

GCCF Property

Transportation Impact Analysis



Prepared for:
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Sarasota, Florida 34240

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GCCF Property Transportation Impact Analysis

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Professional Engineer's Certification

I hereby certify that I am a Licensed Professional Engineer in the State of Florida practicing with Stantec Consulting Services Inc. and that I have supervised the preparation of and approve the evaluations, findings, opinions, conclusions, and technical advice hereby reported for:

PROJECT: GCCF Property
Transportation Impact Analysis
215810792

LOCATION: East of I-75 between Border Road and Laurel Road in Venice, Florida

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Prepared by:



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Introduction

The purpose of this study is to determine the transportation impacts of the proposed GCCF Property located east of I-75 between Border Road and Laurel Road in Venice, Florida. The proposed development is shown in **Figure 1**.

The property is currently vacant. The petitioner proposes to construct a maximum of 1,300 dwelling units; 550 single-family detached dwelling units and 750 multi-family dwelling units. The development will have four external access points, two to Laurel Road and two to Border Road. The transportation impact analysis assumed a worst-case scenario ignoring the optional fifth access point interconnecting with the property to the east. If constructed, the interconnection will serve to reduce vehicular demand at the four external access points to Laurel Road and Border Road. The build-out year for the development is 2025. Prior to undertaking the study, a methodology statement was submitted to the City of Venice on September 12, 2018, and approved on September 13, 2018. A copy of the methodology is attached in Appendix A.

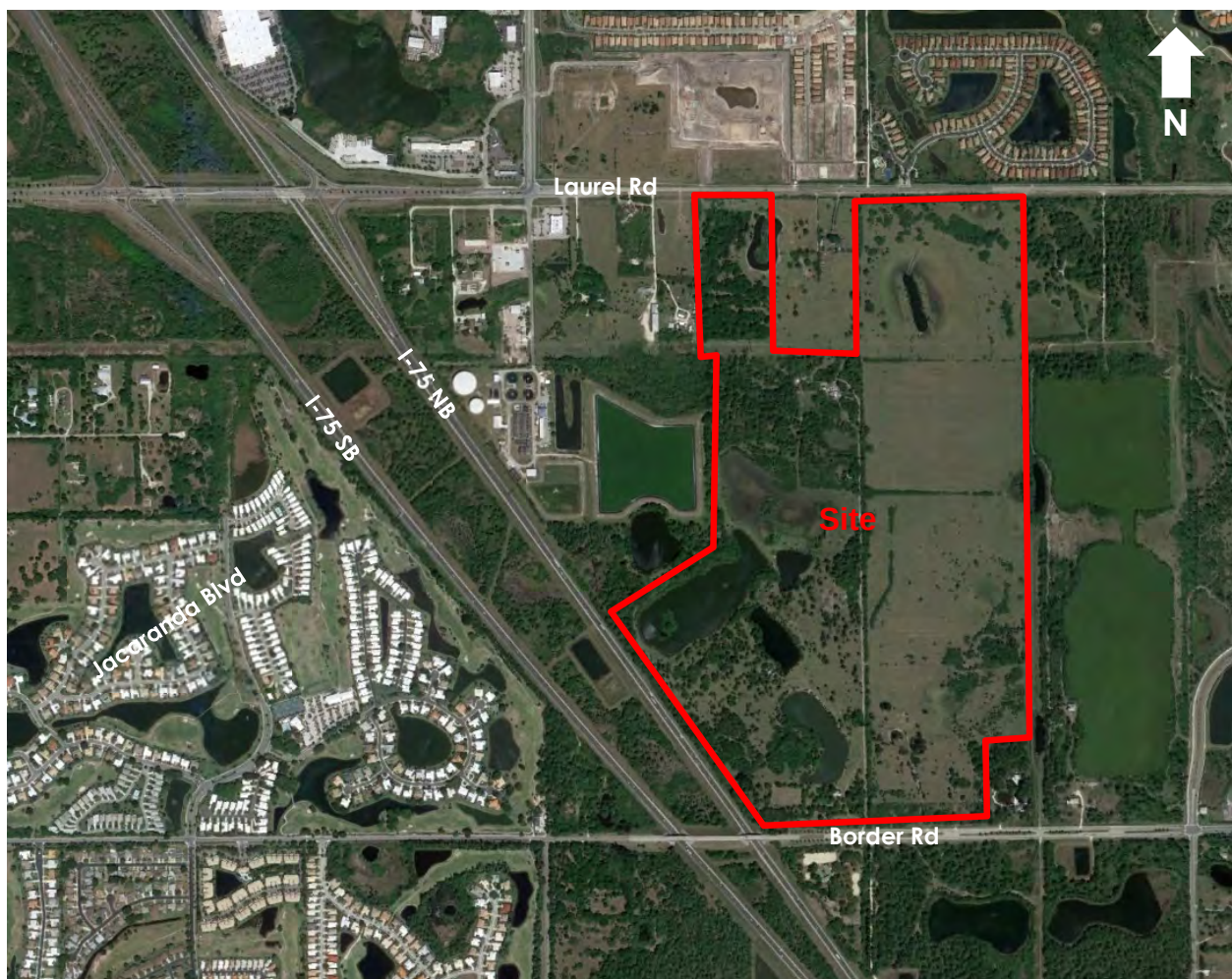


Figure 1: Project Location

Trip Generation

Traffic volumes generated by the project were estimated using the Institute of Transportation Engineers (ITE), Trip Generation Manual – the 10th Edition (2017). Land Use Code 210 (Single-Family Detached Housing) and Land Use Code 220 (Multifamily Housing Low-Rise) were used to estimate the PM peak-hour trip generation potential. The estimated external trips generated by the development are 877 PM peak-hour two-way trip ends (553 entering; 324 exiting). The trip generation results are summarized in **Table 1**.

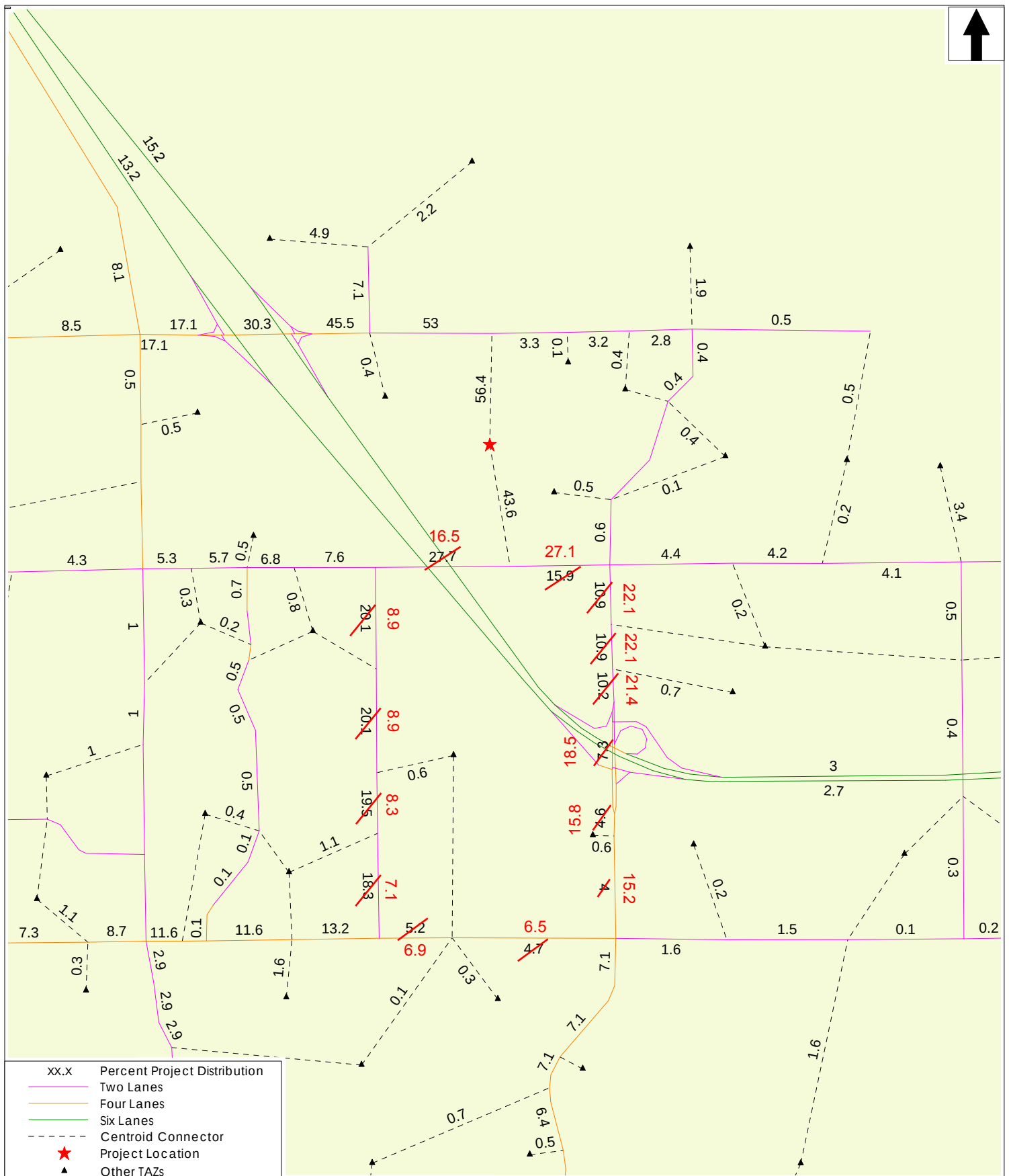
Table 1: PM Peak-Hour Trip Generation

ITE Land Use Category	Variable	Size	PM Peak Trip Rate/ Equation	PM Enter Split	PM Exit Split	PM Peak Total Trips		
						Total	Enter	Exit
Single-Family Detached Housing - 210	Per Unit	550	$\ln(T) = 0.96\ln(x) + 0.20$	63%	37%	522	329	193
Multifamily Housing (Low-Rise) - 220	Per Unit	750	$\ln(T) = 0.89\ln(x) - 0.02$	63%	37%	355	224	131
TOTAL						877	553	324

Project Traffic Distribution/Assignment

Traffic generated by the proposed project was distributed and assigned to the adjacent roadway network using the FDOT D1 Districtwide 2018 Existing plus Committed travel demand model with 2040 socioeconomic data. Based on discussions with City staff, a manual adjustment to the travel demand model distribution was made to remove north-south project traffic assigned to Auburn Road and shift those trips onto Jacaranda Boulevard, a more likely north-south route.

The project traffic distribution is shown in **Figure 2**. Once the distribution was determined, project traffic was assigned to all functionally classified roadways listed in Sarasota County's 2016 *Generalized Level of Service Analysis Table*. The project traffic assignment on functionally classified roadways is shown in **Figure 3**.



**Figure 2: Project Traffic Distribution
2018 Existing Plus Committed Network
GCCF**

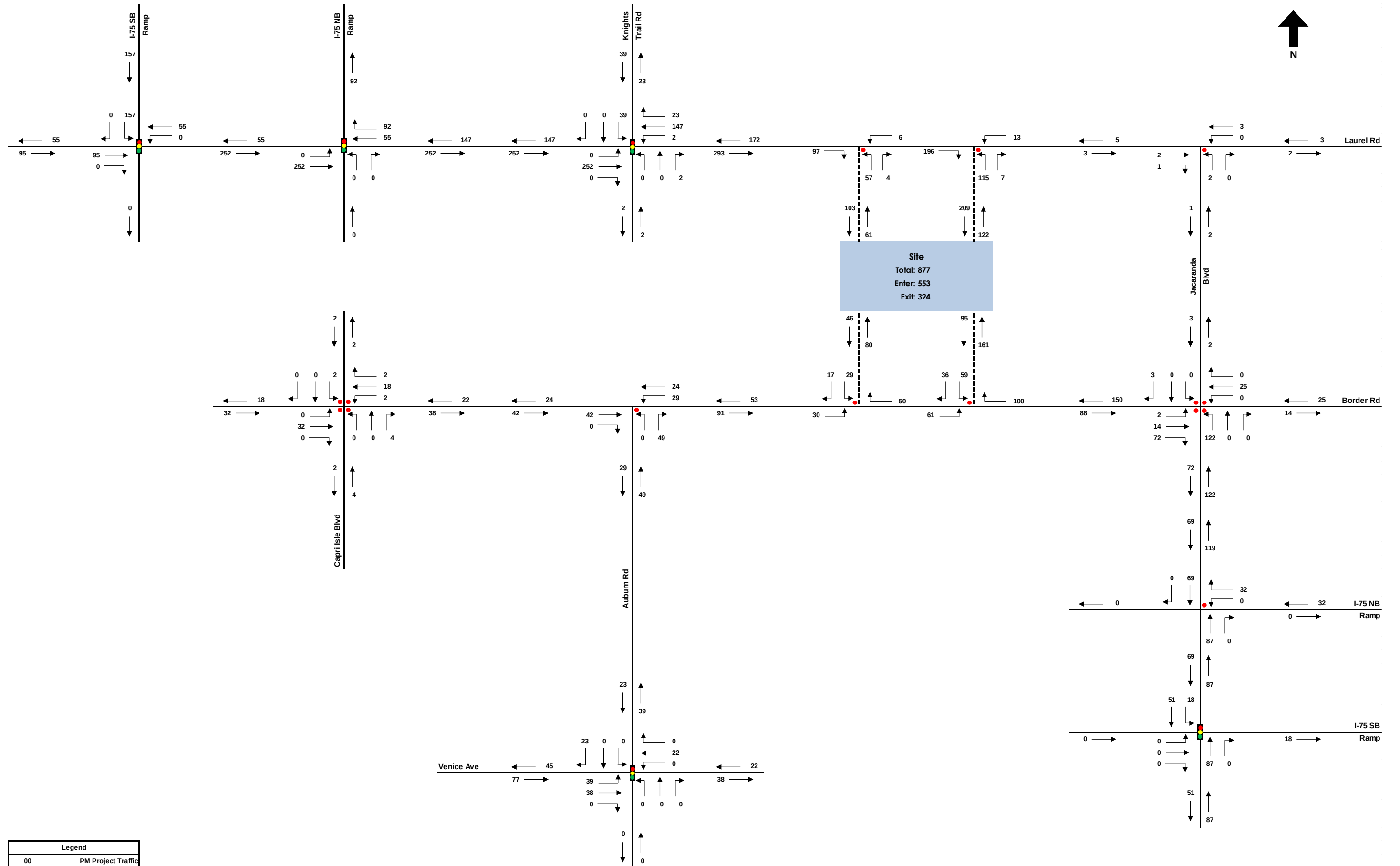


Figure 3: Project Traffic Assignment

Study Area

The study area consists of arterial and collector roads in which project traffic is expected to consume at least 4.5 percent of the peak-hour two-way level-of-service standard or any roadway segment to which the development has direct access or which the development accesses via local and private roads.

The results of the study area determination are provided in **Table 2**. Per the City of Venice's criteria, 10 regulated roadway segments meet the significance threshold and were evaluated as part of this analysis.

Table 2: Study Area Determination

Road Name and Segment	Adopted LOS			Percent Project Traffic	New Project Traffic		Significant Impact? (>4.5%)	Direct Access?
	LOS Standard	Number of Lanes	Service Volume		Trips	% Impact		
Auburn Road								
Border Rd to Venice Ave	D	2	1,197	8.0%	70	5.8%	Yes	No
Border Road								
Auburn Rd to Site	D	2	1,264	16.5%	145	11.5%	Yes	No
Site to Jacaranda Blvd	D	2	1,264	27.1%	238	18.8%	Yes	No
Jacaranda Blvd to Jackson Rd	D	2	1,057	4.2%	37	3.5%	No	No
Capri Isles Boulevard								
Border Rd to Venice Ave	D	2	998	0.4%	4	0.4%	No	No
Edmondson Road								
Pinebrook Rd to Capri Isles Blvd	D	2	1,197	5.5%	48	4.0%	No	No
Capri Isles Blvd to Auburn Rd	D	2	931	7.2%	63	6.8%	Yes	No
I-75								
SR 681 to Laurel Rd	B	6	6,130	28.4%	249	4.06%	No	No
Laurel Rd to Jacaranda Blvd	B	6	6,130	0.0%	0	0.0%	No	No
Jacaranda Blvd to River Rd	B	6	6,130	5.7%	50	0.8%	No	No
Jacaranda Boulevard								
Laurel Rd to Border Rd	D	2	1,330	0.5%	4	0.3%	No	No
Border Rd to I-75 NB	D	2	1,510	21.8%	191	12.6%	Yes	No
I-75 NB to I-75 SB	D	4	3,401	18.5%	156	4.6%	Yes	No
I-75 SB to Executive/Commercial	D	4	3,401	15.8%	139	4.1%	No	No
Executive/Commercial to Venice	D	4	3,401	15.2%	133	3.9%	No	No
Venice to Center	D	4	3,401	7.1%	62	1.8%	No	No
Knights Trail								
Laurel Rd to Rustic Rd	D	2	1,440	7.1%	62	4.3%	No	No
Laurel Road								
Pinebrook Rd to I-75 SB	D	4	3,401	17.1%	150	4.4%	No	No
I-75 SB to I-75 NB	D	4	3,401	30.3%	307	9.0%	Yes	No
I-75 NB to Knights Trail Rd	D	4	3,401	45.5%	399	11.7%	Yes	No
Knights Trail Rd to Site	D	2	1,440	53.0%	465	32.3%	Yes	Yes
Site to Jacaranda Blvd	D	2	1,440	3.4%	30	2.1%	No	Yes
Jacaranda Blvd to Citadella Dr	D	2	1,440	0.5%	4	0.3%	No	No
Venice Ave								
Capri Isles Blvd to Auburn	D	4	3,222	12.4%	109	3.4%	No	No
Auburn to Jacaranda	D	4	3,222	6.7%	59	1.8%	No	No
Jacaranda to Jackson	D	2	1,120	0.9%	8	0.7%	No	No

In addition to the roadway segments evaluated in the study area, intersections of regulated roadways within the study area as well as the four site access connections were evaluated. The 10 regulated roadway intersections that were studied are listed below.

- | | |
|----------------------------------|-----------------------------|
| 1. I-75 SB/Laurel Rd | 6. Auburn Rd/Border Rd |
| 2. I-75 NB/Laurel Rd | 7. Jacaranda Blvd/Border Rd |
| 3. Knights Trail/Laurel Rd | 8. Jacaranda Blvd/I-75 NB |
| 4. Jacaranda Blvd/Laurel Rd | 9. Jacaranda Blvd/I-75 SB |
| 5. Capri Isles Blvd/Edmondson Rd | 10. Auburn Rd/E Venice Ave |

2018 Existing Traffic Conditions

Vehicle turning movement counts were conducted at the study area intersections on Wednesday September 19, 2018. The turning movement counts were taken during the PM peak period (4:00 PM to 6:00 PM) to quantify existing PM peak-hour conditions. The turning movement counts then were adjusted by FDOT's peak-season conversion factor of 1.40. The existing PM peak-hour peak-season traffic volumes are shown in **Figure 4**. The peak-season factors, turning movement counts, and signal timing information are attached in Appendix B.

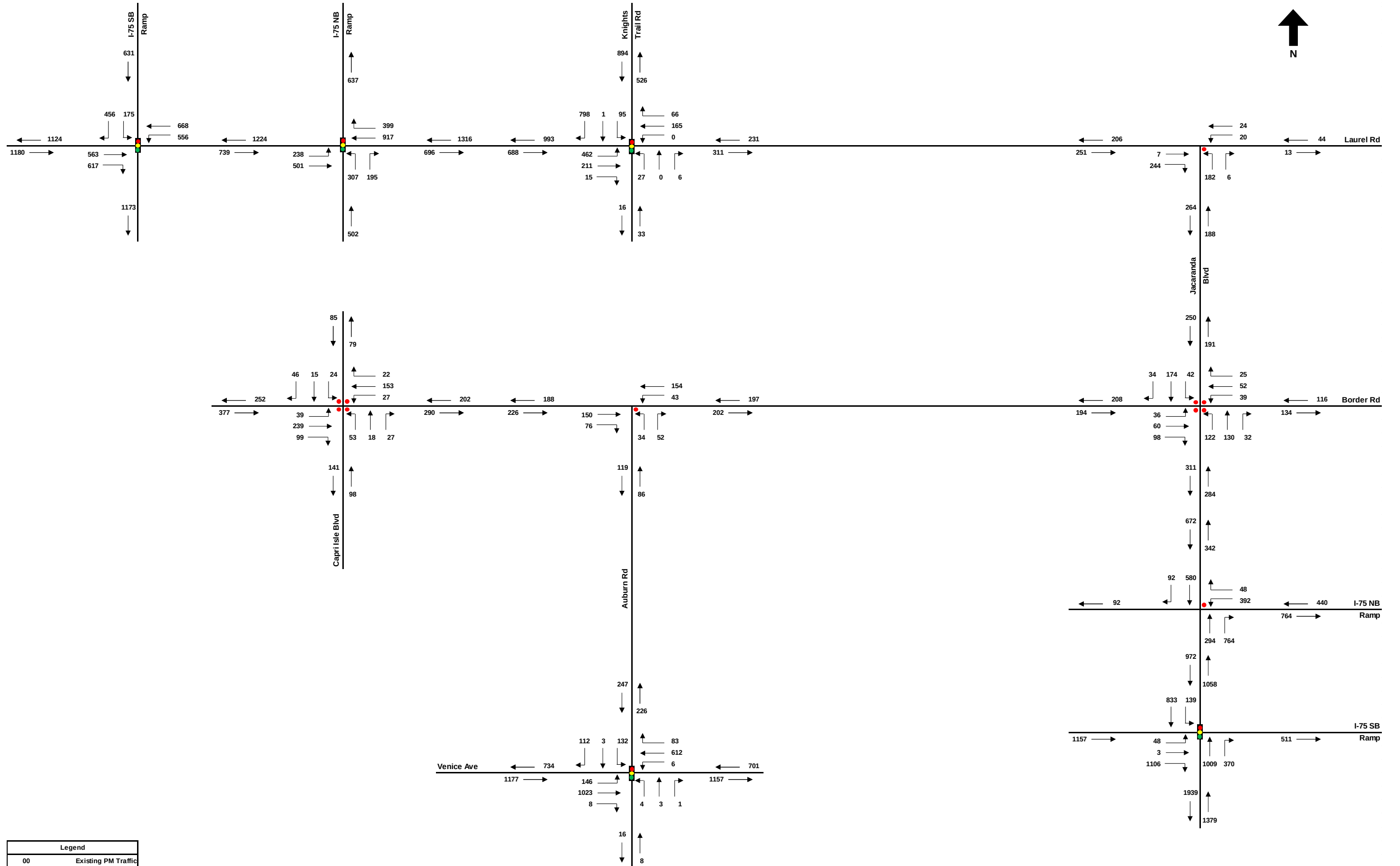


Figure 4: Existing PM Peak-Hour Peak-Season Traffic

ROADWAY ANALYSIS

Roadway segmentation and maximum service volumes were taken from Sarasota County's 2016 *Generalized Level of Service Analysis Table*. Existing segment volumes were obtained from the peak-season volumes entering/exiting the intersections during the peak-hour. The results of the 2018 existing level-of-service analysis are summarized in **Table 3** and indicate that all segments within the study area are operating at acceptable level-of-service standards.

Table 3: 2018 Existing Segment Conditions

Road Name and Segment	Adopted LOS			Existing Traffic	Exceeds LOS?
	LOS Standard	Number of Lanes	Service Volume		
Auburn Road					
Border Rd to Venice Ave	D	2	1,197	339	No
Border Road					
Auburn Rd to Site	D	2	1,264	399	No
Site to Jacaranda Blvd	D	2	1,264	402	No
Edmondson Road					
Capri Isles Blvd to Auburn Rd	D	2	931	453	No
Jacaranda Boulevard					
Border Rd to I-75 NB	D	2	1,510	805	No
I-75 NB to I-75 SB	D	4	3,401	2,030	No
Laurel Road					
I-75 SB to I-75 NB	D	4	3,401	1,963	No
I-75 NB to Knights Trail Rd	D	4	3,401	1,847	No
Knights Trail Rd to Site	D	2	1,440	542	No
Site to Jacaranda Blvd	D	2	1,440	457	No

INTERSECTION ANALYSIS

The intersection analysis was performed using Trafficware's Synchro 10 Software (using HCM 6th Edition methodology). If the HCM 6th Edition methodology could not be applied at a signalized intersection, the HCM 2000 methodology was used. As part of the analysis, existing lane geometry was used at the study intersections. The City of Venice has an adopted level-of-service standard of D. Each movement was checked to ensure that the level-of-service D standard was met. In some cases, it is not realistic to improve an individual movement's level-of-service to D, in those cases an explanation of why was provided. The results of the Synchro intersection analysis are summarized in **Table 4** and indicate that six intersections currently operate at acceptable level-of-service standards. The I-75 SB Ramp/Laurel Road, Jacaranda Boulevard/I-75 NB Ramp, Jacaranda Boulevard/I-75 SB Ramp, and Auburn Road/Venice Avenue intersections are currently operating at unacceptable level-of-service standards with at least one movement operating at level-of-service E.

Table 4: 2018 Existing Intersection Conditions

Intersection	Type	Overall Intersection LOS		Delay (sec/veh)	Max v/c Ratio	Approach LOS			
		Standard	Existing			EB	WB	NB	SB
I-75 SB Ramp & Laurel Rd	Signalized	D	E	62.2	1.29	F	A		E
I-75 NB Ramp & Laurel Rd	Signalized	D	C	21.5	0.77	A	C	D	
Knights Trail Rd & Laurel Rd	Signalized	D	C	23.7	0.55	C	C	D	B
Jacaranda Blvd & Laurel Rd	TWSC	D	n/a	11.5 ¹	0.27	-- ²	A ³	B	
Capri Isles Blvd & Edmondson Rd	AWSC	D	B	10.6	0.49	B	A	A	A
Auburn Rd & Border Rd	TWSC	D	n/a	11.5 ¹	0.15	-- ²	A ³	B	
Jacaranda Blvd & Border Rd	AWSC	D	B	11.4	0.40	B	B	B	B
Jacaranda Blvd & I-75 NB Ramp	TWSC	D	n/a	107.3 ¹	1.10		F	-- ²	-- ²
Jacaranda Blvd & I-75 SB Ramp	Signalized	D	E	64.4	2.34	C		D	F
Auburn Rd & E Venice Ave	Signalized	D	B	14.4	0.76	B	B	E	E

1. Delay shown for the worst approach.

2. No left-turn movement for approach.

3. Left-turn movement level-of-service.

The intersection volume tables are provided in Appendix C. The 2018 existing Synchro intersection worksheets are provided in Appendix D and electronic versions of the files are attached on the accompanying DVD.

Scheduled Improvements

The current Sarasota County and City of Venice Capital Improvement Programs (CIPs) and the FDOT Five Year Work Program were reviewed to identify any improvements scheduled in the first three years to be included in the analysis. No improvements were identified in the study area.

In addition, improvements that will be completed with the vested projects were included for the future traffic conditions. The improvements identified were:

- Add a second westbound left-turn lane along Laurel Road at the I-75 SB Ramps. (Triple Diamond Commerce Park mitigation)
- Extend the eastbound left-turn lanes along Laurel Road at Knights Trail Road. (Portofino mitigation)

2025 Background Traffic Conditions

The background traffic conditions were analyzed for the build-out year of 2025. The background traffic conditions consist of the existing PM peak-hour peak-season traffic volumes, an annual background growth rate, and vested traffic volumes from approved projects.

- Annual Average Daily Traffic (AADT) volumes, obtained from the Sarasota County *Generalized Level of Service Tables* for roadway segments in the vicinity of the project, indicate a historic annual growth rate of 4.29% for the last five years and a negative growth rate for the last ten years. The historic growth rates are shown in **Table 5**. A two percent annual growth rate was used to forecast future background traffic.

Table 5: Historic Growth Rates

Road Name and Segment	2006 AADT	2011 AADT	2016 AADT	5-YR Growth Rate	10-YR Growth Rate
Auburn Road					
Border Rd to Venice Ave	3,072	2,803	2,148	-5.18%	-3.51%
Border Road					
Auburn Rd to Jacaranda Blvd	--	2,124	2,741	5.23%	--
Edmondson Road					
Capri Isles Blvd to Auburn Rd	--	2,747	--	--	--
Jacaranda Boulevard					
Laurel Rd to Border Rd	--	--	3,371	--	--
Border Rd to I-75	--	2,193	4,845	17.18%	--
I-75 to Executive/Commercial	29,407	23,655	24,158	0.42%	-1.95%
Laurel Road					
Pinebrook Rd to I-75	17,352	11,269	19,261	11.32%	1.05%
I-75 to Jacaranda Blvd	--	13,227	15,027	2.58%	--
TOTAL	49,831	55,271	68,180	4.29%	-0.89%

- Vested traffic from the unconstructed portions of the SJMR PUD, Toscana Isles, Plaza Venezia, Portofino, the Woods at Venice, the Milano PUD (Villages of Milano [VICA] and Laurel Lakes), Murphy Oaks, and Laurel Road Storage Facility were added as part of the background traffic. The applicable pages from the traffic studies showing the volumes at the study area intersections are attached in Appendix E.

The 2025 PM peak-hour background traffic volumes are shown in **Figure 5** as well as in Appendix C.

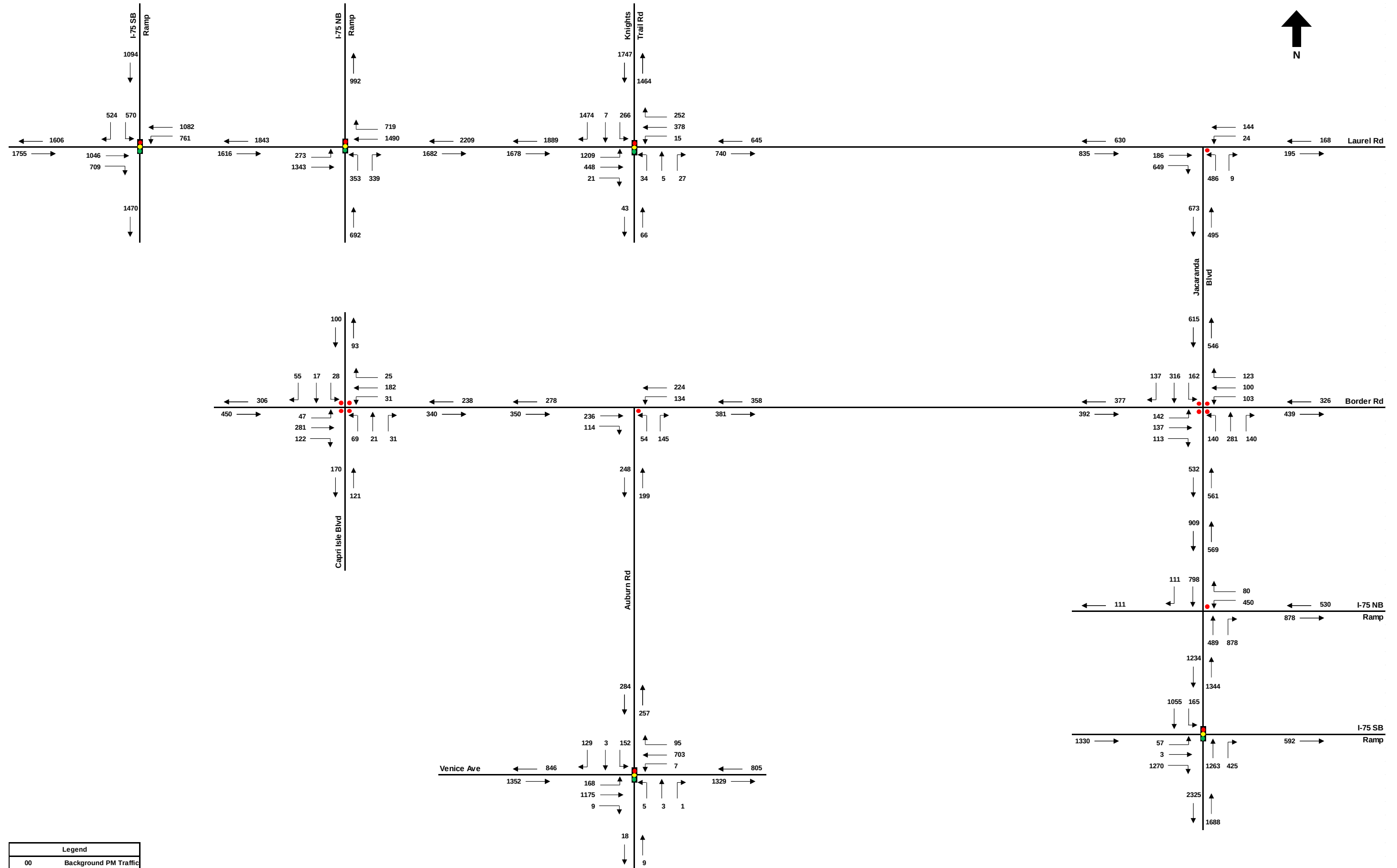


Figure 5: 2025 PM Peak-Hour Background Traffic

Legend	
00	Background PM Traffic

ROADWAY ANALYSIS

Roadway segmentation and maximum service volumes were again taken from Sarasota County's 2016 *Generalized Level of Service Analysis Table*. The results of the 2025 background traffic level-of-service analysis are summarized in **Table 6** and indicate that all segments within the study area are anticipated to continue to operate at acceptable level-of-service standards except for Laurel Road from the I-75 SB Ramps to the project site. The failure on Laurel Road is due to the large amount of background growth, the majority of which is vested traffic.

Table 6: 2025 Background Traffic Segment Conditions

Road Name and Segment	Adopted LOS			Existing Traffic	Bkgd Growth	Vested Traffic ¹										2025 Bkgd Traffic	Exceeds LOS?
	LOS Standard	Number of Lanes	Service Volume			SJMR PUD	Toscana Isles	Plaza Venetia	Porto fino	Woods at Venice	VICA	Laurel Lakes	Murphy Oaks	Laurel Rd Storage			
Auburn Road																	
Border Rd to Venice Ave	D	2	1,197	339	50	0	0	0	52	11	6	9	29	0	496	No	
Border Road																	
Auburn Rd to Site	D	2	1,264	399	59	21	0	0	139	67	20	40	8	0	753	No	
Site to Jacaranda Blvd	D	2	1,264	402	60	21	0	0	139	67	20	40	8	0	757	No	
Edmondson Road																	
Capri Isles Blvd to Auburn Rd	D	2	931	453	67	0	0	6	18	23	5	11	21	0	604	No	
Jacaranda Boulevard																	
Border Rd to I-75 NB	D	2	1,510	805	120	83	0	0	133	39	33	75	0	0	1,288	No	
I-75 NB to I-75 SB	D	4	3,401	2,030	302	37	0	0	127	0	26	56	0	0	2,578	No	
Laurel Road																	
I-75 SB to I-75 NB	D	4	3,401	1,963	292	135	459	0	470	0	49	93	0	0	3,461	Yes	
I-75 NB to Knights Trail Rd	D	4	3,401	1,847	275	176	571	0	670	0	67	122	0	4	3,732	Yes	
Knights Trail Rd to Site	D	2	1,440	542	81	228	146	0	259	0	74	143	0	1	1,474	Yes	
Site to Jacaranda Blvd	D	2	1,440	457	68	228	146	0	259	0	74	143	0	1	1,376	No	

1. Volumes obtained from individual movements at the intersections; see Appendix C for additional detail.

INTERSECTION ANALYSIS

The intersection analysis was again performed using Trafficware's Synchro 10 Software. The 2025 background traffic analysis used the same geometry as the existing conditions, except for the identified vested project improvements. Signal timing adjustments were also made along the Laurel Road corridor in conjunction with the geometric improvements. The three coordinated intersections had their cycle lengths increased from 110 seconds to 160 seconds.

The results of the Synchro intersection analysis are summarized in **Table 7** and indicate that all the intersection with the exception of the Capri Isles Boulevard/Edmondson Road and Auburn Road/Border Road intersections are anticipated to operate at unacceptable level-of-service standards with at least one movement operating at level-of-service E.

Table 7: 2025 Background Traffic Intersection Conditions

Intersection	Type	Overall Intersection LOS		Delay (sec/veh)	Max v/c Ratio	Approach LOS			
		Standard	Bkgd			EB	WB	NB	SB
I-75 SB Ramp & Laurel Rd	Signalized	D	D	54.9	1.07	F	B		F
I-75 NB Ramp & Laurel Rd	Signalized	D	C	23.4	0.84	A	C	E	
Knights Trail Rd & Laurel Rd	Signalized	D	D	37.6	0.98	C	E	E	C
Jacaranda Blvd & Laurel Rd	TWSC	D	n/a	280.7 ¹	1.53	-- ²	A ³	F	
Capri Isles Blvd & Edmondson Rd	AWSC	D	B	12.9	0.62	C	B	B	A
Auburn Rd & Border Rd	TWSC	D	n/a	19.6 ¹	0.49	-- ²	A ³	C	
Jacaranda Blvd & Border Rd	AWSC	D	F	122.5	1.41	F	F	F	F
Jacaranda Blvd & I-75 NB Ramp	TWSC	D	n/a	538.8 ¹	2.09		F	-- ²	-- ²
Jacaranda Blvd & I-75 SB Ramp	Signalized	D	F	120.8	2.77	C		F	F
Auburn Rd & E Venice Ave	Signalized	D	B	16.5	0.78	B	B	E	E

1. Delay shown for the worst approach.

2. No left-turn movement for approach.

3. Left-turn movement level-of-service.

The intersection volume tables are provided in Appendix C. The 2025 background traffic Synchro intersection worksheets are provided in Appendix F, and electronic versions of the files are attached on the accompanying DVD.

IMPROVED BACKGROUND TRAFFIC ANALYSIS

The large amount of background traffic creates generalized arterial deficiencies on Laurel Road between the I-75 SB Ramps and the project site and intersection deficiencies at eight of the study area intersections causing them to operate at an unacceptable level-of-service. The failures on Laurel Road and at the eight study area intersections are preexisting conditions and not caused by the addition of this project's traffic.

Chapter 2011-139, Laws of Florida; and Chapter 163.3180 of the Florida Statutes as amended by HB 319, exempt developers from contributing proportionate-share monies to correct preexisting transportation deficiencies. Because the identified failures are preexisting conditions and not caused by the addition of this project's traffic, improvements to correct the deficiencies can be considered in place. The improvements needed to correct the preexisting deficiencies are:

I-75 SB Ramp/Laurel Road Intersection

- Construct a second southbound left-turn lane to accommodate the projected 570 vehicles.

Knights Trail Road/Laurel Road Intersection

- Construct an eastbound to northbound left turn flyover for the projected 1209 vehicles and remove the westbound left turn protected phase.

Jacaranda Boulevard/Laurel Road Intersection

- Signalize and add an eastbound right-turn lane to accommodate the projected 649 vehicles.

Jacaranda Boulevard/Border Road Intersection

- Signalize and restripe the southbound approach from a shared left-turn/through lane and exclusive right-turn lane to an exclusive left-turn lane and a shared through/right-turn lane so that left-turn traffic will not block through traffic on green.

