780			7681			1510	
Turn Bay Length (ft)	400		225	400		515	210		650	330		400
Base Capacity (vph)	276	851	547	287	919	569	402	1193	712	983	1190	661
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
4: Sumter Blvd & Price Blvd

Background PM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.39	0.13	0.95	0.29	0.30	0.35	0.35	0.39	0.56	0.58	0.23

Intersection Summary

Area Type: Other

Cycle Length: 92

Actuated Cycle Length: 89

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 27.4

Intersection LOS: C

Intersection Capacity Utilization 86.5%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Sumter Blvd & Price Blvd

 Ø3	 Ø4	 Ø1	 Ø2
15 s	28 s	17 s	32 s
 Ø7	 Ø8	 Ø5	 Ø6
13 s	30 s	18 s	31 s

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Background PM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	1465	62	55	1058	63	49	85	83	62	56	94
Future Volume (vph)	168	1465	62	55	1058	63	49	85	83	62	56	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	390		350	350		0	260		90	165		380
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	50			100			25			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				1.00			1.00					0.99
Frts			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3574	1615	1770	3539	1553	1805	1863	1538	1770	1900	1599
Flt Permitted	0.950			0.950			0.719			0.690		
Satd. Flow (perm)	1770	3574	1615	1769	3539	1553	1364	1863	1538	1285	1900	1579
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			186			129			189			189
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		1410			5683			1003			1463	
Travel Time (s)		21.4			86.1			22.8			24.9	
Confl. Peds. (#/hr)				1			2					1
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
Heavy Vehicles (%)	2%	1%	0%	2%	2%	4%	0%	2%	5%	2%	0%	1%
Adj. Flow (vph)	177	1542	65	58	1114	66	52	89	87	65	59	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	177	1542	65	58	1114	66	52	89	87	65	59	99
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	12.4	45.8	45.8	12.3	51.8	51.8	10.7	63.5	63.5	10.7	62.5	62.5
Total Split (s)	18.0	45.0	45.0	32.0	59.0	59.0	18.0	46.0	46.0	17.0	45.0	45.0
Total Split (%)	12.9%	32.1%	32.1%	22.9%	42.1%	42.1%	12.9%	32.9%	32.9%	12.1%	32.1%	32.1%
Maximum Green (s)	10.6	38.2	38.2	24.7	52.2	52.2	12.3	39.5	39.5	11.3	38.5	38.5
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.6	2.0	2.0	2.5	2.0	2.0	2.0	2.8	2.8	2.0	2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	5.7	6.5	6.5	5.7	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		29.0	29.0		35.0	35.0		47.0	47.0		46.0	46.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	10.6	55.6	55.6	10.0	52.2	52.2	52.1	44.5	44.5	53.4	45.2	45.2
Actuated g/C Ratio	0.08	0.40	0.40	0.07	0.37	0.37	0.37	0.32	0.32	0.38	0.32	0.32
v/c Ratio	1.32	1.09	0.09	0.46	0.84	0.10	0.10	0.15	0.14	0.12	0.10	0.16
Control Delay	234.9	91.2	0.2	79.9	43.4	1.5	25.9	37.0	0.5	26.2	35.9	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	234.9	91.2	0.2	79.9	43.4	1.5	25.9	37.0	0.5	26.2	35.9	0.5
LOS	F	F	A	E	D	A	C	D	A	C	D	A
Approach Delay		102.1			42.9			20.6			17.4	
Approach LOS		F			D			C			B	
Queue Length 50th (ft)	~208	~862	0	56	277	0	29	60	0	36	39	0
Queue Length 95th (ft)	#363	#1051	0	m87	352	m3	57	108	0	68	76	0
Internal Link Dist (ft)		1330			5603			923			1383	
Turn Bay Length (ft)	390		350	350			260		90	165		380
Base Capacity (vph)	134	1419	753	312	1319	659	576	591	617	543	613	637
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Background PM Peak Hour
10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.32	1.09	0.09	0.19	0.84	0.10	0.09	0.15	0.14	0.12	0.10	0.16

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 66 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 70.2

Intersection LOS: E

Intersection Capacity Utilization 108.5%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

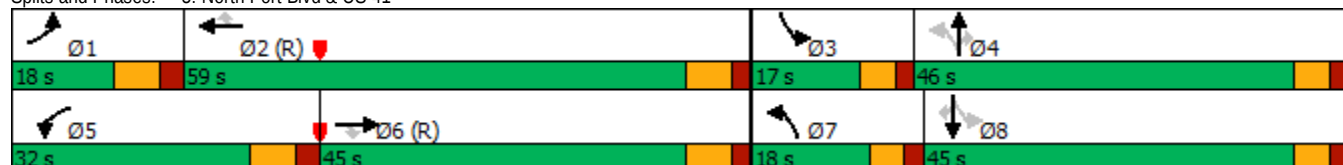
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: North Port Blvd & US 41



Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	12	207	56	6	119
Future Vol, veh/h	36	12	207	56	6	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	4	0	4	5	20	2
Mvmt Flow	41	14	238	64	7	137
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	421	270	0	0	302	0
Stage 1	270	-	-	-	-	-
Stage 2	151	-	-	-	-	-
Critical Hdwy	6.44	6.2	-	-	4.3	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.3	-	-	2.38	-
Pot Cap-1 Maneuver	585	774	-	-	1163	-
Stage 1	771	-	-	-	-	-
Stage 2	872	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	581	774	-	-	1163	-
Mov Cap-2 Maneuver	581	-	-	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	872	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.4	0		0.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	620	1163	-	
HCM Lane V/C Ratio	-	-	0.089	0.006	-	
HCM Control Delay (s)	-	-	11.4	8.1	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0	-	

Intersection						
Int Delay, s/veh	6.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	206	41	74	189	89	128
Future Vol, veh/h	206	41	74	189	89	128
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	4	1	4	4
Mvmt Flow	245	49	88	225	106	152
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	296	0	673	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	401	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1254	-	417	762
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	672	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1252	-	383	761
Mov Cap-2 Maneuver	-	-	-	-	383	-
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	672	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.3		17.5	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	542	-	-	1252	-	
HCM Lane V/C Ratio	0.477	-	-	0.07	-	
HCM Control Delay (s)	17.5	-	-	8.1	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	2.5	-	-	0.2	-	

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Buildout AM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	726	53	19	972	274	88	118	16	447	140	299
Future Volume (vph)	191	726	53	19	972	274	88	118	16	447	140	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	700		310	360		390	185		0	480		210
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	75			80			50			50		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.97	0.95	0.95
Ped Bike Factor								1.00				
Frts			0.850			0.850		0.982			0.941	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4940	1509	1805	5036	1538	1736	1783	0	3433	1617	1504
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4940	1509	1805	5036	1538	1736	1783	0	3433	1617	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			146			295		5			21	225
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		5683			3139			1562			1377	
Travel Time (s)		86.1			47.6			35.5			23.5	
Confl. Peds. (#/hr)									1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	5%	7%	0%	3%	5%	4%	4%	8%	2%	7%	2%
Adj. Flow (vph)	205	781	57	20	1045	295	95	127	17	481	151	322
Shared Lane Traffic (%)												30%
Lane Group Flow (vph)	205	781	57	20	1045	295	95	144	0	481	248	225
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0		5.0	7.0	7.0
Minimum Split (s)	12.8	40.8	40.8	12.0	34.8	34.8	11.9	50.9		10.7	48.4	48.4
Total Split (s)	18.0	55.0	55.0	20.0	57.0	57.0	29.0	31.0		24.0	26.0	26.0
Total Split (%)	13.8%	42.3%	42.3%	15.4%	43.8%	43.8%	22.3%	23.8%		18.5%	20.0%	20.0%
Maximum Green (s)	10.2	48.2	48.2	13.0	50.2	50.2	22.1	24.1		18.3	19.6	19.6
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9		3.7	3.7	3.7
All-Red Time (s)	3.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0		2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.8	6.8	6.8	7.0	6.8	6.8	6.9	6.9		5.7	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		27.0	27.0		21.0	21.0		37.0			35.0	35.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	11.0	66.8	66.8	7.0	54.2	54.2	12.4	19.3		18.3	24.5	24.5
Actuated g/C Ratio	0.08	0.51	0.51	0.05	0.42	0.42	0.10	0.15		0.14	0.19	0.19
v/c Ratio	0.71	0.31	0.07	0.21	0.50	0.36	0.58	0.54		1.00	0.77	0.48
Control Delay	60.8	38.2	6.6	63.2	29.7	4.2	69.2	55.7		95.5	62.3	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	60.8	38.2	6.6	63.2	29.7	4.2	69.2	55.7		95.5	62.3	9.3
LOS	E	D	A	E	C	A	E	E		F	E	A
Approach Delay		40.9			24.7			61.0			66.5	
Approach LOS		D			C			E			E	
Queue Length 50th (ft)	90	195	3	16	247	0	78	108		211	189	0
Queue Length 95th (ft)	#146	268	24	44	293	58	132	173		#326	#326	75
Internal Link Dist (ft)		5603			3059			1482			1297	
Turn Bay Length (ft)	700		310	360		390	185			480		210
Base Capacity (vph)	292	2540	846	180	2099	812	295	334		483	321	466
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Buildout AM Peak Hour
10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.70	0.31	0.07	0.11	0.50	0.36	0.32	0.43		1.00	0.77	0.48

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 109 (84%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 42.9

Intersection LOS: D

Intersection Capacity Utilization 67.8%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Sumter Blvd & US 41

 Ø1	 Ø2 (R)	 Ø3	 Ø4
20 s	55 s	29 s	26 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
18 s	57 s	24 s	31 s

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	58	123	94	451	814	39
Future Vol, veh/h	58	123	94	451	814	39
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	0	0	6	2	0
Mvmt Flow	62	132	101	485	875	42
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1342	460	918	0	-	0
Stage 1	897	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Critical Hdwy	6.88	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	141	554	752	-	-	-
Stage 1	354	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	122	553	751	-	-	-
Mov Cap-2 Maneuver	122	-	-	-	-	-
Stage 1	306	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	29	1.8		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	751	-	122	553	-	-
HCM Lane V/C Ratio	0.135	-	0.511	0.239	-	-
HCM Control Delay (s)	10.5	-	61.9	13.5	-	-
HCM Lane LOS	B	-	F	B	-	-
HCM 95th %tile Q(veh)	0.5	-	2.4	0.9	-	-

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Buildout AM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	3	120	4	2	2	71	422	3	2	611	227
Future Volume (vph)	164	3	120	4	2	2	71	422	3	2	611	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		0	120		0	130		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					1.00			1.00		1.00		
Frt			0.850		0.966			0.999			0.959	
Flt Protected		0.953			0.976		0.950			0.950		
Satd. Flow (prot)	0	1793	1615	0	1786	0	1719	3403	0	1805	3370	0
Flt Permitted		0.724			0.859		0.239			0.486		
Satd. Flow (perm)	0	1362	1615	0	1570	0	432	3403	0	922	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96		2			1			75	
Link Speed (mph)		35			30			40			40	
Link Distance (ft)		1965			991			3533			7761	
Travel Time (s)		38.3			22.5			60.2			132.3	
Confl. Peds. (#/hr)				1		1			1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	5%	6%	0%	0%	3%	2%
Adj. Flow (vph)	178	3	130	4	2	2	77	459	3	2	664	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	181	130	0	8	0	77	462	0	2	911	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	25.0		10.0	25.0	
Minimum Split (s)	16.0	16.0	16.0	40.0	40.0		15.0	33.0		15.0	31.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0		20.0	55.0		20.0	55.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		20.0%	55.0%		20.0%	55.0%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0		15.0	49.0		15.0	49.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.5		4.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		5.0	6.0		5.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.7	4.0		2.7	4.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)	0.0	0.0	0.0	7.0	7.0			7.0			10.0	
Flash Dont Walk (s)	0.0	0.0	0.0	27.0	27.0			20.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		15.9	15.9		15.9		61.6	58.7		58.7	50.0	
Actuated g/C Ratio		0.18	0.18		0.18		0.69	0.66		0.66	0.56	
v/c Ratio		0.75	0.36		0.03		0.17	0.21		0.00	0.48	
Control Delay		55.6	14.4		27.7		5.8	7.6		5.0	13.1	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		55.6	14.4		27.7		5.8	7.6		5.0	13.1	
LOS		E	B		C		A	A		A	B	
Approach Delay		38.4			27.7			7.4			13.1	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)		102	17		3		13	46		0	160	
Queue Length 95th (ft)		#188	66		15		27	108		2	218	
Internal Link Dist (ft)		1885			911			3453			7681	
Turn Bay Length (ft)			50				120			130		
Base Capacity (vph)		292	421		337		519	2231		793	1916	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Buildout AM Peak Hour
10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.62	0.31		0.02		0.15	0.21		0.00	0.48	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 89.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 15.9

Intersection LOS: B

Intersection Capacity Utilization 62.6%

ICU Level of Service B

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Sumter Blvd & Appomattox Dr

 Ø1	 Ø2	 Ø4
20 s	55 s	25 s
 Ø5	 Ø6	 Ø8
20 s	55 s	25 s

Lanes, Volumes, Timings
4: Sumter Blvd & Price Blvd

Buildout AM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	242	57	344	248	275	61	411	145	191	474	102
Future Volume (vph)	179	242	57	344	248	275	61	411	145	191	474	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		225	400		515	210		650	330		400
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (ft)	50			50			50			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3610	1583	1770	3574	1583	1671	3471	1583	3367	3438	1553
Flt Permitted	0.592			0.504			0.466			0.460		
Satd. Flow (perm)	1071	3610	1583	939	3574	1583	820	3471	1583	1630	3438	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			286			217			217
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		2204			1860			7761			1590	
Travel Time (s)		33.4			36.2			176.4			36.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	0%	2%	2%	1%	2%	8%	4%	2%	4%	5%	4%
Adj. Flow (vph)	186	252	59	358	258	286	64	428	151	199	494	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	252	59	358	258	286	64	428	151	199	494	106
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	10.0	25.0	25.0	10.0	25.0	25.0
Minimum Split (s)	14.0	35.0	35.0	14.1	36.1	36.1	17.2	37.2	37.2	17.2	34.2	34.2
Total Split (s)	13.0	28.0	28.0	15.0	30.0	30.0	18.0	32.0	32.0	17.0	31.0	31.0
Total Split (%)	14.1%	30.4%	30.4%	16.3%	32.6%	32.6%	19.6%	34.8%	34.8%	18.5%	33.7%	33.7%
Maximum Green (s)	6.0	21.0	21.0	7.9	22.9	22.9	10.8	24.8	24.8	9.8	23.8	23.8
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	7.2	7.2	7.2	7.2	7.2	7.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	2.0	1.0	1.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		22.0	22.0		23.0	23.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	17.1	11.1	11.1	21.0	13.0	13.0	40.0	30.0	30.0	41.1	33.3	33.3
Actuated g/C Ratio	0.20	0.13	0.13	0.24	0.15	0.15	0.46	0.34	0.34	0.47	0.38	0.38
v/c Ratio	0.73	0.55	0.15	1.19	0.48	0.60	0.14	0.36	0.22	0.21	0.38	0.15
Control Delay	45.3	40.5	0.8	144.9	37.3	10.0	11.1	22.8	1.7	11.0	22.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	40.5	0.8	144.9	37.3	10.0	11.1	22.8	1.7	11.0	22.1	0.4
LOS	D	D	A	F	D	A	B	C	A	B	C	A
Approach Delay		37.6			71.4			16.6			16.5	
Approach LOS		D			E			B			B	
Queue Length 50th (ft)	80	69	0	~163	69	0	16	90	0	25	107	0
Queue Length 95th (ft)	#148	107	0	#407	107	68	37	136	13	45	159	0
Internal Link Dist (ft)		2124			1780			7681			1510	
Turn Bay Length (ft)	400		225	400		515	210		650	330		400
Base Capacity (vph)	254	868	546	300	937	625	488	1192	686	961	1310	725
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.29	0.11	1.19	0.28	0.46	0.13	0.36	0.22	0.21	0.38	0.15

Intersection Summary	
Area Type:	Other
Cycle Length:	92
Actuated Cycle Length:	87.4
Natural Cycle:	105
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.19
Intersection Signal Delay:	37.6
Intersection LOS:	D
Intersection Capacity Utilization:	80.3%
ICU Level of Service:	D
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 4: Sumter Blvd & Price Blvd

