



Engineering & Planning, Inc.

1172 SW 30<sup>th</sup> Street • Suite 500 • Palm City • Florida • 34990  
(772) 286-8030 • [www.mackenzieengineeringinc.com](http://www.mackenzieengineeringinc.com)

**Memorandum**

To: Bob Fromm, Kolter Communities  
Scott Morton, Kolter Communities

From: Shaun Mackenzie, P.E.

Date: March 25, 2020

Re: Verano DRI  
Annual Traffic Monitoring 2020

---

MacKenzie Engineering and Planning, Inc. (MEP) provided this analysis of Verano Development of Regional Impact (DRI) transportation conditions to satisfy the development order conditions the DRI. MEP has performed signal warrant and/or operational analyses for the following intersections and road segments:

Signal Warrant Analysis and Operational Analysis:

- Condition #36: Glades Cut-Off Road & Commerce Center Drive

Operational Analysis:

- Condition #34: St. Lucie West Boulevard & Commerce Center Drive (Roundabout)
- Conditions #39 & 40: Commerce Center Dr: Reserve Blvd. to Glades Cut Off Road

Signal warrant and operational analyses are called for in the Verano DRI Development Order (beginning in January 2009).

**Development of Intersection Turning Movement Volumes**

AM and PM peak hour turning movement counts were performed at the following intersections:

- Glades Cut-Off Road & Commerce Center Drive – January 30, 2019
- St. Lucie West Boulevard & Commerce Center Drive (Roundabout) – February 12, 2019

A peak season factor (found within the 2018 Florida Department of Transportation (FDOT) Traffic Information Database) were applied to the volumes at each intersection based on the traffic count date to reflect peak season traffic conditions.

The St. Lucie TPO database for St. Lucie West Boulevard west of I-95 has a linear growth rate of 1.48%, therefore a conservative 2.0% growth rate was used. The 2.0% growth rate was applied to the 2019 peak season volumes to “grow” the volumes into the future. The intersection volumes were projected into the future as follows:

- Glades Cut-Off Road & Commerce Center Drive – 2023 peak season
- St. Lucie West Blvd & Commerce Center Drive (Roundabout) – 2023 peak season

## **Warrant Evaluation**

### Warrant 1 - Eight-Hour Vehicular Volume

The highest hourly volumes at the intersection was analyzed to determine if it met the criteria related to Warrant 1, the Eight-Hour Vehicular Volume Warrant. Warrant 1 has three conditions (Condition A, Condition B, and Combination) that trigger the need for a potential traffic signal. Condition A, the Minimum Vehicular Volume condition, is intended for application at intersections where a large volume of intersecting traffic is the principal reason for installing a traffic signal. Condition B, the Interruption of Continuous Traffic condition, is intended for application at intersections where Condition A is not satisfied and where the traffic volume on the major street is so heavy that traffic on the minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. Or Combination, a blending of Conditions A and B, where neither intersection will individually meet a traffic signal warrant but together the roadway conditions may require the installation of a traffic signal.

The projected 2023 peak season volumes at the intersection of Glades Cut-Off Road & Commerce Center Drive do not meet the criteria for Warrant 1, as shown on Exhibits 1 & 2. The existing minor street approach volumes for this intersection are low and the major street approach volumes do not currently cause excessive amounts of delay/conflict for the minor street approach volumes. Furthermore, this warrant is intended to apply to at least eight (8) hours of an average day, and at this intersection the highest hour of the peak season fails to meet either condition. Therefore, Warrant 1 is not met and signalization is not recommended.

### Warrant 2 - Four-Hour Vehicular Volume

The highest hourly volumes at the intersection was analyzed to determine if it met the criteria related to Warrant 2, the Four-Hour Vehicular Volume Warrant. Warrant 2 is intended for application at intersections where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

The projected 2023 peak season volumes at the intersection of Glades Cut-Off Road & Commerce Center Drive does not meet the criteria for Warrant 2, as shown on Exhibits 1 & 2. As discussed for Warrant 1, the existing minor street approach volumes for this intersection are low and the major street approach volumes do not currently cause excessive amounts of delay/conflict for the minor street approach volumes. Furthermore, this warrant is intended to apply to at least four (4) hours of an average day, and the highest hour of the peak season at this intersection fails to meet the criteria. Therefore, Warrant 2 is not met and signalization is not recommended.

### Warrant 3 - Peak Hour

The peak hour volumes were analyzed at the intersection to determine if it met the criteria related to Warrant 3, the Peak Hour Warrant. Warrant 3 is intended for application at intersections where traffic conditions are such that for a minimum of one hour of an average day, the minor street traffic suffers undue delay when entering or crossing the major street.

The projected 2023 peak season volumes at the intersection of Glades Cut-Off Road & Commerce Center Drive do not meet the criteria for Warrant 3. As discussed for Warrants 1 and 2, the existing minor street approach volumes for this intersection are low and the major street approach volumes do not currently cause excessive amounts of delay/conflict for the minor street approach volumes. Furthermore, this warrant is intended to apply to unusual cases, such as office or industrial complexes, manufacturing plants, or high-occupancy vehicle facilities that are projected to attract or discharge large numbers of vehicles over a short time. Therefore, Warrant 3 is not met and signalization is not recommended.