Jacaranda Boulevard/I-75 NB Ramp Intersection

- Signalize

Jacaranda Boulevard/I-75 SB Ramp Intersection

- Add a southbound left-turn protected plus permitted phase.
- Convert the dual eastbound right turn lanes to a free-flow movement with an add lane (becoming the southbound right turn lane at Commercial Court intersection).

Auburn Road/Venice Avenue Intersection

- Remove the split phase operations for the northbound/southbound approaches.

The improvements to the intersections are anticipated to allow the arterial segment of Laurel Road to operate at acceptable level-of-service standards without widening Laurel Road from four to six lanes. **Table 8** shows results of the detailed Synchro arterial analysis by direction accounting for the improvements to the intersections and **Table 9** shows the results of the improved intersection analysis for the background traffic conditions. The tables demonstrate that the identified improvements will correct the preexisting deficiencies and allow the arterial and intersections to operate at acceptable level-of-service standards with the exception of the I-75/Laurel Road interchange and Knights Trail Road/Laurel Road intersection.

At the I-75/Laurel Road interchange, the eastbound through (I-75 SB Ramp), southbound left, southbound right, and northbound left movements still operate at level-of-service E. However, all the movements have volume to capacity (v/c) ratios less than 1.0 indicating capacity still exists. In order to further improve the level-of-service, the interchange would need to be converted to a diverging diamond interchange (DDI). Based on the peak-season peak-hour operating conditions, a major reconstruction of the interchange is not warranted.

At the Knights Trail Road/Laurel Road intersection, the northbound left and northbound through/right movements still operate at level-of-service E. However, both movements have a v/c ratio less than 1.0 indicating capacity still exists. There are only 34 peak-season peak-hour northbound left movements and 32 peak-season peak-hour northbound through/right movements. Additional improvements are not required to mitigate the low northbound volumes.

Table 8: Improved 2025 Background Traffic Arterial Conditions

Arterial	Direction	Adopted LOS	Number of Lanes	Arterial Speed (mph)	Arterial LOS
Laurel Road					
I-75 SB to I-75 NB	EB	D	2	33.1	B
	WB		2	31.5	B
I-75 NB to Knights Trail Rd	EB	D	2	18.5	D
	WB		2	22.0	C
Knights Trail Rd to Jacaranda Blvd	EB	D	1	41.1	A
	WB		1	31.0	B

Table 9: Improved 2025 Background Traffic Intersection Conditions

Intersection	Type	Overall Intersection LOS		Delay (sec/veh)	Max v/c Ratio	Approach LOS			
		Standard	Bkgd			EB	WB	NB	SB
I-75 SB Ramp & Laurel Rd	Signalized	D	D	44.2	0.96	E	C		E
I-75 NB Ramps & Laurel Rd	Signalized	D	C	29.8	0.84	A	D	E	
Knights Trail Rd & Laurel Rd	Signalized	D	D	38.9	0.91	C	D	E	D
Jacaranda Blvd & Laurel Rd	Signalized	D	B	15.3	0.85	B	A	C	
Jacaranda Blvd & Border Rd	Signalized	D	C	22.2	0.85	C	B	C	C
Jacaranda Blvd & I-75 NB Ramp	Signalized	D	C	28.0	0.91		D	C	B
Jacaranda Blvd & I-75 SB Ramp	Signalized	D	A	8.0	0.84	A		B	A
Auburn Rd & E Venice Ave	Signalized	D	B	18.9	0.59	B	B	D	D

The intersection volume tables are provided in Appendix C. The 2025 improved background traffic Synchro arterial and intersection worksheets are provided in Appendix G and electronic versions of the files are attached on the accompanying DVD.

2025 Total Traffic Conditions

The total traffic conditions were analyzed for 2025. The total traffic conditions consist of the existing PM peak-hour peak-season traffic volumes, annual background growth, vested traffic from approved developments, and project traffic. The 2025 total traffic PM peak-hour peak-season total traffic volumes are shown in **Figure 6**.

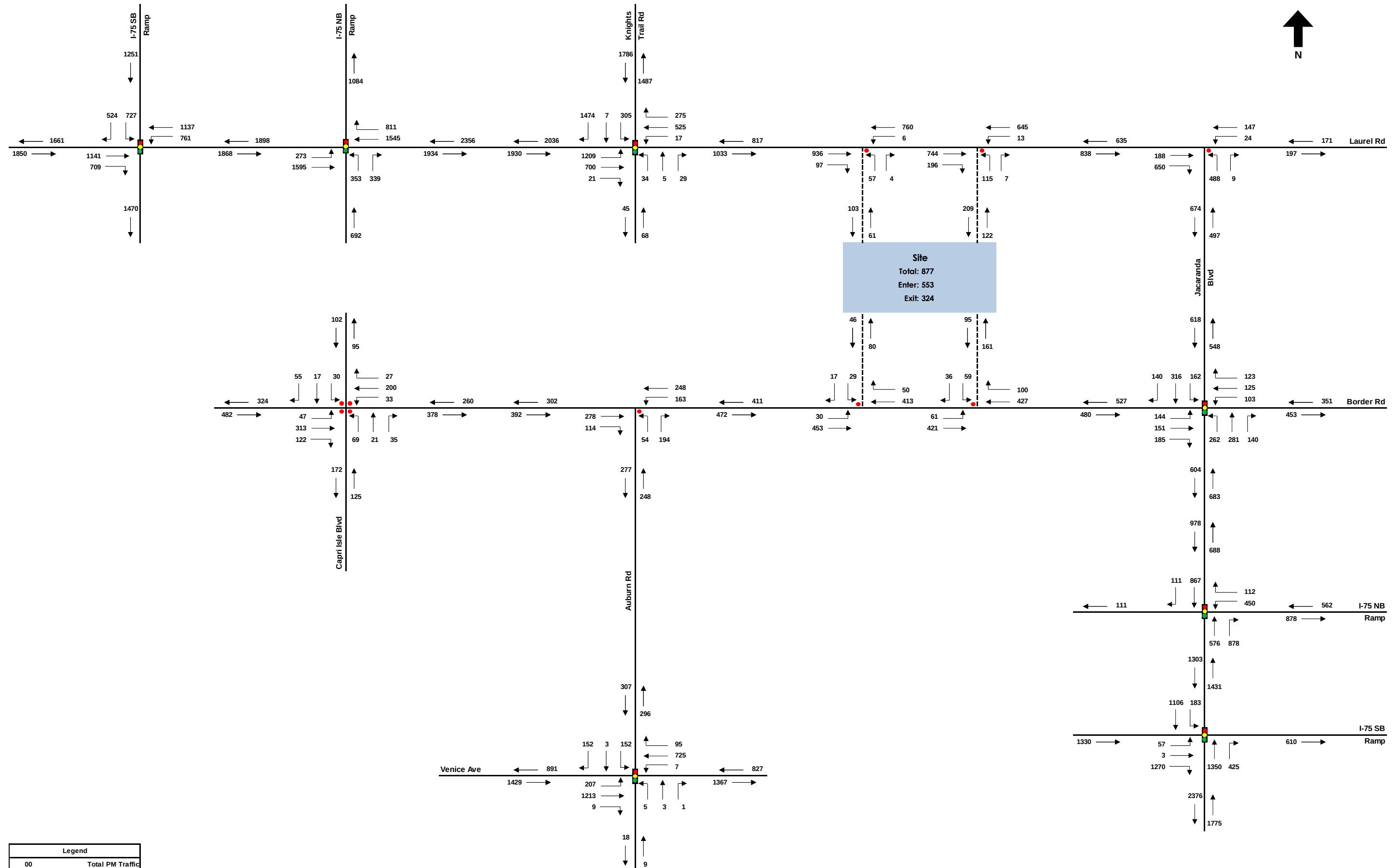


Figure 6: 2025 PM Peak-Hour Total Traffic

ROADWAY ANALYSIS

Roadway segmentation and maximum service volumes were again taken from Sarasota County's 2016 Generalized Level of Service Analysis Table. The results of the 2025 total traffic level-of-service analysis are summarized in **Table 10** and indicate that all segments in the study area are anticipated to operate at acceptable level-of-service standards with the exception of Laurel Road from the I-75 SB Ramps to the project site. Because Laurel Road exceeds its generalized adopted level-of-service standard (as identified in the background traffic conditions), a detailed analysis of the arterial was performed using the Synchro Software. Based on the detailed Synchro analysis, the segments will operate at acceptable level-of-service standards. The 2025 traffic conditions Synchro analysis is attached in Appendix H. No roadway improvements are required in conjunction with this project.

Table 10: 2025 Total Traffic Segment Conditions

Road Name and Segment	Adopted LOS			Bkgd Traffic	Project Traffic	2025 Total Traffic	Exceeds LOS?
	LOS Standard	Number of Lanes	Service Volume				
Auburn Road							
Border Rd to Venice Ave	D	2	1,197	496	70	566	No
Border Road							
Auburn Rd to Site	D	2	1,264	753	145	898	No
Site to Jacaranda Blvd	D	2	1,264	757	238	995	No
Edmondson Road							
Capri Isles Blvd to Auburn Rd	D	2	931	604	63	667	No
Jacaranda Boulevard							
Border Rd to I-75 NB	D	2	1,510	1,288	191	1,479	No
I-75 NB to I-75 SB	D	4	3,401	2,578	156	2,734	No
Laurel Road							
I-75 SB to I-75 NB	D	4	3,401	3,461	307	3,768	No ¹
I-75 NB to Knights Trail Rd	D	4	3,401	3,732	399	4,131	No ²
Knights Trail Rd to Site	D	2	1,440	1,474	465	1,939	No ³
Site to Jacaranda Blvd	D	2	1,440	1,376	30	1,406	No

1. The Synchro analysis indicates that the arterial is operating at level-of-service B with an average travel speed of 31.8 mph for the eastbound direction and operating at level-of-service B with an average travel speed of 30.9 mph for the westbound direction.
2. The Synchro analysis indicates that the arterial is operating at level-of-service D with an average travel speed of 18.3 mph for the eastbound direction and operating at level-of-service D with an average travel speed of 21.7 mph for the westbound direction.
3. The Synchro analysis indicates that the arterial is operating at level-of-service A with an average travel speed of 41.0 mph for the eastbound direction and operating at level-of-service B with an average travel speed of 31.3 mph for the westbound direction.

INTERSECTION ANALYSIS

The intersection analysis was again performed using Trafficware's Synchro 10 Software. The 2025 total traffic intersection analysis used the same geometry as the improved background traffic analysis. The geometric improvements identified at the study area intersections needed to correct the background traffic deficiencies were assumed to be in place. The results of the Synchro intersection analysis are summarized in **Table 11** and indicate all intersections are anticipated to continue to operate at acceptable level-of-service standards with the addition of project traffic with the exception of the I-75/Laurel Road interchange and Knights Trail Road/Laurel Road intersection. At those locations, the total traffic conditions are the same as the background traffic conditions with improvements. Given that the v/c ratios are less than 1.0, no additional improvements are required.

Table 11: 2025 Total Traffic Intersection Conditions

Intersection	Type	Overall Intersection LOS		Delay (sec/veh)	Max v/c Ratio	Approach LOS			
		Standard	Total			EB	WB	NB	SB
I-75 SB Ramps & Laurel Rd	Signalized	D	D	44.5	0.97	E	B		E
I-75 NB Ramps & Laurel Rd	Signalized	D	C	28.4	0.84	A	D	E	
Knights Trail Rd & Laurel Rd	Signalized	D	D	44.8	0.98	C	D	E	D
Jacaranda Blvd & Laurel Rd	Signalized	D	B	15.4	0.85	B	A	C	
Capri Isles Blvd & Edmondson Rd	AWSC	D	B	14.2	0.67	C	B	B	B
Auburn Rd & Border Rd	TWSC	D	n/a	27.8 ¹	0.66	-- ²	A ³	D	
Jacaranda Blvd & Border Rd	Signalized	D	D	42.6	0.91	D	C	D	D
Jacaranda Blvd & I-75 NB Ramps	Signalized	D	C	28.3	0.91		D	C	B
Jacaranda Blvd & I-75 SB Ramps	Signalized	D	A	8.8	0.84	A		B	A
Auburn Rd & E Venice Ave	Signalized	D	B	19.3	0.59	B	B	D	D

1. Delay shown for the worst approach.

2. No left-turn movement for approach.

3. Left-turn movement level-of-service.

The intersection volume tables are provided in Appendix C. The 2025 total traffic Synchro intersection worksheets are provided in Appendix H and electronic versions of the files are attached on the accompanying DVD.

SITE ACCESS ANALYSIS

The site access analysis evaluated the need for right- and left-turn lanes at the site access points as well as the level-of-service for turn lanes into the site and the v/c ratio for the driveway approaches. The development will utilize four new connections, two to Laurel Road and two to Border Road. **Figure 6** shows the project traffic at the proposed access points.

Driveway 1 and Driveway 2 at Laurel Road Site Access Connections

The right-turn lane warrant was performed based on the FDOT *Driveway Information Guide*. The report identifies the threshold of right turns requiring an exclusive turn lane for speeds above and below 45 mph. The posted speed on Laurel Road is 45 mph. For speeds 45 mph or less, a maximum of 80 right turns per hour on two-lane roads is allowed. During the PM peak-hour it is estimated that 97 vehicles will make an eastbound right from Laurel Road at Driveway 1 and 196 vehicles will make an eastbound right from Laurel Road at Driveway 2.

Given that there are more than 80 right-turning vehicles, the right-turn-lane warrant threshold volume is satisfied at both site access points. FDOT *Standard Index 301* specifies a deceleration length of 185 feet for a design speed of 45 mph (assumed the design speed was equal to the posted speed due to the presence of raised curb and gutter along the north side of the road). Therefore, a 185-foot eastbound right-turn lane needs to be constructed at both project driveways on Laurel Road in conjunction with this project.

The need for westbound left-turn lanes at Driveway 1 and Driveway 2 was based on the M.D. Harmelink Study and the National Cooperative Highway Research Program (NCHRP) Report 279. The left-turn lane warrant analysis is summarized below:

	<u>Driveway 1</u>	<u>Driveway 2</u>
Advancing Volume (Va) =	766 vph	658 vph
Opposing Volume (Vo) =	1033 vph	940 vph
Left-turn Volume =	6 vph	13 vph
Laurel Road Speed Limit =	45 mph	45 mph
Percent Left Turns =	.8% $\approx$ 5%	2% $\approx$ 5%

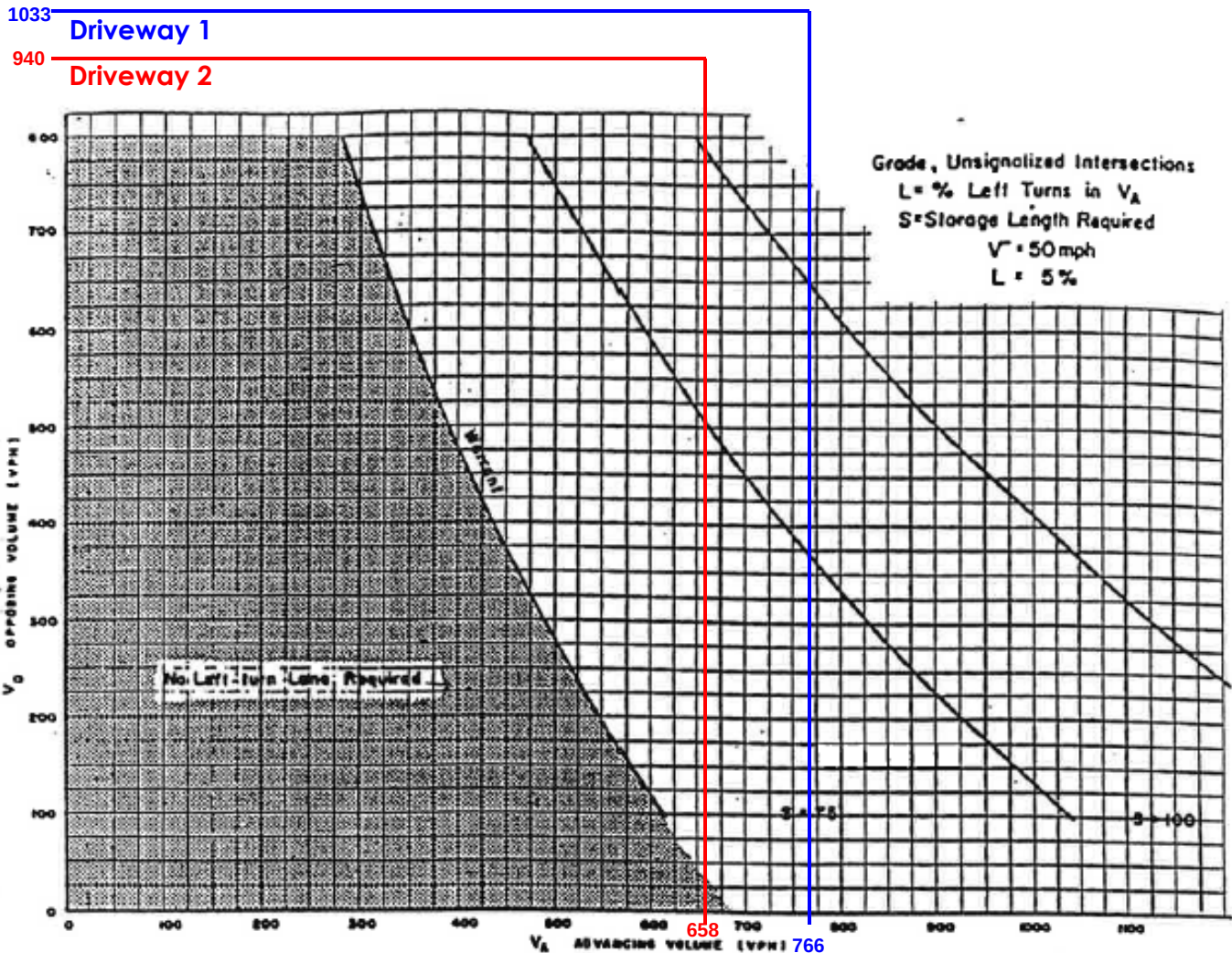


Figure 7: Driveway 1 and Driveway 2 at Laurel Road Left-Turn Lane Warrant

Based on the trip generation and assignment, both Driveway 1 and Driveway 2 warrant a left-turn lane. FDOT *Standard Index 301* specifies a deceleration length of 185 feet for a speed of 45 mph. The required unsignalized queue length for the left-turn lane was calculated using procedures outlined in the AASHTO *Green Book*. The AASHTO *Green Book* specifies that at a minimum, queue storage for at least two vehicles (50 feet) be provided. Both the six westbound left-turning vehicles at Driveway 1 and 13 westbound left-turning vehicles at Driveway 2 will require 50 feet of queue; therefore, the left-turn lanes should be 235 feet (185 + 50). The queue length calculation is shown below:

Driveway 1 WB Left-turn Lane Queue Length:

$$6 \frac{\text{veh}}{\text{hr}} \left(\frac{1 \text{ hr}}{60 \text{ min}} \right) \left(\frac{2 \text{ min}}{1} \right) \left(\frac{25 \text{ ft}}{\text{veh}} \right) \approx 5 \text{ ft} = 50 \text{ ft}$$

Driveway 2 WB Left-turn Lane Queue Length:

$$13 \frac{\text{veh}}{\text{hr}} \left(\frac{1 \text{ hr}}{60 \text{ min}} \right) \left(\frac{2 \text{ min}}{1} \right) \left(\frac{25 \text{ ft}}{\text{veh}} \right) \approx 11 \text{ ft} = 50 \text{ ft}$$

Driveway 3 and Driveway 4 at Border Road Site Access Connections

The right-turn lane warrant was performed based on the FDOT *Driveway Information Guide*. The report identifies the threshold of right turns requiring an exclusive turn lane for speeds above and below 45 mph. The posted speed on Border Road is 40 mph. For speeds 45 mph or less, a maximum of 80 right turns per hour on two-lane roads is allowed. During the PM peak-hour it is estimated that 100 vehicles will make a westbound right from Border Road at Driveway 3 and 50 vehicles will make a westbound right from Border Road at Driveway 4. Given that there are more than 80 right-turning vehicles at Driveway 3, the right-turn-lane warrant threshold volume is satisfied at that site access point. A right-turn-lane is not warranted at Driveway 4. FDOT *Standard Index 301* specifies a deceleration length of 185 feet for a design speed of 45 mph (assumed 40 mph posted speed plus 5 mph). Therefore, a 185-foot westbound right-turn lane needs to be constructed in conjunction with this project at Driveway 3.

The need for an eastbound left-turn lane at Driveway 3 and Driveway 4 was based on the M.D. Harmelink Study and the National Cooperative Highway Research Program (NCHRP) Report 279. The left-turn lane warrant analysis is summarized below:

	<u>Driveway 3</u>	<u>Driveway 4</u>
Advancing Volume (Va) =	482 vph	483 vph
Opposing Volume (Vo) =	527 vph	463 vph
Left-turn Volume =	61 vph	30 vph
Laurel Road Speed Limit =	40 mph	40 mph
Percent Left Turns =	12.7% $\approx$ 10%	6.2% $\approx$ 10%

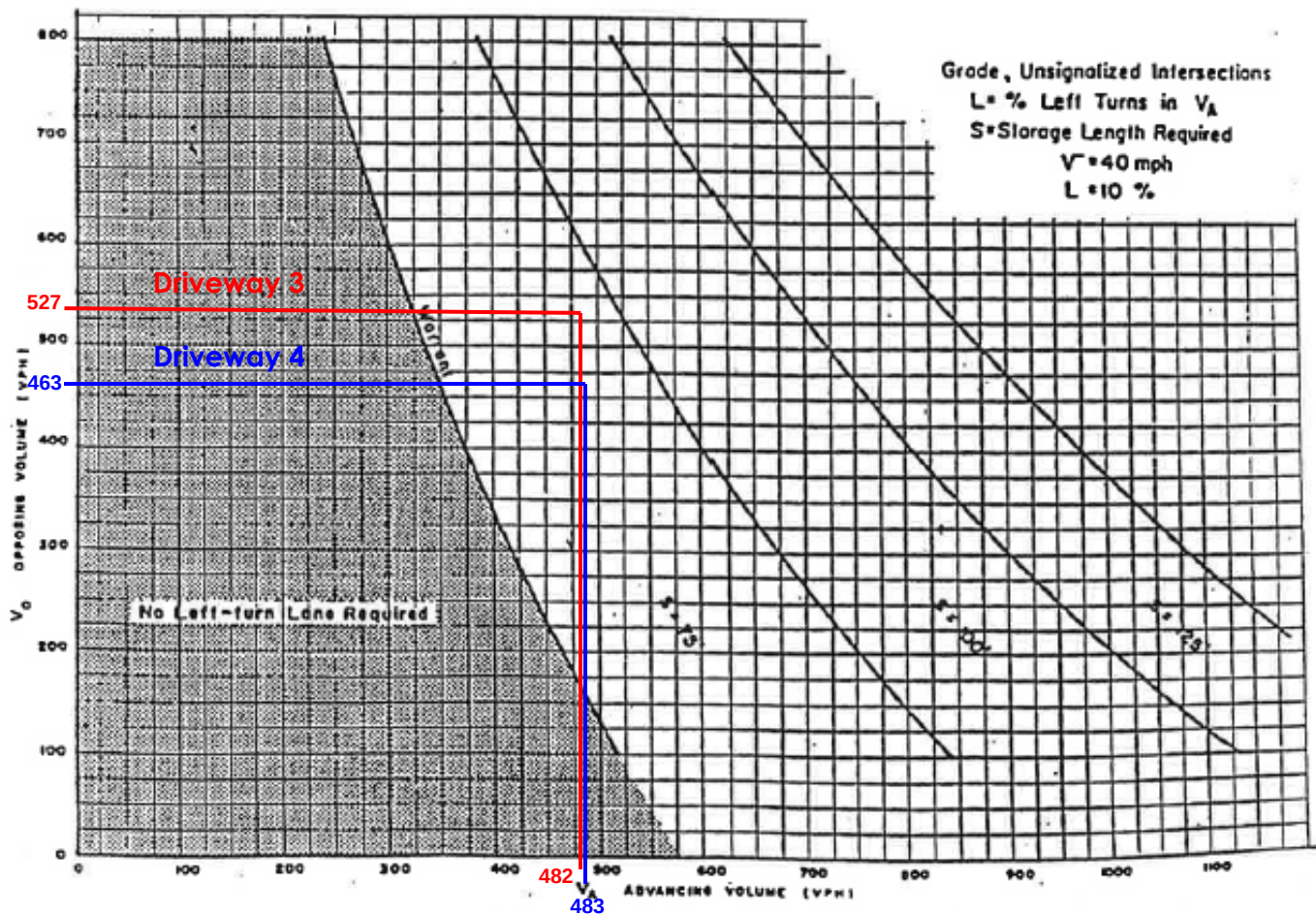


Figure 8: Driveway 3 and Driveway 4 at Border Road Left-Turn Lane Warrant

Based on the trip generation and assignment, both Driveway 3 and Driveway 4 warrant a left-turn lane. FDOT *Standard Index 301* specifies a deceleration length of 185 feet for a design speed of 45 mph. The required unsignalized queue length for the left-turn lane was calculated using procedures outlined in the AASHTO *Green Book*. The AASHTO *Green Book* specifies that at a minimum, queue storage for at least two vehicles (50 feet) be provided. Both the 61 eastbound left-turning vehicles at Driveway 3 and 30 eastbound left-turning vehicles at Driveway 4 will require 50 feet of queue; therefore, the left-turn lanes should be 235 feet (185 + 50). The queue length calculation is shown below:

Driveway 3 EB Left-turn Lane Queue Length:

$$61 \frac{\text{veh}}{\text{hr}} \left(\frac{1 \text{ hr}}{60 \text{ min}} \right) \left(\frac{2 \text{ min}}{25 \text{ ft}} \right) \left(\frac{25 \text{ ft}}{\text{veh}} \right) \approx 25 \text{ ft} = 50 \text{ ft}$$

Driveway 4 EB Left-turn Lane Queue Length:

$$30 \frac{\text{veh}}{\text{hr}} \left(\frac{1 \text{ hr}}{60 \text{ min}} \right) \left(\frac{2 \text{ min}}{25 \text{ ft}} \right) \left(\frac{25 \text{ ft}}{\text{veh}} \right) \approx 51 \text{ ft} = 50 \text{ ft}$$

Level-of-Service Analysis

A Synchro analysis was performed to ensure that the turn lanes into the site operate at acceptable level-of-service. The City of Venice has not adopted level-of-service standards for driveways. The driveway approaches were checked to ensure that the v/c ratio did not exceed 1.0. **Table 12** demonstrates that the turn lanes into the site will operate at acceptable level-of-service standards and the driveway approaches will have v/c ratios less than 1.0.

Table 12: Site Access Level-of-Service Analysis

Intersection	Type	Delay (sec/veh) ¹	Max v/c Ratio	Left Turn Queue (ft) ²	Approach LOS			
					EB	WB	NB	SB
Driveway 1 & Laurel Rd	TWSC	119.1	0.75	0	-- ³	B ⁴	F	
Driveway 2 & Laurel Rd	TWSC	131.9	0.97	3	-- ³	B ⁴	F	
Driveway 3 & Border Rd	TWSC	20.5	0.27	5	A ⁴	-- ³		C
Driveway 4 & Border Rd	TWSC	17.2	0.12	3	A ⁴	-- ³		C

1. Delay shown for the project stop-controlled approach.

2. Queue for the inbound left-turn movement to the site.

3. No left-turn movement for approach.

4. Left-turn movement level-of-service.

The site access analysis Synchro intersection worksheets are provided in Appendix I and electronic versions of the files are attached on the accompanying DVD.

Conclusion

The GCCF Property consists of a maximum of 1,300 dwelling units; 550 single-family detached dwelling units and 750 single-family attached dwelling units and is estimated to generate 877 PM peak-hour trip ends (553 entering; 324 exiting). The analysis evaluated a build-out year of 2025. A transportation concurrency analysis and site access analysis were both performed for the project for the PM peak-hour.

All study area roadway segments are currently operating at acceptable level-of-service standards. Six of the 10 study area intersections are currently operating at acceptable level-of-service standards. Several deficiencies were identified in the study area for the background traffic conditions in 2025. Laurel Road between the I-75 SB Ramp and the project site is anticipated to exceed the City of Venice's generalized adopted level-of-service standards; however, a detailed arterial analysis (along with the improvements to the corresponding intersections) demonstrates that widening is not required. In addition, eight intersections were identified as having at least one movement where the level-of-service D threshold was not met. The improvements needed to correct the preexisting deficiencies at each intersection are:

I-75 SB Ramps/Laurel Road Intersection

- Increase the cycle length from 110 second to 160 seconds.
- Construct a second southbound left-turn lane to accommodate the projected 570 vehicles.

I-75 NB Ramp/Laurel Road Intersection

- Increase the cycle length from 110 second to 160 seconds.

Knights Trail Road/Laurel Road Intersection

- Increase the cycle length from 110 second to 160 seconds.
- Construct an eastbound to northbound left turn flyover for the projected 1209 vehicles and remove the westbound left turn protected phase.

Jacaranda Boulevard/Laurel Road Intersection

- Signalize and add an eastbound right-turn lane to accommodate the projected 649 vehicles.

Jacaranda Boulevard/Border Road Intersection

- Signalize and restripe the southbound approach from a shared left-turn/through lane and exclusive right-turn lane to an exclusive left-turn lane and a shared through/right-turn lane so that left-turn traffic will not block through traffic on green.

Jacaranda Boulevard/I-75 NB Ramp Intersection

- Signalize

Jacaranda Boulevard/I-75 SB Ramp Intersection

- Add a southbound left-turn protected plus permitted phase.
- Convert the dual eastbound right turn lanes to a free-flow movement with an add lane (becoming the southbound right turn lane at Commercial Court intersection).

Auburn Road/Venice Avenue Intersection

- Remove the split phase operations for the northbound/southbound approaches.

Because the failures identified above are preexisting conditions and not caused by the addition of this project's traffic, improvements to correct the deficiencies can be considered in place. Once the aforementioned improvements are made, all intersections will operate at acceptable level-of-service standards. The addition of project traffic does not create any additional deficiencies in the study area.

The site access analysis evaluated the four proposed driveway connections to Laurel Road and Border Road. The need for right- and left-turn lanes as well as the operating conditions of the driveway approaches was evaluated. The following site access improvements are required in conjunction with this project. All turn lanes should be constructed in accordance with the FDOT *Plans Preparation Manual* and *Standard Index 301*.

Driveway 1/Laurel Road

- Construct a 185-foot eastbound right-turn lane
- Construct a 235-foot westbound left-turn lane

Driveway 2/Laurel Road

- Construct a 185-foot eastbound right-turn lane
- Construct a 235-foot westbound left-turn lane

Driveway 3/Border Road

- Construct a 235-foot eastbound left-turn lane
- Construct a 185-foot westbound right-turn lane

Driveway 4/Border Road

- Construct a 235-foot eastbound left-turn lane

APPENDIX A

METHODOLOGY STATEMENT

Crim, Matt

From: Giacherio, Aimee <AGiacherio@WadeTrim.com>
Sent: Thursday, September 13, 2018 9:47 AM
To: Crim, Matt; Jeff Shrum (JShrum@venicegov.com); Roger Clark
Cc: 'pneal@nealcommunities.com' (pneal@nealcommunities.com); Tom Panaseny; Smith, Melanie; Domingo, Frank; 'jboone@boone-law.com'; Jackson Boone (Jackson.Boone@boone-law.com); Jim Collins (JCollins@boone-law.com); Maryann Grgic (maryann@keypointcommunication.com); John Neal (jneal@neallandventures.com)
Subject: RE: GCCF Methodology

Looks good Matt, thanks.

From: Crim, Matt <Matt.Crim@stantec.com>
Sent: Wednesday, September 12, 2018 4:58 PM
To: Giacherio, Aimee <AGiacherio@WadeTrim.com>; Jeff Shrum (JShrum@venicegov.com) <JShrum@venicegov.com>; Roger Clark <RClark@Venicegov.com>
Cc: 'pneal@nealcommunities.com' (pneal@nealcommunities.com) <pneal@nealcommunities.com>; Tom Panaseny <TPanaseny@nealcommunities.com>; Smith, Melanie <Melanie.Smith@stantec.com>; Domingo, Frank <Frank.Domingo@stantec.com>; 'jboone@boone-law.com' <jboone@boone-law.com>; Jackson Boone (Jackson.Boone@boone-law.com) <Jackson.Boone@boone-law.com>; Jim Collins (JCollins@boone-law.com) <JCollins@boone-law.com>; Maryann Grgic (maryann@keypointcommunication.com) <maryann@keypointcommunication.com>; John Neal (jneal@neallandventures.com) <jneal@neallandventures.com>
Subject: RE: GCCF Methodology

Aimee,

Attached is the revised methodology with the updates to Table 2 you requested.

Thanks,

Matt

From: Giacherio, Aimee <AGiacherio@WadeTrim.com>
Sent: Tuesday, September 11, 2018 2:27 PM
To: Crim, Matt <Matt.Crim@stantec.com>; Jeff Shrum (JShrum@venicegov.com) <JShrum@venicegov.com>; Roger Clark <RClark@Venicegov.com>
Cc: 'pneal@nealcommunities.com' (pneal@nealcommunities.com) <pneal@nealcommunities.com>; Tom Panaseny <TPanaseny@nealcommunities.com>; Smith, Melanie <Melanie.Smith@stantec.com>; Domingo, Frank <Frank.Domingo@stantec.com>; 'jboone@boone-law.com' <jboone@boone-law.com>; Jackson Boone (Jackson.Boone@boone-law.com) <Jackson.Boone@boone-law.com>; Jim Collins (JCollins@boone-law.com) <JCollins@boone-law.com>; Maryann Grgic (maryann@keypointcommunication.com) <maryann@keypointcommunication.com>; John Neal (jneal@neallandventures.com) <jneal@neallandventures.com>
Subject: RE: GCCF Methodology

Matt,

The Percent Project Traffic in Table 2 was not updated for the updated distribution along Venice Ave between Auburn & Jacaranda.

Also, three segments have different minimum adopted service volumes than what is indicated in Sarasota County's 2016 Generalized LOS Table.

1. Border Rd from Jacaranda to Jackson
2. Jacaranda Blvd from Border to I-75NB
3. Laurel Rd, east of Knights Trail Rd

Everything else looks great.

Thanks,
Aimee

From: Crim, Matt <Matt.Crim@stantec.com>
Sent: Tuesday, September 11, 2018 8:54 AM
To: Jeff Shrum (JShrum@venicegov.com) <JShrum@venicegov.com>; Giacherio, Aimee <AGiacherio@WadeTrim.com>; Roger Clark <RClark@Venicegov.com>
Cc: 'pneal@nealcommunities.com' (pneal@nealcommunities.com) <pneal@nealcommunities.com>; Tom Panaseniy <TPanaseny@nealcommunities.com>; Smith, Melanie <Melanie.Smith@stantec.com>; Domingo, Frank <Frank.Domingo@stantec.com>; 'jboone@boone-law.com' <jboone@boone-law.com>; Jackson Boone (Jackson.Boone@boone-law.com) <Jackson.Boone@boone-law.com>; Jim Collins (JCollins@boone-law.com) <JCollins@boone-law.com>; Maryann Grgic (maryann@keypointcommunication.com) <maryann@keypointcommunication.com>; John Neal (jneal@neallandventures.com) <jneal@neallandventures.com>
Subject: GCCF Methodology

Jeff,

Attached is the revised methodology statement which incorporates the changes we discussed at the meeting yesterday. Please let me know if it is acceptable and we will proceed with the analysis.

Thanks,

Matt

Matthew Crim P.E., PTOE
Associate, Transportation Engineer

Direct: 832-523-9111
matt.crim@stantec.com



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September 12, 2018

Jeff Shrum, AICP
Community Development Director
City of Venice
401 W. Venice Avenue
Venice, Florida 34285

Via email: jshrum@venicegov.com

**Reference: GCCF Property
Transportation Methodology Statement**

Dear Mr. Shrum:

This letter serves to summarize the Transportation Methodology for the subject project for your approval. The proposed development is located east of I-75 between Border Road and Laurel Road in Venice, Florida. The petitioner proposes to construct a maximum of 1,300 dwelling units; 550 single-family detached dwelling units and 750 single-family attached dwelling units. The development will have three access points, two to Laurel Road and one to Border Road. The build-out year for the development is 2025. The analysis is for transportation concurrency approval from the City of Venice. The following is a summary of the methodology:

Trip Generation

The transportation analysis will be based on the PM peak-hour. Traffic volumes generated by the proposed development will be estimated using the Institute of Transportation Engineers (ITE), *Trip Generation – the 10th Edition (2017)*. Land Use Code 210 (Single-Family Detached Housing) and Land Use Code 220 (Multifamily Housing Low-Rise) will be used to estimate the trip generation potential. No Internal Capture or Pass-by Capture trips will be used in the analysis. The PM peak-hour trip generation is summarized in Table 1.

Table 1: PM Peak-Hour Trip Generation

ITE Land Use Category	Variable	Size	PM Peak Trip Rate/ Equation	PM Enter Split	PM Exit Split	PM Peak Total Trips		
						Total	Enter	Exit
Single-Family Detached Housing - 210	Per Unit	550	$\ln(T) = 0.96\ln(x) + 0.20$	63%	37%	522	329	193
Multifamily Housing (Low-Rise) - 220	Per Unit	750	$\ln(T) = 0.89\ln(x) - 0.02$	63%	37%	355	224	131
TOTAL						877	553	324



September 12, 2018
Jeff Shrum, AICP
Page 2 of 6

**Reference: GCCF Property
Transportation Methodology Statement**

Trip Distribution

The FDOT D1 Districtwide 2018 Existing plus Committed travel demand model will be used to distribute project traffic from the site. Similar to the manual adjustments requested by the City of Venice during previous transportation methodologies, project traffic will be manually adjusted to shift a portion of the north-south project traffic assigned to Auburn Road to Jacaranda Boulevard, a more likely north-south route. The distribution of project traffic from the site is shown in the attached Figure.

Study Area

The study area will consist of arterial and collector roads that:

- Project traffic equals or exceeds 4.5 percent of the adopted two-way peak-hour service volume (LOS D), as specified by Sarasota County's 2016 Generalized Level of Service Table, for all applicable county and state roads.
- Any road segment to which the development has a direct access or which the development accesses via local and private roads.

It is anticipated that 10 regulated roadway segments will exceed 4.5 percent of the adopted two-way peak-hour service volume or have direct access and will be included in the study area. A preliminary study area determination is shown in Table 2 and shown in the attached graphic.