 Ø3	 Ø4	 Ø1	 Ø2
15 s	28 s	17 s	32 s
 Ø7	 Ø8	 Ø5	 Ø6
13 s	30 s	18 s	31 s

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Buildout AM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	824	60	41	1067	58	53	62	53	50	68	186
Future Volume (vph)	147	824	60	41	1067	58	53	62	53	50	68	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	390		350	350		0	260		90	165		380
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	50			100			25			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										1.00		
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3438	1553	1752	3505	1553	1770	1900	1583	1752	1863	1599
Flt Permitted	0.950			0.950			0.701			0.709		
Satd. Flow (perm)	1752	3438	1553	1752	3505	1553	1306	1900	1583	1307	1863	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			139			142			221
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		1410			5683			1003			1463	
Travel Time (s)		21.4			86.1			22.8			24.9	
Confl. Peds. (#/hr)										1		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	4%	3%	3%	4%	2%	0%	2%	3%	2%	1%
Adj. Flow (vph)	175	981	71	49	1270	69	63	74	63	60	81	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	981	71	49	1270	69	63	74	63	60	81	221
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	12.4	45.8	45.8	12.3	51.8	51.8	10.7	63.5	63.5	10.7	62.5	62.5
Total Split (s)	18.0	74.0	74.0	18.0	74.0	74.0	18.0	20.0	20.0	18.0	20.0	20.0
Total Split (%)	13.8%	56.9%	56.9%	13.8%	56.9%	56.9%	13.8%	15.4%	15.4%	13.8%	15.4%	15.4%
Maximum Green (s)	10.6	67.2	67.2	10.7	67.2	67.2	12.3	13.5	13.5	12.3	13.5	13.5
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.6	2.0	2.0	2.5	2.0	2.0	2.0	2.8	2.8	2.0	2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	5.7	6.5	6.5	5.7	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		29.0	29.0		35.0	35.0		47.0	47.0		46.0	46.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	10.6	71.8	71.8	8.7	67.2	67.2	27.9	19.2	19.2	27.6	19.0	19.0
Actuated g/C Ratio	0.08	0.55	0.55	0.07	0.52	0.52	0.21	0.15	0.15	0.21	0.15	0.15
v/c Ratio	1.23	0.52	0.08	0.42	0.70	0.08	0.20	0.26	0.18	0.20	0.30	0.52
Control Delay	199.4	20.3	0.2	96.3	18.9	0.2	40.1	54.8	1.1	40.0	55.7	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	199.4	20.3	0.2	96.3	18.9	0.2	40.1	54.8	1.1	40.0	55.7	11.6
LOS	F	C	A	F	B	A	D	D	A	D	E	B
Approach Delay		44.7			20.7			33.3			26.2	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	~181	276	0	44	487	0	42	57	0	40	63	0
Queue Length 95th (ft)	#302	314	0	m81	533	m0	75	102	0	73	111	59
Internal Link Dist (ft)		1330			5603			923			1383	
Turn Bay Length (ft)	390		350	350			260		90	165		380
Base Capacity (vph)	142	1899	920	144	1811	869	343	280	354	340	272	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Buildout AM Peak Hour
10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.23	0.52	0.08	0.34	0.70	0.08	0.18	0.26	0.18	0.18	0.30	0.52

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 66 (51%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.23

Intersection Signal Delay: 31.4

Intersection LOS: C

Intersection Capacity Utilization 64.5%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: North Port Blvd & US 41

	Ø1		Ø2 (R)		Ø3		Ø4
18 s		74 s		18 s		20 s	
	Ø5		Ø6 (R)		Ø7		Ø8
18 s		74 s		18 s		20 s	

Intersection						
Int Delay, s/veh	3.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	117	13	99	77	16	190
Future Vol, veh/h	117	13	99	77	16	190
Conflicting Peds, #/hr	0	3	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	2	0	11	1
Mvmt Flow	156	17	132	103	21	253
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	480	188	0	0	236	0
Stage 1	185	-	-	-	-	-
Stage 2	295	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.21	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.299	-
Pot Cap-1 Maneuver	548	859	-	-	1280	-
Stage 1	852	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	537	856	-	-	1279	-
Mov Cap-2 Maneuver	537	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	14.3	0		0.6		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	558	1279	-	
HCM Lane V/C Ratio	-	-	0.311	0.017	-	
HCM Control Delay (s)	-	-	14.3	7.9	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	1.3	0.1	-	

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	169	54	126	184	39	74
Future Vol, veh/h	169	54	126	184	39	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	5	0	4	4	0
Mvmt Flow	182	58	135	198	42	80
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	240	0	679	211
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	468	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	1339	-	414	834
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1339	-	367	834
Mov Cap-2 Maneuver	-	-	-	-	367	-
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	626	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		3.2		12.9	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	579	-	-	1339	-	
HCM Lane V/C Ratio	0.21	-	-	0.101	-	
HCM Control Delay (s)	12.9	-	-	8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.8	-	-	0.3	-	

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	38	63	69	99	79
Future Vol, veh/h	55	38	63	69	99	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	41	68	75	108	86
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	143	0	-	0	267	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	161	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1440	-	-	-	722	948
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	868	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1440	-	-	-	691	948
Mov Cap-2 Maneuver	-	-	-	-	691	-
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	868	-
Approach	EB	WB		SB		
HCM Control Delay, s	4.5	0		10.3		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1440	-	-	-	691	948
HCM Lane V/C Ratio	0.042	-	-	-	0.156	0.091
HCM Control Delay (s)	7.6	0	-	-	11.2	9.2
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.3

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	202	42	56	244	61	80
Future Vol, veh/h	202	42	56	244	61	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	220	46	61	265	66	87
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	266	0	630	243
Stage 1	-	-	-	-	243	-
Stage 2	-	-	-	-	387	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1298	-	446	796
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	686	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1298	-	421	796
Mov Cap-2 Maneuver	-	-	-	-	421	-
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	686	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1.5		13.5		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	575	-	-	1298	-	
HCM Lane V/C Ratio	0.267	-	-	0.047	-	
HCM Control Delay (s)	13.5	-	-	7.9	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-	

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Buildout PM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	335	1253	97	53	932	447	172	233	34	525	206	174
Future Volume (vph)	335	1253	97	53	932	447	172	233	34	525	206	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	700		310	360		390	185		0	480		210
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	75			80			50			50		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.97	0.95	0.95
Ped Bike Factor							1.00			1.00		
Frts			0.850			0.850		0.981			0.989	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	1805	5085	1599	1770	1864	0	3467	1765	1490
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	5136	1615	1805	5085	1599	1767	1864	0	3463	1765	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			471		5			3	165
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		5683			3139			1562			1377	
Travel Time (s)		86.1			47.6			35.5			23.5	
Confl. Peds. (#/hr)							2			2		
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
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	2%	0%	0%	1%	1%	3%
Adj. Flow (vph)	353	1319	102	56	981	471	181	245	36	553	217	183
Shared Lane Traffic (%)												10%
Lane Group Flow (vph)	353	1319	102	56	981	471	181	281	0	553	235	165
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0		5.0	7.0	7.0
Minimum Split (s)	12.8	40.8	40.8	12.0	34.8	34.8	11.9	50.9		10.7	48.4	48.4
Total Split (s)	18.0	42.0	42.0	25.0	49.0	49.0	27.0	45.0		28.0	46.0	46.0
Total Split (%)	12.9%	30.0%	30.0%	17.9%	35.0%	35.0%	19.3%	32.1%		20.0%	32.9%	32.9%
Maximum Green (s)	10.2	35.2	35.2	18.0	42.2	42.2	20.1	38.1		22.3	39.6	39.6
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9		3.7	3.7	3.7
All-Red Time (s)	3.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0		2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.8	6.8	6.8	7.0	6.8	6.8	6.9	6.9		5.7	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		27.0	27.0		21.0	21.0		37.0			35.0	35.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	22.2	58.1	58.1	9.7	42.2	42.2	18.0	26.1		22.3	29.7	29.7
Actuated g/C Ratio	0.16	0.42	0.42	0.07	0.30	0.30	0.13	0.19		0.16	0.21	0.21
v/c Ratio	0.64	0.62	0.14	0.45	0.64	0.58	0.80	0.80		1.00	0.62	0.37
Control Delay	84.4	21.3	1.9	73.1	44.6	6.2	83.6	69.9		96.9	56.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	84.4	21.3	1.9	73.1	44.6	6.2	83.6	69.9		96.9	56.8	8.4
LOS	F	C	A	E	D	A	F	E		F	E	A
Approach Delay		32.7			33.7			75.3			71.7	
Approach LOS		C			C			E			E	
Queue Length 50th (ft)	175	138	4	50	283	0	160	243		~263	207	0
Queue Length 95th (ft)	m170	m141	m6	94	334	86	#259	325		#387	286	61
Internal Link Dist (ft)		5603			3059			1482			1297	
Turn Bay Length (ft)	700		310	360		390	185			480		210
Base Capacity (vph)	554	2130	754	232	1532	811	254	510		552	501	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Buildout PM Peak Hour
10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.64	0.62	0.14	0.24	0.64	0.58	0.71	0.55		1.00	0.47	0.31

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 3 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 45.1

Intersection LOS: D

Intersection Capacity Utilization 79.7%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

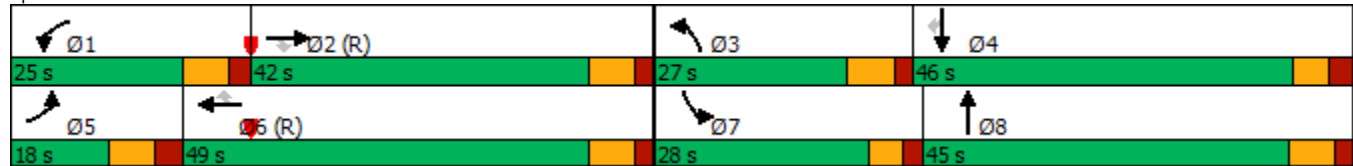
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Sumter Blvd & US 41



Intersection						
Int Delay, s/veh	6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	101	155	878	735	63
Future Vol, veh/h	51	101	155	878	735	63
Conflicting Peds, #/hr	5	0	2	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	3	0	1	1	0
Mvmt Flow	56	111	170	965	808	69
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1673	441	879	0	-	0
Stage 1	845	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Critical Hdwy	6.88	6.96	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.33	2.2	-	-	-
Pot Cap-1 Maneuver	85	561	777	-	-	-
Stage 1	377	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	66	560	776	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	294	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	67	1.6		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	776	-	66	560	-	-
HCM Lane V/C Ratio	0.219	-	0.849	0.198	-	-
HCM Control Delay (s)	10.9	-	173.9	13	-	-
HCM Lane LOS	B	-	F	B	-	-
HCM 95th %tile Q(veh)	0.8	-	4	0.7	-	-

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Buildout PM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	269	7	111	5	4	2	128	630	7	1	622	219
Future Volume (vph)	269	7	111	5	4	2	128	630	7	1	622	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		0	120		0	130		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					1.00			1.00		1.00		
Frt			0.850		0.975			0.998			0.961	
Flt Protected		0.954			0.978		0.950			0.950		
Satd. Flow (prot)	0	1795	1583	0	1657	0	1752	3567	0	1805	3435	0
Flt Permitted		0.724			0.804		0.227			0.388		
Satd. Flow (perm)	0	1362	1583	0	1362	0	419	3567	0	736	3435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87		2			2			69	
Link Speed (mph)		35			30			40			40	
Link Distance (ft)		1900			991			3533			7761	
Travel Time (s)		37.0			22.5			60.2			132.3	
Confl. Peds. (#/hr)				1		1			1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	2%	0%	0%	50%	3%	1%	0%	0%	1%	1%
Adj. Flow (vph)	292	8	121	5	4	2	139	685	8	1	676	238
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	121	0	11	0	139	693	0	1	914	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	25.0		10.0	25.0	
Minimum Split (s)	16.0	16.0	16.0	40.0	40.0		15.0	33.0		15.0	31.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0		20.0	55.0		20.0	55.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		20.0%	55.0%		20.0%	55.0%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0		15.0	49.0		15.0	49.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.5		4.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		5.0	6.0		5.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.7	4.0		2.7	4.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)	0.0	0.0	0.0	7.0	7.0			7.0			10.0	
Flash Dont Walk (s)	0.0	0.0	0.0	27.0	27.0			20.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		19.0	19.0		19.0		64.0	61.0		60.0	49.0	
Actuated g/C Ratio		0.20	0.20		0.20		0.67	0.64		0.63	0.52	
v/c Ratio		1.10	0.31		0.04		0.33	0.30		0.00	0.51	
Control Delay		122.9	14.2		28.6		7.4	8.8		5.0	15.0	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		122.9	14.2		28.6		7.4	8.8		5.0	15.0	
LOS		F	B		C		A	A		A	B	
Approach Delay		91.6			28.6			8.5			15.0	
Approach LOS		F			C			A			B	
Queue Length 50th (ft)		~207	17		4		25	78		0	166	
Queue Length 95th (ft)		#369	64		20		45	166		2	218	
Internal Link Dist (ft)		1820			911			3453			7681	
Turn Bay Length (ft)			50				120			130		
Base Capacity (vph)		272	386		274		497	2291		672	1804	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Buildout PM Peak Hour
10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		1.10	0.31		0.04		0.28	0.30		0.00	0.51	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 95

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 27.4

Intersection LOS: C

Intersection Capacity Utilization 68.6%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Sumter Blvd & Appomattox Dr

 Ø1	 Ø2	 Ø4
20 s	55 s	25 s
 Ø5	 Ø6	 Ø8
20 s	55 s	25 s

Lanes, Volumes, Timings
4: Sumter Blvd & Price Blvd

Buildout PM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	316	66	281	253	159	133	433	282	515	693	140
Future Volume (vph)	217	316	66	281	253	159	133	433	282	515	693	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		225	400		515	210		650	330		400
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (ft)	50			50			50			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor									0.99			
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3610	1615	1770	3574	1583	1805	3539	1583	3467	3574	1553
Flt Permitted	0.586			0.426			0.254			0.461		
Satd. Flow (perm)	1092	3610	1615	794	3574	1583	483	3539	1561	1682	3574	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			218			280			217
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		2204			1860			7761			1590	
Travel Time (s)		33.4			36.2			176.4			36.1	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	0%	0%	2%	1%	2%	0%	2%	2%	1%	1%	4%
Adj. Flow (vph)	231	336	70	299	269	169	141	461	300	548	737	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	231	336	70	299	269	169	141	461	300	548	737	149
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	10.0	25.0	25.0	10.0	25.0	25.0
Minimum Split (s)	14.0	35.0	35.0	14.1	36.1	36.1	17.2	37.2	37.2	17.2	34.2	34.2
Total Split (s)	13.0	28.0	28.0	15.0	30.0	30.0	18.0	32.0	32.0	17.0	31.0	31.0
Total Split (%)	14.1%	30.4%	30.4%	16.3%	32.6%	32.6%	19.6%	34.8%	34.8%	18.5%	33.7%	33.7%
Maximum Green (s)	6.0	21.0	21.0	7.9	22.9	22.9	10.8	24.8	24.8	9.8	23.8	23.8
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	7.2	7.2	7.2	7.2	7.2	7.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	2.0	1.0	1.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		22.0	22.0		23.0	23.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	18.8	12.8	12.8	22.6	14.7	14.7	40.2	30.0	30.0	39.5	29.7	29.7
Actuated g/C Ratio	0.21	0.14	0.14	0.25	0.17	0.17	0.45	0.34	0.34	0.44	0.33	0.33
v/c Ratio	0.84	0.65	0.17	1.04	0.46	0.38	0.38	0.39	0.42	0.58	0.62	0.23
Control Delay	54.7	42.2	0.9	94.5	36.1	4.5	14.8	24.0	5.8	15.8	28.1	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	42.2	0.9	94.5	36.1	4.5	14.8	24.0	5.8	15.8	28.1	1.7
LOS	D	D	A	F	D	A	B	C	A	B	C	A
Approach Delay		42.2			52.6			16.5			20.7	
Approach LOS		D			D			B			C	
Queue Length 50th (ft)	102	95	0	~147	72	0	38	102	7	83	180	0
Queue Length 95th (ft)	#194	139	0	#308	110	27	75	154	65	126	260	12
Internal Link Dist (ft)		2124			1780			7681			1510	
Turn Bay Length (ft)	400		225	400		515	210		650	330		400
Base Capacity (vph)	276	851	547	287	919	569	382	1193	711	942	1190	661
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
4: Sumter Blvd & Price Blvd