### **Roundabout Analysis (Reserve Boulevard and Commerce Center Drive)**

A 2% growth rate was applied to the existing Year 2019 volumes to project Year 2023 traffic volumes. The HCM 2010 analysis projects that the roundabout will operate at an acceptable level of service for the year 2023. In the AM and PM peak hours, the roundabout is projected to operate at level of service A.

- Reserve Boulevard / Commerce Center Dr. (Roundabout) AM Peak Hour – 2023 LOS A
- Reserve Boulevard / Commerce Center Dr. (Roundabout) PM Peak Hour – 2023 LOS A

The roundabout operates acceptably, is projected to operate acceptably well into the future, and no action is needed.

### Intersection Analysis

The intersection of Glades Cut-Off Road & Commerce Center Drive was analyzed using the HCS 7 TWSC for projected 2023 AM and PM peak hour conditions. The resulting level of service (LOS)/operation for the intersection is as follows:

- Glades Cut-Off Road / Commerce Center Drive AM Peak Hour – LOS A
- Glades Cut-Off Road / Commerce Center Drive PM Peak Hour – LOS A

### Commerce Center Drive Roadway Analysis

The 2023 peak hour directional volumes on Commerce Center Drive from Glades Cut-Off Road to Reserve Boulevard were projected and then analyzed during the AM and PM peak hour conditions. Roadway Capacities were developed from FDOT’s 2013 Q/LOS manual.

Table 1. Roadway Analysis

Roadway	From	To	Lanes	Class	Service Capacity	2020 AM Peak Hour		2020 PM Peak Hour		2023 AM Peak Hour		2023 PM Peak Hour		Acceptable Capacity	
						NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Commerce Center Drive	Glades Cut off Rd	Industrial Park	2	2	800	204	272	152	175	216	289	161	186	YES	YES
	Industrial Park	Reserve Blvd	2	1	880	219	268	157	173	232	284	167	184	YES	YES

Commerce Center Drive has adequate roadway capacity during the AM and PM peak hour peak season conditions.

## **Conclusion**

The intersection of Glades Cut-Off Road & Commerce Center Drive was analyzed to determine if a traffic signal is warranted based on projected 2023 peak season traffic volumes. A Traffic signal is not warranted at the intersection during existing 2019 or projected 2023 peak season conditions. The intersection operates at level of service A. Projected operation of the Reserve Boulevard & Commerce Center Drive roundabout was performed for 2023 conditions (three year period). The roundabout is projected to operate acceptably at level of service A in 2023 peak hour peak season conditions.

Therefore, operational improvements, traffic signals and/or modifications of the roundabout are not warranted and Conditions 34, 36, & 43 are satisfied until the next biennial report.

No improvements of Commerce Center Drive are needed based on the analysis. Therefore Conditions 39 and 40 of the DRI Development Order are satisfied until the next biennial report.

Please do not hesitate to call (772) 345-1948 if you have any questions.

## Attachments

- Warrant Analysis
- Volume Development Sheets
- 2023 Turning Movement Counts
- Intersection Analysis

---

Shaun G. MacKenzie P.E.  
PE Number 61751  
CA 29013

**Exhibit 1 - AM Peak Hour Warrant/Analysis**  
**Warrant 1**  
**AM**

<b>Condition A</b>			
	veh/hr on major street (totaling both directions)	veh/hr on minor street (higher volume direction only)	met?
Glades Cut-Off Rd & Commerce Center Pkwy (2019)	676	187	NO

<b>Condition B</b>			
	veh/hr on major street (totaling both directions)	veh/hr on minor street (higher volume direction only)	met?
Glades Cut-Off Rd & Commerce Center Pkwy	676	187	NO

**Warrant 2**

	veh/hr on major street (totaling both directions)	veh/hr on minor street (higher volume direction only)	met?
Glades Cut-Off Rd & Commerce Center Pkwy	676	187	NO

**Exhibit 2 - PM Peak Hour Warrant/Analysis**  
**Warrant 1**  
**PM**

<b>Condition A</b>			
	veh/hr on major street (totaling both directions)	veh/hr on minor street (higher volume direction only)	met?
Glades Cut-Off Rd & Commerce Center Pkwy (2019)	470	53	NO

<b>Condition B</b>			
	veh/hr on major street (totaling both directions)	veh/hr on minor street (higher volume direction only)	met?
Glades Cut-Off Rd & Commerce Center Pkwy	470	53	NO

**Warrant 2**

	veh/hr on major street (totaling both directions)	veh/hr on minor street (higher volume direction only)	met?
Glades Cut-Off Rd & Commerce Center Pkwy	470	53	NO