September 12, 2018
 Jeff Shrum, AICP
 Page 3 of 6

Reference: GCCF Property
Transportation Methodology Statement

Table 2: Study Area Determination

Road Name and Segment	Adopted LOS			Percent Project Traffic	New Project Traffic		Significant Impact? (>4.5%)	Direct Access?
	LOS Standard	Number of Lanes	Service Volume		Trips	% Impact		
Auburn Road								
Border Rd to Venice Ave	D	2	1,197	8.0%	70	5.8%	Yes	No
Border Road								
Auburn Rd to Site	D	2	1,264	16.5%	145	11.5%	Yes	No
Site to Jacaranda Blvd	D	2	1,264	27.1%	238	18.8%	Yes	No
Jacaranda Blvd to Jackson Rd	D	2	1,057	4.2%	37	3.5%	No	No
Capri Isles Boulevard								
Border Rd to Venice Ave	D	2	998	0.4%	4	0.4%	No	No
Edmondson Road								
Pinebrook Rd to Capri Isles Blvd	D	2	1,197	5.5%	48	4.0%	No	No
Capri Isles Blvd to Auburn Rd	D	2	931	7.2%	63	6.8%	Yes	No
I-75								
SR 681 to Laurel Rd	B	6	6,130	28.4%	249	4.06%	No	No
Laurel Rd to Jacaranda Blvd	B	6	6,130	0.0%	0	0.0%	No	No
Jacaranda Blvd to River Rd	B	6	6,130	5.7%	50	0.8%	No	No
Jacaranda Boulevard								
Laurel Rd to Border Rd	D	2	1,330	0.5%	4	0.3%	No	No
Border Rd to I-75 NB	D	2	1,510	21.8%	191	12.6%	Yes	No
I-75 NB to I-75 SB	D	4	3,401	18.5%	156	4.6%	Yes	No
I-75 SB to Executive/Commercial	D	4	3,401	15.8%	139	4.1%	No	No
Executive/Commercial to Venice	D	4	3,401	15.2%	133	3.9%	No	No
Venice to Center	D	4	3,401	7.1%	62	1.8%	No	No
Knights Trail								
Laurel Rd to Rustic Rd	D	2	1,440	7.1%	62	4.3%	No	No
Laurel Road								
Pinebrook Rd to I-75 SB	D	4	3,401	17.1%	150	4.4%	No	No
I-75 SB to I-75 NB	D	4	3,401	30.3%	307	9.0%	Yes	No
I-75 NB to Knights Trail Rd	D	4	3,401	45.5%	399	11.7%	Yes	No
Knights Trail Rd to Site	D	2	1,440	53.0%	465	32.3%	Yes	Yes
Site to Jacaranda Blvd	D	2	1,440	3.4%	30	2.1%	No	Yes
Jacaranda Blvd to Citadella Dr	D	2	1,440	0.5%	4	0.3%	No	No
Venice Ave								
Capri Isles Blvd to Auburn	D	4	3,222	12.4%	109	3.4%	No	No
Auburn to Jacaranda	D	4	3,222	6.7%	59	1.8%	No	No
Jacaranda to Jackson	D	2	1,120	0.9%	8	0.7%	No	No

In addition, intersections at the termini of study area roadway segments as well as the project access points will be evaluated. The 10 off-site intersections that will be studied are listed below. The study area roadway segments and intersections are shown in the attached graphic.



**Reference: GCCF Property
Transportation Methodology Statement**

- | | |
|----------------------------------|-----------------------------|
| 1. I-75 SB/Laurel Rd | 6. Auburn Rd/Border Rd |
| 2. I-75 NB/Laurel Rd | 7. Jacaranda Blvd/Border Rd |
| 3. Knights Trail/Laurel Rd | 8. Jacaranda Blvd/I-75 NB |
| 4. Jacaranda Blvd/Laurel Rd | 9. Jacaranda Blvd/I-75 SB |
| 5. Capri Isles Blvd/Edmondson Rd | 10. Auburn Rd/E Venice Ave |

Scheduled/Planned Improvements

Improvements scheduled for construction in the current Sarasota County and City of Venice Capital Improvement Programs (CIPs) or the FDOT Five Year Work Program will be included in the analysis. Improvements scheduled in the first three years will be assumed to be in place for the future traffic conditions. In addition, any improvements that will be completed with the vested projects will be included for the future traffic conditions as well.

Existing and Future Traffic

1. Existing Traffic:

Will be based on PM peak-hour turning movement counts collected at the study area intersections. The intersection counts will be adjusted to peak-season conditions based upon FDOT's peak-season correction factors.

2. Future Traffic (Non Project):

Annual Average Daily Traffic (AADT) volumes obtained from the Sarasota County Generalized Level of Service Tables for roadway segments in the study area indicates a historical annual growth rate of 4.29% for the last five years and a negative growth rate for the last ten years. The historical growth rate is shown in Table 3. It is proposed that a 2.0% annual growth rate be used to forecast future background traffic. In addition to the background growth, any vested traffic within the study area will be provided by the City of Venice. It is anticipated that at a minimum the following projects (unconstructed portions only) will be included as part of the background traffic:

- | | |
|-------------------|------------------------------|
| • SJMR PUD | • Milano PUD |
| • Toscana Isles | o Villages of Milano (VICA) |
| • Plaza Venezia | o Laurel Lakes |
| • Portofino | • Murphy Oaks |
| • Woods of Venice | • Laurel Rd Storage Facility |



**Reference: GCCF Property
 Transportation Methodology Statement**

Table 3: Historical Growth Rates

Road Name and Segment	2006 AADT	2011 AADT	2016 AADT	5-YR Growth Rate	10-YR Growth Rate
Auburn Road					
Border Rd to Venice Ave	3,072	2,803	2,148	-5.18%	-3.51%
Border Road					
Auburn Rd to Jacaranda Blvd	--	2,124	2,741	5.23%	--
Edmondson Road					
Capri Isles Blvd to Auburn Rd	--	2,747	--	--	--
Jacaranda Boulevard					
Laurel Rd to Border Rd	--	--	3,371	--	--
Border Rd to I-75	--	2,193	4,845	17.18%	--
I-75 to Executive/Commercial	29,407	23,655	24,158	0.42%	-1.95%
Laurel Road					
Pinebrook Rd to I-75	17,352	11,269	19,261	11.32%	1.05%
I-75 to Jacaranda Blvd	--	13,227	15,027	2.58%	--
TOTAL	49,831	55,271	68,180	4.29%	-0.89%

Analysis Scenarios

The analysis will be undertaken for the PM Peak-Hour, and will include the following scenarios:

1. Existing traffic will be evaluated within the established study area (2018 conditions).
2. Existing traffic plus Future traffic will be evaluated for 2025.
3. Existing traffic plus Future traffic plus Project traffic will be evaluated for 2025.

Proportionate Fair Share Analysis

Consistent with Chapter 2011-139, Laws of Florida and Chapter 163.3180 of the Florida Statutes, as amended by HB 319, a proportionate fair share calculation will be provided for only those transportation deficiencies created by project traffic. If transportation improvements are needed to maintain the adopted level of service standards for Scenario 2 (Existing plus Future traffic), the necessary improvements will be identified and will be considered in place for Scenario 3 (Existing plus Future plus Project traffic). The project's proportionate fair share will be calculated only for any needed transportation improvements greater than those improvements required to remedy any deficiencies identified in Scenario 2. If a deficiency is created by project traffic in Scenario 3, the proportionate fair share will be calculated based upon the PM peak-hour trip generation and the following formula:

$$\text{Proportionate Fair Share} = \sigma [[(\text{Development Trips}_i) / (\text{SV Increase}_i)] * \text{Cost}_i]$$



September 12, 2018
Jeff Shrum, AICP
Page 6 of 6

**Reference: GCCF Property
Transportation Methodology Statement**

Turn Lane Analysis

A review of the turn lane requirements at the site access connections will be performed. Right turn lane warrants will be based on the FDOT *Driveway Information Guide*. The left turn lane warrants will be based on the M.D. Harmelink Study and the National Cooperative Highway Research Program (NCHRP) Report 279. If turn lanes are required, design requirements in the FDOT *Design Standards Index No. 301* will be used.

Analysis Procedures

All analyses will be conducted in a manner consistent with the procedures and assumptions utilized by the City of Venice. Intersection capacity analysis for the study area intersections will be conducted using Synchro Version 10. The Synchro output will utilize the HCM 6th Edition reports. Roadway segment capacity analysis will be conducted using the Sarasota County adopted level of service volumes, the FDOT's Generalized Level of Service Volume Tables, ARTPLAN and/or Synchro. The findings of the study will be summarized in a signed and sealed report.

If the above methodology is acceptable, please send written confirmation so we can proceed with the study. Should you have any questions, please feel free to contact me.

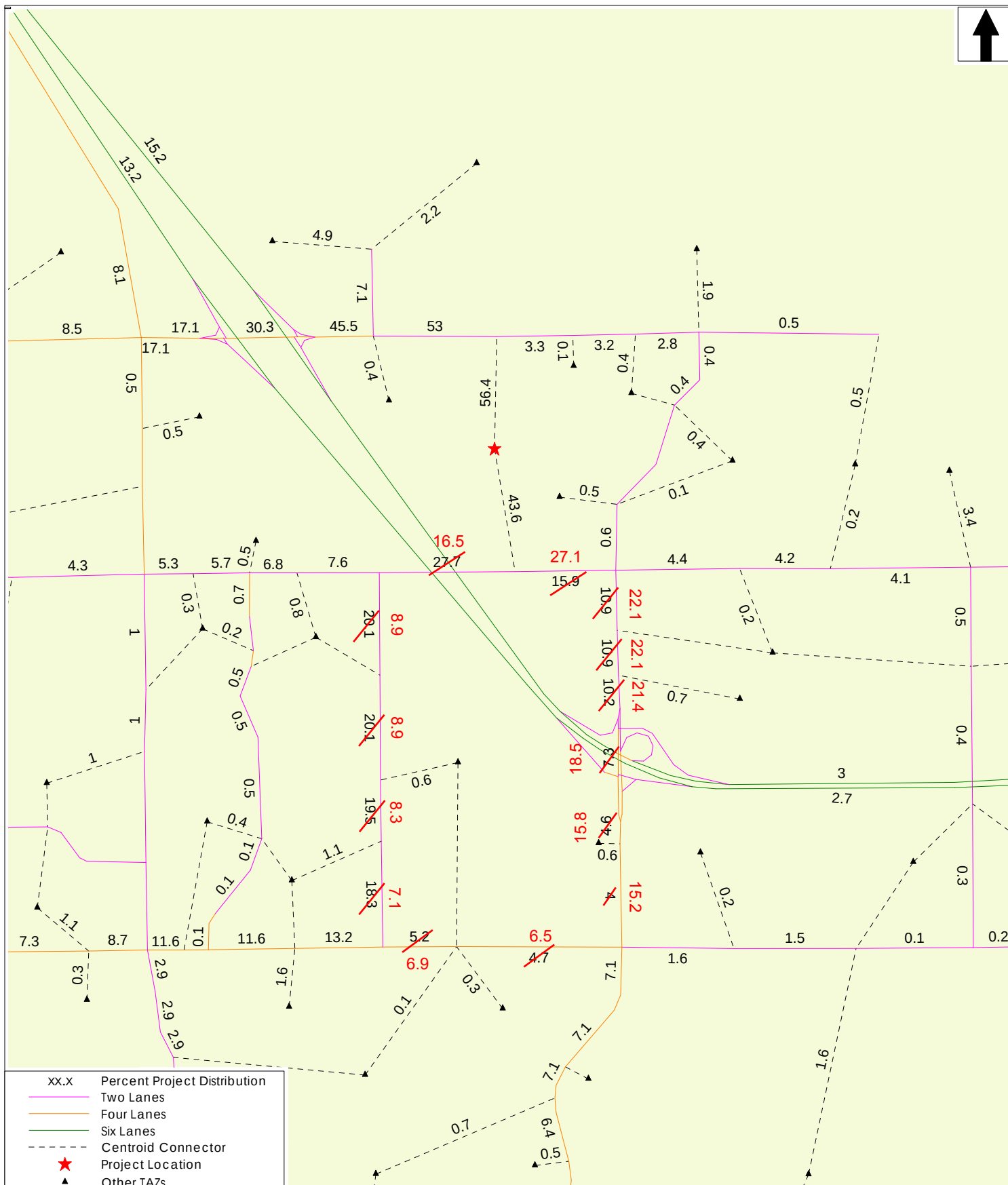
Sincerely,

Stantec Consulting Services Inc.

A handwritten signature in blue ink, appearing to read "Matt R. Crim".

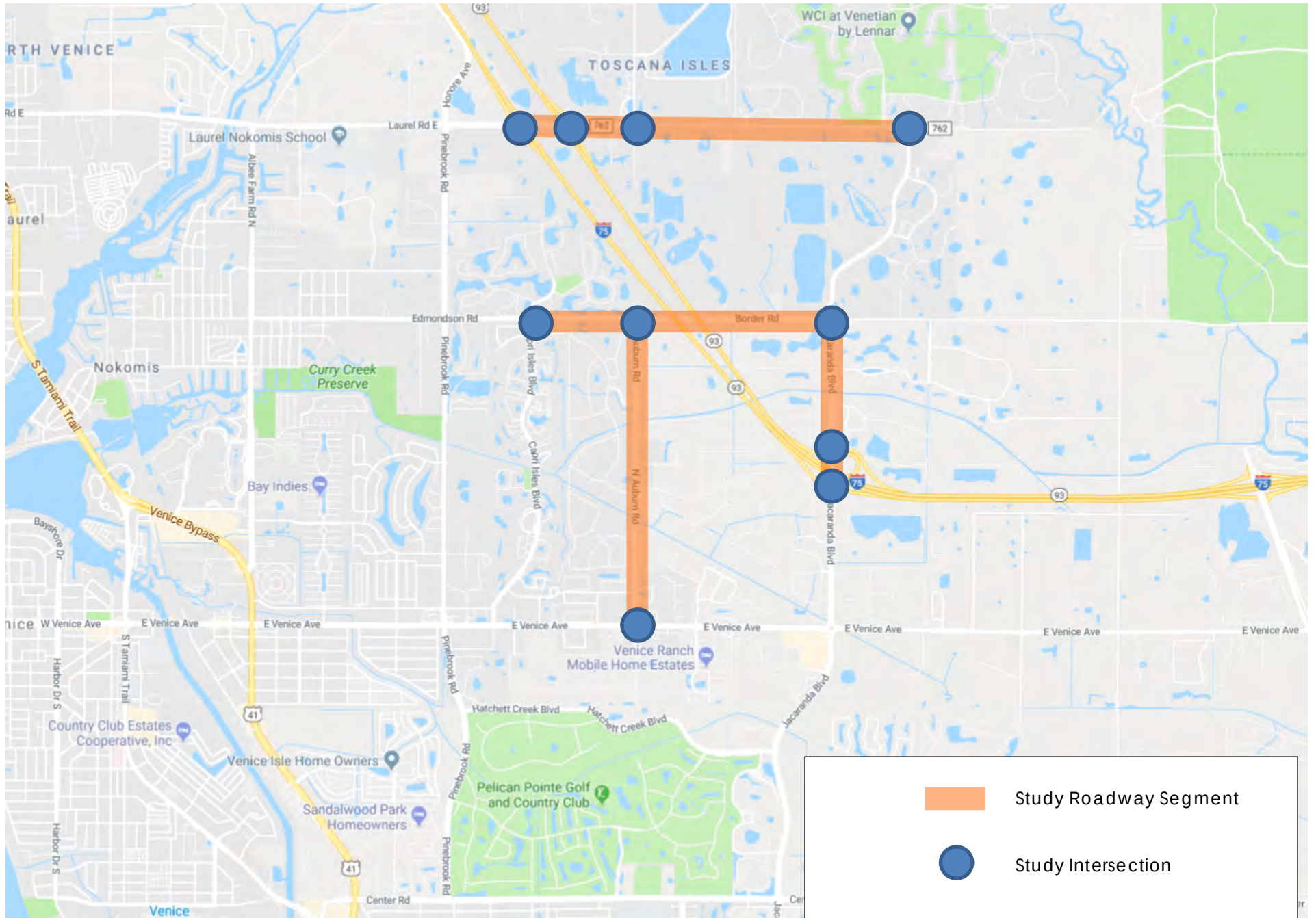
Matthew R. Crim, P.E., PTOE
Transportation Engineer
Ph: 832-523-9111
matt.crim@stantec.com

Attachments: Project Traffic Distribution
Study Area



Project Traffic Distribution
2018 Existing Plus Committed Network
GCCF

STUDY AREA



APPENDIX B

SARASOTA COUNTY SEASONAL ADJUSTMENT FACTORS

TURNING MOVEMENT COUNTS

EXISTING SIGNAL TIMING

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

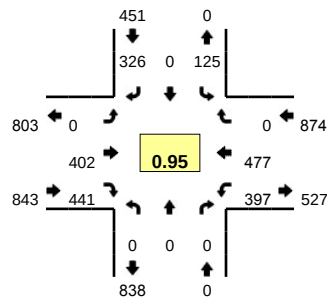
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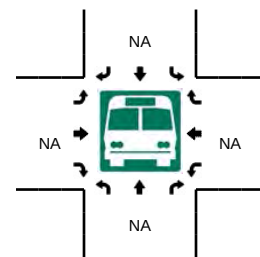
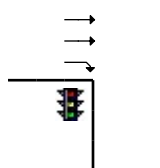
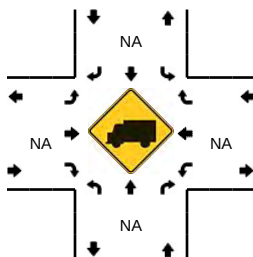
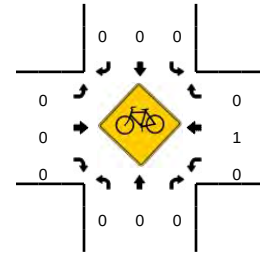
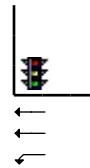
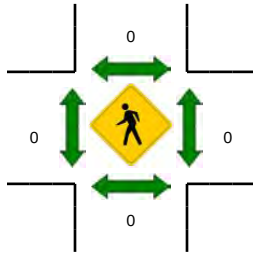
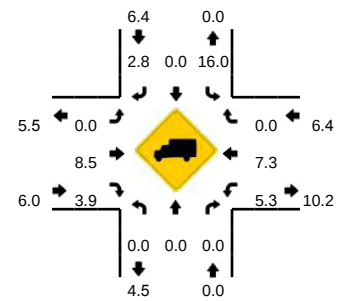
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CITY/STATE: Nokomis, FL

QC JOB #: 14787301
DATE: Wed, Sep 19 2018



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Peak 15-Min: 5:15 PM -- 5:30 PM



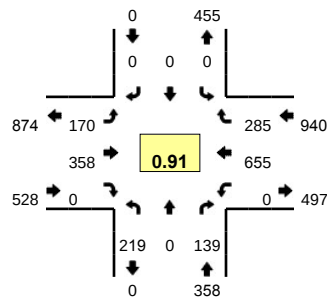
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	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	45	0	68	0	0	0	97	75	0	0	108	103	0	0	0	496	
4:15 PM	0	0	0	0	0	26	0	74	0	0	0	122	114	0	0	60	111	0	0	0	507	
4:30 PM	0	0	0	0	0	42	0	86	0	0	0	82	109	0	0	95	115	0	0	0	529	
4:45 PM	0	0	0	0	0	31	0	89	0	0	0	110	91	0	0	89	111	0	0	0	521	2053
5:00 PM	0	0	0	0	0	21	0	66	0	0	0	93	106	0	0	125	136	0	0	0	547	2104
5:15 PM	0	0	0	0	0	31	0	85	0	0	0	117	135	0	0	88	115	0	0	0	571	2168
5:30 PM	0	0	0	0	0	27	0	71	0	0	0	91	78	0	0	50	104	0	0	0	421	2060
5:45 PM	0	0	0	0	0	19	0	78	0	0	0	65	61	0	0	41	101	0	0	0	365	1904
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	0	0	0	0	0	124	0	340	0	0	0	468	540	0	0	352	460	0	0	0	2284	
Heavy Trucks	0	0	0			20	0	8			0	32	16			20	40	0			136	
Pedestrians								0					0				0				0	
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0	
Railroad																						
Stopped Buses																						

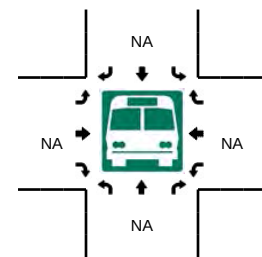
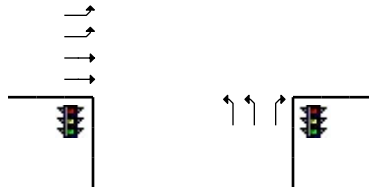
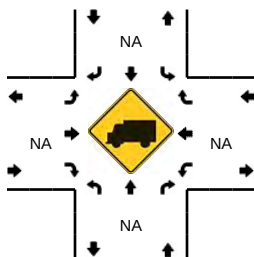
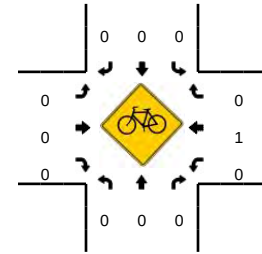
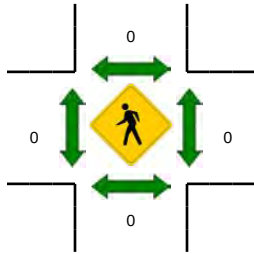
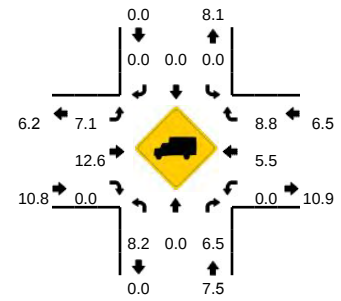
Comments:

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CITY/STATE: Venice, FL

QC JOB #: 14787302
DATE: Wed, Sep 19 2018



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



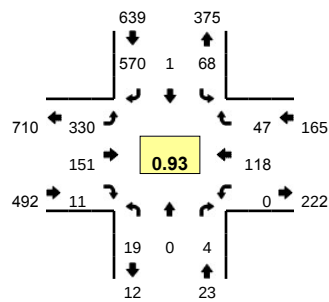
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	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	58	0	59	0	0	0	0	0	0	0	41	94	0	0	0	0	171	65	0	0	488	
4:15 PM	52	0	47	0	0	0	0	0	0	0	53	88	0	0	0	0	134	46	0	0	420	
4:30 PM	50	0	76	0	0	0	0	0	0	0	31	90	0	0	0	0	157	67	0	0	471	
4:45 PM	47	0	33	0	0	0	0	0	0	0	48	87	0	0	0	0	139	67	0	0	421	1800
5:00 PM	55	0	15	0	0	0	0	0	0	0	46	83	0	0	0	0	207	93	0	0	499	1811
5:15 PM	67	0	15	0	0	0	0	0	0	0	45	98	0	0	0	0	152	58	0	0	435	1826
5:30 PM	58	0	9	0	0	0	0	0	0	0	47	70	0	0	0	0	103	51	0	0	338	1693
5:45 PM	52	0	21	0	0	0	0	0	0	0	25	58	0	0	0	0	92	24	0	0	272	1544
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	220	0	60	0	0	0	0	0	0	0	184	332	0	0	0	0	828	372	0	0	1996	
Heavy Trucks	16	0	0			0	0	0			4	52	0			0	40	24			136	
Pedestrians																					0	
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0	
Railroad																						
Stopped Buses																						

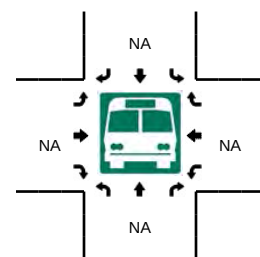
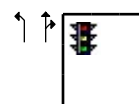
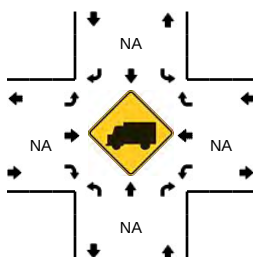
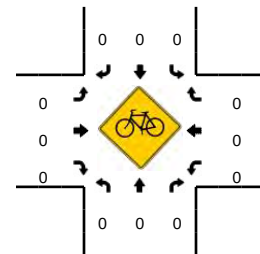
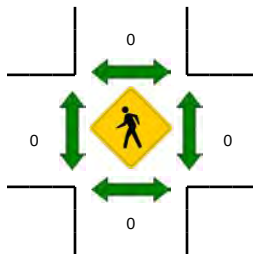
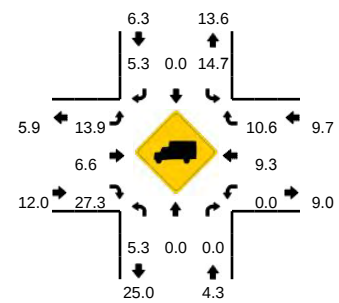
Comments:

LOCATION: Knights Trail Rd -- Laurel Rd E
CITY/STATE: Nokomis, FL

QC JOB #: 14787303
DATE: Wed, Sep 19 2018



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



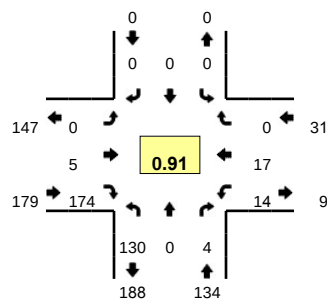
R* = RTOR

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	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	7	1	2	0	4	22	0	86	1	32	107	44	2	0	0	0	16	6	0	4	334	
4:15 PM	4	0	0	0	2	17	0	79	0	33	87	36	4	0	0	0	27	6	0	7	302	
4:30 PM	10	0	0	0	1	13	0	94	0	33	115	30	2	0	1	0	29	7	0	6	341	
4:45 PM	4	0	0	0	1	14	1	89	0	43	82	41	4	2	0	0	31	5	0	6	323	1300
5:00 PM	1	0	0	0	0	23	0	147	1	52	43	44	0	1	0	0	31	5	0	5	353	1319
5:15 PM	2	2	0	0	2	14	0	84	0	28	64	46	4	0	0	1	32	3	0	4	286	1303
5:30 PM	0	0	0	0	0	8	1	48	1	28	40	39	0	0	0	1	33	1	0	6	206	1168
5:45 PM	6	0	0	0	1	10	1	38	0	22	48	29	2	0	0	0	32	1	0	2	192	1037
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	4	0	0	0	0	92	0	588	4	208	172	176	0	4	0	0	124	20	0	20	1412	
Heavy Trucks	0	0	0	0	0	20	0	28	0	0	24	28	0	0	0	0	8	0	0	0	108	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
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	

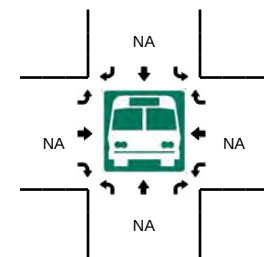
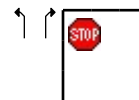
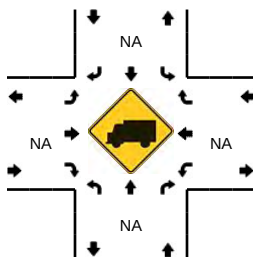
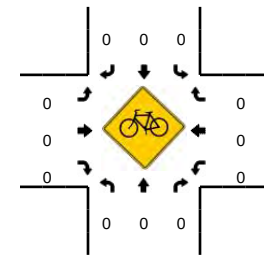
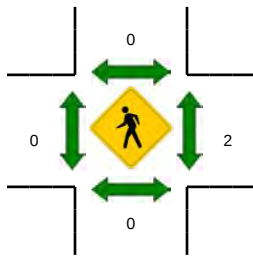
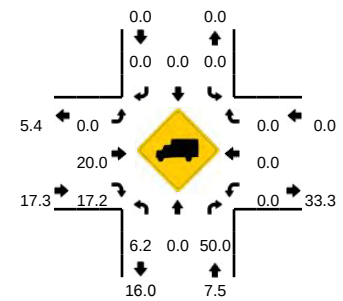
Comments:

LOCATION: Jacaranda Blvd -- Laurel Rd E
CITY/STATE: Nokomis, FL

QC JOB #: 14787304
DATE: Wed, Sep 19 2018



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



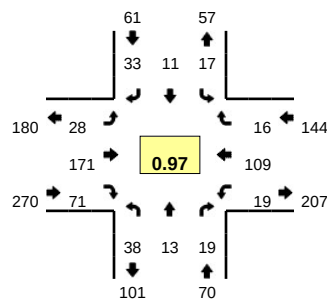
R* = RTOR

15-Min Count Period Beginning At	Jacaranda Blvd (Northbound)					Jacaranda Blvd (Southbound)					Laurel Rd E (Eastbound)					Laurel Rd E (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	31	0	1	0	0	0	0	0	0	0	0	0	47	0	0	1	1	0	0	0	81	
4:15 PM	40	0	2	0	0	0	0	0	0	0	0	1	31	0	0	1	7	0	0	0	82	
4:30 PM	39	0	1	0	0	0	0	0	0	0	0	1	42	0	0	3	1	0	0	0	87	
4:45 PM	28	0	1	0	0	0	0	0	0	0	0	2	35	0	0	4	6	0	0	0	76	326
5:00 PM	37	0	0	0	0	0	0	0	0	0	0	1	53	0	0	3	1	0	0	0	95	340
5:15 PM	26	0	2	0	0	0	0	0	0	0	0	1	44	0	0	4	9	0	0	0	86	344
5:30 PM	22	0	2	0	0	0	0	0	0	0	0	1	26	0	0	1	5	0	0	0	57	314
5:45 PM	24	0	1	0	0	0	0	0	0	0	0	1	22	0	0	1	3	0	0	0	52	290
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	148	0	0	0	0	0	0	0	0	0	0	4	212	0	0	12	4	0	0	0	380	
Heavy Trucks	8	0	0			0	0	0			0	0	40			0	0	0			48	
Pedestrians	0					0					0					0	4				4	
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0	
Railroad																						
Stopped Buses																						

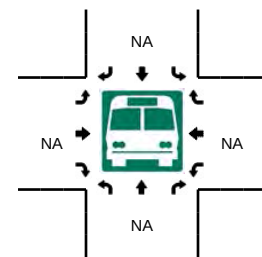
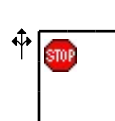
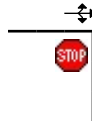
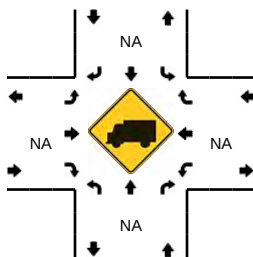
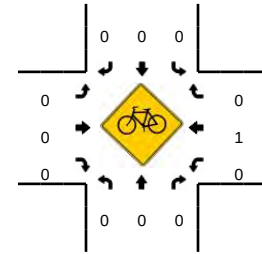
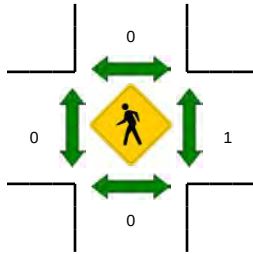
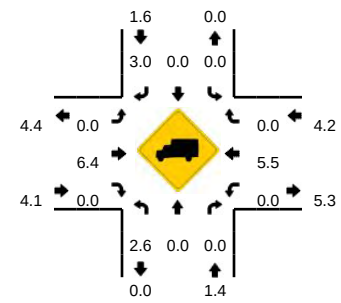
Comments:

LOCATION: Capri Isles Blvd -- Edmondson Rd
CITY/STATE: Venice, FL

QC JOB #: 14787305
DATE: Wed, Sep 19 2018



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



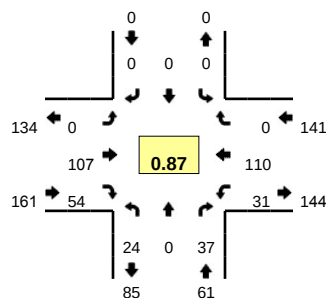
R* = RTOR

15-Min Count Period Beginning At	Capri Isles Blvd (Northbound)					Capri Isles Blvd (Southbound)					Edmondson Rd (Eastbound)					Edmondson Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	9	6	3	0	0	4	3	7	0	0	7	41	12	0	0	1	28	6	0	0	127	
4:15 PM	12	5	4	0	0	5	4	9	0	0	4	43	15	0	0	3	24	2	0	0	130	
4:30 PM	8	4	6	0	0	4	4	9	0	0	10	36	24	0	0	8	21	4	0	0	138	
4:45 PM	7	3	5	0	0	3	2	7	0	0	4	46	19	0	0	5	31	5	0	0	137	532
5:00 PM	11	1	4	0	0	5	1	8	0	0	10	46	13	0	0	3	33	5	0	0	140	545
5:15 PM	11	3	7	0	0	1	0	5	0	0	8	27	15	0	0	2	31	3	0	0	113	528
5:30 PM	12	1	5	0	0	3	7	9	0	0	11	26	11	0	0	5	32	3	0	0	125	515
5:45 PM	13	0	1	0	0	2	1	8	0	0	5	27	13	0	0	4	19	5	0	0	98	476
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	44	4	16	0	0	20	4	32	0	0	40	184	52	0	0	12	132	20	0	0	560	
Heavy Trucks	4	0	0			0	0	0			0	16	0			0	8	0			28	
Pedestrians	0					0					0					0					0	
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0	
Railroad																						
Stopped Buses																						

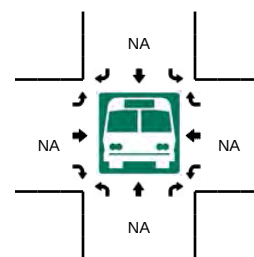
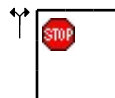
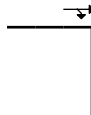
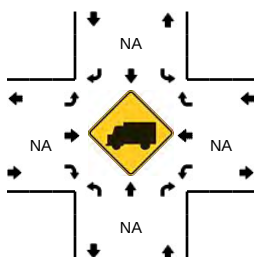
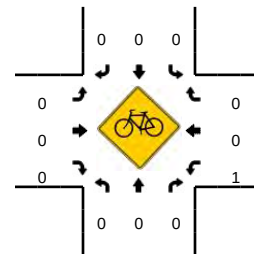
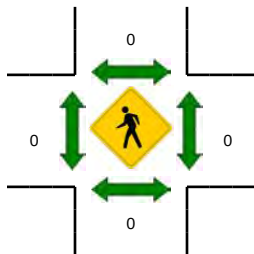
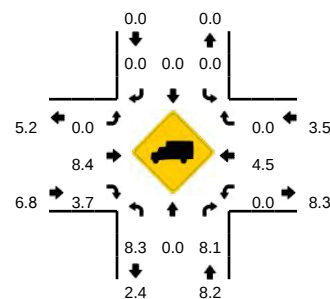
Comments:

LOCATION: N Auburn Rd -- Edmonson Rd/Border Rd
CITY/STATE: Sarasota, FL

QC JOB #: 14787306
DATE: Wed, Sep 19 2018



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



R* = RTOR

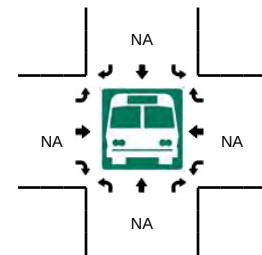
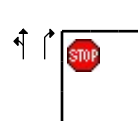
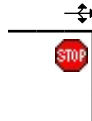
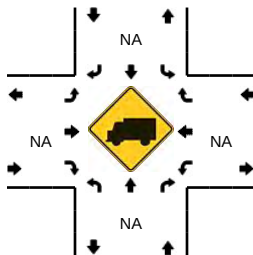
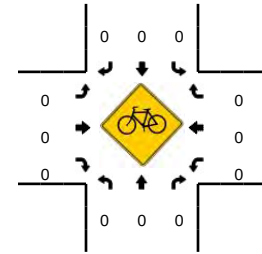
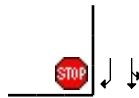
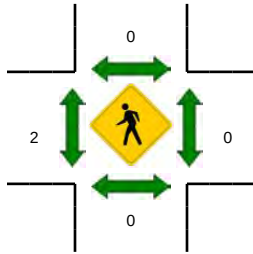
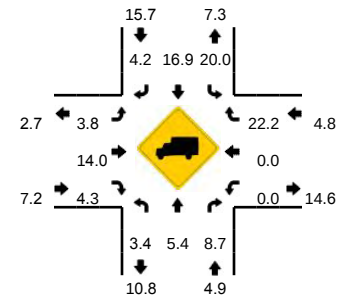
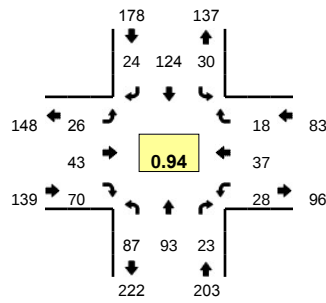
15-Min Count Period Beginning At	N Auburn Rd (Northbound)					N Auburn Rd (Southbound)					Edmonson Rd/Border Rd (Eastbound)					Edmonson Rd/Border Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	8	0	12	0	0	0	0	0	0	0	0	30	15	0	0	12	23	0	0	0	100	
4:15 PM	7	0	8	0	0	0	0	0	0	0	0	28	15	0	0	7	15	0	0	0	80	
4:30 PM	2	0	11	0	0	0	0	0	0	0	0	29	10	0	0	7	29	0	0	0	88	
4:45 PM	8	0	9	0	0	0	0	0	0	0	0	24	12	0	0	7	31	0	0	0	91	359
5:00 PM	7	0	9	0	0	0	0	0	0	0	0	26	17	0	0	10	35	0	0	0	104	363
5:15 PM	9	0	10	0	0	0	0	0	0	0	0	19	10	0	0	8	23	0	0	0	79	362
5:30 PM	10	0	5	0	0	0	0	0	0	0	0	22	11	0	0	4	28	0	0	0	80	354
5:45 PM	5	0	13	0	0	0	0	0	0	0	0	17	11	0	0	5	17	0	0	0	68	331
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	28	0	36	0	0	0	0	0	0	0	0	104	68	0	0	40	140	0	0	0	416	
Heavy Trucks	4	0	4			0	0	0			0	16	0			0	8	0			32	
Pedestrians																					0	
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0	
Railroad																						
Stopped Buses																						

Comments:

LOCATION: Jacaranda Blvd -- Border Rd
CITY/STATE: Venice, FL

QC JOB #: 14787307
DATE: Wed, Sep 19 2018

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



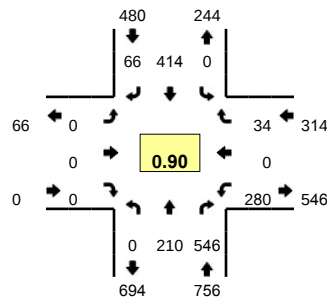
R* = RTOR

15-Min Count Period Beginning At	Jacaranda Blvd (Northbound)					Jacaranda Blvd (Southbound)					Border Rd (Eastbound)					Border Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	23	25	5	0	0	12	28	3	0	0	6	17	18	0	0	8	8	4	0	0	157	
4:15 PM	9	30	6	0	0	5	32	6	0	0	7	15	19	0	0	9	7	6	0	0	151	
4:30 PM	17	31	5	0	0	9	31	6	0	0	8	12	16	0	0	4	7	2	0	0	148	
4:45 PM	21	17	3	0	0	3	30	9	0	0	7	8	20	0	0	11	11	3	0	0	143	599
5:00 PM	25	21	8	0	0	9	30	3	0	0	5	11	18	0	0	9	14	7	0	0	160	602
5:15 PM	24	24	7	0	0	9	33	6	0	0	6	12	16	0	0	4	5	6	0	0	152	603
5:30 PM	18	29	6	0	0	5	25	3	0	0	4	7	16	0	0	7	11	1	0	0	132	587
5:45 PM	12	20	4	0	0	1	12	3	0	0	9	8	11	0	0	5	3	4	0	0	92	536
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	100	84	32	0	0	36	120	12	0	0	20	44	72	0	0	36	56	28	0	0	640	
Heavy Trucks	8	4	4			12	24	0			0	4	8			0	0	0			64	
Pedestrians	0					0					0					0					0	
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0	
Railroad																						
Stopped Buses																						