Buildout PM Peak Hour
10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.39	0.13	1.04	0.29	0.30	0.37	0.39	0.42	0.58	0.62	0.23

Intersection Summary

Area Type: Other

Cycle Length: 92

Actuated Cycle Length: 89

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 29.7

Intersection LOS: C

Intersection Capacity Utilization 87.7%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Sumter Blvd & Price Blvd

 Ø3	 Ø4	 Ø1	 Ø2
15 s	28 s	17 s	32 s
 Ø7	 Ø8	 Ø5	 Ø6
13 s	30 s	18 s	31 s

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Buildout PM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	1465	62	55	1058	63	49	99	83	62	68	174
Future Volume (vph)	268	1465	62	55	1058	63	49	99	83	62	68	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	390		350	350		0	260		90	165		380
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	50			100			25			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				1.00			1.00					0.99
Frts			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3574	1615	1770	3539	1553	1805	1863	1538	1770	1900	1599
Flt Permitted	0.950			0.950			0.710			0.681		
Satd. Flow (perm)	1770	3574	1615	1769	3539	1553	1347	1863	1538	1269	1900	1579
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			186			129			189			189
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		1410			5683			1003			1463	
Travel Time (s)		21.4			86.1			22.8			24.9	
Confl. Peds. (#/hr)				1			2					1
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
Heavy Vehicles (%)	2%	1%	0%	2%	2%	4%	0%	2%	5%	2%	0%	1%
Adj. Flow (vph)	282	1542	65	58	1114	66	52	104	87	65	72	183
Shared Lane Traffic (%)												
Lane Group Flow (vph)	282	1542	65	58	1114	66	52	104	87	65	72	183
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	12.4	45.8	45.8	12.3	51.8	51.8	10.7	63.5	63.5	10.7	62.5	62.5
Total Split (s)	18.0	45.0	45.0	32.0	59.0	59.0	18.0	46.0	46.0	17.0	45.0	45.0
Total Split (%)	12.9%	32.1%	32.1%	22.9%	42.1%	42.1%	12.9%	32.9%	32.9%	12.1%	32.1%	32.1%
Maximum Green (s)	10.6	38.2	38.2	24.7	52.2	52.2	12.3	39.5	39.5	11.3	38.5	38.5
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.6	2.0	2.0	2.5	2.0	2.0	2.0	2.8	2.8	2.0	2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	5.7	6.5	6.5	5.7	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		29.0	29.0		35.0	35.0		47.0	47.0		46.0	46.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	10.6	55.6	55.6	10.0	52.2	52.2	52.1	44.5	44.5	53.4	45.2	45.2
Actuated g/C Ratio	0.08	0.40	0.40	0.07	0.37	0.37	0.37	0.32	0.32	0.38	0.32	0.32
v/c Ratio	2.10	1.09	0.09	0.46	0.84	0.10	0.10	0.18	0.14	0.13	0.12	0.29
Control Delay	551.0	91.2	0.2	79.9	43.4	1.5	26.0	37.3	0.5	26.2	36.1	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	551.0	91.2	0.2	79.9	43.4	1.5	26.0	37.3	0.5	26.2	36.1	5.6
LOS	F	F	A	E	D	A	C	D	A	C	D	A
Approach Delay		156.7			42.9			21.7			16.7	
Approach LOS		F			D			C			B	
Queue Length 50th (ft)	~406	~862	0	56	277	0	29	70	0	36	47	0
Queue Length 95th (ft)	#591	#1051	0	m87	352	m3	57	123	0	68	90	53
Internal Link Dist (ft)		1330			5603			923			1383	
Turn Bay Length (ft)	390		350	350			260		90	165		380
Base Capacity (vph)	134	1419	753	312	1319	659	570	591	617	538	613	637
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Buildout PM Peak Hour
10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.10	1.09	0.09	0.19	0.84	0.10	0.09	0.18	0.14	0.12	0.12	0.29

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 66 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.10

Intersection Signal Delay: 97.5

Intersection LOS: F

Intersection Capacity Utilization 108.5%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

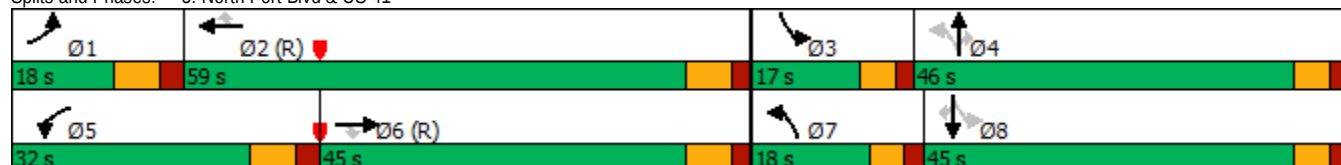
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: North Port Blvd & US 41



Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	98	17	244	133	13	149
Future Vol, veh/h	98	17	244	133	13	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	4	0	4	5	20	2
Mvmt Flow	113	20	280	153	15	171
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	558	357	0	0	433	0
Stage 1	357	-	-	-	-	-
Stage 2	201	-	-	-	-	-
Critical Hdwy	6.44	6.2	-	-	4.3	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.3	-	-	2.38	-
Pot Cap-1 Maneuver	487	692	-	-	1037	-
Stage 1	704	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	479	692	-	-	1037	-
Mov Cap-2 Maneuver	479	-	-	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	14.7	0		0.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	502	1037	-	
HCM Lane V/C Ratio	-	-	0.263	0.014	-	
HCM Control Delay (s)	-	-	14.7	8.5	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	1	0	-	

Intersection						
Int Delay, s/veh	8.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	232	48	104	210	94	165
Future Vol, veh/h	232	48	104	210	94	165
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	4	1	4	4
Mvmt Flow	276	57	124	250	112	196
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	335	0	805	307
Stage 1	-	-	-	-	307	-
Stage 2	-	-	-	-	498	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1213	-	349	728
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	607	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1211	-	307	727
Mov Cap-2 Maneuver	-	-	-	-	307	-
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	607	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	2.8		24.4		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	486	-	-	1211	-	
HCM Lane V/C Ratio	0.634	-	-	0.102	-	
HCM Control Delay (s)	24.4	-	-	8.3	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	4.4	-	-	0.3	-	

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	84	62	115	103	83	67
Future Vol, veh/h	84	62	115	103	83	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	67	125	112	90	73

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	237	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	1330	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1330	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	4.5	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1330	-	-	-	541	862
HCM Lane V/C Ratio	0.069	-	-	-	0.167	0.084
HCM Control Delay (s)	7.9	0	-	-	13	9.6
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6	0.3

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	333	63	83	268	51	67
Future Vol, veh/h	333	63	83	268	51	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	362	68	90	291	55	73
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	430	0	867	396
Stage 1	-	-	-	-	396	-
Stage 2	-	-	-	-	471	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1129	-	323	653
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1129	-	292	653
Mov Cap-2 Maneuver	-	-	-	-	292	-
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	628	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	2		17.1		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	426	-	-	1129	-	
HCM Lane V/C Ratio	0.301	-	-	0.08	-	
HCM Control Delay (s)	17.1	-	-	8.5	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1.2	-	-	0.3	-	

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	39	79	845	708	36
Future Vol, veh/h	29	39	79	845	708	36
Conflicting Peds, #/hr	5	0	2	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	3	0	1	1	0
Mvmt Flow	32	43	87	929	778	40
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1444	411	820	0	-	0
Stage 1	800	-	-	-	-	-
Stage 2	644	-	-	-	-	-
Critical Hdwy	6.88	6.96	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.33	2.2	-	-	-
Pot Cap-1 Maneuver	121	587	818	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	479	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	108	586	816	-	-	-
Mov Cap-2 Maneuver	108	-	-	-	-	-
Stage 1	355	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	28.7		0.8		0	
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	816	-	108	586	-	-
HCM Lane V/C Ratio	0.106	-	0.295	0.073	-	-
HCM Control Delay (s)	9.9	-	51.7	11.6	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.4	-	1.1	0.2	-	-

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Background + Improvements PM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	1465	62	55	1058	63	49	85	83	62	56	94
Future Volume (vph)	168	1465	62	55	1058	63	49	85	83	62	56	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	390		350	350		0	260		90	165		380
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	50			100			25			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				1.00			1.00					0.99
Frts			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3574	1615	1770	3539	1553	1805	1863	1538	1770	1900	1599
Flt Permitted	0.950			0.950			0.719			0.692		
Satd. Flow (perm)	1770	3574	1615	1769	3539	1553	1364	1863	1538	1289	1900	1579
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			129			129			131			131
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		1410			5683			1003			1463	
Travel Time (s)		21.4			86.1			22.8			24.9	
Confl. Peds. (#/hr)				1			2					1
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
Heavy Vehicles (%)	2%	1%	0%	2%	2%	4%	0%	2%	5%	2%	0%	1%
Adj. Flow (vph)	177	1542	65	58	1114	66	52	89	87	65	59	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	177	1542	65	58	1114	66	52	89	87	65	59	99
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	12.4	45.8	45.8	12.3	51.8	51.8	10.7	63.5	63.5	10.7	62.5	62.5
Total Split (s)	38.0	53.0	53.0	32.0	47.0	47.0	18.0	39.0	39.0	16.0	37.0	37.0
Total Split (%)	27.1%	37.9%	37.9%	22.9%	33.6%	33.6%	12.9%	27.9%	27.9%	11.4%	26.4%	26.4%
Maximum Green (s)	30.6	46.2	46.2	24.7	40.2	40.2	12.3	32.5	32.5	10.3	30.5	30.5
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.6	2.0	2.0	2.5	2.0	2.0	2.0	2.8	2.8	2.0	2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	5.7	6.5	6.5	5.7	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		29.0	29.0		35.0	35.0		47.0	47.0		46.0	46.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	19.3	63.6	63.6	10.0	51.5	51.5	44.3	36.5	36.5	45.1	36.9	36.9
Actuated g/C Ratio	0.14	0.45	0.45	0.07	0.37	0.37	0.32	0.26	0.26	0.32	0.26	0.26
v/c Ratio	0.73	0.95	0.08	0.46	0.86	0.10	0.11	0.18	0.18	0.15	0.12	0.19
Control Delay	74.3	50.8	0.2	74.7	39.5	0.8	31.2	43.4	2.4	31.6	42.4	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.3	50.8	0.2	74.7	39.5	0.8	31.2	43.4	2.4	31.6	42.4	3.7
LOS	E	D	A	E	D	A	C	D	A	C	D	A
Approach Delay		51.3			39.0			25.0			22.1	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	157	725	0	55	252	0	32	65	0	40	42	0
Queue Length 95th (ft)	228	#950	0	m87	#646	m0	63	116	13	75	83	24
Internal Link Dist (ft)		1330			5603			923			1383	
Turn Bay Length (ft)	390		350	350			260		90	165		380
Base Capacity (vph)	386	1623	804	312	1301	652	498	486	497	458	501	512
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Background + Improvements PM Peak Hour

10/11/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.95	0.08	0.19	0.86	0.10	0.10	0.18	0.18	0.14	0.12	0.19

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 66 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 43.3

Intersection LOS: D

Intersection Capacity Utilization 108.5%

ICU Level of Service G

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: North Port Blvd & US 41

	Ø1		Ø2 (R)		Ø3		Ø4
38 s		47 s		16 s		39 s	
	Ø5		Ø6 (R)		Ø7		Ø8
32 s		53 s		18 s		37 s	

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	58	123	94	451	814	39
Future Vol, veh/h	58	123	94	451	814	39
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	0	0	6	2	0
Mvmt Flow	62	132	101	485	875	42
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1342	460	918	0	-	0
Stage 1	897	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Critical Hdwy	6.88	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	141	554	752	-	-	-
Stage 1	354	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	122	553	751	-	-	-
Mov Cap-2 Maneuver	122	-	-	-	-	-
Stage 1	306	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	29	1.8		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	751	-	122	553	-	-
HCM Lane V/C Ratio	0.135	-	0.511	0.239	-	-
HCM Control Delay (s)	10.5	-	61.9	13.5	-	-
HCM Lane LOS	B	-	F	B	-	-
HCM 95th %tile Q(veh)	0.5	-	2.4	0.9	-	-

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Buildout + Improvements AM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	824	60	41	1067	58	53	62	53	50	68	186
Future Volume (vph)	147	824	60	41	1067	58	53	62	53	50	68	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	390		350	350		0	260		90	165		380
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	50			100			25			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										1.00		
Fr t			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3438	1553	1752	3505	1553	1770	1900	1583	1752	1863	1599
Fit Permitted	0.950			0.950			0.701			0.709		
Satd. Flow (perm)	1752	3438	1553	1752	3505	1553	1306	1900	1583	1307	1863	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			139			142			221
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		1410			5683			1003			1463	
Travel Time (s)		21.4			86.1			22.8			24.9	
Confl. Peds. (#/hr)										1		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	4%	3%	3%	4%	2%	0%	2%	3%	2%	1%
Adj. Flow (vph)	175	981	71	49	1270	69	63	74	63	60	81	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	981	71	49	1270	69	63	74	63	60	81	221
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	12.4	45.8	45.8	12.3	51.8	51.8	10.7	63.5	63.5	10.7	62.5	62.5
Total Split (s)	18.0	74.0	74.0	18.0	74.0	74.0	18.0	20.0	20.0	18.0	20.0	20.0
Total Split (%)	13.8%	56.9%	56.9%	13.8%	56.9%	56.9%	13.8%	15.4%	15.4%	13.8%	15.4%	15.4%
Maximum Green (s)	10.6	67.2	67.2	10.7	67.2	67.2	12.3	13.5	13.5	12.3	13.5	13.5
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.6	2.0	2.0	2.5	2.0	2.0	2.0	2.8	2.8	2.0	2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	5.7	6.5	6.5	5.7	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		29.0	29.0		35.0	35.0		47.0	47.0		46.0	46.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	10.6	71.8	71.8	8.7	67.2	67.2	27.9	19.2	19.2	27.6	19.0	19.0
Actuated g/C Ratio	0.08	0.55	0.55	0.07	0.52	0.52	0.21	0.15	0.15	0.21	0.15	0.15
v/c Ratio	1.23	0.52	0.08	0.42	0.70	0.08	0.20	0.26	0.18	0.20	0.30	0.52
Control Delay	199.4	20.3	0.2	96.3	18.9	0.2	40.1	54.8	1.1	40.0	55.7	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	199.4	20.3	0.2	96.3	18.9	0.2	40.1	54.8	1.1	40.0	55.7	11.6
LOS	F	C	A	F	B	A	D	D	A	D	E	B
Approach Delay		44.7			20.7			33.3			26.2	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	~181	276	0	44	487	0	42	57	0	40	63	0
Queue Length 95th (ft)	#302	314	0	m81	533	m0	75	102	0	73	111	59
Internal Link Dist (ft)		1330			5603			923			1383	
Turn Bay Length (ft)	390		350	350			260		90	165		380
Base Capacity (vph)	142	1899	920	144	1811	869	343	280	354	340	272	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Buildout + Improvements AM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.23	0.52	0.08	0.34	0.70	0.08	0.18	0.26	0.18	0.18	0.30	0.52

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 66 (51%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.23

Intersection Signal Delay: 31.4

Intersection LOS: C

Intersection Capacity Utilization 64.5%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: North Port Blvd & US 41

	Ø1		Ø2 (R)		Ø3		Ø4
18 s		74 s		18 s		20 s	
	Ø5		Ø6 (R)		Ø7		Ø8
18 s		74 s		18 s		20 s	

Intersection						
Int Delay, s/veh	6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	101	155	878	735	63
Future Vol, veh/h	51	101	155	878	735	63
Conflicting Peds, #/hr	5	0	2	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	3	0	1	1	0
Mvmt Flow	56	111	170	965	808	69
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1673	441	879	0	-	0
Stage 1	845	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Critical Hdwy	6.88	6.96	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.33	2.2	-	-	-
Pot Cap-1 Maneuver	85	561	777	-	-	-
Stage 1	377	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	66	560	776	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	294	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	67	1.6		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	776	-	66	560	-	-
HCM Lane V/C Ratio	0.219	-	0.849	0.198	-	-
HCM Control Delay (s)	10.9	-	173.9	13	-	-
HCM Lane LOS	B	-	F	B	-	-
HCM 95th %tile Q(veh)	0.8	-	4	0.7	-	-