AM PEAK HOUR TURNING MOVEMENTS  
 EXHIBIT 3  
 Commerce Cnt Dr & Glades Cutoff

	ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr	totals	
7:00 AM			0	46	36		13	54		0	67	0	8	0			0	224
7:15 AM			0	68	81		10	61		0	40	0	13	0			0	273
7:30 AM			0	51	38		7	28		0	34	0	12	0			0	170
7:45 AM			0	46	20		9	40		0	27	0	18	0			0	160
8:00 AM			0	25	22		9	46		0	36	0	8	0			0	146
8:15 AM			0	32	22		8	41		0	27	0	11	0			0	141
8:30 AM			0	33	12		8	28		0	23	0	8	0			0	112
8:45 AM			0	30	11		10	23		0	24	0	11	0			0	109
7:00 AM			0	0	211	175	0	39	183	0	0	168	0	51	0	0	0	827

Count Taken: 1/30/2019  
 Buildout year: 2023  
 Growth Rate: 2.00%  
 PSCF: 1.03

	ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr
1/30/2019	0	0	211	175	0	39	183	0	0	168	0	51	0	0	0	0
Seasonal Factor	0	0	6	5	0	1	5	0	0	5	0	2	0	0	0	0
Adjusted Volumes	0	0	217	180	0	40	188	0	0	173	0	53	0	0	0	0
Growth	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	0%	2%	2%	2%	0%	2%
2023 Volumes	0	0	235	195	0	43	203	0	0	187	0	57	0	0	0	0



PM PEAK HOUR TURNING MOVEMENTS  
EXHIBIT 4  
Commerce Cnt Dr & Glades Cutoff

	ebu	ebl	ebr	ebl	wbu	wbl	wbr	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr	totals
4:00 PM	0	0	54	23	0	8	23	0	0	13	0	8	0	0	0	0	129
4:15 PM	0	0	26	15	0	10	21	0	0	25	0	12	0	0	0	0	109
4:30 PM	0	0	34	47	0	16	27	0	0	16	0	15	0	0	0	0	155
4:45 PM	0	0	34	26	0	3	30	0	0	11	0	10	0	0	0	0	114
5:00 PM	0	0	38	31	0	10	31	0	0	8	0	8	0	0	0	0	126
5:15 PM	0	0	33	26	0	17	19	0	0	13	0	10	0	0	0	0	118
5:30 PM	0	0	37	24	0	3	23	0	0	29	0	4	0	0	0	0	120
5:45 PM	0	0	35	11	0	8	28	0	0	19	0	8	0	0	0	0	109
4:30 PM		0	0	139	130	0	46	107	0	0	48	0	43	0	0	0	513

Count Taken: 1/30/2019  
Buildout year: 2023  
Growth Rate: 2.00%  
PSCF: 1.03

	ebu	ebl	ebr	ebl	wbu	wbl	wbr	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr
1/30/2019	0	0	139	130	0	46	107	0	0	48	0	43	0	0	0	0
Seasonal Factor	0	0	4	4	0	1	3	0	0	1	0	1	0	0	0	0
Adjusted Volumes	0	0	143	134	0	47	110	0	0	49	0	44	0	0	0	0
Growth	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	0%	2%	2%	2%	0%	2%
2023 Volumes	0	0	155	145	0	51	119	0	0	53	0	48	0	0	0	0

AM PEAK HOUR TURNING MOVEMENTS  
EXHIBIT 5  
Commerce Cnt Dr & SLW Blvd

	ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr	totals
7:00 AM	0	3	44	4	1	8	28	73	0	3	8	4	0	57	6	16	255
7:15 AM	0	2	49	5	3	4	15	47	0	4	10	7	0	70	17	3	236
7:30 AM	0	2	59	4	0	5	14	40	0	9	15	0	1	69	14	5	237
7:45 AM	0	3	55	7	3	10	23	39	1	10	22	1	0	46	10	5	235
8:00 AM	0	3	47	5	3	11	21	37	0	8	13	4	0	47	7	7	213
8:15 AM	0	5	54	14	3	17	30	29	0	13	3	1	0	38	9	3	219
8:30 AM	0	6	63	13	1	17	29	42	0	7	6	3	0	31	4	9	231
8:45 AM	0	13	80	9	0	19	31	39	0	6	9	2	0	28	16	10	262
7:00 AM																	
8:00 AM	0	10	207	20	7	27	80	199	1	26	55	12	1	242	47	29	963

Count Taken: 2/12/2019  
Buildout year: 2023  
Growth Rate: 2.00%  
PSCF: 1.00

	ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr
2/12/2019	0	10	207	20	7	27	80	199	1	26	55	12	1	242	47	29
Seasonal Factor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Volumes	0	10	207	20	7	27	80	199	1	26	55	12	1	242	47	29
Growth	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2023 Volumes	0	11	224	22	8	29	87	215	1	28	60	13	1	262	51	31