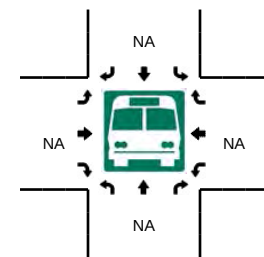
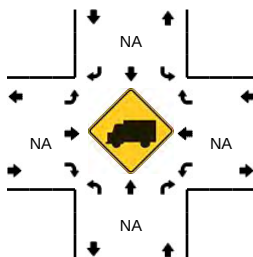
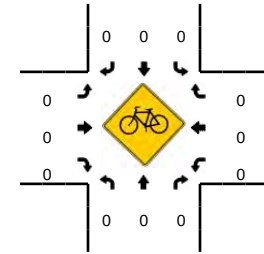
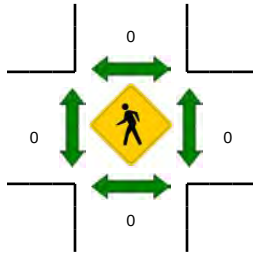
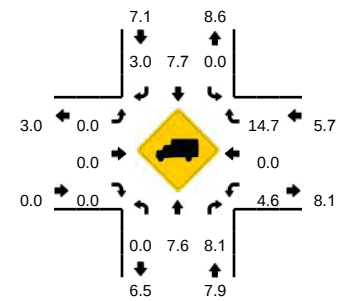
Comments:

LOCATION: Jacaranda Blvd -- I-75 NB Ramps
CITY/STATE: Sarasota, FL

QC JOB #: 14787308
DATE: Wed, Sep 19 2018



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



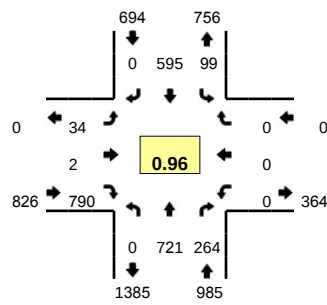
R* = RTOR

15-Min Count Period Beginning At	Jacaranda Blvd (Northbound)					Jacaranda Blvd (Southbound)					I-75 NB Ramps (Eastbound)					I-75 NB Ramps (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	68	122	0	0	0	97	23	0	0	0	0	0	0	0	47	0	10	0	0	367	
4:15 PM	0	44	129	0	0	0	93	22	0	0	0	0	0	0	0	67	0	11	0	0	366	
4:30 PM	0	60	131	0	0	0	110	12	0	0	0	0	0	0	0	70	0	10	0	0	393	
4:45 PM	0	42	133	0	0	0	87	18	0	0	0	0	0	0	0	71	0	7	0	0	358	1484
5:00 PM	0	53	138	0	0	0	135	27	0	0	0	0	0	0	0	70	0	8	0	0	431	1548
5:15 PM	0	55	144	0	0	0	82	9	0	0	0	0	0	0	0	69	0	9	0	0	368	1550
5:30 PM	0	47	115	0	0	0	70	17	0	0	0	0	0	0	0	49	0	13	0	0	311	1468
5:45 PM	0	39	112	0	0	0	41	7	1	0	0	0	0	0	0	45	0	8	0	0	253	1363
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	0	212	552	0	0	0	540	108	0	0	0	0	0	0	0	280	0	32	0	0	1724	
Heavy Trucks	0	24	44			0	44	0			0	0	0			4	0	0			116	
Pedestrians		0					0					0					0				0	
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0	
Railroad																						
Stopped Buses																						

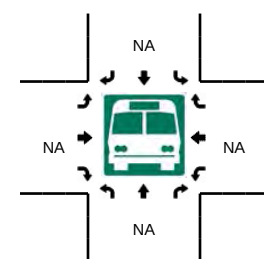
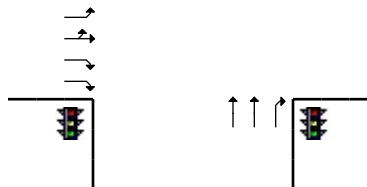
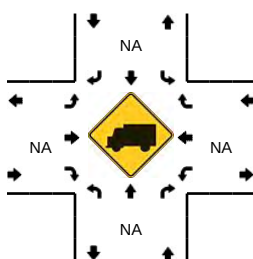
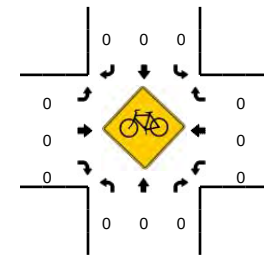
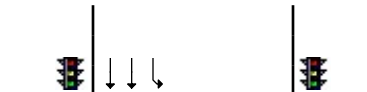
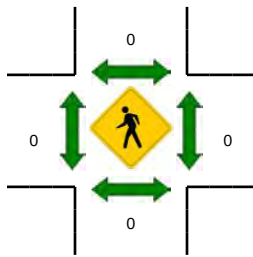
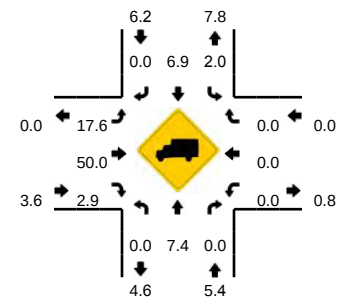
Comments:

LOCATION: Jacaranda Blvd -- I-75 SB Ramps
CITY/STATE: Sarasota, FL

QC JOB #: 14787309
DATE: Wed, Sep 19 2018



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



R* = RTOR

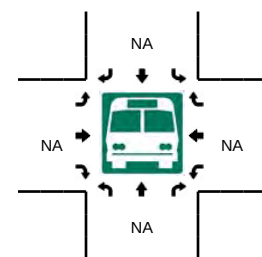
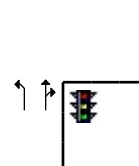
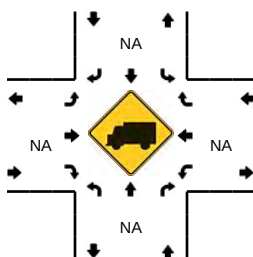
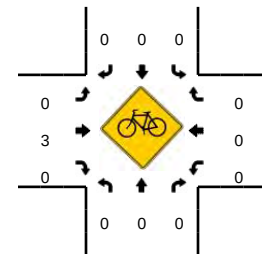
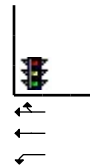
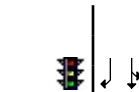
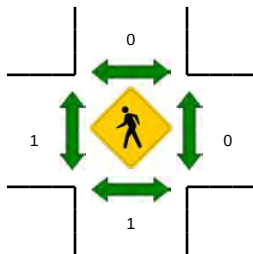
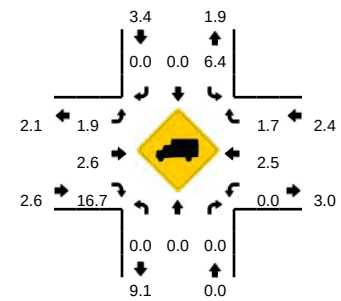
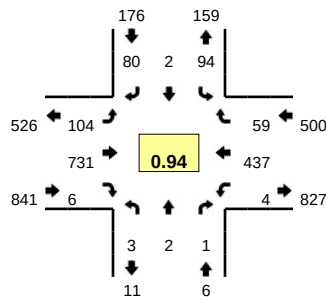
15-Min Count Period Beginning At	Jacaranda Blvd (Northbound)					Jacaranda Blvd (Southbound)					I-75 SB Ramps (Eastbound)					I-75 SB Ramps (Westbound)					Total	Hourly Totals	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*			
4:00 PM	0	175	58	0	0	30	114	0	0	0	13	0	52	0	139	0	0	0	0	0	581	2406	
4:15 PM	0	173	74	0	0	32	126	0	0	0	9	0	66	0	133	0	0	0	0	0	613		
4:30 PM	0	176	69	0	0	24	144	0	0	0	13	1	96	0	105	0	0	0	0	0	628		
4:45 PM	0	177	58	0	0	19	135	0	1	0	5	0	52	0	137	0	0	0	0	0	584		
5:00 PM	0	181	60	0	0	34	175	0	0	0	9	0	86	0	107	0	0	0	0	0	652		2477
5:15 PM	0	187	77	0	0	21	141	0	0	0	7	1	76	0	131	0	0	0	0	0	641		2505
5:30 PM	0	155	88	0	0	15	103	0	0	0	6	0	77	0	99	0	0	0	0	0	543		2420
5:45 PM	0	143	69	0	0	12	76	0	0	0	9	0	43	0	140	0	0	0	0	0	492		2328
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total		
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*			
All Vehicles	0	724	240	0	0	136	700	0	0	0	36	0	344	0	428	0	0	0	0	0	2608		
Heavy Trucks	0	44	0			0	48	0			12	0	20			0	0	0			124		
Pedestrians		0					0					0					0				0		
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0		
Railroad																							
Stopped Buses																							

Comments:

LOCATION: Auburn Rd -- E Venice Ave
CITY/STATE: Sarasota, FL

QC JOB #: 14787310
DATE: Wed, Sep 19 2018

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



R* = RTOR

15-Min Count Period Beginning At	Auburn Rd (Northbound)					Auburn Rd (Southbound)					E Venice Ave (Eastbound)					E Venice Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	2	0	1	0	0	31	1	4	0	15	29	167	4	3	0	1	106	17	0	1	382	
4:15 PM	4	0	2	0	0	17	0	5	0	13	27	157	2	0	0	1	110	17	0	0	355	
4:30 PM	0	0	0	0	0	25	0	3	0	18	21	199	1	1	0	1	101	12	0	0	382	
4:45 PM	0	0	0	0	0	14	0	5	0	20	30	161	1	3	1	1	103	14	0	1	354	1473
5:00 PM	1	2	0	0	1	43	1	3	0	9	25	192	1	1	0	0	110	14	1	3	407	1498
5:15 PM	2	0	0	0	0	12	1	3	0	19	22	179	2	1	0	1	123	14	0	1	380	1523
5:30 PM	1	1	0	0	1	21	0	2	0	19	30	130	1	2	0	0	101	14	0	1	324	1465
5:45 PM	1	0	0	0	1	18	0	2	0	12	25	108	3	1	0	2	105	14	1	1	294	1405
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	4	8	0	0	4	172	4	12	0	36	100	768	4	4	0	0	440	56	4	12	1628	
Heavy Trucks	0	0	0			4	0	0			0	32	0			0	12	4			52	
Pedestrians	4					0					4					0					8	
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0	
Railroad																						
Stopped Buses																						

Comments:

Station : 1460 - Laurel Rd @ I-75 SB Ramps (West) (Standard File)

Phase	1 (WL)	2 (ET)	3	4 (ST)	5	6	7	8	9	10	11	12	13	14	15	16
Walk																
Ped Clearance																
Min Green	5	12		7												
Passage	3	5		5												
Max1	50	40		20												
Max2	60	40		25												
Yellow	4.8	5	9	3.4	9	9	9	9	9	9	9	9	9	9	9	9
Red	2	5.9		2												
Red Revert	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON		ON												
Auto Entry				ON												
Auto Exit		ON														
Non Act1																
Non Act2																
Lock Call																
Min Recall		ON														
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry																
Sim Gap Enable																
Guar Passage																
Rest In Walk																
Cond Service																
Add Init Calc																
Bike Clear																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Flash	ON	ON				
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green	5	5	5	5	5	5
Min Walk						
Ped Clear						
Track Green						
Min Dwell	5	5	10	10	10	10
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell Ped1						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Type				
Platoon Rx				
Cond Lockout				
Coord in Preempt				
Platoon Tx				
Lock				
Begin Mode	SKIP	SKIP	SKIP	SKIP
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Max Lockout				
Ext Dwell				
Ant Arrival				
Max Grn 1				
Max Grn 2				
Max Grn 3				
Max Grn 4				
Max Grn 5				
Max Grn 6				
Max Grn 7				
Max Grn 8				
Max Grn 9				
Max Grn 10				
Max Grn 11				
Max Grn 12				
Max Grn 13				
Max Grn 14				
Max Grn 15				
Max Grn 16				
Headway Group				
Queue Jump				
Headway Time				

Prepared By

Date Implemented

Reviewed By

Traffic Engineer

TX Time				
PP Hold Time				
PP Tx Phase 1				
PP Tx Phase 2				
PP Tx Phase 3				
PP Tx Phase 4				

Coordination

[illegible]

[illegible][illegible]

User Comments:

Station : 1462 - Laurel Rd @ I-75 NB Ramps (East) (Standard File)

Phase	1 (EL)	2 (WT)	3	4 (NT)	5	6	7	8	9	10	11	12	13	14	15	16
Walk																
Ped Clearance																
Min Green	5	12		7												
Passage	3	5		4												
Max1	30	40		35												
Max2	30	60		30												
Yellow	4.8	4.8	9	3.7	9	9	9	9	9	9	9	9	9	9	9	9
Red	2	2		3												
Red Revert	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON		ON												
Auto Entry				ON												
Auto Exit		ON														
Non Act1																
Non Act2																
Lock Call																
Min Recall																
Max Recall		ON														
Ped Recall																
Soft Recall																
Dual Entry																
Sim Gap Enable																
Guar Passage																
Rest In Walk																
Cond Service																
Add Init Calc																
Bike Clear																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Flash	ON	ON				
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green	5	5	5	5	5	5
Min Walk						
Ped Clear						
Track Green						
Min Dwell	5	5	10	10	10	10
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell Ped1						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Type				
Platoon Rx				
Cond Lockout				
Coord in Preempt				
Platoon Tx				
Lock				
Begin Mode	SKIP	SKIP	SKIP	SKIP
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Max Lockout				
Ext Dwell				
Ant Arrival				
Max Grn 1				
Max Grn 2				
Max Grn 3				
Max Grn 4				
Max Grn 5				
Max Grn 6				
Max Grn 7				
Max Grn 8				
Max Grn 9				
Max Grn 10				
Max Grn 11				
Max Grn 12				
Max Grn 13				
Max Grn 14				
Max Grn 15				
Max Grn 16				
Headway Group				
Queue Jump				
Headway Time				

Prepared By

Date Implemented

Reviewed By

Traffic Engineer

TX Time				
PP Hold Time				
PP Tx Phase 1				
PP Tx Phase 2				
PP Tx Phase 3				
PP Tx Phase 4				

Coordination

[illegible]

[illegible][illegible]

User Comments:

Station : 1464 - Laurel Rd @ Knights Trail Rd (Standard File)

Phase	1 (EL)	2 (WT)	3 (NT)	4 (ST)	5 (WL)	6 (ET)	7	8	9	10	11	12	13	14	15	16
Walk		7	8													
Ped Clearance		31	30													
Min Green	5	10	7	7	5	10										
Passage	5	5	3	3	3	5										
Max1	40	40	15	35	10	40										
Max2	50	25	15	30	15	50										
Yellow	4.9	4.9	3.7	4.9	4.9	4.9	9	9	9	9	9	9	9	9	9	9
Red	2	2	2	2	3	2										
Red Revert	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON	ON	ON	ON	ON										
Auto Entry	ON				ON											
Auto Exit		ON				ON										
Non Act1																
Non Act2																
Lock Call																
Min Recall																
Max Recall																
Ped Recall																
Soft Recall		ON				ON										
Dual Entry		ON				ON										
Sim Gap Enable	ON	ON			ON	ON										
Guar Passage																
Rest In Walk																
Cond Service																
Add Init Calc																
Bike Clear																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Flash	ON	ON				
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green	5	5	20	20	20	20
Min Walk						
Ped Clear			29	29	29	29
Track Green						
Min Dwell	5	5	7	10	10	10
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell Ped1						
Exit R1			4	2	1	2
Exit R2				6	6	6
Exit R3						
Exit R4						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Type				
Platoon Rx				
Cond Lockout				
Coord in Preempt				
Platoon Tx				
Lock				
Begin Mode	SKIP	SKIP	SKIP	SKIP
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Max Lockout				
Ext Dwell				
Ant Arrival				
Max Grn 1				
Max Grn 2				
Max Grn 3				
Max Grn 4				
Max Grn 5				
Max Grn 6				
Max Grn 7				
Max Grn 8				
Max Grn 9				
Max Grn 10				
Max Grn 11				
Max Grn 12				
Max Grn 13				
Max Grn 14				
Max Grn 15				
Max Grn 16				
Headway Group				
Queue Jump				
Headway Time				

Prepared By

Date Implemented

Reviewed By

Traffic Engineer

TX Time				
PP Hold Time				
PP Tx Phase 1				
PP Tx Phase 2				
PP Tx Phase 3				
PP Tx Phase 4				

Station : 1464 - Laurel Rd @ Knights Trail Rd (Standard File)

Coordination

[illegible]

Split 16										
Split 15										
Split 14										
Split 13										
Split 12										
Split 11										
Split 10										
Split 9										
Split 8										
Split 7										
Split 6										
Split 5										
Split 4										
Split 3										
Split 2										
Split 1										
Dwell										
Long										
Short										
Seque										
Split										
Offset										
Cycle										
Pattern										
Action	254									
Minute	99									
Hour										
Day Plan 4										
Easy										

[illegible]

User Comments:

Station : 1470 - Jacaranda Blvd @ I-75 SB Ramps (West) (Standard File)

Phase	1	2 (NT)	3 (WT)	4	5	6 (ST)	7	8	9	10	11	12	13	14	15	16
Walk		7		7		7										
Ped Clearance		27		26		12										
Min Green		10	10	10		10										
Passage		5	3			5										
Max1		40	35	33		40										
Max2		110	55	33		110										
Yellow	9	4.9	4.9	4.9	9	4.9	9	9	9	9	9	9	9	9	9	9
Red		2.7	2.7	2.7		2.7										
Red Revert	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit		90	48			90										
Dynamic Max Step		10	5			10										
Enable		ON	ON	ON		ON										
Auto Entry			ON													
Auto Exit		ON				ON										
Non Act1																
Non Act2																
Lock Call																
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON				ON										
Sim Gap Enable		ON				ON										
Guar Passage																
Rest In Walk																
Cond Service																
Add Init Calc																
Bike Clear																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON				ON
Override Flash	ON	ON				
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green	5	5	10	10	10	5
Min Walk						
Ped Clear			99	99	99	
Track Green						
Min Dwell	5	5	10	10	10	10
Max Presence			120	120	120	
Track R1						
Track R2						
Track R3						
Track R4						
Dwell Ped1						
Exit R1			2	2	2	
Exit R2			6	6	6	
Exit R3						
Exit R4						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Type				
Platoon Rx				
Cond Lockout				
Coord in Preempt				
Platoon Tx				
Lock				
Begin Mode	SKIP	SKIP	SKIP	SKIP
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Max Lockout				
Ext Dwell				
Ant Arrival				
Max Grn 1				
Max Grn 2				
Max Grn 3				
Max Grn 4				
Max Grn 5				
Max Grn 6				
Max Grn 7				
Max Grn 8				
Max Grn 9				
Max Grn 10				
Max Grn 11				
Max Grn 12				
Max Grn 13				
Max Grn 14				
Max Grn 15				
Max Grn 16				
Headway Group				
Queue Jump				
Headway Time				

Prepared By

Date Implemented

Reviewed By

Traffic Engineer

TX Time				
PP Hold Time				
PP Tx Phase 1				
PP Tx Phase 2				
PP Tx Phase 3				
PP Tx Phase 4				

Coordination

[illegible]

Station : 1470 - Jacaranda Blvd @ I-75 SB Ramps (West) (Standard File)

[illegible]

Scheduler

[illegible]

User Comments:

Station : 1108 - Venice Ave @ Auburn Rd (Standard File)

Phase	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		7		7		8								
Ped Clearance		20		24		15		26								
Min Green	5	10		7	5	10		7								
Passage	2.5	3.5		3	2.5	3.5		3								
Max1	15	45		15	15	45		30								
Max2	25	65		20	20	70		30								
Yellow	4.8	4.8	9	3.7	4.8	4.8	9	4								
Red	2	3		2.2	3	3		2.1								
Red Revert	3	3	3	3	3	3	3	3								
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON		ON	ON	ON		ON								
Auto Entry				ON				ON								
Auto Exit		ON				ON										
Non Act1																
Non Act2																
Lock Call																
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON				ON										
Sim Gap Enable																
Guar Passage																
Rest In Walk																
Cond Service																
Add Init Calc																
Bike Clear																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Flash						
Override Higher	ON					
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green			7	20	7	20
Min Walk			7	7	7	7
Ped Clear			22	17	22	17
Track Green						
Min Dwell			7	20	7	20
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell Ped1						
Exit R1			4	2	4	2
Exit R2			8	6	8	6
Exit R3						
Exit R4						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Type				
Platoon Rx				
Cond Lockout				
Coord in Preempt				
Platoon Tx				
Lock				
Begin Mode	SKIP	SKIP	SKIP	SKIP
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Max Lockout				
Ext Dwell				
Ant Arrival				
Max Grn 1				
Max Grn 2				
Max Grn 3				
Max Grn 4				
Max Grn 5				
Max Grn 6				
Max Grn 7				
Max Grn 8				
Max Grn 9				
Max Grn 10				
Max Grn 11				
Max Grn 12				
Max Grn 13				
Max Grn 14				
Max Grn 15				
Max Grn 16				
Headway Group				
Queue Jump				
Headway Time				

Prepared By

Date Implemented

Reviewed By

Traffic Engineer

TX Time				
PP Hold Time				
PP Tx Phase 1				
PP Tx Phase 2				
PP Tx Phase 3				
PP Tx Phase 4				

Coordination

[illegible]

Station : 1108 - Venice Ave @ Auburn Rd (Standard File)

[illegible]

Scheduler

[illegible]

User Comments:

APPENDIX C

EXISTING AND FUTURE INTERSECTION VOLUMES

TRAFFIC VOLUME AT STUDY INTERSECTIONS

Intersection: I-75 SB Ramps & Laurel Road

Count Date: 09/19/18

P.M. Peak Time Period: 4:30 - 5:30 PM

Peak Hour Factor: 0.95

	Laurel Rd			Laurel Rd						I-75 SB Ramp		
Existing Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movement Counts	0	402	441	397	477	0	0	0	0	125	0	326
Peak Season Factor	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2018 Existing Conditions	0	563	617	556	668	0	0	0	0	175	0	456

Future Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Conditions	0	563	617	556	668	0	0	0	0	175	0	456
Years to Build-out	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Background Traffic Growth	0	84	92	83	99	0	0	0	0	26	0	68
SJMR PUD		40			22					73		
Toscana Isles		186		14	109					149		
Portofino		130		108	159					73		
Milano PUD (VICA East of Jacaranda)		14			8					27		
Milano PUD (Laurel Lakes West of Jacaranda)		29			17					47		
2025 Future Conditions	0	1046	709	761	1082	0	0	0	0	570	0	524

Project Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	0	95	0	0	55	0	0	0	0	157	0	0
Total Project Traffic	0	95	0	0	55	0	0	0	0	157	0	0

Total Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Traffic	0	1046	709	761	1082	0	0	0	0	570	0	524
Project Traffic	0	95	0	0	55	0	0	0	0	157	0	0
Total Conditions	0	1141	709	761	1137	0	0	0	0	727	0	524

TRAFFIC VOLUME AT STUDY INTERSECTIONS

Intersection: I-75 NB Ramps & Laurel Road

Count Date: 09/19/18

P.M. Peak Time Period: 4:30 - 5:30 PM

Peak Hour Factor: 0.91

	Laurel Rd			Laurel Rd			I-75 NB Ramp					
Existing Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movement Counts	170	358	0	0	655	285	219	0	139	0	0	0
Peak Season Factor	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2018 Existing Conditions	238	501	0	0	917	399	307	0	195	0	0	0

Future Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Conditions	238	501	0	0	917	399	307	0	195	0	0	0
Years to Build-out	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Background Traffic Growth	35	74	0	0	136	59	46	0	29	0	0	0
SJMR PUD		113			22	41						
Toscana Isles		335			124	87			24			
Portofino		203			266	89			88			
Milano PUD (VICA East of Jacaranda)		41			8	16			2			
Milano PUD (Laurel Lakes West of Jacaranda)		76			17	28			1			
2025 Future Conditions	273	1343	0	0	1490	719	353	0	339	0	0	0

Project Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	0	252	0	0	55	92	0	0	0	0	0	0
Total Project Traffic	0	252	0	0	55	92	0	0	0	0	0	0

Total Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Traffic	273	1343	0	0	1490	719	353	0	339	0	0	0
Project Traffic	0	252	0	0	55	92	0	0	0	0	0	0
Total Conditions	273	1595	0	0	1545	811	353	0	339	0	0	0

TRAFFIC VOLUME AT STUDY INTERSECTIONS

Intersection: Knights Trail Road & Laurel Road

Count Date: 09/19/18

P.M. Peak Time Period: 4:15 - 5:15 PM

Peak Hour Factor: 0.93

	Laurel Rd			Laurel Rd			Knights Trail Rd			Knights Trail Rd		
Existing Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movement Counts	330	151	11	0	118	47	19	0	4	68	1	570
Peak Season Factor	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2018 Existing Conditions	462	211	15	0	165	66	27	0	6	95	1	798

Future Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Conditions	462	211	15	0	165	66	27	0	6	95	1	798
Years to Build-out	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Background Traffic Growth	69	31	2	0	25	10	4	0	1	14	0	119
SJMR PUD		113		4	63	12			8	21		
Toscana Isles	360					154				90		211
Portofino	318	-27		6	56	0		5	5	29	6	346
Milano PUD (VICA East of Jacaranda)		43			24	2			1	4		
Milano PUD (Laurel Lakes West of Jacaranda)		77		4	45	8			5	13		
Laurel Rd Storage Facility			4	1			3		1			
2025 Future Conditions	1209	448	21	15	378	252	34	5	27	266	7	1474

Project Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	0	252	0	2	147	23	0	0	2	39	0	0
Total Project Traffic	0	252	0	2	147	23	0	0	2	39	0	0

Total Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Traffic	1209	448	21	15	378	252	34	5	27	266	7	1474
Project Traffic	0	252	0	2	147	23	0	0	2	39	0	0
Total Conditions	1209	700	21	17	525	275	34	5	29	305	7	1474

TRAFFIC VOLUME AT STUDY INTERSECTIONS

Intersection: Jacaranda Boulevard & Laurel Road

Count Date: 09/19/18

P.M. Peak Time Period: 4:30 - 5:30 PM

Peak Hour Factor: 0.91

	Laurel Rd			Laurel Rd			Jacaranda Blvd					
Existing Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movement Counts	0	5	174	14	17	0	130	0	4	0	0	0
Peak Season Factor	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2018 Existing Conditions	0	7	244	20	24	0	182	0	6	0	0	0

Future Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Conditions	0	7	244	20	24	0	182	0	6	0	0	0
Years to Build-out	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Background Traffic Growth	0	1	36	3	4	0	27	0	1	0	0	0
SJMR PUD		150		1	85				2			
Toscana Isles		9	9		15		15					
Portofino		19	228		16		186					
Milano PUD (VICA East of Jacaranda)			48				26					
Milano PUD (Laurel Lakes West of Jacaranda)			84				50					
2025 Future Conditions	0	186	649	24	144	0	486	0	9	0	0	0

Project Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	0	2	1	0	3	0	2	0	0	0	0	0
Total Project Traffic	0	2	1	0	3	0	2	0	0	0	0	0

Total Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Traffic	0	186	649	24	144	0	486	0	9	0	0	0
Project Traffic	0	2	1	0	3	0	2	0	0	0	0	0
Total Conditions	0	188	650	24	147	0	488	0	9	0	0	0

TRAFFIC VOLUME AT STUDY INTERSECTIONS

Intersection: Capri Isles Bouleavrd & Edmondson Road

Count Date: 09/19/18

P.M. Peak Time Period: 4:15 - 5:15 PM

Peak Hour Factor: 0.97

	Edmondson Rd			Edmondson Rd			Capri Isles Blvd			Capri Isles Blvd		
Existing Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movement Counts	28	171	71	19	109	16	38	13	19	17	11	33
Peak Season Factor	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2018 Existing Conditions	39	239	99	27	153	22	53	18	27	24	15	46

Future Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Conditions	39	239	99	27	153	22	53	18	27	24	15	46
Years to Build-out	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Background Traffic Growth	6	36	15	4	23	3	8	3	4	4	2	7
Plaza Venetia	2	6	8		6		8					2
2025 Future Conditions	47	281	122	31	182	25	69	21	31	28	17	55

Project Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	0	32	0	2	18	2	0	0	4	2	0	0
Total Project Traffic	0	32	0	2	18	2	0	0	4	2	0	0

Total Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Traffic	47	281	122	31	182	25	69	21	31	28	17	55
Project Traffic	0	32	0	2	18	2	0	0	4	2	0	0
Total Conditions	47	313	122	33	200	27	69	21	35	30	17	55

TRAFFIC VOLUME AT STUDY INTERSECTIONS

Intersection: Auburn Road & Border Road

Count Date: 09/19/18

P.M. Peak Time Period: 4:15 - 5:15 PM

Peak Hour Factor: 0.87

	Edmondson Rd			Border Rd			Auburn Rd					
Existing Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movement Counts	0	107	54	31	110	0	24	0	37	0	0	0
Peak Season Factor	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2018 Existing Conditions	0	150	76	43	154	0	34	0	52	0	0	0

Future Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Conditions	0	150	76	43	154	0	34	0	52	0	0	0
Years to Build-out	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Background Traffic Growth	0	22	11	6	23	0	5	0	8	0	0	0
Murphy Oaks			27	10			15		6			
Portofino		16		57	19				47			
The Woods at Venice		28		8	17				14			
Milano PUD (VICA East of Jacaranda)		6		4	3				7			
Milano PUD (Laurel Lakes West of Jacaranda)		14		6	8				11			
2025 Future Conditions	0	236	114	134	224	0	54	0	145	0	0	0

Project Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	0	42	0	29	24	0	0	0	49	0	0	0
Total Project Traffic	0	42	0	29	24	0	0	0	49	0	0	0

Total Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Traffic	0	236	114	134	224	0	54	0	145	0	0	0
Project Traffic	0	42	0	29	24	0	0	0	49	0	0	0
Total Conditions	0	278	114	163	248	0	54	0	194	0	0	0

TRAFFIC VOLUME AT STUDY INTERSECTIONS

Intersection: Jacaranda Boulevard & Border Road

Count Date: 09/19/18

P.M. Peak Time Period: 4:30 - 5:30 PM

Peak Hour Factor: 0.94

	Border Rd			Border Rd			Jacaranda Blvd			Jacaranda Blvd		
Existing Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movement Counts	26	43	70	28	37	18	87	93	23	30	124	24
Peak Season Factor	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2018 Existing Conditions	36	60	98	39	52	25	122	130	32	42	174	34

Future Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Conditions	36	60	98	39	52	25	122	130	32	42	174	34
Years to Build-out	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Background Traffic Growth	5	9	15	6	8	4	18	19	5	6	26	5
SJMR PUD		26		30	15	1			54	1		
Portofino	62					62		62		76	76	76
The Woods at Venice		42		28	25	17			49	29		
Milano PUD (VICA East of Jacaranda)	13					4		22		2	12	7
Milano PUD (Laurel Lakes West of Jacaranda)	26					10		48		6	28	15
2025 Future Conditions	142	137	113	103	100	123	140	281	140	162	316	137

Project Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	2	14	72	0	25	0	122	0	0	0	0	3
Total Project Traffic	2	14	72	0	25	0	122	0	0	0	0	3

Total Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Traffic	142	137	113	103	100	123	140	281	140	162	316	137
Project Traffic	2	14	72	0	25	0	122	0	0	0	0	3
Total Conditions	144	151	185	103	125	123	262	281	140	162	316	140

TRAFFIC VOLUME AT STUDY INTERSECTIONS

Intersection: Jacaranda Boulevard & I-75 NB Ramps

Count Date: 09/19/18

P.M. Peak Time Period: 4:30 - 5:30 PM

Peak Hour Factor: 0.90

				I-75 NB Ramp			Jacaranda Blvd			Jacaranda Blvd		
Existing Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movement Counts	0	0	0	280	0	34	0	210	546	0	414	66
Peak Season Factor	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2018 Existing Conditions	0	0	0	392	0	48	0	294	764	0	580	92

Future Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Conditions	0	0	0	392	0	48	0	294	764	0	580	92
Years to Build-out	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Background Traffic Growth	0	0	0	58	0	7	0	44	114	0	86	14
SJMR PUD						7		45			29	
Portofino								57			70	
Milano PUD (VICA East of Jacaranda)						4		16			10	2
Milano PUD (Laurel Lakes West of Jacaranda)						14		33			23	3
2025 Future Conditions	0	0	0	450	0	80	0	489	878	0	798	111

Project Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	0	0	0	0	0	32	0	87	0	0	69	0
Total Project Traffic	0	0	0	0	0	32	0	87	0	0	69	0

Total Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Traffic	0	0	0	450	0	80	0	489	878	0	798	111
Project Traffic	0	0	0	0	0	32	0	87	0	0	69	0
Total Conditions	0	0	0	450	0	112	0	576	878	0	867	111

TRAFFIC VOLUME AT STUDY INTERSECTIONS

Intersection: Jacaranda Boulevard & I-75 SB Ramps

Count Date: 09/19/18

P.M. Peak Time Period: 4:30 - 5:30 PM

Peak Hour Factor: 0.96

	I-75 SB Ramp						Jacaranda Blvd			Jacaranda Blvd		
Existing Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movement Counts	34	2	790	0	0	0	0	721	264	99	595	0
Peak Season Factor	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2018 Existing Conditions	48	3	1106	0	0	0	0	1009	370	139	833	0

Future Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Conditions	48	3	1106	0	0	0	0	1009	370	139	833	0
Years to Build-out	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Background Traffic Growth	7	0	164	0	0	0	0	150	55	21	124	0
Portofino								57			70	
Milano PUD (VICA East of Jacaranda)	2							14		1	9	
Milano PUD (Laurel Lakes West of Jacaranda)								33		4	19	
2025 Future Conditions	57	3	1270	0	0	0	0	1263	425	165	1055	0

Project Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	0	0	0	0	0	0	0	87	0	18	51	0
Total Project Traffic	0	0	0	0	0	0	0	87	0	18	51	0

Total Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Traffic	57	3	1270	0	0	0	0	1263	425	165	1055	0
Project Traffic	0	0	0	0	0	0	0	87	0	18	51	0
Total Conditions	57	3	1270	0	0	0	0	1350	425	183	1106	0

TRAFFIC VOLUME AT STUDY INTERSECTIONS

Intersection: Auburn Road & East Venice Avenue

Count Date: 09/19/18

P.M. Peak Time Period: 4:30 - 5:30 PM

Peak Hour Factor: 0.94

	E Venice Ave			E Venice Ave			Auburn Rd			Auburn Rd		
Existing Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movement Counts	104	731	6	4	437	59	3	2	1	94	2	80
Peak Season Factor	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2018 Existing Conditions	146	1023	8	6	612	83	4	3	1	132	3	112

Future Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Conditions	146	1023	8	6	612	83	4	3	1	132	3	112
Years to Build-out	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Background Traffic Growth	22	152	1	1	91	12	1	0	0	20	0	17
2025 Future Conditions	168	1175	9	7	703	95	5	3	1	152	3	129

Project Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	39	38	0	0	22	0	0	0	0	0	0	23
Total Project Traffic	39	38	0	0	22	0	0	0	0	0	0	23

Total Traffic	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Traffic	168	1175	9	7	703	95	5	3	1	152	3	129
Project Traffic	39	38	0	0	22	0	0	0	0	0	0	23
Total Conditions	207	1213	9	7	725	95	5	3	1	152	3	152

APPENDIX D

2018 EXISTING TRAFFIC SYNCHRO SUMMARY WORKSHEETS

HCM 6th Signalized Intersection Summary

1: I-75 SB Ramp & Laurel Rd

09/28/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑					↑		↑↑
Traffic Volume (veh/h)	0	563	617	556	668	0	0	0	0	175	0	456
Future Volume (veh/h)	0	563	617	556	668	0	0	0	0	175	0	456
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1767	1841	1826	1796	0				1663	0	1856
Adj Flow Rate, veh/h	0	593	0	585	703	0				184	0	480
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	9	4	5	7	0				16	0	3
Cap, veh/h	0	461		792	2330	0				297	0	518
Arrive On Green	0.00	0.14	0.00	0.91	1.00	0.00				0.19	0.00	0.19
Sat Flow, veh/h	0	3445	1560	1739	3503	0				1584	0	2768
Grp Volume(v), veh/h	0	593	0	585	703	0				184	0	480
Grp Sat Flow(s),veh/h/ln	0	1678	1560	1739	1706	0				1584	0	1384
Q Serve(g_s), s	0.0	15.1	0.0	10.1	0.0	0.0				11.8	0.0	18.8
Cycle Q Clear(g_c), s	0.0	15.1	0.0	10.1	0.0	0.0				11.8	0.0	18.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	461		792	2330	0				297	0	518
V/C Ratio(X)	0.00	1.29		0.74	0.30	0.00				0.62	0.00	0.93
Avail Cap(c_a), veh/h	0	461		857	2330	0				297	0	518
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.80	0.80	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	47.4	0.0	3.1	0.0	0.0				41.1	0.0	44.0
Incr Delay (d2), s/veh	0.0	144.8	0.0	2.5	0.1	0.0				5.7	0.0	23.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	24.1	0.0	3.4	0.1	0.0				8.5	0.0	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	192.2	0.0	5.6	0.1	0.0				46.8	0.0	67.4
LnGrp LOS	A	F		A	A	A				D	A	E
Approach Vol, veh/h		593	A		1288						664	
Approach Delay, s/veh		192.2			2.6						61.7	
Approach LOS		F			A						E	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	60.0	25.0		25.0		85.0						
Change Period (Y+Rc), s	* 11	* 11		5.4		* 11						
Max Green Setting (Gmax), s	* 53	* 14		19.6		* 74						
Max Q Clear Time (g_c+I1), s	12.1	17.1		20.8		2.0						
Green Ext Time (p_c), s	1.9	0.0		0.0		11.1						
Intersection Summary												
HCM 6th Ctrl Delay				62.2								
HCM 6th LOS				E								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