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Buildout + Improvements PM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	1465	62	55	1058	63	49	99	83	62	68	174
Future Volume (vph)	268	1465	62	55	1058	63	49	99	83	62	68	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	390		350	350		0	260		90	165		380
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	50			100			25			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				1.00			1.00					0.99
Frts			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3574	1615	1770	3539	1553	1805	1863	1538	1770	1900	1599
Flt Permitted	0.950			0.950			0.710			0.682		
Satd. Flow (perm)	1770	3574	1615	1769	3539	1553	1347	1863	1538	1270	1900	1579
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			129			129			131			183
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		1410			5683			1003			1463	
Travel Time (s)		21.4			86.1			22.8			24.9	
Confl. Peds. (#/hr)				1			2					1
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
Heavy Vehicles (%)	2%	1%	0%	2%	2%	4%	0%	2%	5%	2%	0%	1%
Adj. Flow (vph)	282	1542	65	58	1114	66	52	104	87	65	72	183
Shared Lane Traffic (%)												
Lane Group Flow (vph)	282	1542	65	58	1114	66	52	104	87	65	72	183
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	12.4	45.8	45.8	12.3	51.8	51.8	10.7	63.5	63.5	10.7	62.5	62.5
Total Split (s)	38.0	53.0	53.0	32.0	47.0	47.0	18.0	39.0	39.0	16.0	37.0	37.0
Total Split (%)	27.1%	37.9%	37.9%	22.9%	33.6%	33.6%	12.9%	27.9%	27.9%	11.4%	26.4%	26.4%
Maximum Green (s)	30.6	46.2	46.2	24.7	40.2	40.2	12.3	32.5	32.5	10.3	30.5	30.5
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.6	2.0	2.0	2.5	2.0	2.0	2.0	2.8	2.8	2.0	2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	5.7	6.5	6.5	5.7	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		29.0	29.0		35.0	35.0		47.0	47.0		46.0	46.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	26.4	63.6	63.6	10.0	44.4	44.4	44.3	36.5	36.5	45.1	36.9	36.9
Actuated g/C Ratio	0.19	0.45	0.45	0.07	0.32	0.32	0.32	0.26	0.26	0.32	0.26	0.26
v/c Ratio	0.85	0.95	0.08	0.46	0.99	0.11	0.11	0.21	0.18	0.15	0.14	0.33
Control Delay	77.1	50.8	0.2	74.7	56.8	0.9	31.2	43.8	2.4	31.7	42.6	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.1	50.8	0.2	74.7	56.8	0.9	31.2	43.8	2.4	31.7	42.6	7.5
LOS	E	D	A	E	E	A	C	D	A	C	D	A
Approach Delay		53.0			54.6			26.3			20.3	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	248	725	0	55	~267	0	32	77	0	40	52	0
Queue Length 95th (ft)	348	#950	0	m87	#705	m0	63	132	13	75	98	62
Internal Link Dist (ft)		1330			5603			923			1383	
Turn Bay Length (ft)	390		350	350			260		90	165		380
Base Capacity (vph)	386	1623	804	312	1122	580	493	486	497	453	501	551
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Buildout + Improvements PM Peak Hour

10/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.95	0.08	0.19	0.99	0.11	0.11	0.21	0.18	0.14	0.14	0.33

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 66 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 48.9

Intersection LOS: D

Intersection Capacity Utilization 108.5%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: North Port Blvd & US 41

 Ø1	 Ø2 (R)	 Ø3	 Ø4
38 s	47 s	16 s	39 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
32 s	53 s	18 s	37 s

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Bridge Alternative Buildout AM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	793	59	19	1018	228	92	113	16	384	133	299
Future Volume (vph)	191	793	59	19	1018	228	92	113	16	384	133	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	700		310	360		390	185		0	480		210
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	75			80			50			50		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.97	0.95	0.95
Ped Bike Factor								1.00				
Fr't			0.850			0.850		0.982			0.938	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4940	1509	1805	5036	1538	1736	1783	0	3433	1613	1504
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4940	1509	1805	5036	1538	1736	1783	0	3433	1613	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			146			245		5			23	222
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		2401			3139			1562			1377	
Travel Time (s)		36.4			47.6			35.5			23.5	
Confl. Peds. (#/hr)									1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	5%	7%	0%	3%	5%	4%	4%	8%	2%	7%	2%
Adj. Flow (vph)	205	853	63	20	1095	245	99	122	17	413	143	322
Shared Lane Traffic (%)												31%
Lane Group Flow (vph)	205	853	63	20	1095	245	99	139	0	413	243	222
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0		5.0	7.0	7.0
Minimum Split (s)	12.8	40.8	40.8	12.0	34.8	34.8	11.9	50.9		10.7	48.4	48.4
Total Split (s)	18.0	55.0	55.0	20.0	57.0	57.0	29.0	31.0		24.0	26.0	26.0
Total Split (%)	13.8%	42.3%	42.3%	15.4%	43.8%	43.8%	22.3%	23.8%		18.5%	20.0%	20.0%
Maximum Green (s)	10.2	48.2	48.2	13.0	50.2	50.2	22.1	24.1		18.3	19.6	19.6
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9		3.7	3.7	3.7
All-Red Time (s)	3.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0		2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.8	6.8	6.8	7.0	6.8	6.8	6.9	6.9		5.7	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		27.0	27.0		21.0	21.0		37.0			35.0	35.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	11.1	67.3	67.3	7.0	54.6	54.6	12.7	19.2		17.9	23.7	23.7
Actuated g/C Ratio	0.09	0.52	0.52	0.05	0.42	0.42	0.10	0.15		0.14	0.18	0.18
v/c Ratio	0.70	0.33	0.07	0.21	0.52	0.31	0.59	0.52		0.88	0.78	0.49
Control Delay	81.9	31.4	3.2	63.2	29.9	4.2	69.2	55.1		74.7	62.9	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	81.9	31.4	3.2	63.2	29.9	4.2	69.2	55.1		74.7	62.9	9.5
LOS	F	C	A	E	C	A	E	E		E	E	A
Approach Delay		39.1			25.8			61.0			54.9	
Approach LOS		D			C			E			D	
Queue Length 50th (ft)	94	161	2	16	263	0	81	104		177	184	0
Queue Length 95th (ft)	m#145	295	m16	44	309	53	136	167		#260	#317	74
Internal Link Dist (ft)		2321			3059			1482			1297	
Turn Bay Length (ft)	700		310	360		390	185			480		210
Base Capacity (vph)	294	2558	851	180	2114	787	295	334		483	315	458
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Bridge Alternative Buildout AM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.70	0.33	0.07	0.11	0.52	0.31	0.34	0.42		0.86	0.77	0.48

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 109 (84%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 39.4

Intersection LOS: D

Intersection Capacity Utilization 66.6%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Sumter Blvd & US 41

 Ø1	 Ø2 (R)	 Ø3	 Ø4
20 s	55 s	29 s	26 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
18 s	57 s	24 s	31 s

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	58	50	43	451	817	39
Future Vol, veh/h	58	50	43	451	817	39
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	0	0	6	2	0
Mvmt Flow	62	54	46	485	878	42
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1235	461	921	0	-	0
Stage 1	900	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Critical Hdwy	6.88	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	166	553	750	-	-	-
Stage 1	352	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	156	552	749	-	-	-
Mov Cap-2 Maneuver	156	-	-	-	-	-
Stage 1	330	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	28.6		0.9		0	
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	749	-	156	552	-	-
HCM Lane V/C Ratio	0.062	-	0.4	0.097	-	-
HCM Control Delay (s)	10.1	-	42.7	12.2	-	-
HCM Lane LOS	B	-	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.7	0.3	-	-

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Bridge Alternative Buildout AM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	3	120	4	2	2	71	422	3	2	611	227
Future Volume (vph)	164	3	120	4	2	2	71	422	3	2	611	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		0	120		0	130		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					1.00			1.00		1.00		
Frt			0.850		0.966			0.999			0.959	
Flt Protected		0.953			0.976		0.950			0.950		
Satd. Flow (prot)	0	1793	1615	0	1786	0	1719	3403	0	1805	3370	0
Flt Permitted		0.724			0.859		0.239			0.486		
Satd. Flow (perm)	0	1362	1615	0	1570	0	432	3403	0	922	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96		2			1			75	
Link Speed (mph)		35			30			40			40	
Link Distance (ft)		1965			991			3533			7761	
Travel Time (s)		38.3			22.5			60.2			132.3	
Confl. Peds. (#/hr)				1		1			1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	5%	6%	0%	0%	3%	2%
Adj. Flow (vph)	178	3	130	4	2	2	77	459	3	2	664	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	181	130	0	8	0	77	462	0	2	911	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	25.0		10.0	25.0	
Minimum Split (s)	16.0	16.0	16.0	40.0	40.0		15.0	33.0		15.0	31.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0		20.0	55.0		20.0	55.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		20.0%	55.0%		20.0%	55.0%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0		15.0	49.0		15.0	49.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.5		4.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		5.0	6.0		5.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.7	4.0		2.7	4.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)	0.0	0.0	0.0	7.0	7.0			7.0			10.0	
Flash Dont Walk (s)	0.0	0.0	0.0	27.0	27.0			20.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		15.9	15.9		15.9		61.6	58.7		58.7	50.0	
Actuated g/C Ratio		0.18	0.18		0.18		0.69	0.66		0.66	0.56	
v/c Ratio		0.75	0.36		0.03		0.17	0.21		0.00	0.48	
Control Delay		55.6	14.4		27.7		5.8	7.6		5.0	13.1	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		55.6	14.4		27.7		5.8	7.6		5.0	13.1	
LOS		E	B		C		A	A		A	B	
Approach Delay		38.4			27.7			7.4			13.1	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)		102	17		3		13	46		0	160	
Queue Length 95th (ft)		#188	66		15		27	108		2	218	
Internal Link Dist (ft)		1885			911			3453			7681	
Turn Bay Length (ft)			50				120			130		
Base Capacity (vph)		292	421		337		519	2231		793	1916	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Bridge Alternative Buildout AM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.62	0.31		0.02		0.15	0.21		0.00	0.48	
Intersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 89.5												
Natural Cycle: 90												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.75												
Intersection Signal Delay: 15.9							Intersection LOS: B					
Intersection Capacity Utilization 62.6%							ICU Level of Service B					
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 3: Sumter Blvd & Appomattox Dr

 Ø1	 Ø2	 Ø4
20 s	55 s	25 s
 Ø5	 Ø6	 Ø8
20 s	55 s	25 s

Lanes, Volumes, Timings
4: Sumter Blvd & Price Blvd

Bridge Alternative Buildout AM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	242	57	344	248	275	61	411	145	191	474	102
Future Volume (vph)	179	242	57	344	248	275	61	411	145	191	474	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		225	400		515	210		650	330		400
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (ft)	50			50			50			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3610	1583	1770	3574	1583	1671	3471	1583	3367	3438	1553
Flt Permitted	0.592			0.504			0.466			0.460		
Satd. Flow (perm)	1071	3610	1583	939	3574	1583	820	3471	1583	1630	3438	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			286			217			217
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		2204			1860			7761			1590	
Travel Time (s)		33.4			36.2			176.4			36.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	0%	2%	2%	1%	2%	8%	4%	2%	4%	5%	4%
Adj. Flow (vph)	186	252	59	358	258	286	64	428	151	199	494	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	252	59	358	258	286	64	428	151	199	494	106
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	10.0	25.0	25.0	10.0	25.0	25.0
Minimum Split (s)	14.0	35.0	35.0	14.1	36.1	36.1	17.2	37.2	37.2	17.2	34.2	34.2
Total Split (s)	13.0	28.0	28.0	15.0	30.0	30.0	18.0	32.0	32.0	17.0	31.0	31.0
Total Split (%)	14.1%	30.4%	30.4%	16.3%	32.6%	32.6%	19.6%	34.8%	34.8%	18.5%	33.7%	33.7%
Maximum Green (s)	6.0	21.0	21.0	7.9	22.9	22.9	10.8	24.8	24.8	9.8	23.8	23.8
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	7.2	7.2	7.2	7.2	7.2	7.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	2.0	1.0	1.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		22.0	22.0		23.0	23.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	17.1	11.1	11.1	21.0	13.0	13.0	40.0	30.0	30.0	41.1	33.3	33.3
Actuated g/C Ratio	0.20	0.13	0.13	0.24	0.15	0.15	0.46	0.34	0.34	0.47	0.38	0.38
v/c Ratio	0.73	0.55	0.15	1.19	0.48	0.60	0.14	0.36	0.22	0.21	0.38	0.15
Control Delay	45.3	40.5	0.8	144.9	37.3	10.0	11.1	22.8	1.7	11.0	22.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	40.5	0.8	144.9	37.3	10.0	11.1	22.8	1.7	11.0	22.1	0.4
LOS	D	D	A	F	D	A	B	C	A	B	C	A
Approach Delay		37.6			71.4			16.6			16.5	
Approach LOS		D			E			B			B	
Queue Length 50th (ft)	80	69	0	~163	69	0	16	90	0	25	107	0
Queue Length 95th (ft)	#148	107	0	#407	107	68	37	136	13	45	159	0
Internal Link Dist (ft)		2124			1780			7681			1510	
Turn Bay Length (ft)	400		225	400		515	210		650	330		400
Base Capacity (vph)	254	868	546	300	937	625	488	1192	686	961	1310	725
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.29	0.11	1.19	0.28	0.46	0.13	0.36	0.22	0.21	0.38	0.15

Intersection Summary	
Area Type:	Other
Cycle Length:	92
Actuated Cycle Length:	87.4
Natural Cycle:	105
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.19
Intersection Signal Delay:	37.6
Intersection LOS:	D
Intersection Capacity Utilization:	80.3%
ICU Level of Service:	D
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 4: Sumter Blvd & Price Blvd

 Ø3	 Ø4	 Ø1	 Ø2
15 s	28 s	17 s	32 s
 Ø7	 Ø8	 Ø5	 Ø6
13 s	30 s	18 s	31 s

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Bridge Alternative Buildout AM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	870	60	51	1134	58	53	55	57	50	58	123
Future Volume (vph)	103	870	60	51	1134	58	53	55	57	50	58	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	390		350	350		0	260		90	165		380
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	50			100			25			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										1.00		
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3438	1553	1752	3505	1553	1770	1900	1583	1752	1863	1599
Flt Permitted	0.950			0.950			0.708			0.715		
Satd. Flow (perm)	1752	3438	1553	1752	3505	1553	1319	1900	1583	1318	1863	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			139			142			146
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		1410			3282			1003			1463	
Travel Time (s)		21.4			49.7			22.8			24.9	
Confl. Peds. (#/hr)										1		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	4%	3%	3%	4%	2%	0%	2%	3%	2%	1%
Adj. Flow (vph)	123	1036	71	61	1350	69	63	65	68	60	69	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	1036	71	61	1350	69	63	65	68	60	69	146
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	12.4	45.8	45.8	12.3	51.8	51.8	10.7	63.5	63.5	10.7	62.5	62.5
Total Split (s)	18.0	74.0	74.0	18.0	74.0	74.0	18.0	20.0	20.0	18.0	20.0	20.0
Total Split (%)	13.8%	56.9%	56.9%	13.8%	56.9%	56.9%	13.8%	15.4%	15.4%	13.8%	15.4%	15.4%
Maximum Green (s)	10.6	67.2	67.2	10.7	67.2	67.2	12.3	13.5	13.5	12.3	13.5	13.5
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.6	2.0	2.0	2.5	2.0	2.0	2.0	2.8	2.8	2.0	2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	5.7	6.5	6.5	5.7	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		29.0	29.0		35.0	35.0		47.0	47.0		46.0	46.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	10.6	71.4	71.4	9.1	67.2	67.2	27.9	19.2	19.2	27.6	19.0	19.0
Actuated g/C Ratio	0.08	0.55	0.55	0.07	0.52	0.52	0.21	0.15	0.15	0.21	0.15	0.15
v/c Ratio	0.87	0.55	0.08	0.50	0.75	0.08	0.20	0.23	0.19	0.19	0.25	0.41
Control Delay	105.4	21.2	0.2	67.3	34.7	4.0	40.1	54.3	1.2	40.0	54.9	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.4	21.2	0.2	67.3	34.7	4.0	40.1	54.3	1.2	40.0	54.9	12.0
LOS	F	C	A	E	C	A	D	D	A	D	D	B
Approach Delay		28.4			34.6			31.3			28.9	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	104	303	0	54	367	3	42	50	0	40	53	0
Queue Length 95th (ft)	#197	338	0	96	411	19	75	92	0	73	97	52
Internal Link Dist (ft)		1330			3202			923			1383	
Turn Bay Length (ft)	390		350	350			260		90	165		380
Base Capacity (vph)	142	1889	915	144	1811	869	345	280	354	341	272	358
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Bridge Alternative Buildout AM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.55	0.08	0.42	0.75	0.08	0.18	0.23	0.19	0.18	0.25	0.41