PM PEAK HOUR TURNING MOVEMENTS  
EXHIBIT 6  
Commerce Cnt Dr & SLW Blvd

	ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr	totals	
4:00 PM	0	8	56	18	2	12	55	47	0	21	14	4	1	27	6	14	285	
4:15 PM	0	9	39	9	0	21	52	43	0	33	20	3	0	37	8	18	292	
4:30 PM	0	12	64	13	1	25	47	55	0	23	15	4	0	62	24	15	360	
4:45 PM	0	14	57	18	3	24	42	47	0	26	11	5	0	43	18	14	322	
5:00 PM	0	12	51	14	0	24	59	51	0	12	9	7	0	66	25	12	342	
5:15 PM	0	16	77	17	0	18	47	44	0	14	16	10	0	51	26	14	350	
5:30 PM	0	9	74	21	0	11	46	57	0	17	5	4	0	55	19	17	335	
5:45 PM	0	13	67	24	0	25	50	39	0	13	10	4	0	96	28	17	386	
5:00 PM	6:00 PM	0	50	269	76	0	78	202	191	0	56	40	25	0	268	98	60	1413

Count Taken: 2/12/2019  
Buildout year: 2023  
Growth Rate: 2.00%  
PSCF: 1.00

	ebu	ebl	ebt	ebr	wbu	wbl	wbt	wbr	nbu	nbl	nbt	nbr	sbu	sbl	sbt	sbr
2/12/2019	0	50	269	76	0	78	202	191	0	56	40	25	0	268	98	60
Seasonal Factor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Volumes	0	50	269	76	0	78	202	191	0	56	40	25	0	268	98	60
Growth	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2023 Volumes	0	54	291	82	0	84	219	207	0	61	43	27	0	290	106	65

# HCS7 Roundabouts Report

General Information					Site Information				
Analyst	MEP				Intersection	Commerce Cnt Dr&SLW Blvd			
Agency or Co.	MEP				E/W Street Name	Commerce Centre Dr			
Date Performed	3/25/2020				N/S Street Name	St. Lucie W Blvd			
Analysis Year	2020				Analysis Time Period (hrs)	0.25			
Time Period					Peak Hour Factor	0.95			
Project Description	2023 AM Peak				Jurisdiction				

## Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0
Lane Assignment	L		TR		L		TR		L		TR		L		TR	
Volume (V), veh/h	0	11	224	22	8	29	87	215	1	28	60	13	1	262	51	31
Percent Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Flow Rate (v <sub>PCE</sub> ), pc/h	0	12	243	24	9	31	94	233	1	30	65	14	1	284	55	34
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	2				2				2				2			
Pedestrians Crossing, p/h	0				0				0				0			

## Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.3276		4.6453	4.3276		4.6453	4.3276		4.6453	4.3276	
Follow-Up Headway (s)	2.6667	2.5352		2.6667	2.5352		2.6667	2.5352		2.6667	2.5352	

## Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v <sub>e</sub> ), pc/h	12	267		40	327		31	79		285	89	
Entry Volume veh/h	12	259		39	317		30	77		277	86	
Circulating Flow (v <sub>c</sub> ), pc/h	381			109			549			165		
Exiting Flow (v <sub>ex</sub> ), pc/h	550			158			311			111		
Capacity (c <sub>PCE</sub> ), pc/h	951	1027		1221	1294		815	890		1160	1234	
Capacity (c), veh/h	923	997		1186	1257		791	865		1126	1198	
v/c Ratio (x)	0.01	0.26		0.03	0.25		0.04	0.09		0.25	0.07	

## Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	4.0	6.2		3.3	5.1		4.9	5.0		5.5	3.6	
Lane LOS	A	A		A	A		A	A		A	A	
95% Queue, veh	0.0	1.0		0.1	1.0		0.1	0.3		1.0	0.2	
Approach Delay, s/veh	6.1			4.9			5.0			5.0		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh   LOS	5.2						A					

# HCS7 Roundabouts Report

General Information					Site Information				
Analyst	MEP				Intersection	Commerce Cnt Dr&SLW Blvd			
Agency or Co.	MEP				E/W Street Name	Commerce Centre Dr			
Date Performed	3/25/2020				N/S Street Name	St. Lucie W Blvd			
Analysis Year	2020				Analysis Time Period (hrs)	0.25			
Time Period					Peak Hour Factor	0.95			
Project Description	2023 PM Peak				Jurisdiction				

## Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0
Lane Assignment	L		TR		L		TR		L		TR		L		TR	
Volume (V), veh/h	0	54	291	82	0	84	219	207	0	61	43	27	0	290	106	65
Percent Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Flow Rate (v <sub>PCE</sub> ), pc/h	0	59	316	89	0	91	237	224	0	66	47	29	0	314	115	70
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	2				2				2				2			
Pedestrians Crossing, p/h	0				0				0				0			

## Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.3276		4.6453	4.3276		4.6453	4.3276		4.6453	4.3276	
Follow-Up Headway (s)	2.6667	2.5352		2.6667	2.5352		2.6667	2.5352		2.6667	2.5352	