2: I-75 NB Ramp & Laurel Rd

09/28/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	501	0	0	917	399	307	0	195	0	0	0
Future Volume (veh/h)	238	501	0	0	917	399	307	0	195	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1796	1707	0	0	1811	1767	1781	0	1796			
Adj Flow Rate, veh/h	262	551	0	0	1008	0	337	0	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	7	13	0	0	6	9	8	0	7			
Cap, veh/h	748	2471	0	0	1664		440	0				
Arrive On Green	0.45	1.00	0.00	0.00	0.48	0.00	0.13	0.00	0.00			
Sat Flow, veh/h	3319	3329	0	0	3532	1497	3291	0	1522			
Grp Volume(v), veh/h	262	551	0	0	1008	0	337	0	0			
Grp Sat Flow(s),veh/h/ln	1659	1622	0	0	1721	1497	1646	0	1522			
Q Serve(g_s), s	5.7	0.0	0.0	0.0	23.5	0.0	10.9	0.0	0.0			
Cycle Q Clear(g_c), s	5.7	0.0	0.0	0.0	23.5	0.0	10.9	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	748	2471	0	0	1664		440	0				
V/C Ratio(X)	0.35	0.22	0.00	0.00	0.61		0.77	0.00				
Avail Cap(c_a), veh/h	748	2471	0	0	1664		577	0				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.36	0.36	0.00	0.00	0.90	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	24.9	0.0	0.0	0.0	20.7	0.0	46.0	0.0	0.0			
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	1.5	0.0	5.4	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	3.4	0.0	0.0	0.0	13.7	0.0	8.2	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.0	0.0	0.0	0.0	22.2	0.0	51.4	0.0	0.0			
LnGrp LOS	C	A	A	A	C		D	A				
Approach Vol, veh/h	813			1008			A			337		
Approach Delay, s/veh	8.1			22.2			51.4					
Approach LOS	A			C			D					
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	30.6	59.0		20.4		89.6						
Change Period (Y+Rc), s	6.8	6.8		* 6.7		6.8						
Max Green Setting (Gmax), s	19.2	52.2		* 18		78.2						
Max Q Clear Time (g_c+I1), s	7.7	25.5		12.9		2.0						
Green Ext Time (p_c), s	0.6	13.2		0.8		8.1						

Intersection Summary

HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM Signalized Intersection Capacity Analysis

3: Knights Trail Rd & Laurel Rd

09/28/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	462	211	15	0	165	66	27	0	6	95	1	798
Future Volume (vph)	462	211	15	0	165	66	27	0	6	95	1	798
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9		5.9	5.9	4.7	4.7		5.9	5.9	5.9
Lane Util. Factor	0.97	1.00	1.00		0.95	1.00	1.00	1.00		1.00	1.00	0.88
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3072	1776	1272		3282	1455	1719	1615		1570	1900	2707
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3072	1776	1272		3282	1455	1719	1615		1570	1900	2707
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	497	227	16	0	177	71	29	0	6	102	1	858
RTOR Reduction (vph)	0	0	6	0	0	50	0	6	0	0	0	377
Lane Group Flow (vph)	497	227	10	0	177	21	29	0	0	102	1	481
Heavy Vehicles (%)	14%	7%	27%	0%	10%	11%	5%	0%	0%	15%	0%	5%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	pt+ov
Protected Phases	1	6		5	2		3	3		4	4	4 1
Permitted Phases			6			2						
Actuated Green, G (s)	31.1	69.0	69.0		31.0	31.0	5.0	5.0		16.5	16.5	54.5
Effective Green, g (s)	32.1	70.0	70.0		32.0	32.0	6.0	6.0		17.5	17.5	55.5
Actuated g/C Ratio	0.29	0.64	0.64		0.29	0.29	0.05	0.05		0.16	0.16	0.50
Clearance Time (s)	6.9	6.9	6.9		6.9	6.9	5.7	5.7		6.9	6.9	
Vehicle Extension (s)	5.0	5.0	5.0		5.0	5.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	896	1130	809		954	423	93	88		249	302	1365
v/s Ratio Prot	c0.16	c0.13			0.05		c0.02	0.00		0.06	0.00	c0.18
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.55	0.20	0.01		0.19	0.05	0.31	0.00		0.41	0.00	0.35
Uniform Delay, d1	32.9	8.3	7.3		29.2	28.1	50.0	49.2		41.6	38.9	16.4
Progression Factor	1.11	0.27	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.4	0.0		0.4	0.2	1.9	0.0		1.1	0.0	0.2
Delay (s)	37.7	2.6	7.4		29.7	28.3	51.9	49.2		42.7	38.9	16.6
Level of Service	D	A	A		C	C	D	D		D	D	B
Approach Delay (s)		26.3			29.3			51.5			19.4	
Approach LOS		C			C			D			B	
Intersection Summary												
HCM 2000 Control Delay			23.7									HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			110.0							23.4		
Intersection Capacity Utilization			55.8%									ICU Level of Service B
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th TWSC
4: Jacaranda Blvd & Laurel Rd

09/28/2018

Intersection						
Int Delay, s/veh	4.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	7	244	20	24	182	6
Future Vol, veh/h	7	244	20	24	182	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	300	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	20	17	0	0	6	50
Mvmt Flow	8	268	22	26	200	7
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	276	0	212	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	70	-
Critical Hdwy	-	-	4.1	-	6.46	6.7
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.2	-	3.554	3.75
Pot Cap-1 Maneuver	-	-	1299	-	767	793
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1299	-	754	793
Mov Cap-2 Maneuver	-	-	-	-	754	-
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	943	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		3.6		11.4	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	754	793	-	-	1299	-
HCM Lane V/C Ratio	0.265	0.008	-	-	0.017	-
HCM Control Delay (s)	11.5	9.6	-	-	7.8	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-

HCM 6th AWSC
5: Capri Isles Blvd & Edmondson Rd

09/28/2018

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	239	99	27	153	22	53	18	27	24	15	46
Future Vol, veh/h	39	239	99	27	153	22	53	18	27	24	15	46
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	6	0	0	6	0	3	0	0	0	0	3
Mvmt Flow	40	246	102	28	158	23	55	19	28	25	15	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB		WB		NB		SB					
Opposing Approach	WB		EB		SB		NB					
Opposing Lanes	1		1		1		1					
Conflicting Approach Left	SB		NB		EB		WB					
Conflicting Lanes Left	1		1		1		1					
Conflicting Approach Right	NB		SB		WB		EB					
Conflicting Lanes Right	1		1		1		1					
HCM Control Delay	11.8		9.7		9.4		9					
HCM LOS	B		A		A		A					

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	54%	10%	13%	28%
Vol Thru, %	18%	63%	76%	18%
Vol Right, %	28%	26%	11%	54%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	377	202	85
LT Vol	53	39	27	24
Through Vol	18	239	153	15
RT Vol	27	99	22	46
Lane Flow Rate	101	389	208	88
Geometry Grp	1	1	1	1
Degree of Util (X)	0.151	0.486	0.277	0.125
Departure Headway (Hd)	5.366	4.5	4.79	5.131
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	661	797	743	691
Service Time	3.458	2.559	2.861	3.226
HCM Lane V/C Ratio	0.153	0.488	0.28	0.127
HCM Control Delay	9.4	11.8	9.7	9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.5	2.7	1.1	0.4

HCM 6th TWSC
6: Auburn Rd & Edmondson Rd/Border Rd

09/28/2018

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	150	76	43	154	34	52
Future Vol, veh/h	150	76	43	154	34	52
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	87	87	87	87	87	87
Heavy Vehicles, %	8	4	0	5	8	8
Mvmt Flow	172	87	49	177	39	60
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	259	0	491	216
Stage 1	-	-	-	-	216	-
Stage 2	-	-	-	-	275	-
Critical Hdwy	-	-	4.1	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.2	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1317	-	526	809
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	758	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1317	-	504	809
Mov Cap-2 Maneuver	-	-	-	-	504	-
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	758	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.7		11.5	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	653	-	-	1317	-	
HCM Lane V/C Ratio	0.151	-	-	0.038	-	
HCM Control Delay (s)	11.5	-	-	7.8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-	

HCM 6th AWSC
7: Jacaranda Blvd & Border Rd

09/28/2018

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵			↵	↵
Traffic Vol, veh/h	36	60	98	39	52	25	122	130	32	42	174	34
Future Vol, veh/h	36	60	98	39	52	25	122	130	32	42	174	34
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, %	4	14	4	0	0	22	3	5	9	20	17	4
Mvmt Flow	38	64	104	41	55	27	130	138	34	45	185	36
Number of Lanes	0	1	0	0	1	0	1	1	0	0	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			2			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			2			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			2			1			1		
HCM Control Delay	11.1			10.3			10.9			12.6		
HCM LOS	B			B			B			B		

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	19%	34%	19%	0%
Vol Thru, %	0%	80%	31%	45%	81%	0%
Vol Right, %	0%	20%	51%	22%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	122	162	194	116	216	34
LT Vol	122	0	36	39	42	0
Through Vol	0	130	60	52	174	0
RT Vol	0	32	98	25	0	34
Lane Flow Rate	130	172	206	123	230	36
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.231	0.278	0.315	0.199	0.404	0.055
Departure Headway (Hd)	6.414	5.801	5.502	5.8	6.336	5.475
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	559	619	652	617	568	653
Service Time	4.155	3.542	3.549	3.852	4.078	3.217
HCM Lane V/C Ratio	0.233	0.278	0.316	0.199	0.405	0.055
HCM Control Delay	11.1	10.8	11.1	10.3	13.3	8.5
HCM Lane LOS	B	B	B	B	B	A
HCM 95th-tile Q	0.9	1.1	1.3	0.7	1.9	0.2

HCM 6th TWSC
8: Jacaranda Blvd & I-75 NB Ramp

09/28/2018

Intersection												
Int Delay, s/veh	32.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	392	0	48	0	294	764	0	580	92
Future Vol, veh/h	0	0	0	392	0	48	0	294	764	0	580	92
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	-	-	-	0	-	800	-	-	800	-	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	5	0	15	0	8	8	0	8	3
Mvmt Flow	0	0	0	436	0	53	0	327	849	0	644	102
Major/Minor				Minor1		Major1			Major2			
Conflicting Flow All				649	-	164	-	0	-	-	-	0
Stage 1				327	-	-	-	-	-	-	-	-
Stage 2				322	-	-	-	-	-	-	-	-
Critical Hdwy				6.9	-	7.2	-	-	-	-	-	-
Critical Hdwy Stg 1				5.9	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.9	-	-	-	-	-	-	-	-
Follow-up Hdwy				3.55	-	3.45	-	-	-	-	-	-
Pot Cap-1 Maneuver				~ 396	0	812	0	-	0	0	-	0
Stage 1				694	0	-	0	-	0	0	-	0
Stage 2				698	0	-	0	-	0	0	-	0
Platoon blocked, %								-			-	
Mov Cap-1 Maneuver				~ 396	0	812	-	-	-	-	-	-
Mov Cap-2 Maneuver				~ 396	0	-	-	-	-	-	-	-
Stage 1				694	0	-	-	-	-	-	-	-
Stage 2				698	0	-	-	-	-	-	-	-
Approach				WB		NB			SB			
HCM Control Delay, s				96.7		0			0			
HCM LOS				F								
Minor Lane/Major Mvmt		NBTWBLn1WBLn2				SBT						
Capacity (veh/h)		- 396 812				-						
HCM Lane V/C Ratio		- 1.1 0.066				-						
HCM Control Delay (s)		- 107.3 9.7				-						
HCM Lane LOS		- F A				-						
HCM 95th %tile Q(veh)		- 15.5 0.2				-						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

HCM Signalized Intersection Capacity Analysis

9: Jacaranda Blvd & I-75 SB Ramp

09/28/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	3	1106	0	0	0	0	1009	370	139	833	0
Future Volume (vph)	48	3	1106	0	0	0	0	1009	370	139	833	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	6.6					6.6	6.6	6.6	6.6	
Lane Util. Factor	0.95	0.95	0.88					0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.96	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1453	1422	2760					3374	1615	1770	3374	
Flt Permitted	0.95	0.96	1.00					1.00	1.00	0.10	1.00	
Satd. Flow (perm)	1453	1422	2760					3374	1615	191	3374	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	50	3	1152	0	0	0	0	1051	385	145	868	0
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	260	0	0	0
Lane Group Flow (vph)	26	27	1134	0	0	0	0	1051	125	145	868	0
Heavy Vehicles (%)	18%	50%	3%	0%	0%	0%	0%	7%	0%	2%	7%	0%
Turn Type	Split	NA	custom					NA	Perm	Perm	NA	
Protected Phases	3	3	3 4					6			2	
Permitted Phases									6	2		
Actuated Green, G (s)	47.2	47.2	66.7					38.1	38.1	38.1	38.1	
Effective Green, g (s)	48.2	48.2	67.7					39.1	39.1	39.1	39.1	
Actuated g/C Ratio	0.40	0.40	0.56					0.33	0.33	0.33	0.33	
Clearance Time (s)	7.6	7.6						7.6	7.6	7.6	7.6	
Vehicle Extension (s)	3.0	3.0						5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)	583	571	1557					1099	526	62	1099	
v/s Ratio Prot	0.02	0.02	c0.41					0.31			0.26	
v/s Ratio Perm									0.08	c0.76		
v/c Ratio	0.04	0.05	0.73					0.96	0.24	2.34	0.79	
Uniform Delay, d1	21.9	21.9	19.3					39.6	29.6	40.5	36.7	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.0	1.7					18.5	1.1	649.5	5.8	
Delay (s)	21.9	21.9	21.1					58.1	30.6	689.9	42.5	
Level of Service	C	C	C					E	C	F	D	
Approach Delay (s)		21.1			0.0			50.7			135.2	
Approach LOS		C			A			D			F	
Intersection Summary												
HCM 2000 Control Delay			64.4									HCM 2000 Level of Service E
HCM 2000 Volume to Capacity ratio			1.40									
Actuated Cycle Length (s)			120.0							19.8		
Intersection Capacity Utilization			72.7%									ICU Level of Service C
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

10: Auburn Rd & E Venice Ave

09/28/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	1023	8	6	612	83	4	3	1	132	3	112
Future Volume (veh/h)	146	1023	8	6	612	83	4	3	1	132	3	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1856	1856	1900	1856	1856	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	155	1088	8	6	651	81	4	3	0	140	3	17
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
Percent Heavy Veh, %	2	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	554	2439	18	365	2052	255	36	37	0	184	4	167
Arrive On Green	0.05	0.68	0.68	0.02	0.65	0.65	0.02	0.02	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1781	3587	26	1810	3156	392	1810	1900	0	1773	38	1610
Grp Volume(v), veh/h	155	535	561	6	363	369	4	3	0	143	0	17
Grp Sat Flow(s),veh/h/ln	1781	1763	1851	1810	1763	1785	1810	1900	0	1811	0	1610
Q Serve(g_s), s	3.7	18.1	18.1	0.1	11.8	11.8	0.3	0.2	0.0	10.0	0.0	1.2
Cycle Q Clear(g_c), s	3.7	18.1	18.1	0.1	11.8	11.8	0.3	0.2	0.0	10.0	0.0	1.2
Prop In Lane	1.00		0.01	1.00		0.22	1.00		0.00	0.98		1.00
Lane Grp Cap(c), veh/h	554	1199	1259	365	1146	1161	36	37	0	188	0	167
V/C Ratio(X)	0.28	0.45	0.45	0.02	0.32	0.32	0.11	0.08	0.00	0.76	0.00	0.10
Avail Cap(c_a), veh/h	669	1199	1259	466	1146	1161	155	162	0	319	0	284
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.0	9.6	9.6	8.1	10.0	10.0	62.6	62.6	0.0	56.7	0.0	52.8
Incr Delay (d2), s/veh	0.2	1.2	1.1	0.0	0.7	0.7	1.4	0.9	0.0	6.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.4	11.4	11.8	0.1	8.2	8.3	0.3	0.2	0.0	8.5	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.2	10.8	10.7	8.1	10.7	10.7	64.0	63.5	0.0	63.0	0.0	53.1
LnGrp LOS	A	B	B	A	B	B	E	E	A	E	A	D
Approach Vol, veh/h	1251		738			7			160			
Approach Delay, s/veh	10.3		10.7			63.8			61.9			
Approach LOS	B		B			E			E			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	12.6	91.3	7.5		8.8	95.2	18.6					
Change Period (Y+Rc), s	6.8	7.8	5.9		7.8	7.8	6.1					
Max Green Setting (Gmax), s	14.2	57.2	10.1		8.2	62.2	21.9					
Max Q Clear Time (g_c+I1), s	5.7	13.8	2.3		2.1	20.1	12.0					
Green Ext Time (p_c), s	0.2	6.6	0.0		0.0	11.6	0.5					
Intersection Summary												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									
Notes												

APPENDIX E

VESTED TRAFFIC VOLUMES

SJMR PUD

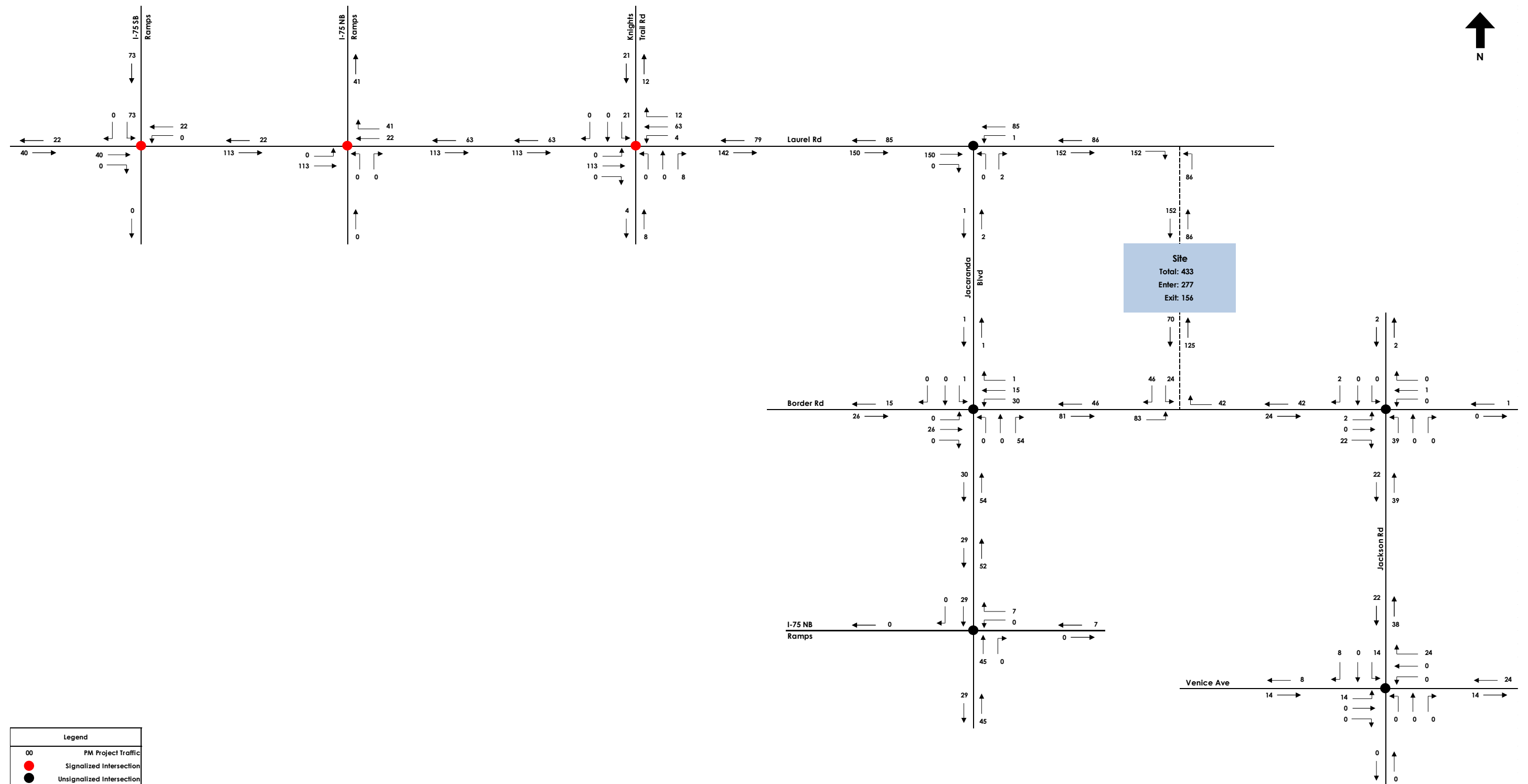


Figure 3: Project Traffic Assignment

Toscana Isles

TABLE F-2

Toscana Isles

Phase 2 Scenario: 1,000 Single Family Dwelling Unit, 638 Multi-Family Dwelling Units, Retail = 110,000 Square Feet

April 11, 2011

PROPOSED PM PEAK HOUR TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			INTERNAL CAPTURE		PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	IC Trips	Percent	PB Trips	In	Out	Total
					In	Out										
Single-Family Detached Housing	6	210	1,000	du	63%	37%	526	309	835	3.5%	29	0.0%	0	611	294	805
Residential Condominium / Townhouse	8	230	628	du	67%	33%	182	89	271	11.1%	30	0.0%	0	163	78	241
Specialty Retail Center	8	814	110	ksf	44%	56%	125	160	285	21.1%	60	29.0%	66	70	89	159
Total:							833	558	1,391		119		66	744	461	1,205

144 Single-Family C.O. = 92 54 146

15 Townhome C.O. = 9 4 13

TOTAL = 101 58 159

159/1,391 = 11.4%; reduced Toscana Isles traffic by 11%

TABLE 1

TOSCANA ISLES
Phase 1, Add 342 Renaissance Trips, Including Bridges Project, Add New N/S Roadway
1,107 Single Family Dwelling Units

PM Peak Roadway Link Analysis

Revised July 18, 2011

Roadway	Number of Lanes	LOS Standard	Service Volume(1)	2008 Traffic Volumes (1)	Reserved Traffic From Other Projects					2020 Total Background Traffic	Project		2020 Total		Project Traffic % Service Vol.	Is Project Traffic Significant?	Roadway LOS OK?	
					Laurel Med. Center	Bridges	CVS	Renaissance: 892 Trips	Venice Hotel		Traffic %	Traffic	Traffic	% Service Vol.				
Laurel Road																		
US 41 to Mission Valley	4LD	C	3,080	1,584	63	0	0	36	0	1,748	11.5%	105	1,854	61.8%	3.5%	No	N/A	
Mission Valley to Albee Farm Road	4LD	C	3,180	1,492	90	0	0	80	0	1,744	12.6%	117	1,861	58.5%	3.7%	No	N/A	
Albee Farm Road to Pinebrook Road	4LD	C	3,180	1,787	106	79	0	138	0	2,208	34.3%	314	2,522	79.3%	9.9%	Yes	Yes	
Pinebrook Road to I-75	4LD	C	2,540	1,515	212	109	48	241	0	2,208	36.3%	332	2,540	100.0%	13.1%	Yes	Yes	
I-75 to Knights Trail Road	4LD	C	2,540	718	53	231	64	321	38	1,442	70.0%	641	2,083	82.0%	25.2%	Yes	Yes	
East of Knights Trail Road	4LD	C	2,540	218	26	243	67	36	21	822	30.0%	275	897	35.3%	10.8%	Yes	Yes	
I-75																		
Jacaranda Road to Laurel Road	6LF	B	5,870	5,882	79	30	0	45	0	6,328	4.7%	43	6,371	108.5%	0.7%	No	N/A	
Laurel Road to SR 681	6LF	B	5,970	5,882	79	91	0	71	0	6,416	28.0%	265	6,680	111.9%	4.4%	No	N/A	
Albee Farm Road																		
Laurel Road to Edmonson Road	4LD	C	3,180	899	26	0	0	27	0	1,001	23.3%	213	1,214	38.2%	6.7%	Yes	Yes	
Pinebrook Road																		
Laurel Road to Edmonson Road	4LD	C	2,420	788	185	30	25	49	0	1,120	3.1%	28	1,148	47.4%	1.2%	No	N/A	
Knights Trail Road																		
Laurel Road north to Technology Drive/South Project Dwy	2LU	C	1,720	629	16	12	0	89	4	781	100.0%	915	1,696	98.6%	53.2%	Yes	Yes	
Technology Drive/South Project Dwy to North Project Dwy	2LU	C	1,720	629	16	12	0	89	4	781	33.3%	305	1,086	63.1%	17.7%	Yes	Yes	

NOTES:

1 :Source: Fruitville Initiative Comprehensive Plan, Amended Traffic Analysis, October 2010, Post Buckley Schuh & Jernigan, pages I-26 through I-29. Knight's Trail Road and Laurel Road west and east of Knight's Trail Road based on actual 2010 traffic counts.

File Name = C:\Users\Public\Videos, Images, 102210\Final_041811\Scenario B\Add 342 Trips to Renaissance, Final_071111\FINAL TABLE 1_Add 342 to Renaissance, SP = 1,107, Roadway Network
 Print Date = July 18, 2011
 Print Time = 7:16 PM

Table D-2

TOSCANA ISLES: Phase 1 = 1,107 single Family dwelling Units

Laurel Road & Knight's Trail Road: Intersection Traffic Analysis

Intersection: Laurel Road & Knight's Trail Road (Counted December 1, 2010)

Analysis Date: July 11, 2011

Scenario: Scenario B: Renaissance = 892 Trips, Add Bridges Project, Add N/S Roadway

Peak Season Factor: 1.017

PHF: 0.838

2020 Growth Factor: 1.0500 (Assume 0.5% growth per year, 2010 to 2020, simple growth rate)

PM Peak Period (4:30 PM - 5:30 PM)															
Movement	2010		Reserved Trips From Other Developments					2020 Total Background	Toscana Isles					Total Traffic 2020	
	Raw Counts	Exist Counts, Pk Season	Laurel Road Med.	Bridges	CVS	Renaissance: 892 Trips	Venice Hotel		% Inbound	% Outbound	Inbound	Outbound	Total		
Southbound: Trucks = 6.37%															
Left	11	11	0	8	0	22	0	40	0.00%	30.00%	0	101	101	141	
Through	2	2	0	0	0	0	2	4	0.00%	0.00%	0	0	0	4	
Right	179	182	9	0	0	0	0	200	0.00%	47.00%	0	169	169	369	
RTOR	162	165	0	0	0	0	0	173	0.00%	23.00%	0	78	78	261	
Total =	354	360	9	8	0	22	2	417			0	338	338	764	
Westbound: Trucks = 3.95%															
Left	0	0	0	0	1	0	11	12	0.00%	0.00%	0	0	0	12	
Through	73	74	22	113	0	122	0	336	0.00%	0.00%	0	0	0	336	
Right	1	1	0	6	0	0	0	7	1.00%	0.00%	6	0	6	13	
RTOR	2	2	0	0	0	2	0	4	29.00%	0.00%	167	0	167	171	
Total =	76	77	22	119	1	124	11	358			173	0	173	531	
Northbound: Trucks = 0.00%															
Left	11	11	0	0	34	0	18	64	0.00%	0.00%	0	0	0	64	
Through	1	1	0	0	0	0	2	3	0.00%	0.00%	0	0	0	3	
Right	1	1	0	0	1	0	10	12	0.00%	0.00%	0	0	0	12	
RTOR	0	0	0	0	0	0	0	0	0.00%	0.00%	0	0	0	0	
Total =	13	13	0	0	35	0	30	79			0	0	0	79	
Eastbound: Trucks = 6.30%															
Left	134	136	9	0	0	0	0	152	70.00%	0.00%	404	0	404	556	
Through	127	129	21	118	0	0	0	274	0.00%	0.00%	0	0	0	274	
Right	2	2	0	0	31	199	20	262	0.00%	0.00%	0	0	0	262	
RTOR	1	1	0	0	0	0	0	1	0.00%	0.00%	0	0	0	1	
Total =	264	268	30	118	31	199	20	679			404	0	404	1,083	
TOTAL =	707	718	61	243	67	345	63	1,532	100.00%	100.00%	577	338	915	2,447	

Plaza Venezia



TABLE 1
DAILY TRIP GENERATION ESTIMATES

DESCRIPTION	ITE Land-Use Category	ITE Land-Use (Code)	Independent Variable	Rate or Equation	Size	Daily 2-Way Trips (vpd)	Daily Pass-by Rate	Pass-By 2-Way Trips (vpd)	Pass-By Trips In (vpd)	Pass-By Trips Out (vpd)	Net-New 2-Way Trips (vpd)	Net-New Trips In (vpd)	Net-New Trips Out (vpd)
Phase 1 & Phase 2													
Plaza Venezia Phase 1 & 2	Shopping Center	820	square feet	$\ln(T)=0.65*\ln(x)+5.83$	115,000	7,437	34%	2,529	1,264	1,264	4,908	2,454	2,454
Total						7,437		2,529	1,264	1,264	4,908	2,454	2,454

TABLE 2
PM PEAK HOUR TRIP GENERATION ESTIMATES

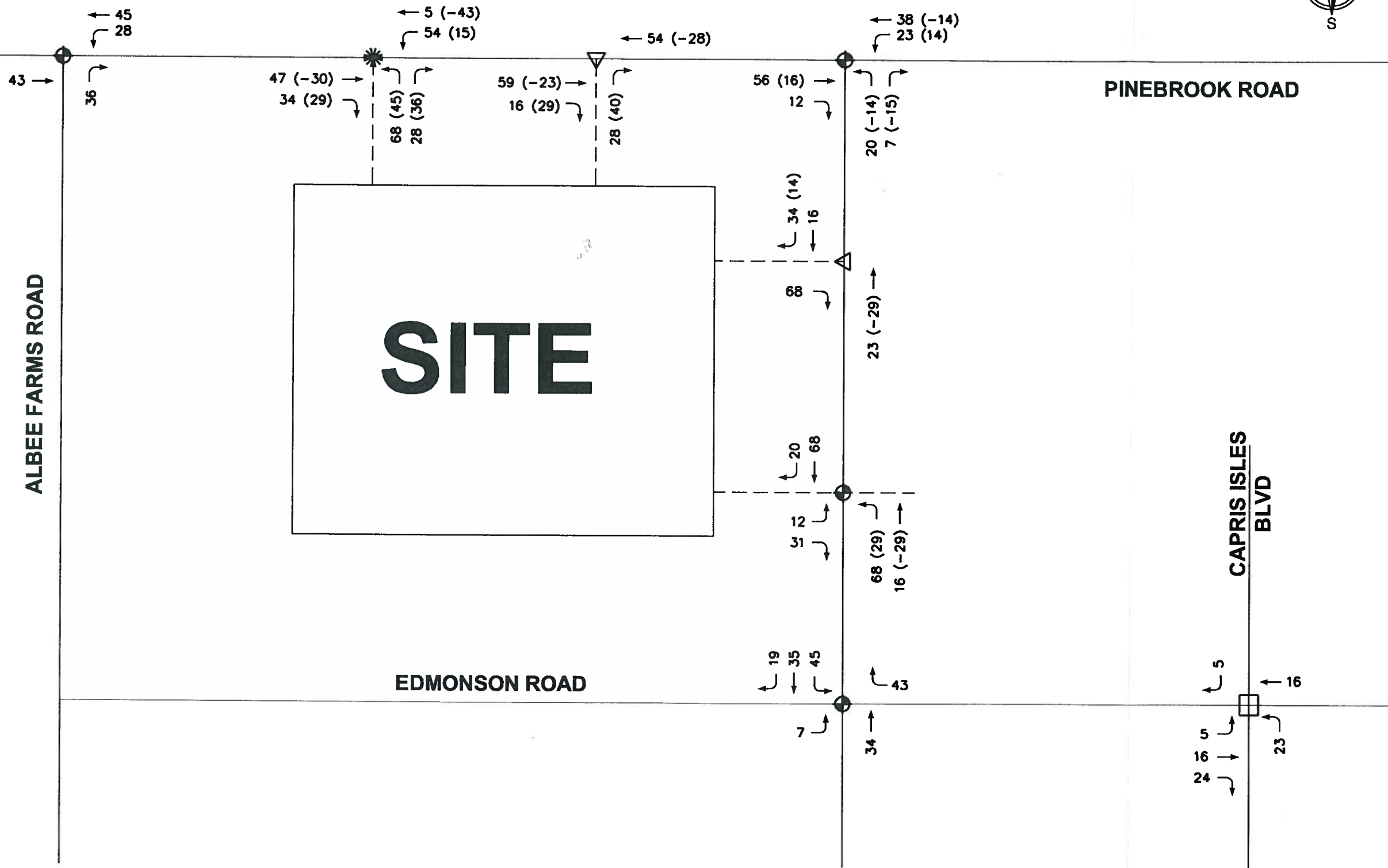
DESCRIPTION	ITE Land-Use Category	ITE Land-Use (Code)	Independent Variable	Rate or Equation	Size	PM PK-HR 2-Way Trips (vph)	PM PK-HR Pass-by Rate	Pass-By 2-Way Trips (vph)	Pass-By Trips In (vph)	Pass-By Trips Out (vph)	Net-New 2-Way Trips (vph)	Net-New Trips In (vph)	Net-New Trips Out (vph)
Phase 1 & Phase 2													
Plaza Venezia Phase 1 & 2	Shopping Center	820	square feet	$\ln(T)=0.67*\ln(x)+3.37$	115,000	699	34%	238	116	121	461	226	235
Total						699		238	116	121	461	226	235

Approxiamtely 75,000 square feet is constructed

$75,000/115,000 = 65\%$

Project traffic volumes were multiplied by 35% to account for existing square footage.

K:\PROJECTS\500\562024\DWG\CURRENT\TRAFFIC\20110831_TRAFFIC EXHIBIT.DWG , 9/1/2011 3:05:54 PM, Jeremy Waugh



LEGEND

- XX(XX) → - NET-NEW% (PASS-BY%)
- ⊕ - SIGNALIZED INTERSECTION
- * - FULL ACCESS INTERSECTION
- ▽ - RIGHT-IN/RIGHT-OUT INTERSECTION
- - 4-WAY STOP INTERSECTION



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FIGURE 4

PM PK-HR SITE ASSIGNMENT

SCALE: N/A

DATE: 08/31/11

JOB NO.: 562-024

SHEET NO.: 1

Portofino

TRAFFIC VOLUMES AT STUDY INTERSECTION

INTERSECTION: Laurel Road & I-75 Southbound Ramps

COUNT DATE: June 20, 2013

TIME PERIOD: 4:30 p.m. - 5:30 p.m.

PEAK HOUR FACTOR: 0.75

"EXISTING TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movements		275	252	342	377					50		273
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
EXISTING CONDITIONS		303	277	376	415					55		300

"BACKGROUND DIVERTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Diverted Traffic from North-South Connector		-21		-41	-16					5		-5

"VESTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Plaza Venezia												
Toscana Isles		209		16	123					167		
The Bridges		56		15	53					47		
TOTAL "VESTED" TRAFFIC		265	0	31	176					214		0

-or-

"BACKGROUND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
BACKGROUND TRAFFIC GROWTH		42	39	53	58					8		42

GROWTH METHOD USED: "VESTED TRAFFIC"		265	0	31	176					214		0
--------------------------------------	--	-----	---	----	-----	--	--	--	--	-----	--	---

TOTAL NON-PROJECT TRAFFIC		547	277	366	575					274		295
---------------------------	--	-----	-----	-----	-----	--	--	--	--	-----	--	-----

"PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Pass-By Distribution	Entering												
	Exiting												
Net New Distribution	Entering		25.0%								14.0%		
	Exiting				17.0%	25.0%							

"PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Project Trips	Pass - By												
	Net New		130		108	159					73		
TOTAL PROJECT TRAFFIC			130	0	108	159					73		0

TOTAL TRAFFIC		677	277	474	734					347		295
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TRAFFIC VOLUMES AT STUDY INTERSECTION

INTERSECTION: Laurel Road & I-75 Northbound Ramps

COUNT DATE: June 20, 2013

TIME PERIOD: 4:30 p.m. - 5:30 p.m.

PEAK HOUR FACTOR: 0.75

"EXISTING TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movements	141	188			584	202	125		57			
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
EXISTING CONDITIONS	155	207			642	222	138		63			

"BACKGROUND DIVERTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Diverted Traffic from North-South Connector	-3	-13			-57	3			-11			

"VESTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Plaza Venezia												
Toscana Isles		376			139	98			27			
The Bridges		103			68	44			16			
TOTAL "VESTED" TRAFFIC	0	479			207	142	0		43			

-or-

"BACKGROUND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
BACKGROUND TRAFFIC GROWTH	22	29			90	31	19		9			

GROWTH METHOD USED: "VESTED TRAFFIC"	0	479			207	142	0		43			
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TOTAL NON-PROJECT TRAFFIC	152	673			792	367	138		95			
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"PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Pass-By Distribution	Entering												
	Exiting												
Net New Distribution	Entering		39.0%							17.0%			
	Exiting					42.0%	14.0%						

"PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Project Trips	Pass - By												
	Net New		203			266	89			88			
TOTAL PROJECT TRAFFIC		0	203			266	89	0		88			

TOTAL TRAFFIC	152	876			1,058	456	138		183				
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TRAFFIC VOLUMES AT STUDY INTERSECTION

INTERSECTION: Laurel Road & Knights Trail/ Haul Road

COUNT DATE: June 20, 2013

TIME PERIOD: 4:15 p.m. - 5:15 p.m.

PEAK HOUR FACTOR: 0.68

"EXISTING TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movements	137	97	17	2	97	13	27	0	1	15	2	469
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
EXISTING CONDITIONS	151	107	19	2	107	14	30	0	1	17	2	516

"BACKGROUND DIVERTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Diverted Traffic from North-South Connector	-23	-1			-11	20				43		-43

"VESTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Plaza Venezia												
Toscana Isles	403					173				102		237
The Bridges		119			112	6				6		
TOTAL "VESTED" TRAFFIC	403	119	0	0	112	179	0	0	0	108	0	237

-or-

"BACKGROUND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
BACKGROUND TRAFFIC GROWTH	21	15	3	0	15	2	4	0	0	2	0	72

GROWTH METHOD USED: "VESTED TRAFFIC"	403	119	0	0	112	179	0	0	0	108	0	237
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TOTAL NON-PROJECT TRAFFIC	531	225	19	2	208	213	30	0	1	168	2	710
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"PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Pass-By Distribution	Entering	41.0%	-41.0%										
	Exiting										2.0%		59.0%
Net New Distribution	Entering	47.0%	9.0%						1.0%	1.0%			
	Exiting				1.0%	9.0%					4.0%	1.0%	36.0%

"PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Project Trips	Pass - By	74	-74								4		117
	Net New	244	47		6	56			5	5	25	6	229
TOTAL PROJECT TRAFFIC		318	-27	0	6	56	0	0	5	5	29	6	346

TOTAL TRAFFIC	849	198	19	8	264	213	30	5	6	197	8	1,056
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TRAFFIC VOLUMES AT STUDY INTERSECTION

INTERSECTION: Laurel Road & Jacaranda Boulevard Extension

COUNT DATE: June 20, 2013

TIME PERIOD:

PEAK HOUR FACTOR: 0.95

"EXISTING TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movements		113			112							
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
EXISTING CONDITIONS		124			123							

"BACKGROUND DIVERTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Diverted Traffic from North-South Connector		-6	48	14	-14		23		9			

"VESTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Plaza Venezia												
Toscana Isles		0			98							
The Bridges		15			16							
TOTAL "VESTED" TRAFFIC		15			114							

-or-

"BACKGROUND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
BACKGROUND TRAFFIC GROWTH		17			17							

GROWTH METHOD USED: "VESTED TRAFFIC"		15			114							
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TOTAL NON-PROJECT TRAFFIC		133	48	14	223		23		9			
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"PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Pass-By Distribution	Entering												
	Exiting												
Net New Distribution	Entering					3.0%		36.0%					
	Exiting		3.0%	36.0%									

"PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Project Trips	Pass - By												
	Net New		19	228		16		186					
TOTAL PROJECT TRAFFIC			19	228	0	16		186		0			

TOTAL TRAFFIC		152	276	14	239		209		9				
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TRAFFIC VOLUMES AT STUDY INTERSECTION

INTERSECTION: Edmondson Road/ Border Road & Auburn Road

COUNT DATE: June 20, 2013

TIME PERIOD: 4:15 p.m. - 5:15 p.m.