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 66 (51%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 31.5

Intersection LOS: C

Intersection Capacity Utilization 63.9%

ICU Level of Service B

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 5: North Port Blvd & US 41

 Ø1	 Ø2 (R)	 Ø3	 Ø4
18 s	74 s	18 s	20 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
18 s	74 s	18 s	20 s

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	13	99	26	18	190
Future Vol, veh/h	44	13	99	26	18	190
Conflicting Peds, #/hr	0	3	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	2	0	11	1
Mvmt Flow	59	17	132	35	24	253
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	452	154	0	0	168	0
Stage 1	151	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.21	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.299	-
Pot Cap-1 Maneuver	569	897	-	-	1357	-
Stage 1	882	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	556	894	-	-	1356	-
Mov Cap-2 Maneuver	556	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.8	0		0.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	608	1356	-	
HCM Lane V/C Ratio	-	-	0.125	0.018	-	
HCM Control Delay (s)	-	-	11.8	7.7	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-	

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	169	56	126	184	39	74
Future Vol, veh/h	169	56	126	184	39	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	5	0	4	4	0
Mvmt Flow	182	60	135	198	42	80
Major/Minor						
	Major1		Major2		Minor1	
Conflicting Flow All	0	0	242	0	680	212
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	468	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	1336	-	414	833
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1336	-	367	833
Mov Cap-2 Maneuver	-	-	-	-	367	-
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	626	-
Approach						
	EB		WB		NB	
HCM Control Delay, s	0		3.3		12.9	
HCM LOS					B	
Minor Lane/Major Mvmt						
	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	579	-	-	1336	-	
HCM Lane V/C Ratio	0.21	-	-	0.101	-	
HCM Control Delay (s)	12.9	-	-	8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.8	-	-	0.3	-	

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	38	0	0	63	18	0	100	0	26	146	6
Future Vol, veh/h	6	38	0	0	63	18	0	100	0	26	146	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	41	0	0	68	20	0	109	0	28	159	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	88	0	0	41	0	0	216	143	41	188	133	78
Stage 1	-	-	-	-	-	-	55	55	-	78	78	-
Stage 2	-	-	-	-	-	-	161	88	-	110	55	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1508	-	-	1568	-	-	740	748	1030	772	758	983
Stage 1	-	-	-	-	-	-	957	849	-	931	830	-
Stage 2	-	-	-	-	-	-	841	822	-	895	849	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1508	-	-	1568	-	-	613	744	1030	683	754	983
Mov Cap-2 Maneuver	-	-	-	-	-	-	613	744	-	683	754	-
Stage 1	-	-	-	-	-	-	952	845	-	926	830	-
Stage 2	-	-	-	-	-	-	676	822	-	776	845	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0			10.7			10.9		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	744	1508	-	-	1568	-	-	683	761
HCM Lane V/C Ratio	0.146	0.004	-	-	-	-	-	0.041	0.217
HCM Control Delay (s)	10.7	7.4	0	-	0	-	-	10.5	11
HCM Lane LOS	B	A	A	-	A	-	-	B	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.1	0.8

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	202	42	56	244	61	80
Future Vol, veh/h	202	42	56	244	61	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	220	46	61	265	66	87
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	266	0	630	243
Stage 1	-	-	-	-	243	-
Stage 2	-	-	-	-	387	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1298	-	446	796
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	686	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1298	-	421	796
Mov Cap-2 Maneuver	-	-	-	-	421	-
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	686	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.5		13.5	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	575	-	-	1298	-	
HCM Lane V/C Ratio	0.267	-	-	0.047	-	
HCM Control Delay (s)	13.5	-	-	7.9	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-	

Lanes, Volumes, Timings
10: Tuscola Blvd & US 41

Bridge Alternative Buildout AM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	946	15	71	1296	108	11	2	23	112	0	105
Future Volume (vph)	86	946	15	71	1296	108	11	2	23	112	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	700		0	250		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	50			250			25			50		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.988			0.913			0.850	
Flt Protected	0.950			0.950				0.985		0.950		
Satd. Flow (prot)	1770	5075	0	1770	5024	0	0	1675	0	1770	1583	0
Flt Permitted	0.131			0.253				0.855		0.732		
Satd. Flow (perm)	244	5075	0	471	5024	0	0	1454	0	1364	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			19			25			168	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		3282			2401			1408			883	
Travel Time (s)		49.7			36.4			32.0			20.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	1028	16	77	1409	117	12	2	25	122	0	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	1044	0	77	1526	0	0	39	0	122	114	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	12.0		5.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.8	34.8		12.8	35.8		52.7	52.7		50.7	50.7	
Total Split (s)	18.0	88.0		18.0	88.0		24.0	24.0		24.0	24.0	
Total Split (%)	13.8%	67.7%		13.8%	67.7%		18.5%	18.5%		18.5%	18.5%	
Maximum Green (s)	10.2	80.2		10.2	80.2		14.3	14.3		14.3	14.3	
Yellow Time (s)	4.8	4.8		4.8	4.8		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.0	3.0		3.0	3.0		6.0	6.0		6.0	6.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	7.8	7.8		7.8	7.8			9.7		9.7	9.7	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	5.0		3.0	5.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		20.0			21.0		36.0	36.0		34.0	34.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	92.8	86.8		90.6	83.7			13.7		13.7	13.7	
Actuated g/C Ratio	0.71	0.67		0.70	0.64			0.11		0.11	0.11	
v/c Ratio	0.36	0.31		0.19	0.47			0.22		0.85	0.36	
Control Delay	14.8	9.3		12.8	27.1			30.0		100.2	4.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	14.8	9.3		12.8	27.1			30.0		100.2	4.8	
LOS	B	A		B	C			C		F	A	
Approach Delay		9.8			26.4			30.0			54.1	
Approach LOS		A			C			C			D	
Queue Length 50th (ft)	18	108		39	395			11		102	0	
Queue Length 95th (ft)	75	151		m71	430			47		#212	13	
Internal Link Dist (ft)		3202			2321			1328			803	
Turn Bay Length (ft)	700			250						100		
Base Capacity (vph)	297	3388		442	3243			182		150	323	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.31	0.31		0.17	0.47			0.21		0.81	0.35	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 66 (51%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 22.3

Intersection LOS: C

Intersection Capacity Utilization 66.2%

ICU Level of Service C

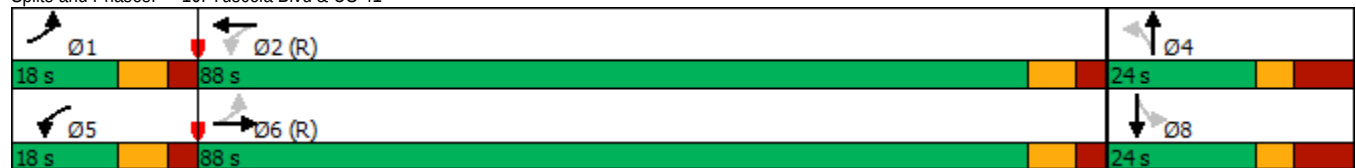
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tuscola Blvd & US 41



Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Bridge Alternative Buildout PM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	335	1310	102	53	1001	377	178	227	34	471	201	174
Future Volume (vph)	335	1310	102	53	1001	377	178	227	34	471	201	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	700		310	360		390	185		0	480		210
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	75			80			50			50		
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.97	0.95	0.95
Ped Bike Factor							1.00			1.00		
Fr't			0.850			0.850		0.980			0.988	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	1805	5085	1599	1770	1862	0	3467	1763	1490
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	5136	1615	1805	5085	1599	1767	1862	0	3463	1763	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			397		5			3	165
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		2457			3139			1562			1377	
Travel Time (s)		37.2			47.6			35.5			23.5	
Confl. Peds. (#/hr)							2			2		
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
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	2%	0%	0%	1%	1%	3%
Adj. Flow (vph)	353	1379	107	56	1054	397	187	239	36	496	212	183
Shared Lane Traffic (%)												10%
Lane Group Flow (vph)	353	1379	107	56	1054	397	187	275	0	496	230	165
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Detector Phase	5	2	2	1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0		5.0	7.0	7.0
Minimum Split (s)	12.8	40.8	40.8	12.0	34.8	34.8	11.9	50.9		10.7	48.4	48.4
Total Split (s)	18.0	42.0	42.0	25.0	49.0	49.0	27.0	45.0		28.0	46.0	46.0
Total Split (%)	12.9%	30.0%	30.0%	17.9%	35.0%	35.0%	19.3%	32.1%		20.0%	32.9%	32.9%
Maximum Green (s)	10.2	35.2	35.2	18.0	42.2	42.2	20.1	38.1		22.3	39.6	39.6
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9		3.7	3.7	3.7
All-Red Time (s)	3.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0		2.0	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.8	6.8	6.8	7.0	6.8	6.8	6.9	6.9		5.7	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		27.0	27.0		21.0	21.0		37.0			35.0	35.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	23.0	58.9	58.9	9.7	42.2	42.2	18.3	25.7		22.0	28.7	28.7
Actuated g/C Ratio	0.16	0.42	0.42	0.07	0.30	0.30	0.13	0.18		0.16	0.20	0.20
v/c Ratio	0.61	0.64	0.14	0.45	0.69	0.52	0.81	0.80		0.91	0.63	0.38
Control Delay	82.8	23.6	2.0	73.1	45.9	6.0	84.6	70.1		80.0	58.0	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	82.8	23.6	2.0	73.1	45.9	6.0	84.6	70.1		80.0	58.0	8.6
LOS	F	C	A	E	D	A	F	E		F	E	A
Approach Delay		33.7			36.4			75.9			61.1	
Approach LOS		C			D			E			E	
Queue Length 50th (ft)	176	162	4	50	310	0	165	238		231	204	0
Queue Length 95th (ft)	m#270	m325	m16	94	364	79	#272	319		#329	281	61
Internal Link Dist (ft)		2377			3059			1482			1297	
Turn Bay Length (ft)	700		310	360		390	185			480		210
Base Capacity (vph)	574	2159	763	232	1532	759	254	510		552	500	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0

Lanes, Volumes, Timings
1: Sumter Blvd & US 41

Bridge Alternative Buildout PM Peak Hour
10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.61	0.64	0.14	0.24	0.69	0.52	0.74	0.54		0.90	0.46	0.31

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 3 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 43.9

Intersection LOS: D

Intersection Capacity Utilization 79.0%

ICU Level of Service D

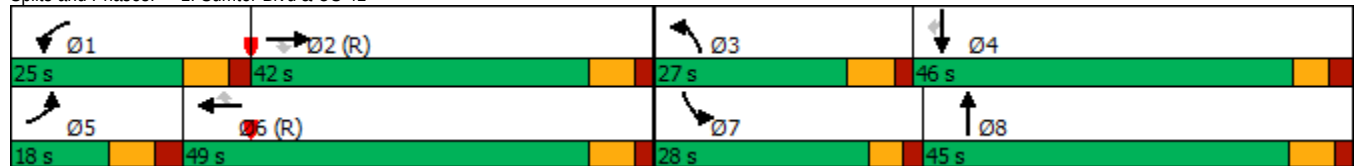
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Sumter Blvd & US 41



Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	39	79	878	738	63
Future Vol, veh/h	51	39	79	878	738	63
Conflicting Peds, #/hr	5	0	2	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	3	0	1	1	0
Mvmt Flow	56	43	87	965	811	69
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1510	442	882	0	-	0
Stage 1	848	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Critical Hdwy	6.88	6.96	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.33	2.2	-	-	-
Pot Cap-1 Maneuver	109	560	775	-	-	-
Stage 1	375	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	96	559	774	-	-	-
Mov Cap-2 Maneuver	96	-	-	-	-	-
Stage 1	332	-	-	-	-	-
Stage 2	468	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	53.5	0.8		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	774	-	96	559	-	-
HCM Lane V/C Ratio	0.112	-	0.584	0.077	-	-
HCM Control Delay (s)	10.2	-	85.3	12	-	-
HCM Lane LOS	B	-	F	B	-	-
HCM 95th %tile Q(veh)	0.4	-	2.7	0.2	-	-

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Bridge Alternative Buildout PM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	269	7	111	5	4	2	128	630	7	1	622	219
Future Volume (vph)	269	7	111	5	4	2	128	630	7	1	622	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		0	120		0	130		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					1.00			1.00		1.00		
Frt			0.850		0.975			0.998			0.961	
Flt Protected		0.954			0.978		0.950			0.950		
Satd. Flow (prot)	0	1795	1583	0	1657	0	1752	3567	0	1805	3435	0
Flt Permitted		0.724			0.804		0.227			0.388		
Satd. Flow (perm)	0	1362	1583	0	1362	0	419	3567	0	736	3435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87		2			2			69	
Link Speed (mph)		35			30			40			40	
Link Distance (ft)		1900			991			3533			7761	
Travel Time (s)		37.0			22.5			60.2			132.3	
Confl. Peds. (#/hr)				1		1			1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	2%	0%	0%	50%	3%	1%	0%	0%	1%	1%
Adj. Flow (vph)	292	8	121	5	4	2	139	685	8	1	676	238
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	121	0	11	0	139	693	0	1	914	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	25.0		10.0	25.0	
Minimum Split (s)	16.0	16.0	16.0	40.0	40.0		15.0	33.0		15.0	31.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0		20.0	55.0		20.0	55.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		20.0%	55.0%		20.0%	55.0%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0		15.0	49.0		15.0	49.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.5		4.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		5.0	6.0		5.0	6.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.7	2.7	2.7	2.7	2.7		2.7	4.0		2.7	4.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)	0.0	0.0	0.0	7.0	7.0			7.0			10.0	
Flash Dont Walk (s)	0.0	0.0	0.0	27.0	27.0			20.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		19.0	19.0		19.0		64.0	61.0		60.0	49.0	
Actuated g/C Ratio		0.20	0.20		0.20		0.67	0.64		0.63	0.52	
v/c Ratio		1.10	0.31		0.04		0.33	0.30		0.00	0.51	
Control Delay		122.9	14.2		28.6		7.4	8.8		5.0	15.0	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		122.9	14.2		28.6		7.4	8.8		5.0	15.0	
LOS		F	B		C		A	A		A	B	
Approach Delay		91.6			28.6			8.5			15.0	
Approach LOS		F			C			A			B	
Queue Length 50th (ft)		~207	17		4		25	78		0	166	
Queue Length 95th (ft)		#369	64		20		45	166		2	218	
Internal Link Dist (ft)		1820			911			3453			7681	
Turn Bay Length (ft)			50				120			130		
Base Capacity (vph)		272	386		274		497	2291		672	1804	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	

Lanes, Volumes, Timings
3: Sumter Blvd & Appomattox Dr

Bridge Alternative Buildout PM Peak Hour
10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		1.10	0.31		0.04		0.28	0.30		0.00	0.51	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 95

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 27.4

Intersection LOS: C

Intersection Capacity Utilization 68.6%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Sumter Blvd & Appomattox Dr