## Flow Computations, Capacity and v/c Ratios

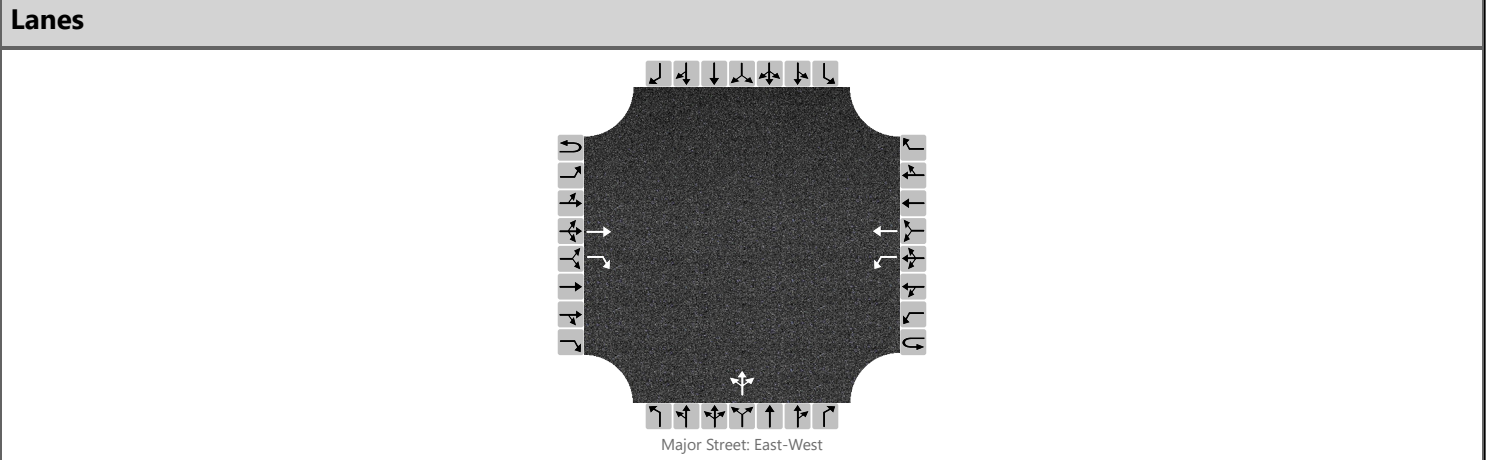
Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v <sub>e</sub> ), pc/h	59	405		91	461		66	76		314	185	
Entry Volume veh/h	57	393		88	448		64	74		305	180	
Circulating Flow (v <sub>c</sub> ), pc/h	520			172			689			394		
Exiting Flow (v <sub>ex</sub> ), pc/h	659			373			330			295		
Capacity (c <sub>PCE</sub> ), pc/h	837	913		1152	1227		716	791		940	1016	
Capacity (c), veh/h	812	886		1119	1191		695	768		912	986	
v/c Ratio (x)	0.07	0.44		0.08	0.38		0.09	0.10		0.33	0.18	

## Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	5.1	9.5		3.9	6.7		6.2	5.7		7.6	5.4	
Lane LOS	A	A		A	A		A	A		A	A	
95% Queue, veh	0.2	2.3		0.3	1.8		0.3	0.3		1.5	0.7	
Approach Delay, s/veh	8.9			6.2			5.9			6.8		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh   LOS	7.1						A					

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	MEP	Intersection	Commerce & Glades Cutoff				
Agency/Co.	MEP	Jurisdiction					
Date Performed	3/25/2020	East/West Street	Glades Cut Off Rd				
Analysis Year	2020	North/South Street	Commerce Centre Dr				
Time Analyzed		Peak Hour Factor	0.95				
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25				
Project Description	2023 AM Peak Hour						



**Vehicle Volumes and Adjustments**

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LTR					
Volume, V (veh/h)			235	195		43	203			187	0	57				
Percent Heavy Vehicles (%)						3				3	3	3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

**Critical and Follow-up Headways**

Base Critical Headway (sec)						4.1					7.1	6.5	6.2				
Critical Headway (sec)						4.13					6.43	6.53	6.23				
Base Follow-Up Headway (sec)						2.2					3.5	4.0	3.3				
Follow-Up Headway (sec)						2.23					3.53	4.03	3.33				

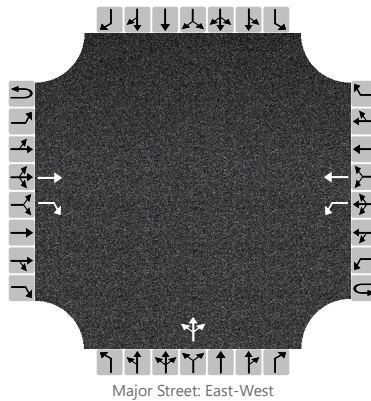
**Delay, Queue Length, and Level of Service**

Flow Rate, v (veh/h)						45					257					
Capacity, c (veh/h)						1102					522					
v/c Ratio						0.04					0.49					
95% Queue Length, Q <sub>95</sub> (veh)						0.1					2.7					
Control Delay (s/veh)						8.4					18.4					
Level of Service, LOS						A					C					
Approach Delay (s/veh)					1.5				18.4							
Approach LOS									C							