PEAK HOUR FACTOR: 0.97

"EXISTING TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movements		72	46	20	77		28		17			
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
EXISTING CONDITIONS		79	51	22	85		31		19			

"BACKGROUND DIVERTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Diverted Traffic from North-South Connector		-21			-21							

"VESTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Plaza Venezia												
Toscana Isles		17			10							
The Bridges		46		15	44				16			
TOTAL "VESTED" TRAFFIC		63	0	15	54		0		16			

-or-

"BACKGROUND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
BACKGROUND TRAFFIC GROWTH		11	7	3	12		4		3			

GROWTH METHOD USED: "VESTED TRAFFIC"		63	0	15	54		0		16			
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TOTAL NON-PROJECT TRAFFIC		121	51	37	118		31		35			
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"PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Pass-By Distribution	Entering												
	Exiting												
Net New Distribution	Entering		3.0%							9.0%			
	Exiting				9.0%	3.0%							

"PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Project Trips	Pass - By												
	Net New		16		57	19				47			
TOTAL PROJECT TRAFFIC			16	0	57	19		0		47			

TOTAL TRAFFIC		137	51	94	137		31		82				
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TRAFFIC VOLUMES AT STUDY INTERSECTION

INTERSECTION: Jacaranda Boulevard & Border Road

COUNT DATE: June 20, 2013

TIME PERIOD: 4:30 p.m. - 5:30 p.m.

PEAK HOUR FACTOR: 0.97

"EXISTING TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movements		37	54	21	27		66		25		5	
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
EXISTING CONDITIONS		41	59	23	30		73		28		6	

"BACKGROUND DIVERTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Diverted Traffic from North-South Connector	3	-6	-15		-5	5	-16	24		11	39	12

"VESTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Plaza Venezia												
Toscana Isles			17				10					
The Bridges		15	74		16		78					
TOTAL "VESTED" TRAFFIC		15	91	0	16		88		0		0	

-or-

"BACKGROUND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
BACKGROUND TRAFFIC GROWTH		6	8	3	4		10		4		1	

GROWTH METHOD USED: "VESTED TRAFFIC"		15	91	0	16		88		0		0	
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TOTAL NON-PROJECT TRAFFIC	3	50	135	23	41	5	145	24	28	11	45	12
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"PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Pass-By Distribution	Entering												
	Exiting												
Net New Distribution	Entering	12.0%					12.0%		12.0%				
	Exiting										12.0%	12.0%	12.0%

"PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Project Trips	Pass - By												
	Net New	62					62		62		76	76	76
TOTAL PROJECT TRAFFIC		62	0	0	0	0	62	0	62	0	76	76	76

TOTAL TRAFFIC	65	50	135	23	41	67	145	86	28	87	121	88
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TRAFFIC VOLUMES AT STUDY INTERSECTION

INTERSECTION: Jacaranda Boulevard & I-75 Northbound Ramps

COUNT DATE: January 18, 2013

TIME PERIOD: 4:45 p.m. - 5:45 p.m.

PEAK HOUR FACTOR: 0.91

"EXISTING TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movements				208		21		102	479		222	66
Peak Season Correction Factor	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
EXISTING CONDITIONS				198		20		97	455		211	63

"BACKGROUND DIVERTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Diverted Traffic from North-South Connector						11		-2			35	

"VESTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Plaza Venezia												
Toscana Isles												
The Bridges						16		53			65	
TOTAL "VESTED" TRAFFIC				0		16		53	0		65	0

-or-

"BACKGROUND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
BACKGROUND TRAFFIC GROWTH				28		3		14	64		30	9

GROWTH METHOD USED: "BACKGROUND TRAFFIC"				28		3		14	64		30	9
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TOTAL NON-PROJECT TRAFFIC				226		34		109	519		276	72
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"PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Pass-By Distribution	Entering												
	Exiting												
Net New Distribution	Entering								11.0%				
	Exiting											11.0%	

"PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Project Trips	Pass - By												
	Net New								57			70	
TOTAL PROJECT TRAFFIC					0		0		57	0		70	0

TOTAL TRAFFIC				226		34		166	519		346	72
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TRAFFIC VOLUMES AT STUDY INTERSECTION

INTERSECTION: Jacaranda Boulevard & I-75 Southbound Ramps
COUNT DATE: January 18, 2013
TIME PERIOD: 4:45 p.m. - 5:45 p.m.
PEAK HOUR FACTOR: 0.91

"EXISTING TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning Movements	38	1	782					542	406	81	345	
Peak Season Correction Factor	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
EXISTING CONDITIONS	36	1	743					515	386	77	328	

"BACKGROUND DIVERTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Diverted Traffic from North-South Connector	-2		-35								35	

"VESTED TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Plaza Venezia												
Toscana Isles	10											
The Bridges								53		15	50	
TOTAL "VESTED" TRAFFIC	10	0	0					53	0	15	50	

-or-

"BACKGROUND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
BACKGROUND TRAFFIC GROWTH	5	0	104					72	54	11	46	

GROWTH METHOD USED: "BACKGROUND TRAFFIC"	5	0	104					72	54	11	46	
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TOTAL NON-PROJECT TRAFFIC	39	1	812					587	440	88	409	
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"PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Pass-By Distribution	Entering												
	Exiting												
Net New Distribution	Entering								11.0%				
	Exiting											11.0%	

"PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Project Trips	Pass - By												
	Net New								57			70	
TOTAL PROJECT TRAFFIC		0	0	0					57	0	0	70	

TOTAL TRAFFIC	39	1	812					644	440	88	479		
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The Woods of Venice

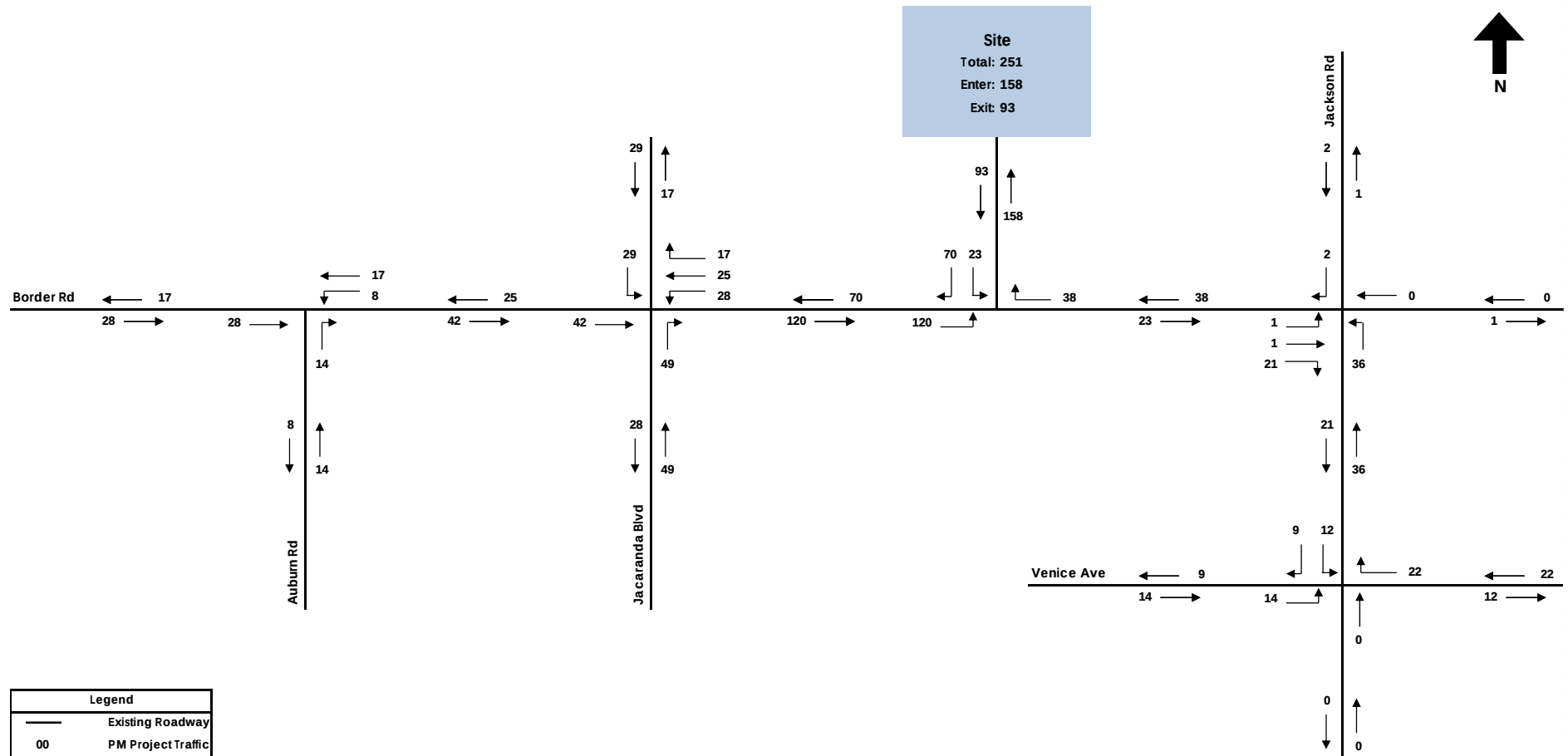
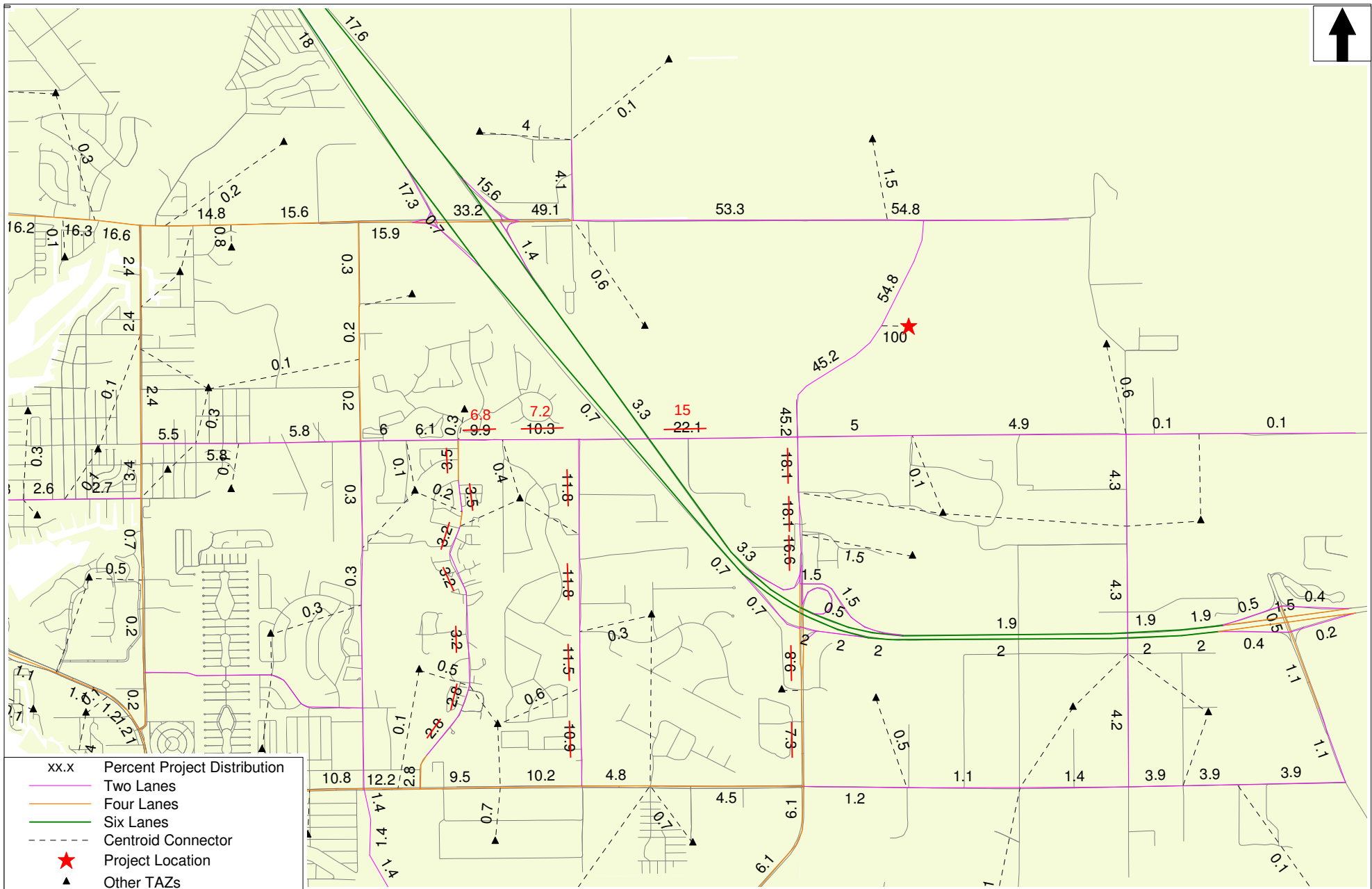


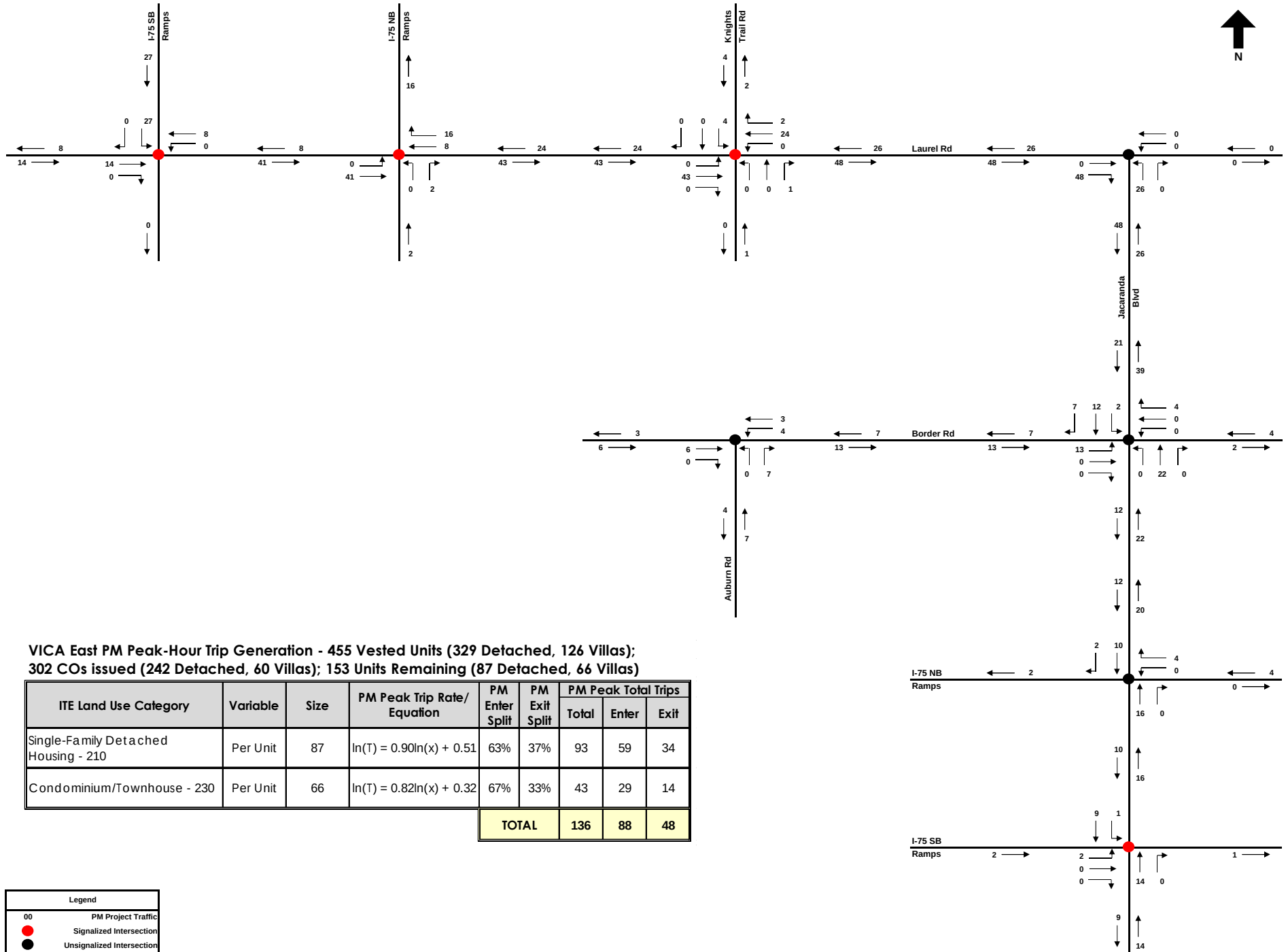
Figure 3: Project Traffic Assignment

Milano PUD

Villages of Milano (VICA) - East of the Jacaranda Blvd Extension



Project Traffic Distribution
2014 Existing Plus Committed Network
Vica



Lot ID	Address	CO Date
VM Amenities	218 Acerno Drive	8/12/16
VM40-111	224 Acerno Drive	8/26/16
VM40-112	228 Acerno Drive	9/16/16
VM40-113	232 Acerno Drive	8/18/16
VM40-098	233 Acerno Drive	10/31/16
VM40-114	236 Acerno Drive	8/16/16
VM40-097	237 Acerno Drive	9/16/16
VM40-115	240 Acerno Drive	5/25/16
VM40-096	241 Acerno Drive	6/21/16
VM40-116	244 Acerno Drive	5/25/16
VM40-095	245 Acerno Drive	5/25/16
VM40-117	248 Acerno Drive	10/7/16
VM40-094	249 Acerno Drive	10/31/16
VM40-118	252 Acerno Drive	9/29/16
VM40-119	256 Acerno Drive	12/13/16
VM40-120	260 Acerno Drive	12/13/16
VM40-121	264 Acerno Drive	12/21/16
VM30-122	268 Acerno Drive	8/12/16
VM30-123	272 Acerno Drive	9/2/16
VM30-124	276 Acerno Drive	7/27/16
VM30-125	280 Acerno Drive	7/25/16
VM30-126	284 Acerno Drive	7/15/16
VM30-127	288 Acerno Drive	7/15/16
VM30-128	292 Acerno Drive	6/15/16
VM30-129	296 Acerno Drive	6/15/16
VM30-130	300 Acerno Drive	6/29/16
VM30-131	304 Acerno Drive	6/24/16
VM30-132	308 Acerno Drive	5/25/16
VM30-133	312 Acerno Drive	5/25/16
VM30-155	313 Acerno Drive	11/3/16
VM30-134	316 Acerno Drive	7/1/16
VM30-154	317 Acerno Drive	10/24/16
VM30-135	320 Acerno Drive	6/24/16
VM30-153	321 Acerno Drive	9/23/16
VM30-136	324 Acerno Drive	9/13/16
VM30-152	325 Acerno Drive	9/23/16
VM30-137	328 Acerno Drive	9/13/16
VM30-151	329 Acerno Drive	11/28/16
VM30-138	332 Acerno Drive	10/11/16
VM30-150	333 Acerno Drive	11/28/16
VM30-139	336 Acerno Drive	10/10/16
VM30-149	337 Acerno Drive	11/3/16
VM30-140	340 Acerno Drive	11/14/16
VM30-148	341 Acerno Drive	10/31/16
VM30-141	344 Acerno Drive	11/14/16
VM30-142	348 Acerno Drive	10/24/16
VM30-143	352 Acerno Drive	10/24/16
VM30-144	356 Acerno Drive	12/6/16
VM30-145	360 Acerno Drive	12/6/16
VM30-146	364 Acerno Drive	12/20/16
VM30-147	368 Acerno Drive	12/21/16

Lot ID	Address	CO Date
VM30-454	235 Casalino Drive	11/28/17
VM30-455	236 Casalino Drive	10/9/17
VM30-453	239 Casalino Drive	12/22/17
VM30-452	243 Casalino Drive	12/1/17
VM30-451	247 Casalino Drive	11/28/17
VM30-450	251 Casalino Drive	7/6/18
VM30-449	255 Casalino Drive	2/14/18
VM30-448	259 Casalino Drive	3/6/18
VM30-447	263 Casalino Drive	2/21/18
VM30-446	267 Casalino Drive	4/19/18
VM30-445	271 Casalino Drive	4/17/18
VM30-444	275 Casalino Drive	7/16/18
VM30-443	279 Casalino Drive	4/24/18
VM30-442	283 Casalino Drive	5/18/18
VM30-441	287 Casalino Drive	5/18/18
VM30-412	332 Casalino Drive	4/30/18
VM30-410	340 Casalino Drive	6/22/18
VM30-402	372 Casalino Drive	8/1/18
VM30-401	376 Casalino Drive	5/3/18
VM40-394	404 Casalino Drive	6/12/18
VM33-307	471 Casalino Drive	9/10/18
VM33-306	475 Casalino Drive	6/28/18
VM33-304	483 Casalino Drive	5/31/18
VM33-303	487 Casalino Drive	6/18/18
VM33-226	211 Cassano Drive	8/28/18
VM33-221	231 Cassano Drive	8/8/18
VM33-220	235 Cassano Drive	6/14/18
VM33-219	239 Cassano Drive	2/22/18
VM33-218	243 Cassano Drive	2/26/18
VM33-329	244 Cassano Drive	8/9/17
VM33-217	247 Cassano Drive	6/27/18
VM33-330	248 Cassano Drive	5/15/17
VM33-216	251 Cassano Drive	4/24/17
VM33-331	252 Cassano Drive	5/25/17
VM33-215	255 Cassano Drive	5/18/17
VM33-332	256 Cassano Drive	5/12/17
VM33-214	259 Cassano Drive	8/9/17
VM33-333	260 Cassano Drive	6/8/17
VM33-213	263 Cassano Drive	5/18/17
VM33-334	264 Cassano Drive	7/3/17
VM33-212	267 Cassano Drive	4/27/17
VM33-335	268 Cassano Drive	6/30/17
VM33-211	271 Cassano Drive	7/25/17
VM33-336	272 Cassano Drive	6/13/17
VM33-210	275 Cassano Drive	5/18/17
VM33-337	276 Cassano Drive	4/14/17
VM33-209	279 Cassano Drive	8/28/17
VM33-338	280 Cassano Drive	3/24/17
VM33-208	283 Cassano Drive	4/5/17
VM33-339	284 Cassano Drive	3/27/17
VM33-207	287 Cassano Drive	5/12/17

Lot ID	Address	CO Date
VM30-023	200 Alento Court	8/2/17
VM30-022	204 Alento Court	8/2/17
VM30-021	208 Alento Court	7/7/17
VM30-008	209 Alento Court	6/19/17
VM30-020	212 Alento Court	4/19/17
VM30-009	213 Alento Court	8/9/17
VM30-019	216 Alento Court	9/20/17
VM30-010	217 Alento Court	1/11/17
VM30-018	220 Alento Court	4/28/17
VM30-011	221 Alento Court	1/11/17
VM30-017F	224 Alento Court	3/7/17
VM30-012	225 Alento Court	2/14/17
VM30-016	228 Alento Court	3/7/17
VM30-013	229 Alento Court	2/14/17
VM30-015	232 Alento Court	1/11/17
VM30-014	236 Alento Court	1/11/17
VM40-291	216 Benedetto Court	8/29/18
VM40-267	237 Benedetto Court	8/8/18
VM40-270	249 Benedetto Court	7/16/18
VM40-271	253 Benedetto Court	8/1/18
VM40-281	256 Benedetto Court	7/26/18
VM40-272	257 Benedetto Court	8/13/18
VM40-280	260 Benedetto Court	7/18/18
VM40-273	261 Benedetto Court	5/23/18
VM40-279	264 Benedetto Court	7/30/18
VM40-274	265 Benedetto Court	4/13/18
VM40-278	268 Benedetto Court	8/16/18
VM40-277	272 Benedetto Court	8/16/18
VM40-276	276 Benedetto Court	4/23/18
VM40-275	280 Benedetto Court	4/23/18
VM33-346	212 Briona Way	11/13/17
VM33-343	200 Briona Way	11/17/17
VM33-345	208 Briona Way	11/17/17
VM33-080	204 Alfero Way	11/14/16
VM33-079	205 Alfero Way	12/12/16
VM33-081	208 Alfero Way	10/14/16
VM33-078	209 Alfero Way	12/5/16
VM33-082	212 Alfero Way	5/4/16
VM33-077	213 Alfero Way	12/20/16
VM33-83	216 Alfero Way	2/24/16
VM33-076	217 Alfero Way	11/29/16
VM33-084	220 Alfero Way	4/5/16
VM33-075	221 Alfero Way	12/16/16
VM33-085	224 Alfero Way	3/17/16
VM33-074	225 Alfero Way	9/2/16
VM33-086	228 Alfero Way	9/2/16
VM33-073	229 Alfero Way	9/29/16
VM33-072	233 Alfero Way	6/9/16
VM33-071	237 Alfero Way	10/11/16
VM33-070	241 Alfero Way	7/1/16
VM33-069	245 Alfero Way	8/3/16

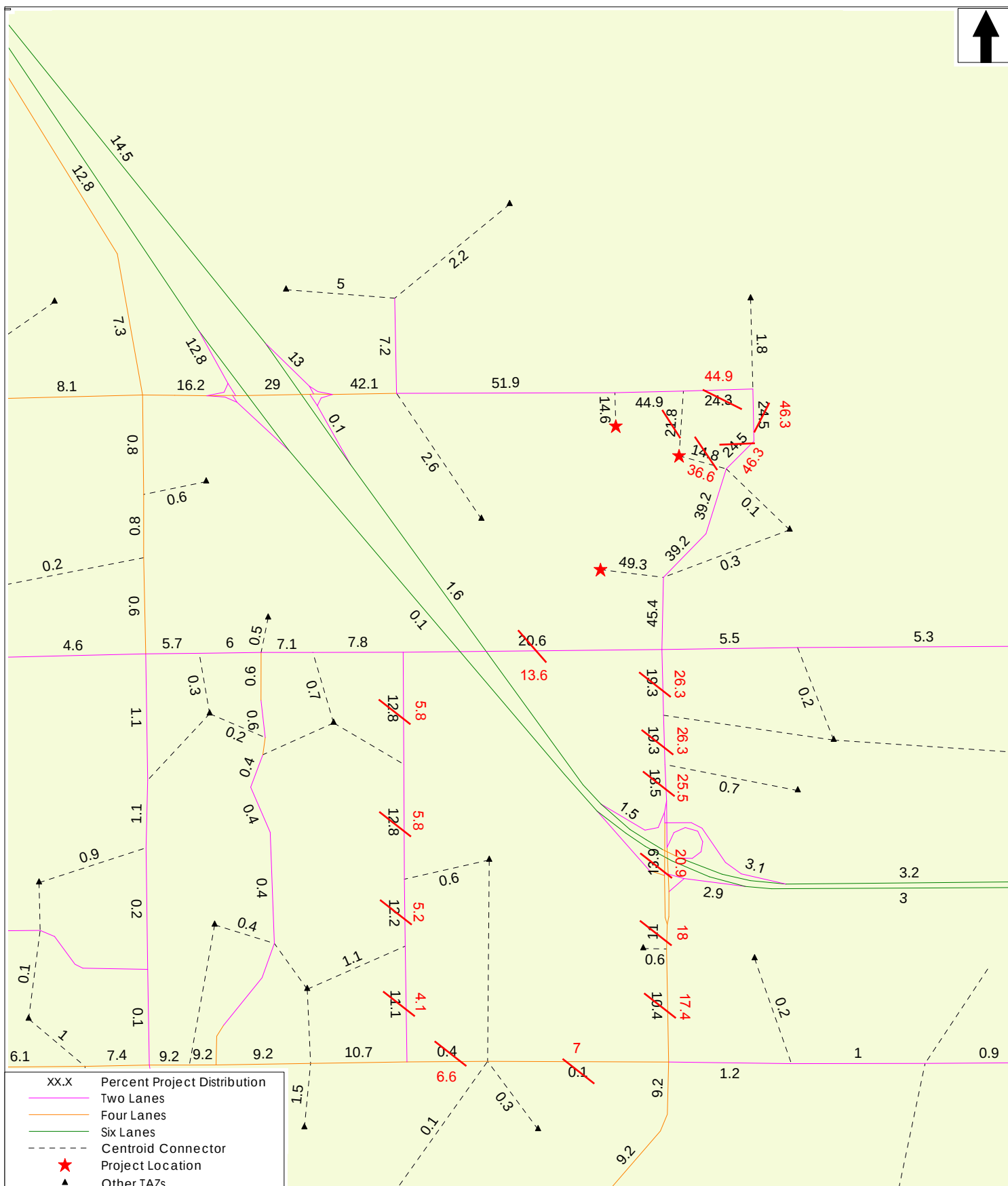
Lot ID	Address	CO Date
VM33-340	288 Cassano Drive	3/27/17
VM33-206	291 Cassano Drive	8/11/17
VM33-341	292 Cassano Drive	3/24/17
VM33-205	295 Cassano Drive	4/14/17
VM33-342	296 Cassano Drive	4/5/17
VM33-204	299 Cassano Drive	5/18/17
VM40-105	300 Cassano Drive	12/21/16
VM33-203	303 Cassano Drive	4/19/17
VM40-104	304 Cassano Drive	12/16/16
VM33-202	307 Cassano Drive	7/3/17
VM40-103	308 Cassano Drive	12/5/16
VM40-106	311 Cassano Drive	11/10/16
VM40-102	312 Cassano Drive	6/22/16
VM40-107	315 Cassano Drive	9/16/16
VM40-101	316 Cassano Drive	7/27/16
VM40-108	319 Cassano Drive	6/10/16
VM40-100	320 Cassano Drive	11/1/16
VM40-109	323 Cassano Drive	5/2/16
VM40-099	324 Cassano Drive	11/21/16
VM40-110	327 Cassano Drive	12/16/16
VM33-360	201 Livorno Way	8/30/18
VM33-359	205 Livorno Way	11/28/17
VM33-358	209 Livorno Way	11/17/17
VM33-357	213 Livorno Way	3/6/18
VM33-356	217 Livorno Way	12/20/17
VM33-355	221 Livorno Way	2/2/18
VM33-354	225 Livorno Way	1/11/18
VM33-373	228 Livorno Way	12/6/17
VM33-353	229 Livorno Way	3/8/18
VM33-372	232 Livorno Way	5/23/18
VM33-352	233 Livorno Way	10/30/17
VM33-371	236 Livorno Way	3/19/18
VM33-351	237 Livorno Way	12/1/17
VM33-350	241 Livorno Way	11/2/17
VM33-349	245 Livorno Way	11/30/17
VM33-368	248 Livorno Way	11/13/17
VM33-348	249 Livorno Way	11/29/17
VM33-367	252 Livorno Way	8/30/18
VM33-365	260 Livorno Way	11/2/17
VM33-364	264 Livorno Way	11/2/17
VM33-363	268 Livorno Way	11/17/17
VM33-362	272 Livorno Way	8/8/18
VM33-361	276 Livorno Way	1/26/18
VM33-315	201 Marcheno Way	6/12/18
VM33-379	204 Marcheno Way	7/23/18
VM33-316	205 Marcheno Way	8/16/18
VM33-378	208 Marcheno Way	12/20/17
VM33-317	209 Marcheno Way	10/30/17
VM33-377	212 Marcheno Way	2/26/18
VM33-318	213 Marcheno Way	11/17/17
VM33-319	217 Marcheno Way	11/15/17

Lot ID		Address	CO Date
VM33-068	249	Alfero Way	9/13/16
VM33-067	253	Alfero Way	10/27/16
VM33-066	257	Alfero Way	11/28/16
VM33-065	261	Alfero Way	8/26/16
VM33-064	265	Alfero Way	4/29/16
VM33-093	205	Carlino Drive	7/11/16
VM33-092	209	Carlino Drive	10/24/16
VM33-091	213	Carlino Drive	10/14/16
VM33-090	217	Carlino Drive	9/22/16
VM33-089	221	Carlino Drive	5/26/16
VM33-088	225	Carlino Drive	5/10/16
VM33-087	229	Carlino Drive	11/28/16
VM33-050M	240	Carlino Drive	6/8/17
VM30-061M	243	Carlino Drive	6/8/17
VM33-049M	244	Carlino Drive	6/8/17
VM30-060M	247	Carlino Drive	6/8/17
VM40-048M	248	Carlino Drive	6/8/17
VM40-047S	252	Carlino Drive	6/8/17
VM40-040	275	Carlino Drive	7/24/17
VM40-039	279	Carlino Drive	10/3/17
VM40-038	283	Carlino Drive	7/7/17
VM40-037	287	Carlino Drive	7/18/17
VM40-036	291	Carlino Drive	6/8/17
VM40-035	295	Carlino Drive	4/19/17
VM40-034	299	Carlino Drive	5/15/17
VM40-033	303	Carlino Drive	3/1/17
VM40-032	307	Carlino Drive	2/14/17
VM40-027	310	Carlino Drive	4/5/17
VM40-031	311	Carlino Drive	3/7/17
VM40-026	314	Carlino Drive	8/22/17
VM40-030	315	Carlino Drive	1/11/17
VM40-025	318	Carlino Drive	1/26/17
VM40-029	319	Carlino Drive	2/2/17
VM40-024	322	Carlino Drive	1/26/17
VM40-028	323	Carlino Drive	5/22/17
VM40-007	327	Carlino Drive	2/14/17
VM40-006	331	Carlino Drive	3/7/17
VM40-005	335	Carlino Drive	6/16/17
VM40-004	339	Carlino Drive	4/5/17
VM40-003	343	Carlino Drive	1/11/17
VM40-002	347	Carlino Drive	1/27/17
VM40-001	351	Carlino Drive	1/27/17
VM30-464	200	Casalino Drive	9/19/17
VM30-463	204	Casalino Drive	9/21/17
VM30-462	208	Casalino Drive	9/7/17
VM30-461	212	Casalino Drive	8/29/17
VM30-460	216	Casalino Drive	1/17/18
VM30-459	220	Casalino Drive	10/9/17
VM30-457	228	Casalino Drive	9/6/17
VM30-456	232	Casalino Drive	9/25/17

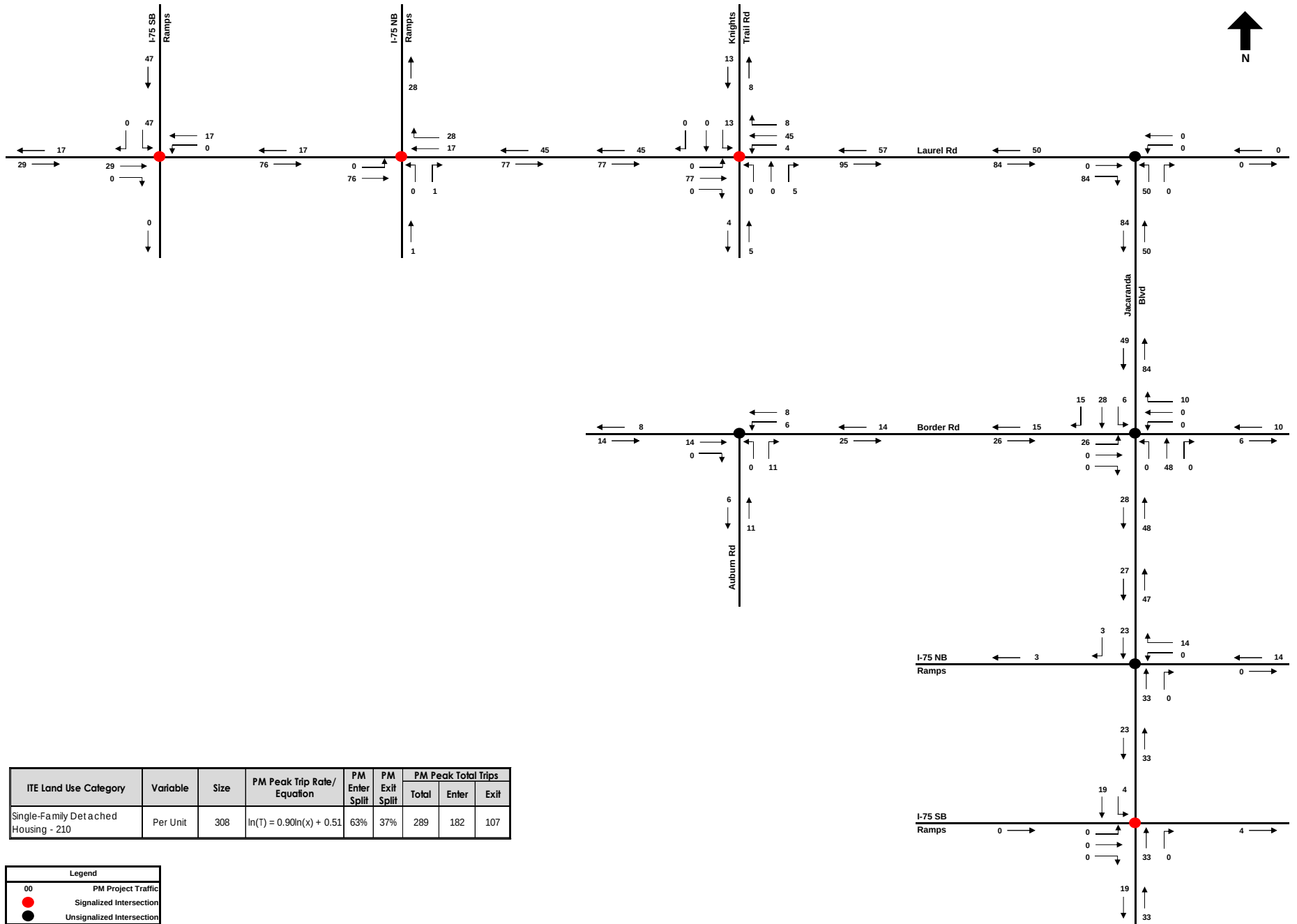
Lot ID		Address	CO Date
VM33-375	220	Marcheno Way	7/16/18
VM33-320	221	Marcheno Way	11/17/17
VM33-321	225	Marcheno Way	12/11/17
VM33-322	229	Marcheno Way	8/1/18
VM33-323	233	Marcheno Way	2/28/18
VM33-324	237	Marcheno Way	3/6/18
VM33-325	241	Marcheno Way	2/9/18
VM33-326	245	Marcheno Way	2/9/18
VM33-327	249	Marcheno Way	3/6/18
VM40-182	200	Malina Court	6/18/18
VM40-156	201	Malina Court	12/20/17
VM40-181	204	Malina Court	6/5/18
VM40-157	205	Malina Court	12/20/17
VM40-158	209	Malina Court	12/15/17
VM40-179	212	Malina Court	1/16/18
VM40-159	213	Malina Court	1/8/18
VM40-178	216	Malina Court	4/11/18
VM40-177	220	Malina Court	1/22/18
VM40-176	224	Malina Court	5/4/18
VM40-175	228	Malina Court	7/25/18
VM40-163	229	Malina Court	7/6/18
VM40-174	232	Malina Court	4/10/18
VM40-173	236	Malina Court	7/25/18
VM40-165	237	Malina Court	12/6/17
VM40-172	240	Malina Court	5/18/18
VM40-166	241	Malina Court	9/5/18
VM40-171	244	Malina Court	6/28/18
VM40-170	248	Malina Court	7/25/18
VM40-169	252	Malina Court	2/2/18
VM40-167	260	Malina Court	7/26/18
VM40-201	200	Rosolina Court	10/6/17
VM40-183	201	Rosolina Court	6/16/17
VM40-200	204	Rosolina Court	9/1/17
VM40-184	205	Rosolina Court	8/21/17
VM40-199	208	Rosolina Court	7/18/17
VM40-185	209	Rosolina Court	8/16/17
VM40-198	212	Rosolina Court	7/5/17
VM40-186	213	Rosolina Court	9/6/18
VM40-197	216	Rosolina Court	8/4/17
VM40-187	217	Rosolina Court	10/20/17
VM40-196	220	Rosolina Court	8/11/17
VM40-188	221	Rosolina Court	10/23/17
VM40-195	224	Rosolina Court	7/31/17
VM40-189	225	Rosolina Court	10/27/17
VM40-194	228	Rosolina Court	8/4/17
VM40-190	229	Rosolina Court	9/15/17
VM40-193	232	Rosolina Court	7/18/17
VM40-191	233	Rosolina Court	8/11/17
VM40-192	236	Rosolina Court	6/9/17