 Ø1	 Ø2	 Ø4
20 s	55 s	25 s
 Ø5	 Ø6	 Ø8
20 s	55 s	25 s

Lanes, Volumes, Timings
4: Sumter Blvd & Price Blvd

Bridge Alternative Buildout PM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	316	66	281	253	159	133	433	282	515	693	140
Future Volume (vph)	217	316	66	281	253	159	133	433	282	515	693	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		225	400		515	210		650	330		400
Storage Lanes	1		1	1		1	1		1	2		1
Taper Length (ft)	50			50			50			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor									0.99			
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3610	1615	1770	3574	1583	1805	3539	1583	3467	3574	1553
Flt Permitted	0.586			0.426			0.254			0.461		
Satd. Flow (perm)	1092	3610	1615	794	3574	1583	483	3539	1561	1682	3574	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			218			280			217
Link Speed (mph)		45			35			30			30	
Link Distance (ft)		2204			1860			7761			1590	
Travel Time (s)		33.4			36.2			176.4			36.1	
Confl. Peds. (#/hr)									2			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	0%	0%	2%	1%	2%	0%	2%	2%	1%	1%	4%
Adj. Flow (vph)	231	336	70	299	269	169	141	461	300	548	737	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	231	336	70	299	269	169	141	461	300	548	737	149
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	10.0	25.0	25.0	10.0	25.0	25.0
Minimum Split (s)	14.0	35.0	35.0	14.1	36.1	36.1	17.2	37.2	37.2	17.2	34.2	34.2
Total Split (s)	13.0	28.0	28.0	15.0	30.0	30.0	18.0	32.0	32.0	17.0	31.0	31.0
Total Split (%)	14.1%	30.4%	30.4%	16.3%	32.6%	32.6%	19.6%	34.8%	34.8%	18.5%	33.7%	33.7%
Maximum Green (s)	6.0	21.0	21.0	7.9	22.9	22.9	10.8	24.8	24.8	9.8	23.8	23.8
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	7.2	7.2	7.2	7.2	7.2	7.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	2.0	1.0	1.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		22.0	22.0		23.0	23.0		20.0	20.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	18.8	12.8	12.8	22.6	14.7	14.7	40.2	30.0	30.0	39.5	29.7	29.7
Actuated g/C Ratio	0.21	0.14	0.14	0.25	0.17	0.17	0.45	0.34	0.34	0.44	0.33	0.33
v/c Ratio	0.84	0.65	0.17	1.04	0.46	0.38	0.38	0.39	0.42	0.58	0.62	0.23
Control Delay	54.7	42.2	0.9	94.5	36.1	4.5	14.8	24.0	5.8	15.8	28.1	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	42.2	0.9	94.5	36.1	4.5	14.8	24.0	5.8	15.8	28.1	1.7
LOS	D	D	A	F	D	A	B	C	A	B	C	A
Approach Delay		42.2			52.6			16.5			20.7	
Approach LOS		D			D			B			C	
Queue Length 50th (ft)	102	95	0	~147	72	0	38	102	7	83	180	0
Queue Length 95th (ft)	#194	139	0	#308	110	27	75	154	65	126	260	12
Internal Link Dist (ft)		2124			1780			7681			1510	
Turn Bay Length (ft)	400		225	400		515	210		650	330		400
Base Capacity (vph)	276	851	547	287	919	569	382	1193	711	942	1190	661
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
4: Sumter Blvd & Price Blvd

Bridge Alternative Buildout PM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.39	0.13	1.04	0.29	0.30	0.37	0.39	0.42	0.58	0.62	0.23

Intersection Summary

Area Type: Other

Cycle Length: 92

Actuated Cycle Length: 89

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 29.7

Intersection LOS: C

Intersection Capacity Utilization 87.7%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Sumter Blvd & Price Blvd

 Ø3	 Ø4	 Ø1	 Ø2
15 s	28 s	17 s	32 s
 Ø7	 Ø8	 Ø5	 Ø6
13 s	30 s	18 s	31 s

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Bridge Alternative Buildout PM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	1534	62	63	1115	63	49	88	90	62	59	121
Future Volume (vph)	201	1534	62	63	1115	63	49	88	90	62	59	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	390		350	350		0	260		90	165		380
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	50			100			25			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				1.00			1.00					0.99
Frts			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3574	1615	1770	3539	1553	1805	1863	1538	1770	1900	1599
Flt Permitted	0.950			0.950			0.717			0.687		
Satd. Flow (perm)	1770	3574	1615	1769	3539	1553	1360	1863	1538	1280	1900	1579
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			186			129			189			189
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		1410			3226			1003			1463	
Travel Time (s)		21.4			48.9			22.8			24.9	
Confl. Peds. (#/hr)				1			2					1
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
Heavy Vehicles (%)	2%	1%	0%	2%	2%	4%	0%	2%	5%	2%	0%	1%
Adj. Flow (vph)	212	1615	65	66	1174	66	52	93	95	65	62	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	1615	65	66	1174	66	52	93	95	65	62	127
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	12.4	45.8	45.8	12.3	51.8	51.8	10.7	63.5	63.5	10.7	62.5	62.5
Total Split (s)	18.0	45.0	45.0	32.0	59.0	59.0	18.0	46.0	46.0	17.0	45.0	45.0
Total Split (%)	12.9%	32.1%	32.1%	22.9%	42.1%	42.1%	12.9%	32.9%	32.9%	12.1%	32.1%	32.1%
Maximum Green (s)	10.6	38.2	38.2	24.7	52.2	52.2	12.3	39.5	39.5	11.3	38.5	38.5
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.6	2.0	2.0	2.5	2.0	2.0	2.0	2.8	2.8	2.0	2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	5.7	6.5	6.5	5.7	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		29.0	29.0		35.0	35.0		47.0	47.0		46.0	46.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	10.6	55.1	55.1	10.6	52.2	52.2	52.1	44.5	44.5	53.4	45.2	45.2
Actuated g/C Ratio	0.08	0.39	0.39	0.08	0.37	0.37	0.37	0.32	0.32	0.38	0.32	0.32
v/c Ratio	1.58	1.15	0.09	0.49	0.89	0.10	0.10	0.16	0.15	0.13	0.10	0.20
Control Delay	334.1	114.6	0.2	54.8	41.6	7.4	25.9	37.1	0.5	26.2	35.9	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	334.1	114.6	0.2	54.8	41.6	7.4	25.9	37.1	0.5	26.2	35.9	1.3
LOS	F	F	A	D	D	A	C	D	A	C	D	A
Approach Delay		135.3			40.6			20.2			16.1	
Approach LOS		F			D			C			B	
Queue Length 50th (ft)	~274	~942	0	62	414	12	29	62	0	36	41	0
Queue Length 95th (ft)	#440	#1133	0	105	666	43	57	112	0	68	79	7
Internal Link Dist (ft)		1330			3146			923			1383	
Turn Bay Length (ft)	390		350	350			260		90	165		380
Base Capacity (vph)	134	1405	747	312	1319	659	574	591	617	542	613	637
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Bridge Alternative Buildout PM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.58	1.15	0.09	0.21	0.89	0.10	0.09	0.16	0.15	0.12	0.10	0.20

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 66 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.58

Intersection Signal Delay: 86.1

Intersection LOS: F

Intersection Capacity Utilization 110.4%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 5: North Port Blvd & US 41

 Ø1	 Ø2 (R) 	 Ø3	 Ø4
18 s	59 s	17 s	46 s
 Ø5	 Ø6 (R) 	 Ø7	 Ø8
32 s	45 s	18 s	45 s

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	17	244	56	14	149
Future Vol, veh/h	36	17	244	56	14	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	4	0	4	5	20	2
Mvmt Flow	41	20	280	64	16	171
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	515	312	0	0	344	0
Stage 1	312	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Critical Hdwy	6.44	6.2	-	-	4.3	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.3	-	-	2.38	-
Pot Cap-1 Maneuver	516	733	-	-	1121	-
Stage 1	738	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	508	733	-	-	1121	-
Mov Cap-2 Maneuver	508	-	-	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	12.2	0		0.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	563	1121	-	
HCM Lane V/C Ratio	-	-	0.108	0.014	-	
HCM Control Delay (s)	-	-	12.2	8.3	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.4	0	-	

Intersection						
Int Delay, s/veh	8.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	232	49	104	210	94	165
Future Vol, veh/h	232	49	104	210	94	165
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	4	1	4	4
Mvmt Flow	276	58	124	250	112	196
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	336	0	805	307
Stage 1	-	-	-	-	307	-
Stage 2	-	-	-	-	498	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1212	-	349	728
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	607	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1210	-	307	727
Mov Cap-2 Maneuver	-	-	-	-	307	-
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	607	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	2.8		24.4		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	486	-	-	1210	-	
HCM Lane V/C Ratio	0.634	-	-	0.102	-	
HCM Control Delay (s)	24.4	-	-	8.3	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	4.4	-	-	0.3	-	

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	62	0	0	115	27	0	152	0	22	124	5
Future Vol, veh/h	8	62	0	0	115	27	0	152	0	22	124	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	67	0	0	125	29	0	165	0	24	135	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	154	0	0	67	0	0	295	239	67	308	225	140
Stage 1	-	-	-	-	-	-	85	85	-	140	140	-
Stage 2	-	-	-	-	-	-	210	154	-	168	85	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1426	-	-	1535	-	-	657	662	997	644	674	908
Stage 1	-	-	-	-	-	-	923	824	-	863	781	-
Stage 2	-	-	-	-	-	-	792	770	-	834	824	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1426	-	-	1535	-	-	549	657	997	516	669	908
Mov Cap-2 Maneuver	-	-	-	-	-	-	549	657	-	516	669	-
Stage 1	-	-	-	-	-	-	917	818	-	857	781	-
Stage 2	-	-	-	-	-	-	651	770	-	661	818	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	12.3	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	657	1426	-	-	1535	-	-	516	676
HCM Lane V/C Ratio	0.251	0.006	-	-	-	-	-	0.046	0.207
HCM Control Delay (s)	12.3	7.5	0	-	0	-	-	12.3	11.7
HCM Lane LOS	B	A	A	-	A	-	-	B	B
HCM 95th %tile Q(veh)	1	0	-	-	0	-	-	0.1	0.8

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	333	63	83	268	51	67
Future Vol, veh/h	333	63	83	268	51	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	362	68	90	291	55	73
Major/Minor						
	Major1		Major2		Minor1	
Conflicting Flow All	0	0	430	0	867	396
Stage 1	-	-	-	-	396	-
Stage 2	-	-	-	-	471	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1129	-	323	653
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1129	-	292	653
Mov Cap-2 Maneuver	-	-	-	-	292	-
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	628	-
Approach						
	EB		WB		NB	
HCM Control Delay, s	0		2		17.1	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	426	-	-	1129	-	
HCM Lane V/C Ratio	0.301	-	-	0.08	-	
HCM Control Delay (s)	17.1	-	-	8.5	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1.2	-	-	0.3	-	

Lanes, Volumes, Timings
10: Tuscola Blvd & US 41

Bridge Alternative Buildout PM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	1675	11	56	1236	142	6	1	21	157	2	106
Future Volume (vph)	122	1675	11	56	1236	142	6	1	21	157	2	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	700		0	250		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	50			250			25			50		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.985			0.896			0.853	
Flt Protected	0.950			0.950				0.990		0.950		
Satd. Flow (prot)	1770	5080	0	1770	5009	0	0	1652	0	1770	1589	0
Flt Permitted	0.134			0.092				0.918		0.738		
Satd. Flow (perm)	250	5080	0	171	5009	0	0	1532	0	1375	1589	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			26			23			114	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		3226			2457			1487			874	
Travel Time (s)		48.9			37.2			33.8			19.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	131	1801	12	60	1329	153	6	1	23	169	2	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	131	1813	0	60	1482	0	0	30	0	169	116	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	12.0		5.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.8	34.8		12.8	35.8		52.7	52.7		50.7	50.7	
Total Split (s)	18.0	94.0		18.0	94.0		28.0	28.0		28.0	28.0	
Total Split (%)	12.9%	67.1%		12.9%	67.1%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	10.2	86.2		10.2	86.2		18.3	18.3		18.3	18.3	
Yellow Time (s)	4.8	4.8		4.8	4.8		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.0	3.0		3.0	3.0		6.0	6.0		6.0	6.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	7.8	7.8		7.8	7.8			9.7		9.7	9.7	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	5.0		3.0	5.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		20.0			21.0		36.0	36.0		34.0	34.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	99.4	92.4		94.8	88.1			18.3		18.3	18.3	
Actuated g/C Ratio	0.71	0.66		0.68	0.63			0.13		0.13	0.13	
v/c Ratio	0.49	0.54		0.31	0.47			0.14		0.94	0.38	
Control Delay	17.1	1.9		19.6	26.8			26.2		113.8	13.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	17.1	1.9		19.6	26.8			26.2		113.8	13.5	
LOS	B	A		B	C			C		F	B	
Approach Delay		2.9			26.6			26.3			73.0	
Approach LOS		A			C			C			E	
Queue Length 50th (ft)	20	34		28	316			6		155	2	
Queue Length 95th (ft)	m25	m31		m50	382			37		#301	60	
Internal Link Dist (ft)		3146			2377			1407			794	
Turn Bay Length (ft)	700			250						100		
Base Capacity (vph)	290	3351		236	3160			220		179	306	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.45	0.54		0.25	0.47			0.14		0.94	0.38	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 100 (71%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 17.9

Intersection LOS: B

Intersection Capacity Utilization 73.2%

ICU Level of Service D

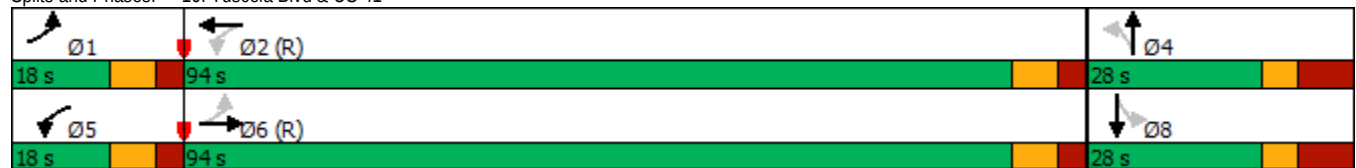
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tuscola Blvd & US 41



Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	39	79	878	738	63
Future Vol, veh/h	51	39	79	878	738	63
Conflicting Peds, #/hr	5	0	2	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	90	120	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	3	0	1	1	0
Mvmt Flow	56	43	87	965	811	69
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1510	442	882	0	-	0
Stage 1	848	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Critical Hdwy	6.88	6.96	4.1	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.33	2.2	-	-	-
Pot Cap-1 Maneuver	109	560	775	-	-	-
Stage 1	375	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	96	559	774	-	-	-
Mov Cap-2 Maneuver	96	-	-	-	-	-
Stage 1	332	-	-	-	-	-
Stage 2	468	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	53.5		0.8		0	
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	774	-	96	559	-	-
HCM Lane V/C Ratio	0.112	-	0.584	0.077	-	-
HCM Control Delay (s)	10.2	-	85.3	12	-	-
HCM Lane LOS	B	-	F	B	-	-
HCM 95th %tile Q(veh)	0.4	-	2.7	0.2	-	-

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Bridge Alternative Buildout + Improvements PM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	1534	62	63	1115	63	49	88	90	62	59	121
Future Volume (vph)	201	1534	62	63	1115	63	49	88	90	62	59	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	390		350	350		0	260		90	165		380
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	50			100			25			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				1.00			1.00					0.99
Frts			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3574	1615	1770	3539	1553	1805	1863	1538	1770	1900	1599
Fit Permitted	0.950			0.950			0.717			0.690		
Satd. Flow (perm)	1770	3574	1615	1769	3539	1553	1360	1863	1538	1285	1900	1579
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			129			129			132			132
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		1410			3226			1003			1463	
Travel Time (s)		21.4			48.9			22.8			24.9	
Confl. Peds. (#/hr)				1			2					1
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
Heavy Vehicles (%)	2%	1%	0%	2%	2%	4%	0%	2%	5%	2%	0%	1%
Adj. Flow (vph)	212	1615	65	66	1174	66	52	93	95	65	62	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	1615	65	66	1174	66	52	93	95	65	62	127
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2	4		4	8		8
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	12.4	45.8	45.8	12.3	51.8	51.8	10.7	63.5	63.5	10.7	62.5	62.5
Total Split (s)	25.0	59.0	59.0	32.0	66.0	66.0	17.0	33.0	33.0	16.0	32.0	32.0
Total Split (%)	17.9%	42.1%	42.1%	22.9%	47.1%	47.1%	12.1%	23.6%	23.6%	11.4%	22.9%	22.9%
Maximum Green (s)	17.6	52.2	52.2	24.7	59.2	59.2	11.3	26.5	26.5	10.3	25.5	25.5
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.6	2.0	2.0	2.5	2.0	2.0	2.0	2.8	2.8	2.0	2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	5.7	6.5	6.5	5.7	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Dont Walk (s)		29.0	29.0		35.0	35.0		47.0	47.0		46.0	46.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	17.6	69.1	69.1	10.6	59.2	59.2	38.4	30.4	30.4	39.0	30.7	30.7
Actuated g/C Ratio	0.13	0.49	0.49	0.08	0.42	0.42	0.27	0.22	0.22	0.28	0.22	0.22
v/c Ratio	0.95	0.92	0.08	0.49	0.78	0.09	0.13	0.23	0.22	0.17	0.15	0.28
Control Delay	110.0	43.1	0.2	54.8	41.3	8.3	35.6	49.0	3.7	36.1	47.8	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	110.0	43.1	0.2	54.8	41.3	8.3	35.6	49.0	3.7	36.1	47.8	8.6
LOS	F	D	A	D	D	A	D	D	A	D	D	A
Approach Delay		49.1			40.3			28.2			25.2	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	195	729	0	62	592	12	34	72	0	43	47	0
Queue Length 95th (ft)	#357	#955	0	105	647	43	67	127	20	80	92	53
Internal Link Dist (ft)		1330			3146			923			1383	
Turn Bay Length (ft)	390		350	350			260		90	165		380
Base Capacity (vph)	222	1762	861	312	1496	731	426	404	437	400	416	449
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lanes, Volumes, Timings
5: North Port Blvd & US 41