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	MEP			Intersection	Commerce & Glades Cutoff		
Agency/Co.	MEP			Jurisdiction			
Date Performed	3/25/2020			East/West Street	Glades Cut Off Rd		
Analysis Year	2020			North/South Street	Commerce Centre Dr		
Time Analyzed				Peak Hour Factor	0.95		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	2023 PM Peak Hour						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	0	1	1	0	1	1	0	0	1	0		0	0	0	
Configuration			T	R		L	T			LTR						
Volume, V (veh/h)			155	145		51	119			53	0	48				
Percent Heavy Vehicles (%)						3				3	3	3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1	6.5	6.2				
Critical Headway (sec)						4.13				6.43	6.53	6.23				
Base Follow-Up Headway (sec)						2.2				3.5	4.0	3.3				
Follow-Up Headway (sec)						2.23				3.53	4.03	3.33				

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						54				107						
Capacity, c (veh/h)						1237				692						
v/c Ratio						0.04				0.15						
95% Queue Length, Q <sub>95</sub> (veh)						0.1				0.5						
Control Delay (s/veh)						8.0				11.1						
Level of Service, LOS						A				B						
Approach Delay (s/veh)					2.4				11.1							
Approach LOS									B							

# KMF Traffic Group, LLC

Stuart, FL  
(772) 221-7971

Manual Traffic Count - All Traffic  
Commerce Centre Dr and Reverse Blvd  
Port St Lucie, FL

File Name : AMPMCIRCLE  
Site Code : MK1905  
Start Date : 2/12/2019  
Page No : 1

### Groups Printed- All Traffic

Start Time	Commerce Centre Dr NB					Commerce Centre Dr SB					Reverse Blvd EB					Reverse Blvd WB					Int. Total
	Right	Thru	Left	UTurn	App. Total	Right	Thru	Left	UTurn	App. Total	Right	Thru	Left	UTurn	App. Total	Right	Thru	Left	UTurn	App. Total	
07:00 AM	4	8	3	0	15	16	6	57	0	79	4	44	3	0	51	73	28	8	1	110	255
07:15 AM	7	10	4	0	21	3	17	70	0	90	5	49	2	0	56	47	15	4	3	69	236
07:30 AM	0	15	9	0	24	5	14	69	1	89	4	59	2	0	65	40	14	5	0	59	237
07:45 AM	1	22	10	1	34	5	10	46	0	61	7	55	3	0	65	39	23	10	3	75	235
Total	12	55	26	1	94	29	47	242	1	319	20	207	10	0	237	199	80	27	7	313	963
08:00 AM	4	13	8	0	25	7	7	47	0	61	5	47	3	0	55	37	21	11	3	72	213
08:15 AM	1	3	13	0	17	3	9	38	0	50	14	54	5	0	73	29	30	17	3	79	219
08:30 AM	3	6	7	0	16	9	4	31	0	44	13	63	6	0	82	42	29	17	1	89	231
08:45 AM	2	9	6	0	17	10	16	28	0	54	9	80	13	0	102	39	31	19	0	89	262
Total	10	31	34	0	75	29	36	144	0	209	41	244	27	0	312	147	111	64	7	329	925
04:00 PM	4	14	21	0	39	14	6	27	1	48	18	56	8	0	82	47	55	12	2	116	285
04:15 PM	3	20	33	0	56	18	8	37	0	63	9	39	9	0	57	43	52	21	0	116	292
04:30 PM	4	15	23	0	42	15	24	62	0	101	13	64	12	0	89	55	47	25	1	128	360
04:45 PM	5	11	26	0	42	14	18	43	0	75	18	57	14	0	89	47	42	24	3	116	322
Total	16	60	103	0	179	61	56	169	1	287	58	216	43	0	317	192	196	82	6	476	1259
05:00 PM	7	9	12	0	28	12	25	66	0	103	14	51	12	0	77	51	59	24	0	134	342
05:15 PM	10	16	14	0	40	14	26	51	0	91	17	77	16	0	110	44	47	18	0	109	350
05:30 PM	4	5	17	0	26	17	19	55	0	91	21	74	9	0	104	57	46	11	0	114	335
05:45 PM	4	10	13	0	27	17	28	96	0	141	24	67	13	0	104	39	50	25	0	114	386
Total	25	40	56	0	121	60	98	268	0	426	76	269	50	0	395	191	202	78	0	471	1413
Grand Total	63	186	219	1	469	179	237	823	2	1241	195	936	130	0	1261	729	589	251	20	1589	4560
Apprch %	13.4	39.7	46.7	0.2		14.4	19.1	66.3	0.2		15.5	74.2	10.3	0		45.9	37.1	15.8	1.3		
Total %	1.4	4.1	4.8	0	10.3	3.9	5.2	18	0	27.2	4.3	20.5	2.9	0	27.7	16	12.9	5.5	0.4	34.8	