Milano PUD

Laurel Lakes - West of the Jacaranda Blvd Extension

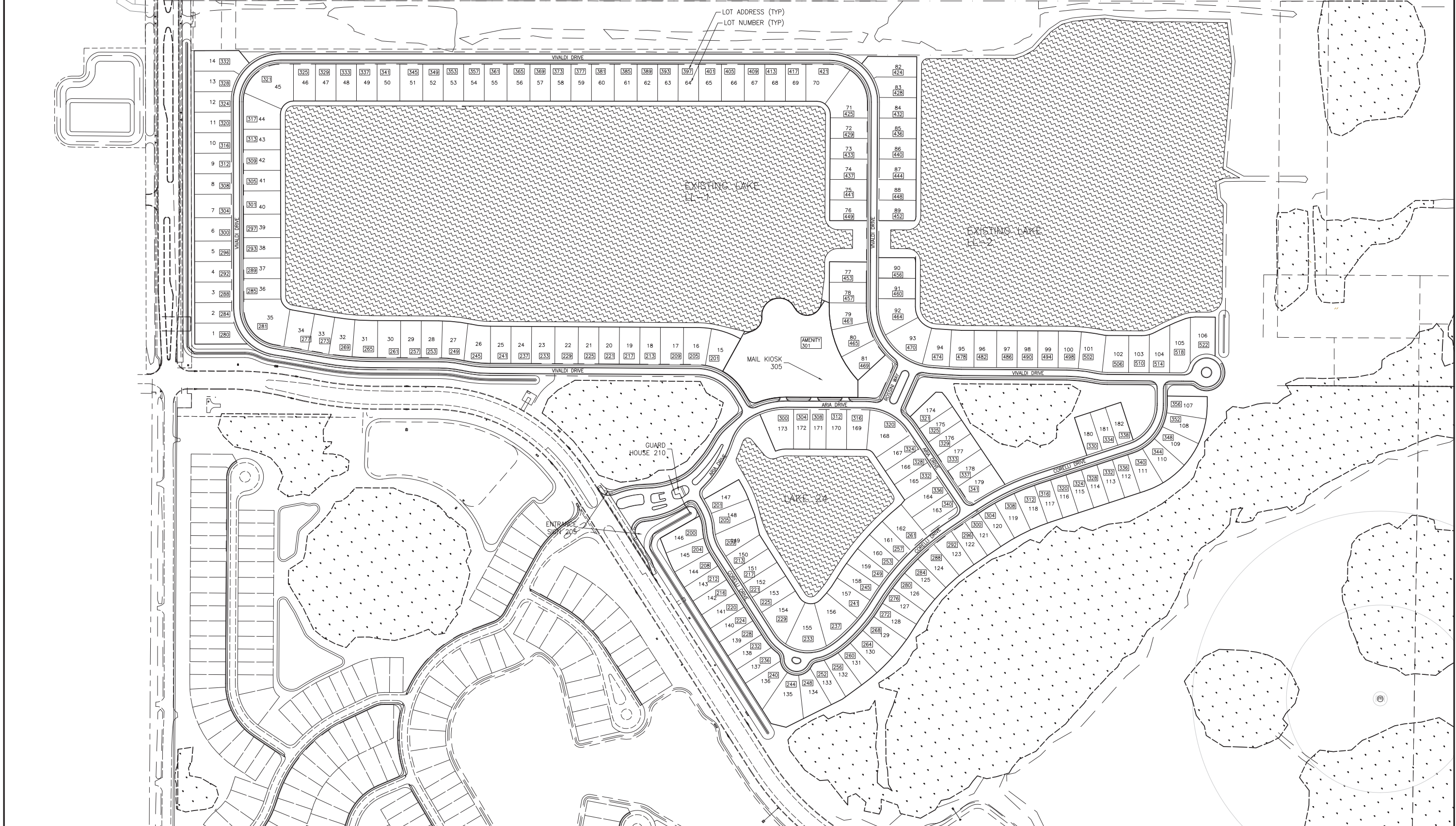


Project Traffic Distribution
2018 Existing Plus Committed Network
Milano PUD

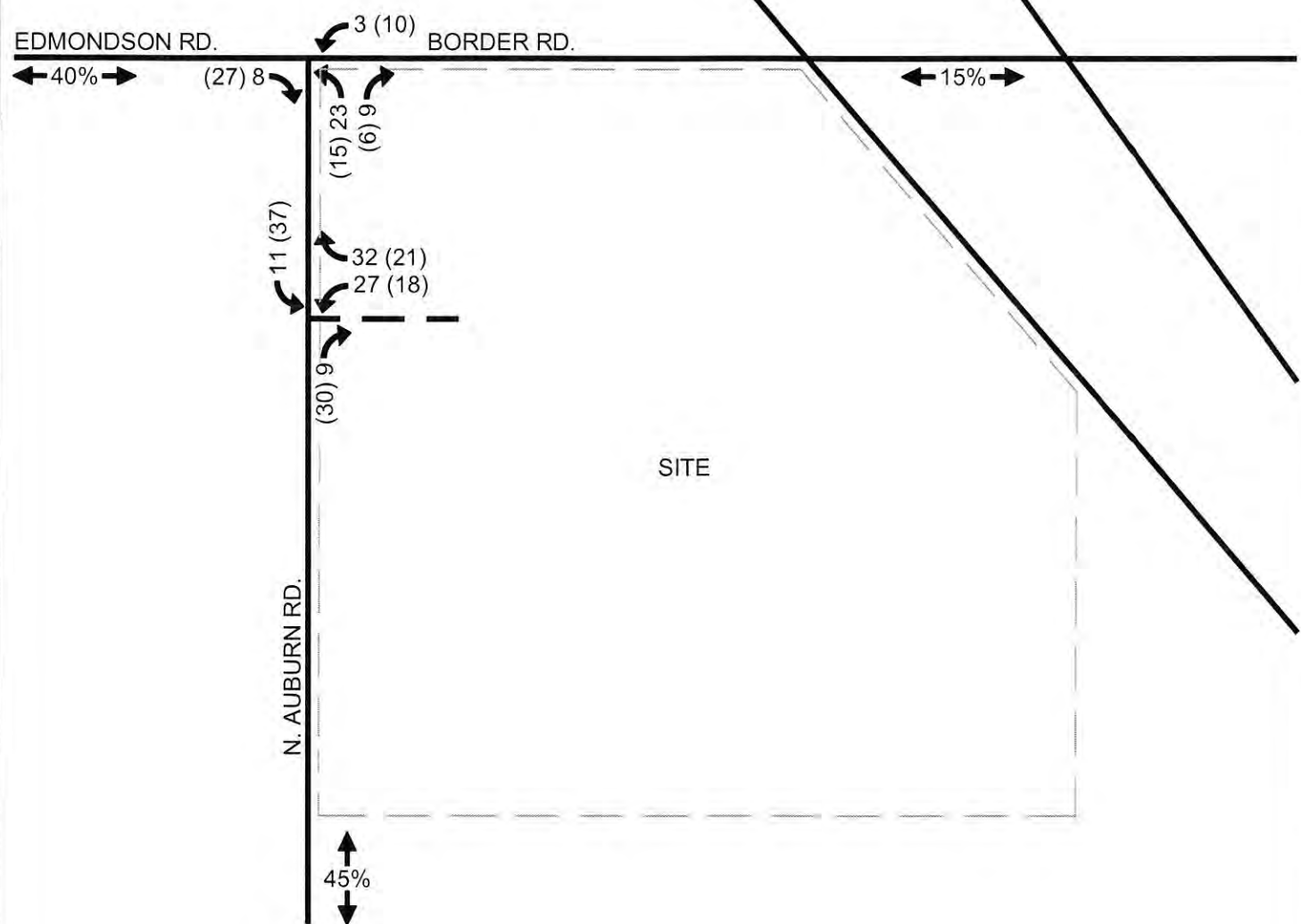
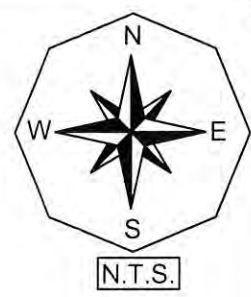




				ACTIVITY		INITIALS/EMP. NO.	DATE	 6900 Professional Parkway East, Sarasota, FL 34240-8414 Phone 941-907-6900 • Fax 941-907-6910 Certificate of Authorization #27013 • www.stantec.com	CLIENT: NEAL COMMUNITIES OF SOUTHWEST FLORIDA, LLC		DATE: 03-2018	TITLE: ADDRESS MAP	NEAL COMMUNITIES OF SOUTHWEST FLORIDA, LLC PROFESSIONAL DESIGN, ENGINEERING, ARCHITECTURE, AND LANDSCAPE ARCHITECTURE 1500 15TH AVENUE, SUITE 100, SARASOTA, FL 34234 ALL INFORMATION CONTAINED HEREIN IS THE PROPERTY OF NEAL COMMUNITIES OF SOUTHWEST FLORIDA, LLC AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF NEAL COMMUNITIES OF SOUTHWEST FLORIDA, LLC. INDEX NUMBER: 215613459-04C-802EX SHEET NUMBER: 1 OF 1		
				DESIGNED BY:			03-2018		PROJECT: CIELO		CROSS REFERENCE FILE NO.: 35 38S 19E	PROJECT NUMBER: 215613459			
				DRAWN BY:											
				CHECKED BY:											
				CONTRACT ADMIN. BY:											
ΔREV NO.	REVISION	DATE	DRAWN BY / EMP. NO.	CHECKED BY / EMP. NO.	WM APPROVED BY:	Saves: 8/28/2018 10:46:27 AM RBETTEN Plotted: 8/28/2018 10:48:44 AM RBETTEN V:\2156\active\215613459\civil\drawing\004-swing-nw-exhibits\215613459-04C-802EX.dwg\ADDRESS MAP									



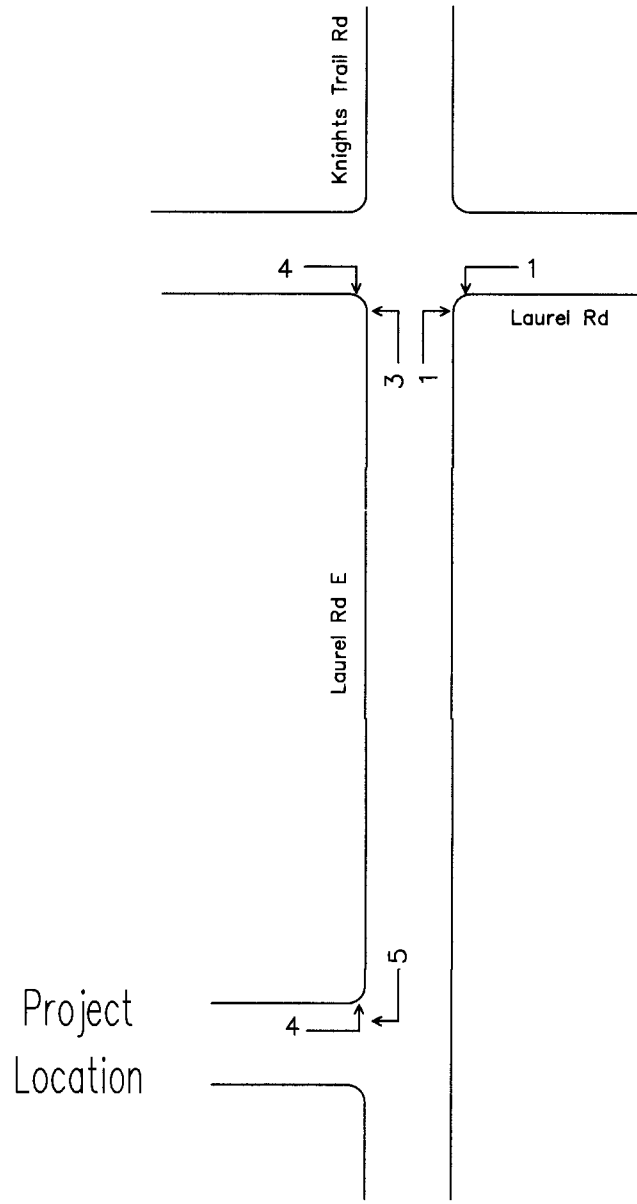
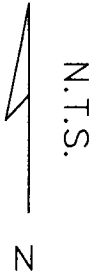
Murphy Oaks



LEGEND

- ← 000 WEEKDAY AM PEAK HOUR SITE TRAFFIC
- ← (000) WEEKDAY PM PEAK HOUR SITE TRAFFIC
- ← 20% → PERCENT TRIP DISTRIBUTION

Laurel Road Storage Facility



RGI Traffic Engineering, LLC
18546 Avocet Drive
Lutz, FL 33558
813-966-9960

Laurel Rd Storage Facility

Project Trip Distribution - PM Peak

EXHIBIT

4

APPENDIX F

2025 BACKGROUND TRAFFIC SYNCHRO SUMMARY WORKSHEETS

HCM 6th Signalized Intersection Summary

1: I-75 SB Ramp & Laurel Rd

09/28/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑		↑↑
Traffic Volume (veh/h)	0	1046	709	761	1082	0	0	0	0	570	0	524
Future Volume (veh/h)	0	1046	709	761	1082	0	0	0	0	570	0	524
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1767	1841	1826	1796	0				1663	0	1856
Adj Flow Rate, veh/h	0	1101	0	801	1139	0				600	0	552
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	9	4	5	7	0				16	0	3
Cap, veh/h	0	1030		1070	2341	0				550	0	962
Arrive On Green	0.00	0.31	0.00	0.63	1.00	0.00				0.35	0.00	0.35
Sat Flow, veh/h	0	3445	1560	3374	3503	0				1584	0	2768
Grp Volume(v), veh/h	0	1101	0	801	1139	0				600	0	552
Grp Sat Flow(s),veh/h/ln	0	1678	1560	1687	1706	0				1584	0	1384
Q Serve(g_s), s	0.0	49.1	0.0	26.4	0.0	0.0				55.6	0.0	26.0
Cycle Q Clear(g_c), s	0.0	49.1	0.0	26.4	0.0	0.0				55.6	0.0	26.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1030		1070	2341	0				550	0	962
V/C Ratio(X)	0.00	1.07		0.75	0.49	0.00				1.09	0.00	0.57
Avail Cap(c_a), veh/h	0	1030		1070	2341	0				550	0	962
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.54	0.54	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	55.5	0.0	24.8	0.0	0.0				52.2	0.0	42.5
Incr Delay (d2), s/veh	0.0	48.4	0.0	1.6	0.2	0.0				65.2	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	37.3	0.0	10.4	0.1	0.0				43.1	0.0	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	103.8	0.0	26.4	0.2	0.0				117.4	0.0	43.9
LnGrp LOS	A	F		C	A	A				F	A	D
Approach Vol, veh/h		1101	A		1940						1152	
Approach Delay, s/veh		103.8			11.0						82.2	
Approach LOS		F			B						F	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	60.7	59.0		60.0		119.7						
Change Period (Y+Rc), s	* 11	* 11		5.4		* 11						
Max Green Setting (Gmax), s	* 34	* 48		54.6		* 89						
Max Q Clear Time (g_c+I1), s	28.4	51.1		57.6		2.0						
Green Ext Time (p_c), s	1.7	0.0		0.0		24.3						
Intersection Summary												
HCM 6th Ctrl Delay				54.9								
HCM 6th LOS				D								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

2: I-75 NB Ramp & Laurel Rd

09/28/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	1343	0	0	1490	719	353	0	339	0	0	0
Future Volume (veh/h)	273	1343	0	0	1490	719	353	0	339	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1796	1707	0	0	1811	1767	1781	0	1796			
Adj Flow Rate, veh/h	300	1476	0	0	1637	0	388	0	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	7	13	0	0	6	9	8	0	7			
Cap, veh/h	520	2556	0	0	2047		461	0				
Arrive On Green	0.31	1.00	0.00	0.00	0.59	0.00	0.14	0.00	0.00			
Sat Flow, veh/h	3319	3329	0	0	3532	1497	3291	0	1522			
Grp Volume(v), veh/h	300	1476	0	0	1637	0	388	0	0			
Grp Sat Flow(s),veh/h/ln	1659	1622	0	0	1721	1497	1646	0	1522			
Q Serve(g_s), s	12.1	0.0	0.0	0.0	58.8	0.0	18.4	0.0	0.0			
Cycle Q Clear(g_c), s	12.1	0.0	0.0	0.0	58.8	0.0	18.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	520	2556	0	0	2047		461	0				
V/C Ratio(X)	0.58	0.58	0.00	0.00	0.80		0.84	0.00				
Avail Cap(c_a), veh/h	520	2556	0	0	2047		562	0				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	0.51	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	50.5	0.0	0.0	0.0	25.0	0.0	67.0	0.0	0.0			
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	1.8	0.0	10.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	5.5	0.0	0.0	0.0	28.6	0.0	13.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	0.0	0.0	0.0	26.8	0.0	77.4	0.0	0.0			
LnGrp LOS	D	A	A	A	C		E	A				
Approach Vol, veh/h	1776			1637			A			388		
Approach Delay, s/veh	8.6			26.8			77.4					
Approach LOS	A			C			E					
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	30.9	101.0		28.1		131.9						
Change Period (Y+Rc), s	6.8	6.8		* 6.7		6.8						
Max Green Setting (Gmax), s	19.2	94.2		* 26		120.2						
Max Q Clear Time (g_c+I1), s	14.1	60.8		20.4		2.0						
Green Ext Time (p_c), s	0.5	25.4		1.0		44.1						
Intersection Summary												
HCM 6th Ctrl Delay	23.4											
HCM 6th LOS	C											
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

3: Knights Trail Rd & Laurel Rd

09/28/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1209	448	21	15	378	252	35	5	27	266	7	1474
Future Volume (vph)	1209	448	21	15	378	252	35	5	27	266	7	1474
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	6.9	5.9	5.9	4.7	4.7		5.9	5.9	5.9
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3072	1776	1272	1805	3282	1455	1719	1657		1570	1900	2707
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3072	1776	1272	1805	3282	1455	1719	1657		1570	1900	2707
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1300	482	23	16	406	271	38	5	29	286	8	1585
RTOR Reduction (vph)	0	0	10	0	0	225	0	28	0	0	0	74
Lane Group Flow (vph)	1300	482	13	16	406	46	38	6	0	286	8	1511
Heavy Vehicles (%)	14%	7%	27%	0%	10%	11%	5%	0%	0%	15%	0%	5%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	pt+ov
Protected Phases	1	6		5	2		3	3		4	4	4 1
Permitted Phases			6			2						
Actuated Green, G (s)	67.9	90.8	90.8	2.0	25.9	25.9	5.9	5.9		33.9	33.9	108.7
Effective Green, g (s)	68.9	91.8	91.8	3.0	26.9	26.9	6.9	6.9		34.9	34.9	109.7
Actuated g/C Ratio	0.43	0.57	0.57	0.02	0.17	0.17	0.04	0.04		0.22	0.22	0.69
Clearance Time (s)	6.9	6.9	6.9	7.9	6.9	6.9	5.7	5.7		6.9	6.9	
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1322	1018	729	33	551	244	74	71		342	414	1855
v/s Ratio Prot	c0.42	0.27		0.01	c0.12		c0.02	0.00		0.18	0.00	c0.56
v/s Ratio Perm			0.01			0.03						
v/c Ratio	0.98	0.47	0.02	0.48	0.74	0.19	0.51	0.09		0.84	0.02	0.81
Uniform Delay, d1	45.0	20.0	14.7	77.7	63.2	57.2	74.9	73.5		59.8	49.1	17.9
Progression Factor	0.50	0.53	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	19.1	1.4	0.0	10.8	8.5	1.7	5.9	0.5		16.1	0.0	2.9
Delay (s)	41.7	11.8	14.7	88.5	71.7	58.8	80.8	74.1		75.9	49.1	20.8
Level of Service	D	B	B	F	E	E	F	E		E	D	C
Approach Delay (s)		33.4			67.1			77.6			29.3	
Approach LOS		C			E			E			C	
Intersection Summary												
HCM 2000 Control Delay			37.6									HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			160.0							23.4		
Intersection Capacity Utilization			81.6%									ICU Level of Service D
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th TWSC
4: Jacaranda Blvd & Laurel Rd

09/28/2018

Intersection						
Int Delay, s/veh	91.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	186	649	24	144	486	9
Future Vol, veh/h	186	649	24	144	486	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	300	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	20	17	0	0	6	50
Mvmt Flow	204	713	26	158	534	10
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	917	0	771	561
Stage 1	-	-	-	-	561	-
Stage 2	-	-	-	-	210	-
Critical Hdwy	-	-	4.1	-	6.46	6.7
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.2	-	3.554	3.75
Pot Cap-1 Maneuver	-	-	752	-	~ 363	446
Stage 1	-	-	-	-	563	-
Stage 2	-	-	-	-	816	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	752	-	~ 349	446
Mov Cap-2 Maneuver	-	-	-	-	~ 349	-
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	816	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.4		275.8	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	349	446	-	-	752	-
HCM Lane V/C Ratio	1.53	0.022	-	-	0.035	-
HCM Control Delay (s)	280.7	13.3	-	-	10	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q(veh)	29.8	0.1	-	-	0.1	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 6th AWSC
5: Capri Isles Blvd & Edmondson Rd

09/28/2018

Intersection												
Intersection Delay, s/veh	12.9											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	281	122	31	182	25	69	21	31	28	17	55
Future Vol, veh/h	47	281	122	31	182	25	69	21	31	28	17	55
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	6	0	0	6	0	3	0	0	0	0	3
Mvmt Flow	48	290	126	32	188	26	71	22	32	29	18	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	15.3			11			10.4			9.8		
HCM LOS	C			B			B			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	57%	10%	13%	28%
Vol Thru, %	17%	62%	76%	17%
Vol Right, %	26%	27%	11%	55%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	121	450	238	100
LT Vol	69	47	31	28
Through Vol	21	281	182	17
RT Vol	31	122	25	55
Lane Flow Rate	125	464	245	103
Geometry Grp	1	1	1	1
Degree of Util (X)	0.203	0.619	0.351	0.161
Departure Headway (Hd)	5.851	4.807	5.151	5.62
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	612	756	697	636
Service Time	3.899	2.807	3.187	3.669
HCM Lane V/C Ratio	0.204	0.614	0.352	0.162
HCM Control Delay	10.4	15.3	11	9.8
HCM Lane LOS	B	C	B	A
HCM 95th-tile Q	0.8	4.3	1.6	0.6

HCM 6th TWSC
6: Auburn Rd & Edmondson Rd/Border Rd

09/28/2018

Intersection						
Int Delay, s/veh	5.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	236	114	134	224	54	145
Future Vol, veh/h	236	114	134	224	54	145
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	87	87	87	87	87	87
Heavy Vehicles, %	8	4	0	5	8	8
Mvmt Flow	271	131	154	257	62	167
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	402	0	902	337
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	565	-
Critical Hdwy	-	-	4.1	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.2	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1168	-	301	692
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	557	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1168	-	255	692
Mov Cap-2 Maneuver	-	-	-	-	255	-
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	557	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		3.2		19.6	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	472	-	-	1168	-	
HCM Lane V/C Ratio	0.485	-	-	0.132	-	
HCM Control Delay (s)	19.6	-	-	8.6	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	2.6	-	-	0.5	-	

HCM 6th AWSC
7: Jacaranda Blvd & Border Rd

09/28/2018

Intersection												
Intersection Delay, s/veh	122.5											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵			↵	↵
Traffic Vol, veh/h	142	137	113	103	100	123	140	281	140	162	316	137
Future Vol, veh/h	142	137	113	103	100	123	140	281	140	162	316	137
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, %	4	14	4	0	0	22	3	5	9	20	17	4
Mvmt Flow	151	146	120	110	106	131	149	299	149	172	336	146
Number of Lanes	0	1	0	0	1	0	1	1	0	0	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			2			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			2			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			2			1			1		
HCM Control Delay	103.7			62.9			104.1			182.8		
HCM LOS	F			F			F			F		

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	36%	32%	34%	0%
Vol Thru, %	0%	67%	35%	31%	66%	0%
Vol Right, %	0%	33%	29%	38%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	140	421	392	326	478	137
LT Vol	140	0	142	103	162	0
Through Vol	0	281	137	100	316	0
RT Vol	0	140	113	123	0	137
Lane Flow Rate	149	448	417	347	509	146
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.415	1.162	1.076	0.908	1.412	0.367
Departure Headway (Hd)	11.083	10.342	10.444	10.845	10.675	9.703
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	328	354	350	336	346	373
Service Time	8.783	8.042	8.444	8.845	8.375	7.403
HCM Lane V/C Ratio	0.454	1.266	1.191	1.033	1.471	0.391
HCM Control Delay	21.4	131.6	103.7	62.9	230.1	17.9
HCM Lane LOS	C	F	F	F	F	C
HCM 95th-tile Q	2	16.3	13.5	8.9	24.6	1.6

HCM 6th TWSC
8: Jacaranda Blvd & I-75 NB Ramp

09/28/2018

Intersection												
Int Delay, s/veh	133.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	450	0	80	0	489	878	0	798	111
Future Vol, veh/h	0	0	0	450	0	80	0	489	878	0	798	111
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	-	-	-	0	-	800	-	-	800	-	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	5	0	15	0	8	8	0	8	3
Mvmt Flow	0	0	0	500	0	89	0	543	976	0	887	123
Major/Minor				Minor1		Major1			Major2			
Conflicting Flow All				987	-	272	-	0	-	-	-	0
Stage 1				543	-	-	-	-	-	-	-	-
Stage 2				444	-	-	-	-	-	-	-	-
Critical Hdwy				6.9	-	7.2	-	-	-	-	-	-
Critical Hdwy Stg 1				5.9	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.9	-	-	-	-	-	-	-	-
Follow-up Hdwy				3.55	-	3.45	-	-	-	-	-	-
Pot Cap-1 Maneuver				~ 239	0	688	0	-	0	0	-	0
Stage 1				538	0	-	0	-	0	0	-	0
Stage 2				605	0	-	0	-	0	0	-	0
Platoon blocked, %								-			-	
Mov Cap-1 Maneuver				~ 239	0	688	-	-	-	-	-	-
Mov Cap-2 Maneuver				~ 239	0	-	-	-	-	-	-	-
Stage 1				538	0	-	-	-	-	-	-	-
Stage 2				605	0	-	-	-	-	-	-	-
Approach				WB		NB			SB			
HCM Control Delay, s				\$ 459.1		0			0			
HCM LOS				F								
Minor Lane/Major Mvmt		NBTWBLn1WBLn2		SBT								
Capacity (veh/h)		-	239	688	-							
HCM Lane V/C Ratio		-	2.092	0.129	-							
HCM Control Delay (s)		-\$	538.8	11	-							
HCM Lane LOS		-	F	B	-							
HCM 95th %tile Q(veh)		-	37.6	0.4	-							
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						

HCM Signalized Intersection Capacity Analysis

9: Jacaranda Blvd & I-75 SB Ramp

09/28/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	3	1270	0	0	0	0	1263	425	165	1055	0
Future Volume (vph)	57	3	1270	0	0	0	0	1263	425	165	1055	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	6.6					6.6	6.6	6.6	6.6	
Lane Util. Factor	0.95	0.95	0.88					0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.96	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1453	1426	2760					3374	1615	1770	3374	
Flt Permitted	0.95	0.96	1.00					1.00	1.00	0.11	1.00	
Satd. Flow (perm)	1453	1426	2760					3374	1615	205	3374	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	59	3	1323	0	0	0	0	1316	443	172	1099	0
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	309	0	0	0
Lane Group Flow (vph)	31	31	1306	0	0	0	0	1316	134	172	1099	0
Heavy Vehicles (%)	18%	50%	3%	0%	0%	0%	0%	7%	0%	2%	7%	0%
Turn Type	Split	NA	custom					NA	Perm	Perm	NA	
Protected Phases	3	3	3 4					6			2	
Permitted Phases									6	2		
Actuated Green, G (s)	49.0	49.0	69.4					35.4	35.4	35.4	35.4	
Effective Green, g (s)	50.0	50.0	70.4					36.4	36.4	36.4	36.4	
Actuated g/C Ratio	0.42	0.42	0.59					0.30	0.30	0.30	0.30	
Clearance Time (s)	7.6	7.6						7.6	7.6	7.6	7.6	
Vehicle Extension (s)	3.0	3.0						5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)	605	594	1619					1023	489	62	1023	
v/s Ratio Prot	0.02	0.02	c0.47					0.39			0.33	
v/s Ratio Perm									0.08	c0.84		
v/c Ratio	0.05	0.05	0.81					1.29	0.27	2.77	1.07	
Uniform Delay, d1	20.9	20.9	19.5					41.8	31.8	41.8	41.8	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.0	3.0					136.4	1.4	841.5	50.3	
Delay (s)	20.9	20.9	22.5					178.2	33.2	883.3	92.1	
Level of Service	C	C	C					F	C	F	F	
Approach Delay (s)		22.4			0.0			141.6			199.2	
Approach LOS		C			A			F			F	
Intersection Summary												
HCM 2000 Control Delay			120.8		HCM 2000 Level of Service				F			
HCM 2000 Volume to Capacity ratio			1.57									
Actuated Cycle Length (s)			120.0		Sum of lost time (s)				19.8			
Intersection Capacity Utilization			84.6%		ICU Level of Service				E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

10: Auburn Rd & E Venice Ave

09/28/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	1175	9	7	703	95	5	3	1	152	3	129
Future Volume (veh/h)	168	1175	9	7	703	95	5	3	1	152	3	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1856	1856	1900	1856	1856	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	179	1250	9	7	748	94	5	3	0	162	3	35
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
Percent Heavy Veh, %	2	3	3	0	3	3	0	0	0	0	0	0
Cap, veh/h	496	2385	17	302	1985	249	38	40	0	207	4	187
Arrive On Green	0.06	0.66	0.66	0.02	0.63	0.63	0.02	0.02	0.00	0.12	0.12	0.12
Sat Flow, veh/h	1781	3588	26	1810	3151	396	1810	1900	0	1778	33	1610
Grp Volume(v), veh/h	179	614	645	7	418	424	5	3	0	165	0	35
Grp Sat Flow(s),veh/h/ln	1781	1763	1851	1810	1763	1784	1810	1900	0	1811	0	1610
Q Serve(g_s), s	4.4	23.3	23.3	0.2	15.0	15.0	0.4	0.2	0.0	11.5	0.0	2.6
Cycle Q Clear(g_c), s	4.4	23.3	23.3	0.2	15.0	15.0	0.4	0.2	0.0	11.5	0.0	2.6
Prop In Lane	1.00		0.01	1.00		0.22	1.00		0.00	0.98		1.00
Lane Grp Cap(c), veh/h	496	1172	1231	302	1111	1124	38	40	0	210	0	187
V/C Ratio(X)	0.36	0.52	0.52	0.02	0.38	0.38	0.13	0.07	0.00	0.78	0.00	0.19
Avail Cap(c_a), veh/h	600	1172	1231	401	1111	1124	155	162	0	319	0	284
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.1	11.2	11.2	9.5	11.7	11.7	62.4	62.4	0.0	55.9	0.0	51.9
Incr Delay (d2), s/veh	0.3	1.7	1.6	0.0	1.0	1.0	1.5	0.8	0.0	7.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	14.2	14.8	0.1	10.1	10.2	0.3	0.2	0.0	9.6	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.4	12.9	12.8	9.6	12.6	12.6	64.0	63.1	0.0	62.9	0.0	52.4
LnGrp LOS	A	B	B	A	B	B	E	E	A	E	A	D
Approach Vol, veh/h	1438		849				8			200		
Approach Delay, s/veh	12.3		12.6				63.7			61.1		
Approach LOS	B		B				E			E		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	13.4	88.7	7.7		8.9	93.2	20.2					
Change Period (Y+Rc), s	6.8	7.8	5.9		7.8	7.8	6.1					
Max Green Setting (Gmax), s	14.2	57.2	10.1		8.2	62.2	21.9					
Max Q Clear Time (g_c+I1), s	6.4	17.0	2.4		2.2	25.3	13.5					
Green Ext Time (p_c), s	0.2	7.9	0.0		0.0	13.8	0.6					
Intersection Summary												
HCM 6th Ctrl Delay			16.5									
HCM 6th LOS			B									
Notes												

APPENDIX G

2025 IMPROVED BACKGROUND TRAFFIC SYNCHRO SUMMARY WORKSHEETS

Arterial Level of Service

01/28/2019

Arterial Level of Service: EB Laurel Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-75 NB Ramp	II	45	29.3	2.9	32.2	0.30	33.1	B
Knights Trail Rd	II	45	31.3	32.3	63.6	0.33	18.5	D
Jacaranda Blvd	II	45	114.7	11.0	125.7	1.43	41.1	A
Total	II		175.3	46.2	221.5	2.06	33.4	B

Arterial Level of Service: WB Laurel Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Knights Trail Rd	II	45	114.7	51.7	166.4	1.43	31.0	B
I-75 NB Ramp	II	45	31.3	22.0	53.3	0.33	22.0	C
I-75 SB Ramp	II	45	29.3	4.6	33.9	0.30	31.5	B
Total	II		175.3	78.3	253.6	2.06	29.2	B

HCM 6th Signalized Intersection Summary

1: I-75 SB Ramp & Laurel Rd

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑↑		↑↑
Traffic Volume (veh/h)	0	1046	709	761	1082	0	0	0	0	570	0	524
Future Volume (veh/h)	0	1046	709	761	1082	0	0	0	0	570	0	524
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1767	1841	1826	1796	0				1663	0	1856
Adj Flow Rate, veh/h	0	1101	0	801	1139	0				600	0	552
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	9	4	5	7	0				16	0	3
Cap, veh/h	0	1209		832	2282	0				743	0	669
Arrive On Green	0.00	0.36	0.00	0.49	1.00	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	3445	1560	3374	3503	0				3072	0	2768
Grp Volume(v), veh/h	0	1101	0	801	1139	0				600	0	552
Grp Sat Flow(s),veh/h/ln	0	1678	1560	1687	1706	0				1536	0	1384
Q Serve(g_s), s	0.0	50.0	0.0	36.6	0.0	0.0				29.4	0.0	30.2
Cycle Q Clear(g_c), s	0.0	50.0	0.0	36.6	0.0	0.0				29.4	0.0	30.2
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1209		832	2282	0				743	0	669
V/C Ratio(X)	0.00	0.91		0.96	0.50	0.00				0.81	0.00	0.82
Avail Cap(c_a), veh/h	0	1240		832	2282	0				808	0	728
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.54	0.54	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	48.7	0.0	39.8	0.0	0.0				57.1	0.0	57.4
Incr Delay (d2), s/veh	0.0	11.8	0.0	14.9	0.2	0.0				6.8	0.0	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	30.1	0.0	17.9	0.1	0.0				17.6	0.0	16.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	60.5	0.0	54.7	0.2	0.0				63.9	0.0	65.9
LnGrp LOS	A	E		D	A	A				E	A	E
Approach Vol, veh/h		1101	A		1940						1152	
Approach Delay, s/veh		60.5			22.7						64.9	
Approach LOS		E			C						E	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	49.4	67.5		43.1		116.9						
Change Period (Y+Rc), s	* 11	* 11		5.4		* 11						
Max Green Setting (Gmax), s	* 38	* 58		41.1		* 1E2						
Max Q Clear Time (g_c+I1), s	38.6	52.0		32.2		2.0						
Green Ext Time (p_c), s	0.0	4.6		5.5		24.9						
Intersection Summary												
HCM 6th Ctrl Delay				44.2								
HCM 6th LOS				D								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

2: I-75 NB Ramp & Laurel Rd

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	1343	0	0	1490	719	353	0	339	0	0	0
Future Volume (veh/h)	273	1343	0	0	1490	719	353	0	339	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1796	1707	0	0	1811	1767	1781	0	1796			
Adj Flow Rate, veh/h	300	1476	0	0	1637	0	388	0	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	7	13	0	0	6	9	8	0	7			
Cap, veh/h	520	2556	0	0	2047		461	0				
Arrive On Green	0.31	1.00	0.00	0.00	0.40	0.00	0.14	0.00	0.00			
Sat Flow, veh/h	3319	3329	0	0	3532	1497	3291	0	1522			
Grp Volume(v), veh/h	300	1476	0	0	1637	0	388	0	0			
Grp Sat Flow(s),veh/h/ln	1659	1622	0	0	1721	1497	1646	0	1522			
Q Serve(g_s), s	12.1	0.0	0.0	0.0	67.2	0.0	18.4	0.0	0.0			
Cycle Q Clear(g_c), s	12.1	0.0	0.0	0.0	67.2	0.0	18.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	520	2556	0	0	2047		461	0				
V/C Ratio(X)	0.58	0.58	0.00	0.00	0.80		0.84	0.00				
Avail Cap(c_a), veh/h	520	2556	0	0	2047		562	0				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	0.67	0.67	1.00	1.00	1.00			
Upstream Filter(I)	0.41	0.41	0.00	0.00	0.47	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	50.5	0.0	0.0	0.0	39.7	0.0	67.0	0.0	0.0			
Incr Delay (d2), s/veh	0.6	0.2	0.0	0.0	1.6	0.0	10.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	6.8	0.1	0.0	0.0	35.8	0.0	13.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.1	0.2	0.0	0.0	41.3	0.0	77.4	0.0	0.0			
LnGrp LOS	D	A	A	A	D		E	A				
Approach Vol, veh/h	1776			1637			A			388		
Approach Delay, s/veh	8.8			41.3			77.4					
Approach LOS	A			D			E					
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	30.9	101.0		28.1		131.9						
Change Period (Y+Rc), s	6.8	6.8		* 6.7		6.8						
Max Green Setting (Gmax), s	19.2	94.2		* 26		120.2						
Max Q Clear Time (g_c+I1), s	14.1	69.2		20.4		2.0						
Green Ext Time (p_c), s	0.5	20.1		1.0		44.1						
Intersection Summary												
HCM 6th Ctrl Delay	29.8											
HCM 6th LOS	C											
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