Bridge Alternative Buildout + Improvements PM Peak Hour

10/15/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.92	0.08	0.21	0.78	0.09	0.12	0.23	0.22	0.16	0.15	0.28

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 66 (47%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 43.0

Intersection LOS: D

Intersection Capacity Utilization 110.4%

ICU Level of Service H

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 5: North Port Blvd & US 41

 Ø1	 Ø2 (R)	 Ø3	 Ø4
25 s	66 s	16 s	33 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
32 s	59 s	17 s	32 s

APPENDIX G

BRIDGE ALTERNATIVE INTERSECTION VOLUME DEVELOPMENT WORKSHEETS

INTERSECTION VOLUME DEVELOPMENT

Sumter Blvd & US 41

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	68	86	12	272	101	232	148	562	41	15	752	161
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	84	106	15	335	124	285	182	691	50	18	925	198
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	4	5	1	17	6	14	9	35	3	1	47	10
Project Traffic % Assignment	2%	1%		10%	1%			20%	2%		20%	10%
Project Traffic Direction	In	In	N/A	Out	Out	N/A	N/A	Out	Out	N/A	In	In
Project Traffic	4	2		32	3			67	6		46	20
2020 Background Traffic	88	111	16	352	130	299	191	726	53	19	972	208
2020 Total Traffic	92	113	16	384	133	299	191	793	59	19	1,018	228

WEEKDAY PM PEAK HOUR (4:45 PM to 5:45 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	133	173	26	344	153	135	259	970	75	41	721	268
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	164	213	32	423	188	166	319	1,193	92	50	887	330
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	7	11	2	21	10	8	16	60	5	3	45	17
Project Traffic % Assignment	2%	1%		10%	1%			20%	2%		20%	10%
Project Traffic Direction	In	In	N/A	Out	Out	N/A	N/A	Out	Out	N/A	In	In
Project Traffic	7	3		27	3			57	5		69	30
2020 Background Traffic	171	224	34	444	198	174	335	1,253	97	53	932	347
2020 Total Traffic	178	227	34	471	201	174	335	1,310	102	53	1,001	377

INTERSECTION VOLUME DEVELOPMENT

Sumter Blvd & Greenwood Ave

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	33	332	0	0	605	16	24	0	39	0	0	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	41	408	0	0	744	20	30	0	48	0	0	0
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	2	21	0	0	38	1	2	0	2	0	0	0
Project Traffic % Assignment		11%			11%	8%	8%					
Project Traffic Direction	N/A	In	N/A	N/A	Out	In	Out	N/A	N/A	N/A	N/A	N/A
Project Traffic		22			35	18	26					
2020 Background Traffic	43	429	0	0	782	21	32	0	50	0	0	0
2020 Total Traffic	43	451	0	0	817	39	58	0	50	0	0	0

WEEKDAY PM PEAK HOUR (4:45 PM to 5:45 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	61	654	0	0	548	28	23	0	30	0	0	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	75	804	0	0	674	34	28	0	37	0	0	0
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	4	41	0	0	34	2	1	0	2	0	0	0
Project Traffic % Assignment		11%			11%	8%	8%					
Project Traffic Direction	N/A	In	N/A	N/A	Out	In	Out	N/A	N/A	N/A	N/A	N/A
Project Traffic		33			30	27	22					
2020 Background Traffic	79	845	0	0	708	36	29	0	39	0	0	0
2020 Total Traffic	79	878	0	0	738	63	51	0	39	0	0	0

INTERSECTION VOLUME DEVELOPMENT

Sumter Blvd & Appomattox Dr

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	38	309	0	2	460	151	92	0	68	2	0	2
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	47	380	0	2	566	186	113	0	84	2	0	2
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	2	19	0	0	29	9	6	0	4	0	0	0
Project Traffic % Assignment	11%	7%	1%		7%	14%	14%	1%	10%	1%	1%	
Project Traffic Direction	In	Out	Out	N/A	In	In	Out	Out	Out	In	In	N/A
Project Traffic	22	23	3		16	32	45	3	32	2	2	
2020 Background Traffic	49	399	0	2	595	195	119	0	88	2	0	2
2020 Total Traffic	71	422	3	2	611	227	164	3	120	4	2	2

WEEKDAY PM PEAK HOUR (4:45 PM to 5:45 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	73	473	3	1	463	133	180	3	65	2	1	2
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	90	582	4	1	569	164	221	4	80	2	1	2
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	5	29	0	0	29	8	11	0	4	0	0	0
Project Traffic % Assignment	11%	7%	1%		7%	14%	14%	1%	10%	1%	1%	
Project Traffic Direction	In	Out	Out	N/A	In	In	Out	Out	Out	In	In	N/A
Project Traffic	33	19	3		24	47	37	3	27	3	3	
2020 Background Traffic	95	611	4	1	598	172	232	4	84	2	1	2
2020 Total Traffic	128	630	7	1	622	219	269	7	111	5	4	2

INTERSECTION VOLUME DEVELOPMENT

Sumter Blvd & Price Blvd

WEEKDAY AM PEAK HOUR (7:45 AM to 8:45 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	47	283	94	148	342	79	138	187	44	254	192	213
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	58	348	116	182	421	97	170	230	54	312	236	262
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	3	18	6	9	21	5	9	12	3	16	12	13
Project Traffic % Assignment		14%	7%		14%					7%		
Project Traffic Direction	N/A	Out	Out	N/A	In	N/A	N/A	N/A	N/A	In	N/A	N/A
Project Traffic		45	23		32					16		
2020 Background Traffic	61	366	122	191	442	102	179	242	57	328	248	275
2020 Total Traffic	61	411	145	191	474	102	179	242	57	344	248	275

WEEKDAY PM PEAK HOUR (5:00 PM to 6:00 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	103	306	204	398	499	108	168	245	51	200	196	123
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	127	376	251	490	614	133	207	301	63	246	241	151
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	6	19	13	25	31	7	10	15	3	12	12	8
Project Traffic % Assignment		14%	7%		14%					7%		
Project Traffic Direction	N/A	Out	Out	N/A	In	N/A	N/A	N/A	N/A	In	N/A	N/A
Project Traffic		37	19		48					23		
2020 Background Traffic	133	395	264	515	645	140	217	316	66	258	253	159
2020 Total Traffic	133	432	283	515	693	140	217	316	66	281	253	159

INTERSECTION VOLUME DEVELOPMENT

North Port Blvd & US 41

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	41	41	41	39	42	71	63	637	46	32	826	45
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	50	50	50	48	52	87	77	784	57	39	1,016	55
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	3	3	3	2	3	4	4	40	3	2	51	3
Project Traffic % Assignment		1%	2%		1%	10%	10%	20%		3%	20%	
Project Traffic Direction	N/A	In	In	N/A	Out	Out	In	In	N/A	Out	Out	N/A
Project Traffic		2	4		3	32	22	46		10	67	
2020 Background Traffic	53	53	53	50	55	91	81	824	60	41	1,067	58
2020 Total Traffic	53	55	57	50	58	123	103	870	60	51	1,134	58

WEEKDAY PM PEAK HOUR (4:30 PM to 5:30 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	38	66	64	48	43	72	130	1,133	48	42	819	49
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	47	81	79	59	53	89	160	1,394	59	52	1,007	60
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	2	4	4	3	3	5	8	71	3	3	51	3
Project Traffic % Assignment		1%	2%		1%	10%	10%	20%		3%	20%	
Project Traffic Direction	N/A	In	In	N/A	Out	Out	In	In	N/A	Out	Out	N/A
Project Traffic		3	7		3	27	33	69		8	57	
2020 Background Traffic	49	85	83	62	56	94	168	1,465	62	55	1,058	63
2020 Total Traffic	49	88	90	62	59	121	201	1,534	62	63	1,115	63

INTERSECTION VOLUME DEVELOPMENT

North Port Blvd & Greenwood Ave

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	58	20	9	120	0	0	0	0	34	0	6
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	0	71	25	11	148	0	0	0	0	42	0	7
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	0	4	1	1	7	0	0	0	0	2	0	0
Project Traffic % Assignment		11%		2%	11%							2%
Project Traffic Direction	N/A	In	N/A	In	Out	N/A	N/A	N/A	N/A	N/A	N/A	Out
Project Traffic		24		6	35							6
2020 Background Traffic	0	75	26	12	155	0	0	0	0	44	0	7
2020 Total Traffic	0	99	26	18	190	0	0	0	0	44	0	13

WEEKDAY PM PEAK HOUR (4:30 PM to 5:30 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	160	43	5	92	0	0	0	0	28	0	9
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	0	197	53	6	113	0	0	0	0	34	0	11
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	0	10	3	0	6	0	0	0	0	2	0	1
Project Traffic % Assignment		11%		2%	11%							2%
Project Traffic Direction	N/A	In	N/A	In	Out	N/A	N/A	N/A	N/A	N/A	N/A	Out
Project Traffic		37		8	30							5
2020 Background Traffic	0	207	56	6	119	0	0	0	0	36	0	12
2020 Total Traffic	0	244	56	14	149	0	0	0	0	36	0	17

INTERSECTION VOLUME DEVELOPMENT

North Port Blvd & Appomattox Dr

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	25	0	39	0	0	0	0	117	39	71	122	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	31	0	48	0	0	0	0	144	48	87	150	0
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	2	0	2	0	0	0	0	7	2	4	8	0
Project Traffic % Assignment	2%		11%					8%	2%	11%	8%	
Project Traffic Direction	Out	N/A	In	N/A	N/A	N/A	N/A	In	In	Out	Out	N/A
Project Traffic	6		24					18	6	35	26	
2020 Background Traffic	33	0	50	0	0	0	0	151	50	91	158	0
2020 Total Traffic	39	0	74	0	0	0	0	169	56	126	184	0

WEEKDAY PM PEAK HOUR (4:30 PM to 5:30 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	69	0	99	0	0	0	0	159	32	57	146	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	85	0	122	0	0	0	0	196	39	70	180	0
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	4	0	6	0	0	0	0	10	2	4	9	0
Project Traffic % Assignment	2%		11%					8%	2%	11%	8%	
Project Traffic Direction	Out	N/A	In	N/A	N/A	N/A	N/A	In	In	Out	Out	N/A
Project Traffic	5		37					26	8	30	21	
2020 Background Traffic	89	0	128	0	0	0	0	206	41	74	189	0
2020 Total Traffic	94	0	165	0	0	0	0	232	49	104	210	0

INTERSECTION VOLUME DEVELOPMENT

South Driveway & Greenwood Ave

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	0	0	0	0	0	0	29	0	0	49	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	0	0	0	0	0	0	0	36	0	0	60	0
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	0	0	0	0	0	0	0	2	0	0	3	0
Project Traffic % Assignment		44%		8%	44%	2%	2%					8%
Project Traffic Direction	N/A	In	N/A	Out	Out	Out	In	N/A	N/A	N/A	N/A	In
Project Traffic		100		26	146	6	6					18
2020 Background Traffic	0	0	0	0	0	0	0	38	0	0	63	0
2020 Total Traffic	0	100	0	26	146	6	6	38	0	0	63	18

WEEKDAY PM PEAK HOUR (4:30 PM to 5:30 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	0	0	0	0	0	0	48	0	0	89	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	0	0	0	0	0	0	0	59	0	0	109	0
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	0	0	0	0	0	0	0	3	0	0	6	0
Project Traffic % Assignment		44%		8%	44%	2%	2%					8%
Project Traffic Direction	N/A	In	N/A	Out	Out	Out	In	N/A	N/A	N/A	N/A	In
Project Traffic		152		22	124	5	8					27
2020 Background Traffic	0	0	0	0	0	0	0	62	0	0	115	0
2020 Total Traffic	0	152	0	22	124	5	8	62	0	0	115	27

INTERSECTION VOLUME DEVELOPMENT

North Driveway & Appomattox Dr

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	0	0	0	0	0	0	156	0	0	189	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	0	0	0	0	0	0	0	192	0	0	232	0
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	0	0	0	0	0	0	0	10	0	0	12	0
Project Traffic % Assignment	19%		25%						19%	25%		
Project Traffic Direction	Out	N/A	Out	N/A	N/A	N/A	N/A	N/A	In	In	N/A	N/A
Project Traffic	61		80						42	56		
2020 Background Traffic	0	0	0	0	0	0	0	202	0	0	244	0
2020 Total Traffic	61	0	80	0	0	0	0	202	42	56	244	0

WEEKDAY PM PEAK HOUR (4:30 PM to 5:30 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	0	0	0	0	0	0	0	258	0	0	207	0
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	0	0	0	0	0	0	0	317	0	0	255	0
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	0	0	0	0	0	0	0	16	0	0	13	0
Project Traffic % Assignment	19%		25%						19%	25%		
Project Traffic Direction	Out	N/A	Out	N/A	N/A	N/A	N/A	N/A	In	In	N/A	N/A
Project Traffic	51		67						63	83		
2020 Background Traffic	0	0	0	0	0	0	0	333	0	0	268	0
2020 Total Traffic	51	0	67	0	0	0	0	333	63	83	268	0

INTERSECTION VOLUME DEVELOPMENT

Tuscola Blvd & US 41

WEEKDAY AM PEAK HOUR (8:00 AM to 9:00 AM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	8	2	18	30	0	24	28	732	11	55	1,003	45
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2018 Peak Season Volumes	10	2	22	37	0	30	34	900	14	68	1,234	55
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	1	0	1	2	0	2	2	46	1	3	62	3
Project Traffic % Assignment				22%		22%	22%					22%
Project Traffic Direction	N/A	N/A	N/A	Out	N/A	Out	In	N/A	N/A	N/A	N/A	In
Project Traffic				73		73	50					50
2020 Background Traffic	11	2	23	39	0	32	36	946	15	71	1,296	58
2020 Total Traffic	11	2	23	112	0	105	86	946	15	71	1,296	108

WEEKDAY PM PEAK HOUR (4:30 PM to 5:30 PM)	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 6/12/2018	5	1	16	73	2	34	36	1,296	8	43	956	51
Peak Season Factor	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Peak Season Volumes	6	1	20	90	2	42	44	1,594	10	53	1,176	63
Annual Growth Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
2020 Background Growth	0	0	1	5	0	2	2	81	1	3	60	3
Project Traffic % Assignment				22%		22%	22%					22%
Project Traffic Direction	N/A	N/A	N/A	Out	N/A	Out	In	N/A	N/A	N/A	N/A	In
Project Traffic				62		62	76					76
2020 Background Traffic	6	1	21	95	2	44	46	1,675	11	56	1,236	66
2020 Total Traffic	6	1	21	157	2	106	122	1,675	11	56	1,236	142