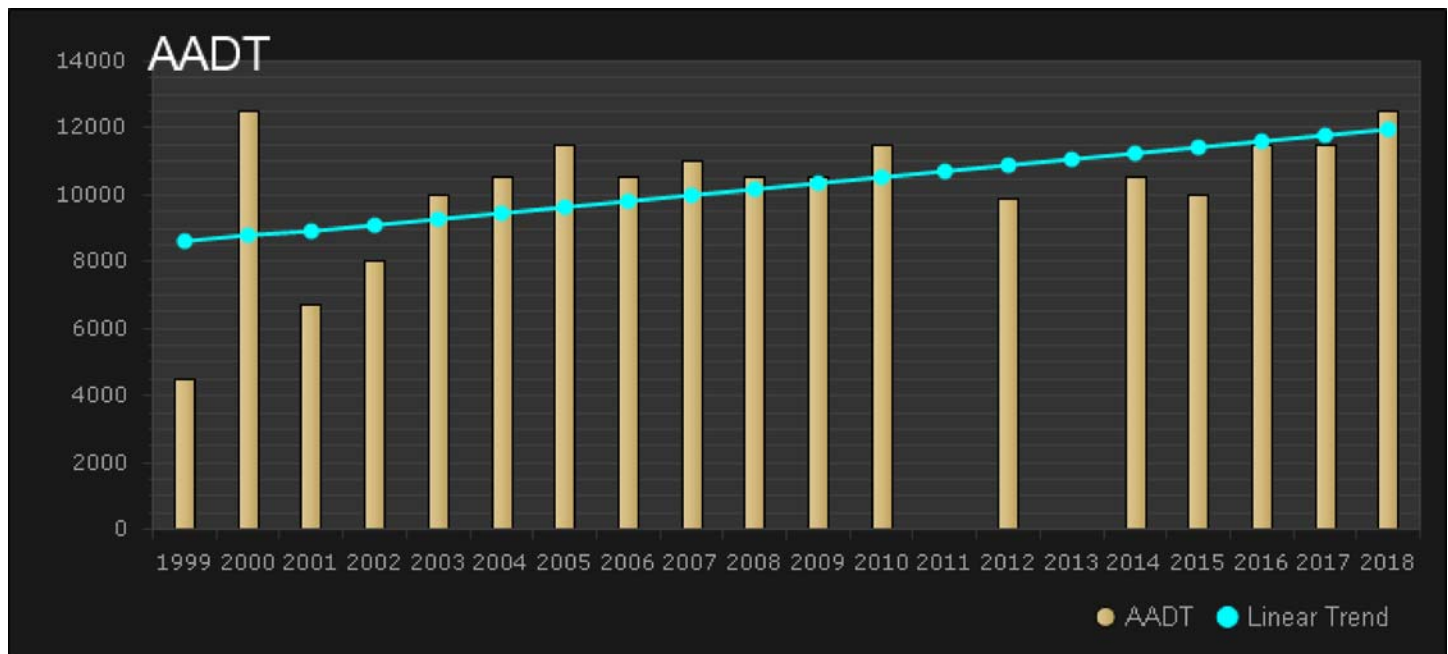




## Station 152

ST LUCIE WEST BLV W. OF I-95 RAMP

Linear Growth = 1.48%



Year	Station	AADT	K100	Avg DFactor	Heavy Vehicle %	AM Peak Vol	PM Peak Vol
Location: Station 152-ST LUCIE WEST BLV W. OF I-95 RAMP							
2018	152	12500	0.09	0.54	5.42	983	1081
2017	152	11500	0.091	0.526	4.74	956	1072
2016	152	11500	0.088	0.5315	4.71	955	1010
2015	152	10000	0.09	0.5455	10.37	800	903
2014	152	10500	0.09	0.536	4.94	926	939
2012	152	9900	0.091	0.505	3.29	864	904
2010	152	11500	0.094	0.534	5.29	939	1087
2009	152	10500	0.091	0.532		920	963
2008	152	10500	0.095	0.526		858	1017
2007	152	11000	0.09	0.515		925	969

2018 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL  
 CATEGORY: 9402 WEST-W OF I95