3: Knights Trail Rd & Laurel Rd

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑↑	↵	↵	↵		↵	↑	↵↵
Traffic Volume (vph)	0	448	21	15	378	252	34	5	27	266	7	1474
Future Volume (vph)	0	448	21	15	378	252	34	5	27	266	7	1474
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9		5.9	5.9	5.9	4.7	4.7		5.9	5.9	5.9
Lane Util. Factor		0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	0.88
Frt		0.99		1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3322		1805	3282	1455	1719	1657		1570	1900	2707
Flt Permitted		1.00		0.31	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		3322		588	3282	1455	1719	1657		1570	1900	2707
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	482	23	16	406	271	37	5	29	286	8	1585
RTOR Reduction (vph)	0	2	0	0	0	199	0	27	0	0	0	164
Lane Group Flow (vph)	0	503	0	16	406	72	37	7	0	286	8	1421
Heavy Vehicles (%)	14%	7%	27%	0%	10%	11%	5%	0%	0%	15%	0%	5%
Turn Type		NA		Perm	NA	Perm	Split	NA		Split	NA	Prot
Protected Phases		6			2		3	3		4	4	4
Permitted Phases				2		2						
Actuated Green, G (s)		41.8		41.8	41.8	41.8	7.7	7.7		91.0	91.0	91.0
Effective Green, g (s)		42.8		42.8	42.8	42.8	8.7	8.7		92.0	92.0	92.0
Actuated g/C Ratio		0.27		0.27	0.27	0.27	0.05	0.05		0.58	0.58	0.58
Clearance Time (s)		6.9		6.9	6.9	6.9	5.7	5.7		6.9	6.9	6.9
Vehicle Extension (s)		5.0		5.0	5.0	5.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		888		157	877	389	93	90		902	1092	1556
v/s Ratio Prot		c0.15			0.12		c0.02	0.00		0.18	0.00	c0.53
v/s Ratio Perm				0.03		0.05						
v/c Ratio		0.57		0.10	0.46	0.19	0.40	0.07		0.32	0.01	0.91
Uniform Delay, d1		50.6		44.1	49.0	45.2	73.1	71.8		17.7	14.5	30.4
Progression Factor		0.59		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.2		1.3	1.8	1.1	2.8	0.3		0.2	0.0	8.6
Delay (s)		32.0		45.4	50.7	46.2	75.9	72.2		17.9	14.5	39.0
Level of Service		C		D	D	D	E	E		B	B	D
Approach Delay (s)		32.0			48.9			74.1			35.7	
Approach LOS		C			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			38.9				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			81.6%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

4: Jacaranda Blvd & Laurel Rd

01/28/2019

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	186	649	24	144	486	9
Future Volume (veh/h)	186	649	24	144	486	9
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1604	1648	1900	1900	1811	1159
Adj Flow Rate, veh/h	204	438	26	158	534	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	20	17	0	0	6	50
Cap, veh/h	703	612	139	707	627	357
Arrive On Green	0.44	0.44	0.44	0.44	0.36	0.36
Sat Flow, veh/h	1604	1397	121	1613	1725	982
Grp Volume(v), veh/h	204	438	184	0	534	10
Grp Sat Flow(s),veh/h/ln	1604	1397	1734	0	1725	982
Q Serve(g_s), s	3.9	12.3	0.0	0.0	13.7	0.3
Cycle Q Clear(g_c), s	3.9	12.3	2.9	0.0	13.7	0.3
Prop In Lane		1.00	0.14		1.00	1.00
Lane Grp Cap(c), veh/h	703	612	846	0	627	357
V/C Ratio(X)	0.29	0.72	0.22	0.00	0.85	0.03
Avail Cap(c_a), veh/h	1004	874	1144	0	738	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	8.7	11.0	8.4	0.0	14.1	9.8
Incr Delay (d2), s/veh	0.2	1.6	0.1	0.0	8.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	5.0	1.5	0.0	9.5	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.9	12.6	8.5	0.0	22.4	9.8
LnGrp LOS	A	B	A	A	C	A
Approach Vol, veh/h	642			184	544	
Approach Delay, s/veh	11.4			8.5	22.1	
Approach LOS	B			A	C	
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	26.0		21.9		26.0	
Change Period (Y+Rc), s	6.0		5.5		6.0	
Max Green Setting (Gmax), s	29.0		19.5		29.0	
Max Q Clear Time (g_c+I1), s	4.9		15.7		14.3	
Green Ext Time (p_c), s	1.0		0.8		2.4	
Intersection Summary						
HCM 6th Ctrl Delay	15.3					
HCM 6th LOS	B					

HCM 6th Signalized Intersection Summary

7: Jacaranda Blvd & Border Rd

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	137	113	103	100	123	140	281	140	162	316	137
Future Volume (veh/h)	142	137	113	103	100	123	140	281	140	162	316	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1693	1693	1693	1900	1900	1900	1856	1826	1826	1604	1648	1648
Adj Flow Rate, veh/h	151	146	120	110	106	131	149	299	149	172	336	146
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
Percent Heavy Veh, %	14	14	14	0	0	0	3	5	5	20	17	17
Cap, veh/h	220	191	140	200	195	202	325	415	207	346	396	172
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.09	0.36	0.36	0.09	0.36	0.36
Sat Flow, veh/h	407	501	367	360	511	529	1767	1150	573	1527	1089	473
Grp Volume(v), veh/h	417	0	0	347	0	0	149	0	448	172	0	482
Grp Sat Flow(s),veh/h/ln	1276	0	0	1400	0	0	1767	0	1723	1527	0	1563
Q Serve(g_s), s	8.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	17.0	5.3	0.0	21.5
Cycle Q Clear(g_c), s	23.0	0.0	0.0	15.0	0.0	0.0	3.8	0.0	17.0	5.3	0.0	21.5
Prop In Lane	0.36		0.29	0.32		0.38	1.00		0.33	1.00		0.30
Lane Grp Cap(c), veh/h	552	0	0	598	0	0	325	0	621	346	0	568
V/C Ratio(X)	0.76	0.00	0.00	0.58	0.00	0.00	0.46	0.00	0.72	0.50	0.00	0.85
Avail Cap(c_a), veh/h	910	0	0	999	0	0	482	0	1160	346	0	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	0.0	18.7	0.0	0.0	16.1	0.0	20.9	15.2	0.0	22.2
Incr Delay (d2), s/veh	2.1	0.0	0.0	0.9	0.0	0.0	1.0	0.0	1.6	1.1	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.7	0.0	0.0	8.2	0.0	0.0	2.6	0.0	10.7	3.1	0.0	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	0.0	0.0	19.6	0.0	0.0	17.1	0.0	22.5	16.3	0.0	26.4
LnGrp LOS	C	A	A	B	A	A	B	A	C	B	A	C
Approach Vol, veh/h		417			347			597			654	
Approach Delay, s/veh		23.6			19.6			21.2			23.8	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	31.6		33.4	11.0	31.3		33.4				
Change Period (Y+Rc), s	5.0	5.0		5.5	5.0	5.0		5.5				
Max Green Setting (Gmax), s	12.5	43.5		48.5	6.0	50.0		48.5				
Max Q Clear Time (g_c+I1), s	5.8	23.5		25.0	7.3	19.0		17.0				
Green Ext Time (p_c), s	0.2	3.1		2.9	0.0	3.1		2.4				
Intersection Summary												
HCM 6th Ctrl Delay				22.2								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary

8: Jacaranda Blvd & I-75 NB Ramp

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	450	0	80	0	489	878	0	798	111
Future Volume (veh/h)	0	0	0	450	0	80	0	489	878	0	798	111
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1826	0	1678	0	1781	1781	0	1781	1856
Adj Flow Rate, veh/h				500	0	89	0	543	0	0	887	0
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				5	0	15	0	8	8	0	8	3
Cap, veh/h				549	0	449	0	1943		0	1943	
Arrive On Green				0.32	0.00	0.32	0.00	0.19	0.00	0.00	0.57	0.00
Sat Flow, veh/h				1739	0	1422	0	3474	1510	0	3474	1572
Grp Volume(v), veh/h				500	0	89	0	543	0	0	887	0
Grp Sat Flow(s),veh/h/ln				1739	0	1422	0	1692	1510	0	1692	1572
Q Serve(g_s), s				33.1	0.0	5.5	0.0	16.5	0.0	0.0	18.2	0.0
Cycle Q Clear(g_c), s				33.1	0.0	5.5	0.0	16.5	0.0	0.0	18.2	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				549	0	449	0	1943		0	1943	
V/C Ratio(X)				0.91	0.00	0.20	0.00	0.28		0.00	0.46	
Avail Cap(c_a), veh/h				803	0	656	0	1943		0	1943	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.81	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				39.4	0.0	30.0	0.0	27.4	0.0	0.0	14.7	0.0
Incr Delay (d2), s/veh				10.7	0.0	0.2	0.0	0.3	0.0	0.0	0.8	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				21.5	0.0	3.3	0.0	11.5	0.0	0.0	10.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				50.1	0.0	30.2	0.0	27.7	0.0	0.0	15.5	0.0
LnGrp LOS				D	A	C	A	C		A	B	
Approach Vol, veh/h				589				543	A		887	A
Approach Delay, s/veh				47.1				27.7			15.5	
Approach LOS				D				C			B	
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	75.5			75.5			44.5					
Change Period (Y+Rc), s	* 7.6			* 7.6			7.6					
Max Green Setting (Gmax), s	* 50			* 50			54.4					
Max Q Clear Time (g_c+I1), s	18.5			20.2			35.1					
Green Ext Time (p_c), s	3.6			6.4			1.8					
Intersection Summary												
HCM 6th Ctrl Delay	28.0											
HCM 6th LOS	C											
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

9: Jacaranda Blvd & I-75 SB Ramp

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	3	1270	0	0	0	0	1263	425	165	1055	0
Future Volume (vph)	57	3	1270	0	0	0	0	1263	425	165	1055	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	3.0					6.6	6.6	6.6	6.6	
Lane Util. Factor	0.95	0.95	1.00					0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.96	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1453	1426	1568					3374	1615	1770	3374	
Flt Permitted	0.95	0.96	1.00					1.00	1.00	0.15	1.00	
Satd. Flow (perm)	1453	1426	1568					3374	1615	282	3374	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	59	3	1323	0	0	0	0	1316	443	172	1099	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	143	0	0	0
Lane Group Flow (vph)	31	31	1323	0	0	0	0	1316	300	172	1099	0
Heavy Vehicles (%)	18%	50%	3%	0%	0%	0%	0%	7%	0%	2%	7%	0%
Turn Type	Split	NA	Free					NA	Perm	pm+pt	NA	
Protected Phases	3	3						6		5	2	
Permitted Phases			Free						6	2		
Actuated Green, G (s)	8.2	8.2	120.0					80.3	80.3	96.6	96.6	
Effective Green, g (s)	9.2	9.2	120.0					81.3	81.3	97.6	97.6	
Actuated g/C Ratio	0.08	0.08	1.00					0.68	0.68	0.81	0.81	
Clearance Time (s)	7.6	7.6						7.6	7.6	7.6	7.6	
Vehicle Extension (s)	3.0	3.0						5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	111	109	1568					2285	1094	349	2744	
v/s Ratio Prot	0.02	0.02						0.39		0.04	0.33	
v/s Ratio Perm			c0.84						0.19	0.36		
v/c Ratio	0.28	0.28	0.84					0.58	0.27	0.49	0.40	
Uniform Delay, d1	52.3	52.3	0.0					10.2	7.7	6.7	3.1	
Progression Factor	1.00	1.00	1.00					1.00	1.00	2.63	0.64	
Incremental Delay, d2	1.4	1.4	5.7					1.1	0.6	0.9	0.4	
Delay (s)	53.6	53.7	5.7					11.3	8.3	18.5	2.4	
Level of Service	D	D	A					B	A	B	A	
Approach Delay (s)		7.9			0.0			10.5			4.6	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			8.0									
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			68.9%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Auburn Rd & E Venice Ave

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	1175	9	7	703	95	5	3	1	152	3	129
Future Volume (vph)	168	1175	9	7	703	95	5	3	1	152	3	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	6.8		6.8	6.8		4.9	4.9			5.1	5.1
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98		1.00	0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1770	3497		1805	3446		1805	1829			1710	1615
Flt Permitted	0.26	1.00		0.18	1.00		0.53	1.00			0.73	1.00
Satd. Flow (perm)	485	3497		338	3446		1010	1829			1306	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	179	1250	10	7	748	101	5	3	1	162	3	137
RTOR Reduction (vph)	0	0	0	0	7	0	0	1	0	0	0	108
Lane Group Flow (vph)	179	1260	0	7	842	0	5	3	0	0	165	29
Heavy Vehicles (%)	2%	3%	17%	0%	3%	2%	0%	0%	0%	6%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2			4		3	8	
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	89.2	80.3		74.3	73.2		27.1	27.1			26.9	26.9
Effective Green, g (s)	90.2	81.3		76.3	74.2		28.1	28.1			27.9	27.9
Actuated g/C Ratio	0.69	0.63		0.59	0.57		0.22	0.22			0.21	0.21
Clearance Time (s)	6.8	7.8		7.8	7.8		5.9	5.9			6.1	6.1
Vehicle Extension (s)	2.5	3.5		2.5	3.5		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	437	2186		222	1966		218	395			280	346
v/s Ratio Prot	c0.03	c0.36		0.00	0.24			0.00				
v/s Ratio Perm	0.25			0.02			0.00				c0.13	0.02
v/c Ratio	0.41	0.58		0.03	0.43		0.02	0.01			0.59	0.08
Uniform Delay, d1	8.4	14.3		12.0	15.9		40.1	40.0			45.9	40.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.5	1.1		0.0	0.7		0.0	0.0			3.2	0.1
Delay (s)	8.9	15.4		12.0	16.5		40.2	40.0			49.1	40.9
Level of Service	A	B		B	B		D	D			D	D
Approach Delay (s)		14.6			16.5			40.1			45.4	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			18.9			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)			23.6			
Intersection Capacity Utilization			67.8%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

APPENDIX H

2025 TOTAL TRAFFIC SYNCHRO SUMMARY WORKSHEETS

Arterial Level of Service

01/28/2019

Arterial Level of Service: EB Laurel Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-75 NB Ramp	II	45	29.3	4.2	33.5	0.30	31.8	B
Knights Trail Rd	II	45	31.3	32.9	64.2	0.33	18.3	D
Jacaranda Blvd	II	45	114.7	11.1	125.8	1.43	41.0	A
Total	II		175.3	48.2	223.5	2.06	33.1	B

Arterial Level of Service: WB Laurel Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Knights Trail Rd	II	45	114.7	50.4	165.1	1.43	31.3	B
I-75 NB Ramp	II	45	31.3	22.7	54.0	0.33	21.7	D
I-75 SB Ramp	II	45	29.3	5.2	34.5	0.30	30.9	B
Total	II		175.3	78.3	253.6	2.06	29.2	B

HCM 6th Signalized Intersection Summary

1: I-75 SB Ramp & Laurel Rd

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑↑		↑↑
Traffic Volume (veh/h)	0	1141	709	761	1137	0	0	0	0	727	0	524
Future Volume (veh/h)	0	1141	709	761	1137	0	0	0	0	727	0	524
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1767	1841	1826	1796	0				1663	0	1856
Adj Flow Rate, veh/h	0	1201	0	801	1197	0				765	0	552
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	9	4	5	7	0				16	0	3
Cap, veh/h	0	1240		989	2472	0				808	0	728
Arrive On Green	0.00	0.37	0.00	0.59	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	3445	1560	3374	3503	0				3072	0	2768
Grp Volume(v), veh/h	0	1201	0	801	1197	0				765	0	552
Grp Sat Flow(s),veh/h/ln	0	1678	1560	1687	1706	0				1536	0	1384
Q Serve(g_s), s	0.0	56.2	0.0	29.9	0.0	0.0				39.1	0.0	29.4
Cycle Q Clear(g_c), s	0.0	56.2	0.0	29.9	0.0	0.0				39.1	0.0	29.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1240		989	2472	0				808	0	728
V/C Ratio(X)	0.00	0.97		0.81	0.48	0.00				0.95	0.00	0.76
Avail Cap(c_a), veh/h	0	1240		989	2472	0				808	0	728
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.50	0.50	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	49.5	0.0	29.6	0.0	0.0				57.8	0.0	54.3
Incr Delay (d2), s/veh	0.0	19.1	0.0	2.6	0.2	0.0				20.2	0.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	34.5	0.0	12.4	0.1	0.0				23.9	0.0	16.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	68.6	0.0	32.2	0.2	0.0				78.0	0.0	59.7
LnGrp LOS	A	E		C	A	A				E	A	E
Approach Vol, veh/h		1201	A		1998						1317	
Approach Delay, s/veh		68.6			13.0						70.3	
Approach LOS		E			B						E	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	56.8	69.0		46.5		125.8						
Change Period (Y+Rc), s	* 11	* 11		5.4		* 11						
Max Green Setting (Gmax), s	* 38	* 58		41.1		* 1E2						
Max Q Clear Time (g_c+I1), s	31.9	58.2		41.1		2.0						
Green Ext Time (p_c), s	1.7	0.0		0.0		27.4						
Intersection Summary												
HCM 6th Ctrl Delay				44.5								
HCM 6th LOS				D								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

2: I-75 NB Ramp & Laurel Rd

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	1595	0	0	1545	811	353	0	339	0	0	0
Future Volume (veh/h)	273	1595	0	0	1545	811	353	0	339	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1796	1707	0	0	1811	1767	1781	0	1796			
Adj Flow Rate, veh/h	300	1753	0	0	1698	0	388	0	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	7	13	0	0	6	9	8	0	7			
Cap, veh/h	520	2556	0	0	2047		461	0				
Arrive On Green	0.31	1.00	0.00	0.00	0.40	0.00	0.14	0.00	0.00			
Sat Flow, veh/h	3319	3329	0	0	3532	1497	3291	0	1522			
Grp Volume(v), veh/h	300	1753	0	0	1698	0	388	0	0			
Grp Sat Flow(s),veh/h/ln	1659	1622	0	0	1721	1497	1646	0	1522			
Q Serve(g_s), s	12.1	0.0	0.0	0.0	70.9	0.0	18.4	0.0	0.0			
Cycle Q Clear(g_c), s	12.1	0.0	0.0	0.0	70.9	0.0	18.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	520	2556	0	0	2047		461	0				
V/C Ratio(X)	0.58	0.69	0.00	0.00	0.83		0.84	0.00				
Avail Cap(c_a), veh/h	520	2556	0	0	2047		562	0				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	0.67	0.67	1.00	1.00	1.00			
Upstream Filter(I)	0.15	0.15	0.00	0.00	0.38	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	50.5	0.0	0.0	0.0	40.8	0.0	67.0	0.0	0.0			
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.0	1.6	0.0	10.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	5.8	0.1	0.0	0.0	36.9	0.0	13.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.7	0.2	0.0	0.0	42.4	0.0	77.4	0.0	0.0			
LnGrp LOS	D	A	A	A	D		E	A				
Approach Vol, veh/h	2053			1698			A	388			A	
Approach Delay, s/veh	7.5			42.4				77.4				
Approach LOS	A			D				E				
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	30.9	101.0		28.1		131.9						
Change Period (Y+Rc), s	6.8	6.8		* 6.7		6.8						
Max Green Setting (Gmax), s	19.2	94.2		* 26		120.2						
Max Q Clear Time (g_c+I1), s	14.1	72.9		20.4		2.0						
Green Ext Time (p_c), s	0.5	17.9		1.0		63.5						
Intersection Summary												
HCM 6th Ctrl Delay	28.4											
HCM 6th LOS	C											
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

3: Knights Trail Rd & Laurel Rd

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑↑	↵	↵	↵		↵	↑	↵↵
Traffic Volume (vph)	0	700	21	17	525	275	34	5	29	305	7	1474
Future Volume (vph)	0	700	21	17	525	275	34	5	29	305	7	1474
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9		5.9	5.9	5.9	4.7	4.7		5.9	5.9	5.9
Lane Util. Factor		0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	0.88
Frt		1.00		1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3340		1805	3282	1455	1719	1655		1570	1900	2707
Flt Permitted		1.00		0.15	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		3340		284	3282	1455	1719	1655		1570	1900	2707
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	753	23	18	565	296	37	5	31	328	8	1585
RTOR Reduction (vph)	0	1	0	0	0	209	0	30	0	0	0	108
Lane Group Flow (vph)	0	775	0	18	565	87	37	6	0	328	8	1477
Heavy Vehicles (%)	14%	7%	27%	0%	10%	11%	5%	0%	0%	15%	0%	5%
Turn Type		NA		Perm	NA	Perm	Split	NA		Split	NA	Prot
Protected Phases		6			2		3	3		4	4	4
Permitted Phases				2		2						
Actuated Green, G (s)		45.9		45.9	45.9	45.9	6.2	6.2		88.4	88.4	88.4
Effective Green, g (s)		46.9		46.9	46.9	46.9	7.2	7.2		89.4	89.4	89.4
Actuated g/C Ratio		0.29		0.29	0.29	0.29	0.05	0.05		0.56	0.56	0.56
Clearance Time (s)		6.9		6.9	6.9	6.9	5.7	5.7		6.9	6.9	6.9
Vehicle Extension (s)		5.0		5.0	5.0	5.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		979		83	962	426	77	74		877	1061	1512
v/s Ratio Prot		c0.23			0.17		c0.02	0.00		0.21	0.00	c0.55
v/s Ratio Perm				0.06		0.06						
v/c Ratio		0.79		0.22	0.59	0.20	0.48	0.09		0.37	0.01	0.98
Uniform Delay, d1		52.0		42.7	48.3	42.5	74.6	73.2		19.7	15.6	34.3
Progression Factor		0.55		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		5.1		5.9	2.6	1.1	4.7	0.5		0.3	0.0	17.8
Delay (s)		33.7		48.6	50.9	43.6	79.2	73.8		20.0	15.6	52.1
Level of Service		C		D	D	D	E	E		B	B	D
Approach Delay (s)		33.7			48.4			76.5			46.4	
Approach LOS		C			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			44.8				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			85.7%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

4: Jacaranda Blvd & Laurel Rd

01/28/2019

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↖	↗	↗
Traffic Volume (veh/h)	188	650	24	147	488	9
Future Volume (veh/h)	188	650	24	147	488	9
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1604	1648	1900	1900	1811	1159
Adj Flow Rate, veh/h	207	439	26	162	536	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	20	17	0	0	6	50
Cap, veh/h	702	611	137	709	629	358
Arrive On Green	0.44	0.44	0.44	0.44	0.36	0.36
Sat Flow, veh/h	1604	1397	117	1621	1725	982
Grp Volume(v), veh/h	207	439	188	0	536	10
Grp Sat Flow(s),veh/h/ln	1604	1397	1738	0	1725	982
Q Serve(g_s), s	4.0	12.4	0.0	0.0	13.8	0.3
Cycle Q Clear(g_c), s	4.0	12.4	3.0	0.0	13.8	0.3
Prop In Lane		1.00	0.14		1.00	1.00
Lane Grp Cap(c), veh/h	702	611	846	0	629	358
V/C Ratio(X)	0.29	0.72	0.22	0.00	0.85	0.03
Avail Cap(c_a), veh/h	1003	873	1145	0	737	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	8.7	11.1	8.4	0.0	14.1	9.8
Incr Delay (d2), s/veh	0.2	1.6	0.1	0.0	8.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	5.0	1.5	0.0	9.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.9	12.7	8.6	0.0	22.5	9.8
LnGrp LOS	A	B	A	A	C	A
Approach Vol, veh/h	646			188	546	
Approach Delay, s/veh	11.5			8.6	22.3	
Approach LOS	B			A	C	
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	26.0		22.0		26.0	
Change Period (Y+Rc), s	6.0		5.5		6.0	
Max Green Setting (Gmax), s	29.0		19.5		29.0	
Max Q Clear Time (g_c+l1), s	5.0		15.8		14.4	
Green Ext Time (p_c), s	1.0		0.7		2.4	
Intersection Summary						
HCM 6th Ctrl Delay	15.4					
HCM 6th LOS	B					

HCM 6th AWSC
5: Capri Isles Blvd & Edmondson Rd

01/28/2019

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	313	122	33	200	27	69	21	35	30	17	55
Future Vol, veh/h	47	313	122	33	200	27	69	21	35	30	17	55
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	0	6	0	0	6	0	3	0	0	0	0	3
Mvmt Flow	48	323	126	34	206	28	71	22	36	31	18	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.3	11.6	10.7	10.1
HCM LOS	C	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	55%	10%	13%	29%
Vol Thru, %	17%	65%	77%	17%
Vol Right, %	28%	25%	10%	54%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	482	260	102
LT Vol	69	47	33	30
Through Vol	21	313	200	17
RT Vol	35	122	27	55
Lane Flow Rate	129	497	268	105
Geometry Grp	1	1	1	1
Degree of Util (X)	0.215	0.672	0.391	0.17
Departure Headway (Hd)	6.003	4.865	5.245	5.809
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	597	740	684	615
Service Time	4.059	2.901	3.288	3.865
HCM Lane V/C Ratio	0.216	0.672	0.392	0.171
HCM Control Delay	10.7	17.3	11.6	10.1
HCM Lane LOS	B	C	B	B
HCM 95th-tile Q	0.8	5.2	1.9	0.6

HCM 6th TWSC
6: Auburn Rd & Edmondson Rd/Border Rd

01/28/2019

Intersection						
Int Delay, s/veh	7.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	278	114	163	248	54	194
Future Vol, veh/h	278	114	163	248	54	194
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	87	87	87	87	87	87
Heavy Vehicles, %	8	4	0	5	8	8
Mvmt Flow	320	131	187	285	62	223
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	451	0	1045	386
Stage 1	-	-	-	-	386	-
Stage 2	-	-	-	-	659	-
Critical Hdwy	-	-	4.1	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.2	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1120	-	247	649
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	504	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1120	-	198	649
Mov Cap-2 Maneuver	-	-	-	-	198	-
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	504	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		3.5		27.8	
HCM LOS					D	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	434	-	-	1120	-	
HCM Lane V/C Ratio	0.657	-	-	0.167	-	
HCM Control Delay (s)	27.8	-	-	8.9	0	
HCM Lane LOS	D	-	-	A	A	
HCM 95th %tile Q(veh)	4.6	-	-	0.6	-	

HCM 6th Signalized Intersection Summary

7: Jacaranda Blvd & Border Rd

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	151	185	103	125	123	262	281	140	162	316	140
Future Volume (veh/h)	144	151	185	103	125	123	262	281	140	162	316	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1693	1693	1693	1900	1900	1900	1856	1826	1826	1604	1648	1648
Adj Flow Rate, veh/h	153	161	197	110	133	131	279	299	149	172	336	149
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
Percent Heavy Veh, %	14	14	14	0	0	0	3	5	5	20	17	17
Cap, veh/h	185	175	200	172	207	183	310	456	227	306	368	163
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.12	0.40	0.40	0.06	0.34	0.34
Sat Flow, veh/h	332	403	462	303	479	422	1767	1150	573	1527	1082	480
Grp Volume(v), veh/h	511	0	0	374	0	0	279	0	448	172	0	485
Grp Sat Flow(s),veh/h/ln	1197	0	0	1204	0	0	1767	0	1723	1527	0	1562
Q Serve(g_s), s	20.7	0.0	0.0	0.0	0.0	0.0	11.2	0.0	24.2	7.0	0.0	34.0
Cycle Q Clear(g_c), s	48.5	0.0	0.0	27.8	0.0	0.0	11.2	0.0	24.2	7.0	0.0	34.0
Prop In Lane	0.30		0.39	0.29		0.35	1.00		0.33	1.00		0.31
Lane Grp Cap(c), veh/h	559	0	0	562	0	0	310	0	683	306	0	531
V/C Ratio(X)	0.91	0.00	0.00	0.67	0.00	0.00	0.90	0.00	0.66	0.56	0.00	0.91
Avail Cap(c_a), veh/h	559	0	0	562	0	0	310	0	768	306	0	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.0	0.0	0.0	25.4	0.0	0.0	25.7	0.0	28.1	27.6	0.0	36.2
Incr Delay (d2), s/veh	19.6	0.0	0.0	3.0	0.0	0.0	27.5	0.0	1.7	2.4	0.0	17.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	23.2	0.0	0.0	13.1	0.0	0.0	11.1	0.0	15.2	2.5	0.0	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	0.0	0.0	28.4	0.0	0.0	53.1	0.0	29.9	30.0	0.0	53.3
LnGrp LOS	D	A	A	C	A	A	D	A	C	C	A	D
Approach Vol, veh/h		511			374			727			657	
Approach Delay, s/veh		52.6			28.4			38.8			47.2	
Approach LOS		D			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.5	42.8		54.0	11.0	49.3		54.0				
Change Period (Y+Rc), s	5.0	5.0		5.5	5.0	5.0		5.5				
Max Green Setting (Gmax), s	12.5	43.5		48.5	6.0	50.0		48.5				
Max Q Clear Time (g_c+I1), s	13.2	36.0		50.5	9.0	26.2		29.8				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	2.9		2.4				
Intersection Summary												
HCM 6th Ctrl Delay				42.6								
HCM 6th LOS				D								

HCM 6th Signalized Intersection Summary

8: Jacaranda Blvd & I-75 NB Ramp

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	450	0	112	0	576	878	0	867	111
Future Volume (veh/h)	0	0	0	450	0	112	0	576	878	0	867	111
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1826	0	1678	0	1781	1781	0	1781	1856
Adj Flow Rate, veh/h				500	0	124	0	640	0	0	963	0
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				5	0	15	0	8	8	0	8	3
Cap, veh/h				551	0	450	0	1941		0	1941	
Arrive On Green				0.32	0.00	0.32	0.00	0.19	0.00	0.00	0.57	0.00
Sat Flow, veh/h				1739	0	1422	0	3474	1510	0	3474	1572
Grp Volume(v), veh/h				500	0	124	0	640	0	0	963	0
Grp Sat Flow(s),veh/h/ln				1739	0	1422	0	1692	1510	0	1692	1572
Q Serve(g_s), s				33.1	0.0	7.8	0.0	19.6	0.0	0.0	20.4	0.0
Cycle Q Clear(g_c), s				33.1	0.0	7.8	0.0	19.6	0.0	0.0	20.4	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				551	0	450	0	1941		0	1941	
V/C Ratio(X)				0.91	0.00	0.28	0.00	0.33		0.00	0.50	
Avail Cap(c_a), veh/h				803	0	656	0	1941		0	1941	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.76	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				39.3	0.0	30.7	0.0	28.7	0.0	0.0	15.3	0.0
Incr Delay (d2), s/veh				10.5	0.0	0.3	0.0	0.3	0.0	0.0	0.9	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				21.5	0.0	4.8	0.0	13.2	0.0	0.0	11.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				49.8	0.0	31.0	0.0	29.1	0.0	0.0	16.2	0.0
LnGrp LOS				D	A	C	A	C		A	B	
Approach Vol, veh/h					624			640	A		963	A
Approach Delay, s/veh					46.1			29.1			16.2	
Approach LOS					D			C			B	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		75.4				75.4		44.6				
Change Period (Y+Rc), s		* 7.6				* 7.6		7.6				
Max Green Setting (Gmax), s		* 50				* 50		54.4				
Max Q Clear Time (g_c+I1), s		21.6				22.4		35.1				
Green Ext Time (p_c), s		4.2				7.0		1.9				
Intersection Summary												
HCM 6th Ctrl Delay				28.3								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM Signalized Intersection Capacity Analysis

9: Jacaranda Blvd & I-75 SB Ramp

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	3	1270	0	0	0	0	1350	425	183	1106	0
Future Volume (vph)	57	3	1270	0	0	0	0	1350	425	183	1106	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	3.0					6.6	6.6	6.6	6.6	
Lane Util. Factor	0.95	0.95	1.00					0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.96	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1453	1426	1568					3374	1615	1770	3374	
Flt Permitted	0.95	0.96	1.00					1.00	1.00	0.13	1.00	
Satd. Flow (perm)	1453	1426	1568					3374	1615	239	3374	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	59	3	1323	0	0	0	0	1406	443	191	1152	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	149	0	0	0
Lane Group Flow (vph)	31	31	1323	0	0	0	0	1406	294	191	1152	0
Heavy Vehicles (%)	18%	50%	3%	0%	0%	0%	0%	7%	0%	2%	7%	0%
Turn Type	Split	NA	Free					NA	Perm	pm+pt	NA	
Protected Phases	3	3						6		5	2	
Permitted Phases			Free						6	2		
Actuated Green, G (s)	8.2	8.2	120.0					78.7	78.7	96.6	96.6	
Effective Green, g (s)	9.2	9.2	120.0					79.7	79.7	97.6	97.6	
Actuated g/C Ratio	0.08	0.08	1.00					0.66	0.66	0.81	0.81	
Clearance Time (s)	7.6	7.6						7.6	7.6	7.6	7.6	
Vehicle Extension (s)	3.0	3.0						5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	111	109	1568					2240	1072	338	2744	
v/s Ratio Prot	0.02	0.02						0.42		0.05	0.34	
v/s Ratio Perm			c0.84						0.18	0.40		
v/c Ratio	0.28	0.28	0.84					0.63	0.27	0.57	0.42	
Uniform Delay, d1	52.3	52.3	0.0					11.6	8.3	9.5	3.2	
Progression Factor	1.00	1.00	1.00					1.00	1.00	2.05	0.80	
Incremental Delay, d2	1.4	1.4	5.7					1.3	0.6	1.8	0.4	
Delay (s)	53.6	53.7	5.7					12.9	8.9	21.2	2.9	
Level of Service	D	D	A					B	A	C	A	
Approach Delay (s)		7.9			0.0			12.0			5.5	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			8.8		HCM 2000 Level of Service				A			
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			120.0		Sum of lost time (s)				19.8			
Intersection Capacity Utilization			72.3%		ICU Level of Service				C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Auburn Rd & E Venice Ave

01/28/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	1213	9	7	725	95	5	3	1	152	3	152
Future Volume (vph)	207	1213	9	7	725	95	5	3	1	152	3	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	6.8		6.8	6.8		4.9	4.9			5.1	5.1
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98		1.00	0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1770	3497		1805	3448		1805	1829			1710	1615
Flt Permitted	0.25	1.00		0.17	1.00		0.53	1.00			0.73	1.00
Satd. Flow (perm)	465	3497		322	3448		1010	1829			1306	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	220	1290	10	7	771	101	5	3	1	162	3	162
RTOR Reduction (vph)	0	0	0	0	7	0	0	1	0	0	0	127
Lane Group Flow (vph)	220	1300	0	7	865	0	5	3	0	0	165	35
Heavy Vehicles (%)	2%	3%	17%	0%	3%	2%	0%	0%	0%	6%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2			4		3	8	
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	89.2	80.4		73.2	72.2		27.1	27.1			26.9	26.9
Effective Green, g (s)	90.2	81.4		75.2	73.2		28.1	28.1			27.9	27.9
Actuated g/C Ratio	0.69	0.63		0.58	0.56		0.22	0.22			0.21	0.21
Clearance Time (s)	6.8	7.8		7.8	7.8		5.9	5.9			6.1	6.1
Vehicle Extension (s)	2.5	3.5		2.5	3.5		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	435	2189		209	1941		218	395			280	346
v/s Ratio Prot	c0.04	c0.37		0.00	0.25			0.00				
v/s Ratio Perm	0.31			0.02			0.00				c0.13	0.02
v/c Ratio	0.51	0.59		0.03	0.45		0.02	0.01			0.59	0.10
Uniform Delay, d1	9.0	14.5		12.5	16.6		40.1	40.0			45.9	41.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.7	1.2		0.0	0.7		0.0	0.0			3.2	0.1
Delay (s)	9.7	15.7		12.5	17.3		40.2	40.0			49.1	41.1
Level of Service	A	B		B	B		D	D			D	D
Approach Delay (s)		14.8			17.3			40.1			45.1	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			19.3				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)			23.6		
Intersection Capacity Utilization			68.8%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

APPENDIX I

SITE ACCESS SYNCHRO SUMMARY WORKSHEETS

HCM 2010 TWSC
33: Driveway 1 & Laurel Rd

01/28/2019

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Vol, veh/h	936	97	6	760	57	4
Future Vol, veh/h	936	97	6	760	57	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	135	185	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	2	2	5	2	2
Mvmt Flow	1006	104	6	817	61	4
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1110	0	1835	1006
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	829	-
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	-	-	629	-	83	293
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	429	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	629	-	82	293
Mov Cap-2 Maneuver	-	-	-	-	82	-
Stage 1	-	-	-	-	349	-
Stage 2	-	-	-	-	429	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		119.1	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	82	293	-	-	629	-
HCM Lane V/C Ratio	0.747	0.015	-	-	0.01	-
HCM Control Delay (s)	126.2	17.5	-	-	10.8	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	3.7	0	-	-	0	-

HCM 6th TWSC
41: Driveway 2 & Laurel Rd

09/28/2018

Intersection						
Int Delay, s/veh	9.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Vol, veh/h	744	196	13	645	115	7
Future Vol, veh/h	744	196	13	645	115	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	135	185	-	0	185
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	2	2	5	2	2
Mvmt Flow	800	211	14	694	124	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1011	0	1522	800
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	722	-
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	-	-	686	-	130	385
Stage 1	-	-	-	-	442	-
Stage 2	-	-	-	-	481	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	686	-	127	385
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	481	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		131.9	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	127	385	-	-	686	-
HCM Lane V/C Ratio	0.974	0.02	-	-	0.02	-
HCM Control Delay (s)	139	14.5	-	-	10.4	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	6.6	0.1	-	-	0.1	-

HCM 6th TWSC
42: Border Rd & Driveway 3

01/31/2019

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	421	427	100	59	36
Future Vol, veh/h	61	421	427	100	59	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	135	0	135
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	5	5	2	2	2
Mvmt Flow	66	458	464	109	64	39
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	573	0	-	0	1054	464
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	590	-
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	1000	-	-	-	250	598
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1000	-	-	-	234	598
Mov Cap-2 Maneuver	-	-	-	-	234	-
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	554	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		20.5		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1000	-	-	-	234	598
HCM Lane V/C Ratio	0.066	-	-	-	0.274	0.065
HCM Control Delay (s)	8.9	-	-	-	26.1	11.4
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.1	0.2

HCM 6th TWSC
44: Border Rd & Driveway 4

01/31/2019

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	453	413	50	29	17
Future Vol, veh/h	30	453	413	50	29	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	135	0	135
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	5	5	2	2	2
Mvmt Flow	33	492	449	54	32	18
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	503	0	-	0	1007	449
Stage 1	-	-	-	-	449	-
Stage 2	-	-	-	-	558	-
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	1061	-	-	-	267	610
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	573	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1061	-	-	-	259	610
Mov Cap-2 Maneuver	-	-	-	-	259	-
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	573	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		17.2		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1061	-	-	-	259	610
HCM Lane V/C Ratio	0.031	-	-	-	0.122	0.03
HCM Control Delay (s)	8.5	-	-	-	20.8	11.1
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.1