APPENDIX H

NCHRP 279 EXCERPT

✓ NATIONAL COOPERATIVE
HIGHWAY RESEARCH PROGRAM REPORT

279

INTERSECTION CHANNELIZATION DESIGN GUIDE

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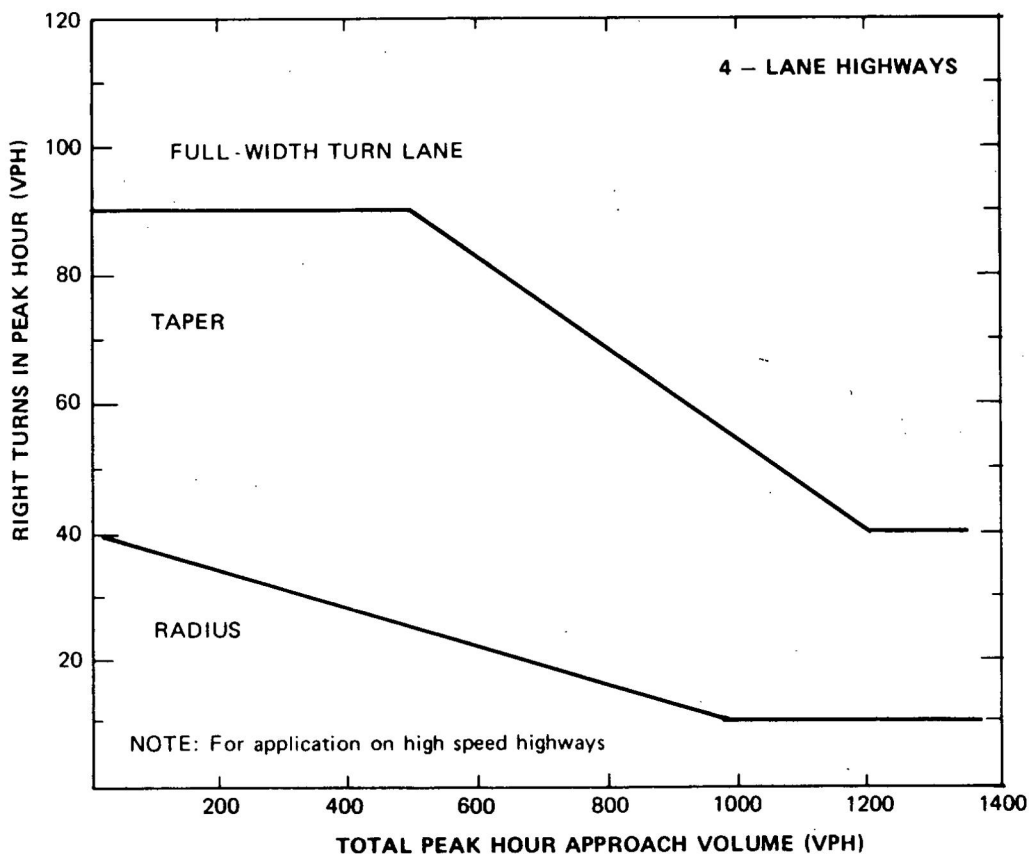
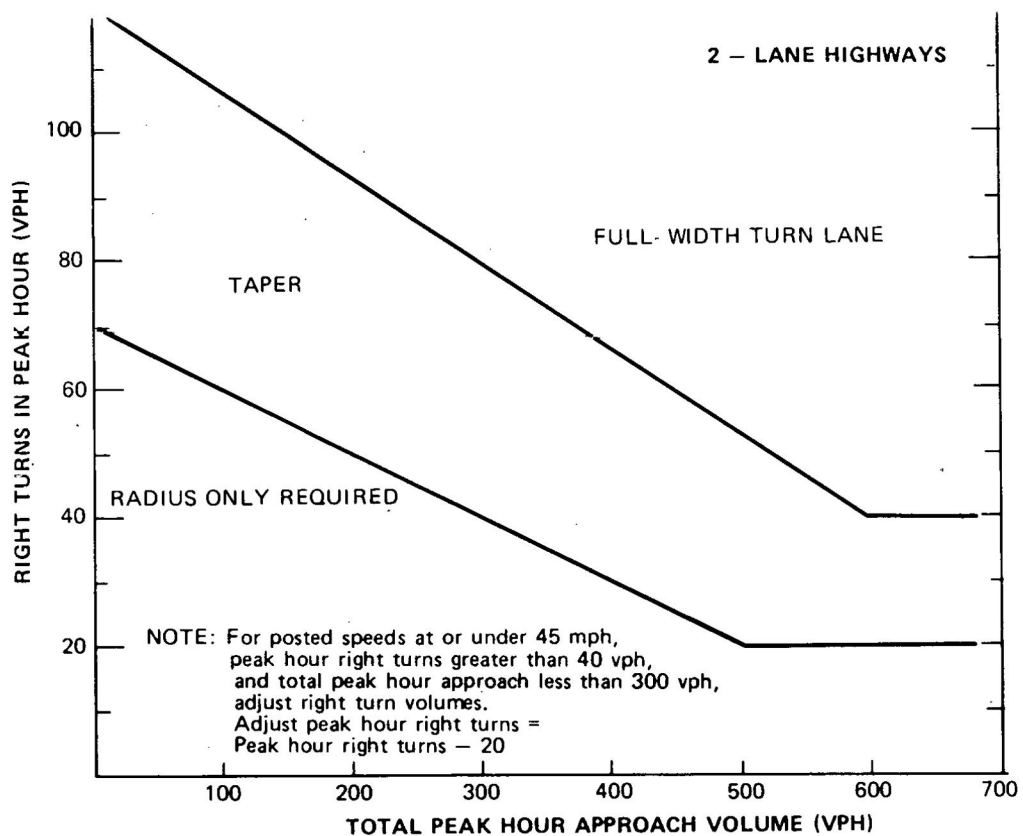


Figure 4-23. Traffic volume guidelines for design of right-turn lanes. (Source: Ref. 4-11)

APPENDIX I

NCHRP 745 EXCERPT

NCHRP

REPORT 745

NATIONAL
COOPERATIVE
HIGHWAY
RESEARCH
PROGRAM

Left-Turn Accommodations at Unsignalized Intersections

TRANSPORTATION RESEARCH BOARD
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of the steps a designer could take to determine whether a left-turn lane is appropriate for a particular location. Where there are no applicable access management guidelines, adequate spacing and design consistency are both essential requirements to consider.

Apply Left-Turn Lane Warrants

Warrants

After compiling all of the relevant information pertaining to a particular intersection, it is necessary to determine whether that information indicates that a left-turn lane is indeed necessary or beneficial. Left-turn lanes can reduce the potential for collisions and improve capacity by removing stopped vehicles from the main travel lane. The recommended left-turn lane warrants developed based on the NCHRP Project 3-91 research (1) are:

- Rural, two-lane highways (see Table 1),
- Rural, four-lane highways (see Table 2), and
- Urban and suburban roadways (see Table 3).

Table 1 also present warrants for a bypass lane treatment on two-lane rural highways. Given a peak-hour left-turn volume and a particular intersection configuration (i.e., number of legs, number of lanes on the major highway), the tables show the minimum peak-hour volume on the major highway that warrants a left-turn lane or bypass lane. Figure 2 displays the warrants for rural two-lane highways graphically. Figure 3 shows graphical warrants for four-lane rural highways, and Figure 4 shows the recommended warrants for urban and suburban arterials.

Technical warrants are an important element of the decision-making process; however, other factors should also be considered when deciding whether to install a left-turn lane, including:

- Sight distance relative to the position of the driver and
- Design consistency within the corridor.

These factors should be considered in conjunction with the numerical warrants. For example, if volumes indicate that a left-turn lane is not warranted but there is insufficient sight distance at the location for the left-turning vehicles, then the left-turn lane should be considered along with other potential changes (e.g., remove sight obstructions, realign the highway, etc.).

Source of Warrants—Benefit-Cost Approach

A benefit-cost approach was conducted as part of NCHRP Project 3-91 (1) to determine when a left-turn lane would be justified. Economic analysis can provide a useful method for combining traffic operations and safety benefits of left-turn lanes to identify situations in which left-turn lanes are and are not justified economically. The development steps included:

- Simulation to determine delay savings from installing a left-turn lane,
- Crash costs,
- Crash reduction savings determined from safety performance functions available in the *AASHTO Highway Safety Manual* (Chapter 10 discusses rural two-lane, two-way roads; Chapter 11 discusses rural multilane highways; and Chapter 12 discusses urban and suburban arterials) (4),

Table 1. Recommended left-turn treatment warrants for rural two-lane highways.

Left-Turn Lane Peak-Hour Volume (veh/hr)	Three-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Bypass Lane	Three-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane	Four-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Bypass Lane	Four-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane
5	50	200	50	150
10	50	100	< 50	50
15	< 50	100	< 50	50
20	< 50	50	< 50	< 50
25	< 50	50	< 50	< 50
30	< 50	50	< 50	< 50
35	< 50	50	< 50	< 50
40	< 50	50	< 50	< 50
45	< 50	50	< 50	< 50
50 or More	< 50	50	< 50	< 50

Table 2. Recommended left-turn lane warrants for rural four-lane highways.

Left-Turn Lane Peak-Hour Volume (veh/hr)	Three-Leg Intersection, Major Four-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane	Four-Leg Intersection, Major Four-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane
5	75	50
10	75	25
15	50	25
20	50	25
25	50	< 25
30	50	< 25
35	50	< 25
40	50	< 25
45	50	< 25
50 or More	50	< 25

Table 3. Recommended left-turn lane warrants for urban and suburban arterials.

Left-Turn Lane Peak-Hour Volume (veh/hr)	Three-Leg Intersection, Major Urban and Suburban Arterial Volume (veh/hr/ln) That Warrants a Left-Turn Lane	Four-Leg Intersection, Major Urban and Suburban Arterial Volume (veh/hr/ln) That Warrants a Left-Turn Lane
5	450	50
10	300	50
15	250	50
20	200	50
25	200	50
30	150	50
35	150	50
40	150	50
45	150	< 50
50 or More	100	< 50

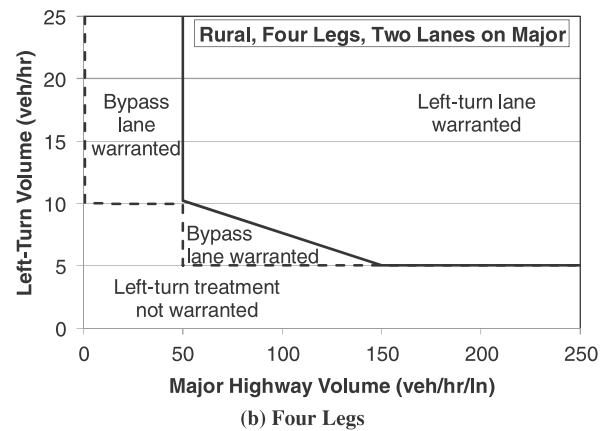
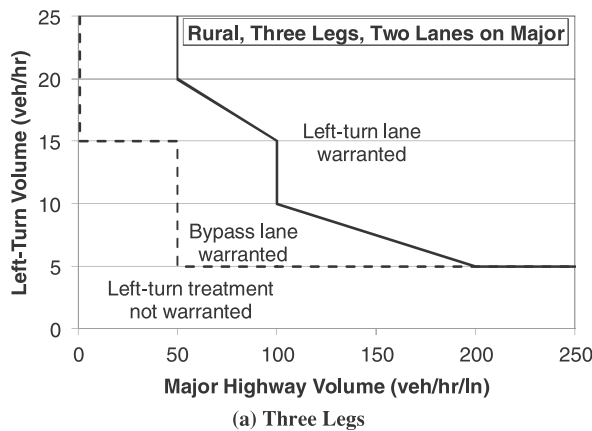


Figure 2. Recommended left-turn treatment warrants for intersections on rural two-lane highways.

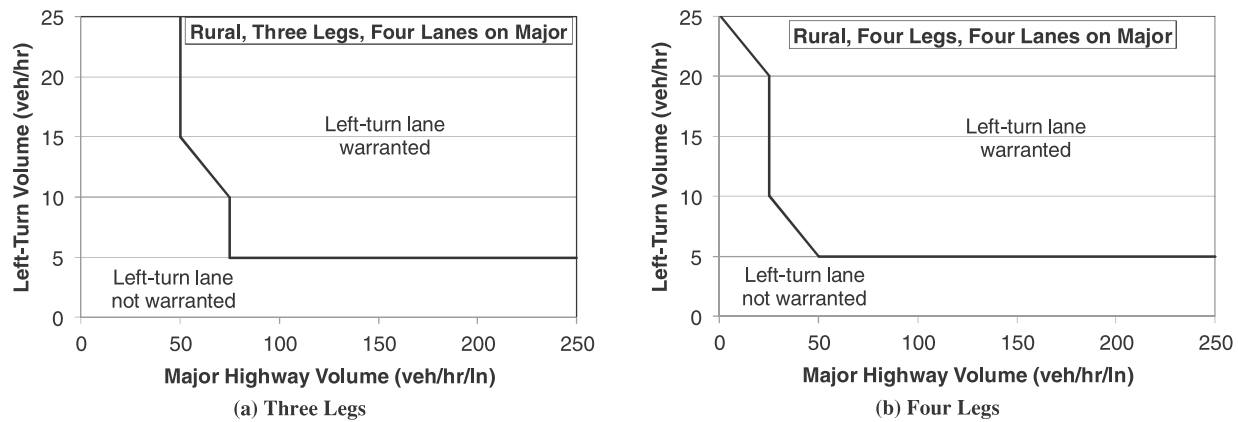


Figure 3. Recommended left-turn lane warrants for intersections on rural four-lane highways.

- Crash modification factors available in the AASHTO *Highway Safety Manual* (4), and
- Construction costs.

For rural conditions, different safety performance functions are provided for two- and four-lane highways and for three- and four-leg intersections. For urban and suburban arterials, prediction equations are provided for three-leg and four-leg intersections. Separate urban and suburban prediction equations are not provided based on the number of lanes on the major road approach. The prediction equations are not a function of speed limit; therefore, the developed warrants also are not a function of speed limit.

A range of values was used in the benefit-cost evaluation to identify volume conditions when the installation of a left-turn lane at unsignalized intersections and major driveways would be cost-effective. Plots and tables were developed that indicate combinations of major road traffic and left-turn lane volume where a left-turn lane would be recommended. Warrants were developed using the following:

- A range of values for the economic value of a statistical life,
- Crash costs based on values in the *Highway Safety Manual*,

- A range of construction costs, and
- A benefit-cost ratio of 1.0 and 2.0.

The research team suggested a benefit-cost ratio of 1.0 along with the mid-range economic value of a statistical life and moderate construction cost to identify the warrants for a left-turn treatment. For urban and suburban areas, that is a left-turn lane. For rural areas, that is a bypass lane. Benefit-cost ratio of 2.0 has been argued as being a more practical value to use to offset the potential variability in other assumptions. The warrants based on a benefit-cost ratio of 2.0 were selected for a left-turn lane on rural highways. These values were similar to the warrants that resulted when the lower crash costs based on older *Highway Safety Manual* costs were used.

Left-turn lanes can reduce the potential for collisions and improve capacity by removing stopped vehicles from the main travel lane. Left-turn lane warrants were developed as part of NCHRP Project 3-91 using an economic analysis procedure for rural, two-lane highways; rural, four-lane highways; and urban and suburban roadways. The methodology presented in the NCHRP Project 3-91 report (1) could also be used if a transportation agency has available local values for delay

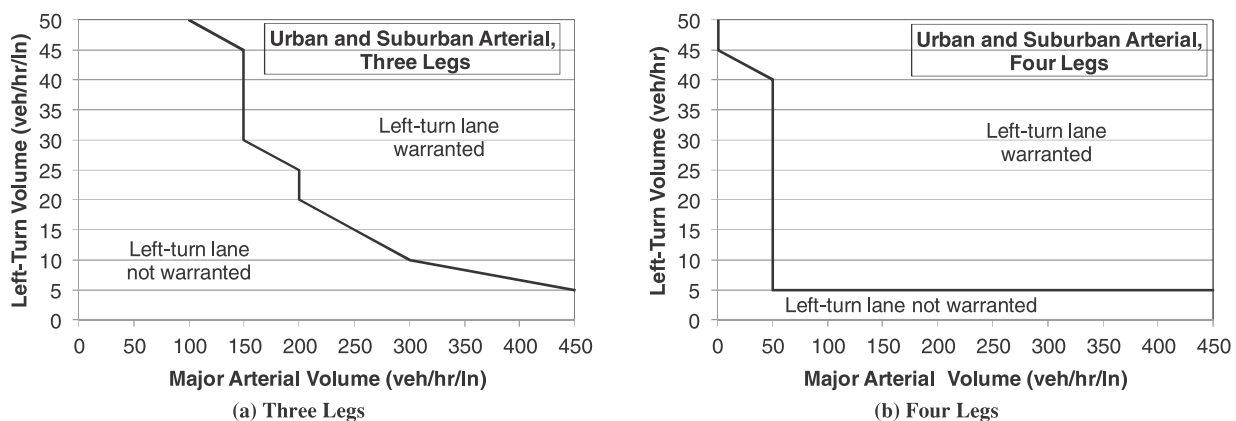


Figure 4. Recommended left-turn lane warrants for intersections on urban and suburban arterials.