WEEK	DATES	SF	MOCF: 0.90 PSCF
1	01/01/2018 - 01/06/2018	1.00	1.11
2	01/07/2018 - 01/13/2018	0.98	1.09
3	01/14/2018 - 01/20/2018	0.97	1.08
4	01/21/2018 - 01/27/2018	0.95	1.06
* 5	01/28/2018 - 02/03/2018	0.93	1.03
* 6	02/04/2018 - 02/10/2018	0.91	1.01
* 7	02/11/2018 - 02/17/2018	0.89	0.99
* 8	02/18/2018 - 02/24/2018	0.89	0.99
* 9	02/25/2018 - 03/03/2018	0.89	0.99
*10	03/04/2018 - 03/10/2018	0.89	0.99
*11	03/11/2018 - 03/17/2018	0.89	0.99
*12	03/18/2018 - 03/24/2018	0.89	0.99
*13	03/25/2018 - 03/31/2018	0.90	1.00
*14	04/01/2018 - 04/07/2018	0.90	1.00
*15	04/08/2018 - 04/14/2018	0.91	1.01
*16	04/15/2018 - 04/21/2018	0.91	1.01
*17	04/22/2018 - 04/28/2018	0.95	1.06
18	04/29/2018 - 05/05/2018	0.99	1.10
19	05/06/2018 - 05/12/2018	1.02	1.13
20	05/13/2018 - 05/19/2018	1.06	1.18
21	05/20/2018 - 05/26/2018	1.06	1.18
22	05/27/2018 - 06/02/2018	1.06	1.18
23	06/03/2018 - 06/09/2018	1.06	1.18
24	06/10/2018 - 06/16/2018	1.06	1.18
25	06/17/2018 - 06/23/2018	1.07	1.19
26	06/24/2018 - 06/30/2018	1.08	1.20
27	07/01/2018 - 07/07/2018	1.10	1.22
28	07/08/2018 - 07/14/2018	1.11	1.23
29	07/15/2018 - 07/21/2018	1.13	1.26
30	07/22/2018 - 07/28/2018	1.12	1.24
31	07/29/2018 - 08/04/2018	1.11	1.23
32	08/05/2018 - 08/11/2018	1.10	1.22
33	08/12/2018 - 08/18/2018	1.09	1.21
34	08/19/2018 - 08/25/2018	1.09	1.21
35	08/26/2018 - 09/01/2018	1.09	1.21
36	09/02/2018 - 09/08/2018	1.08	1.20
37	09/09/2018 - 09/15/2018	1.08	1.20
38	09/16/2018 - 09/22/2018	1.07	1.19
39	09/23/2018 - 09/29/2018	1.06	1.18
40	09/30/2018 - 10/06/2018	1.06	1.18
41	10/07/2018 - 10/13/2018	1.05	1.17
42	10/14/2018 - 10/20/2018	1.04	1.16
43	10/21/2018 - 10/27/2018	1.03	1.14
44	10/28/2018 - 11/03/2018	1.03	1.14
45	11/04/2018 - 11/10/2018	1.02	1.13
46	11/11/2018 - 11/17/2018	1.01	1.12
47	11/18/2018 - 11/24/2018	1.01	1.12
48	11/25/2018 - 12/01/2018	1.00	1.11
49	12/02/2018 - 12/08/2018	1.00	1.11
50	12/09/2018 - 12/15/2018	1.00	1.11
51	12/16/2018 - 12/22/2018	0.99	1.10
52	12/23/2018 - 12/29/2018	0.98	1.09
53	12/30/2018 - 12/31/2018	0.97	1.08

\* PEAK SEASON

25-FEB-2019 16:26:27

830UPD

4\_9402\_PKSEASON.TXT

**Exhibit - PM Peak Hour Traffic Summary**  
**VERANO DRI**  
**Trip Generation**  
**Existing Development (Using ITE 8th Edition) as of**  
**1146 TRIPS for the Purposes of Monitoring**

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
<b>Proposed</b>								
Shopping Center	48,700 s.f.	4,076	97	59	38	376	184	192
Single-Family Residential	676 d.u	6,032	483	121	362	587	370	217
Residential Townhouse	389 d.u	2,097	153	26	127	183	123	60
	<i>Total</i>	<i>12,205</i>	<i>733</i>	<i>206</i>	<i>527</i>	<i>1,146</i>	<i>677</i>	<i>469</i>

Note: Trip generation was calculated using the following data (ITE 8th Edition):

Daily Traffic

Shopping Center (SF) [ITE 820] =  $\text{Ln}(T) = 0.65 \cdot \text{Ln}(X/1000) + 5.83$

Single-Family Residential (DUs) [ITE 210] =  $\text{Ln}(T) = 0.92 \cdot \text{Ln}(X) + 2.71$

Residential Townhouse (DUs) [ITE 230] =  $\text{Ln}(T) = 0.87 \cdot \text{Ln}(X) + 2.46$

AM Peak Hour Traffic

Shopping Center (SF) [ITE 820] =  $\text{Ln}(T) = 0.59 \cdot \text{Ln}(X/1000) + 2.32$  (61% in, 39% out)

Single-Family Residential (DUs) [ITE 210] =  $T = 0.70(X) + 9.74$  (25% in, 75% out)

Residential Townhouse (DUs) [ITE 230] =  $\text{Ln}(T) = 0.80 \cdot \text{Ln}(X) + 0.26$  (17% in, 83% out)

PM Peak Hour Traffic

Shopping Center (SF) [ITE 820] =  $\text{Ln}(T) = 0.67 \cdot \text{Ln}(X/1000) + 3.37$  (49% in, 51% out)

Single-Family Residential (DUs) [ITE 210] =  $\text{Ln}(T) = 0.90 \cdot \text{Ln}(X) + 0.51$  (63% in, 37% out)

Residential Townhouse (DUs) [ITE 230] =  $\text{Ln}(T) = 0.82 \cdot \text{Ln}(X) + 0.32$  (67% in, 33% out)

Pass By Rate

Shopping Center (SF) [ITE 820] = 16.7% Based on previous approved pass-by capture of large retail center only