

TRAFFIC ANALYSIS
FOR THE
ST. ANDREWS EPISCOPAL ACADEMY

Prepared for:

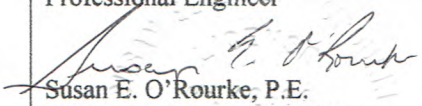
St. Andrews Episcopal Academy

Prepared by

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September 23, 2014
Updated 4.28.15

SR14091.0

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Traffic Engineering, Transportation Planning

September 23, 2014

Ms. Trina Angelone
Head of School
St. Andrews Episcopal Academy
210 S. Indian River Drive
Ft. Pierce, FL 34950

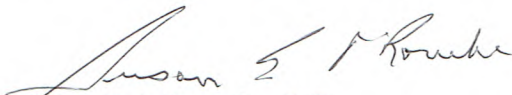
Re: St. Andrews Episcopal Academy

Dear Ms. Angelone:

Susan E. O'Rourke, PE, Inc. has completed the analysis of the expansion of the existing St. Andrews Episcopal Academy located off Indian River Drive in Ft. Pierce, Florida. The steps in the analysis and the ensuing results are presented herein.

It has been a pleasure working with you. If you have any questions or comments, please give me a call.

Respectfully submitted,
SUSAN E. O'ROURKE, P.E., INC.



Susan E. O'Rourke, P.E.
Registered Civil Engineer- Traffic

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INTRODUCTION

Susan E. O'Rourke, P.E., Inc. was retained to prepare traffic analysis in accordance with the draft TIS Guidelines prepared for the St. Lucie County TPO and Article XIV Concurrency Management for the proposed expansion of the St. Andrews Episcopal Academy located on Indian River Drive in Ft. Pierce, Florida. Please note that this analysis is based on the guidelines as dated March 2012. The purpose of this report is to identify the project's impact on the surrounding roadway system.

In order to make the determination, the following analytical steps were taken:

- ◆ summary of the project,
- ◆ summary of existing lane geometrics,
- ◆ summary of the existing traffic volumes,
- ◆ assessment of project traffic,
- ◆ determination of study area,
- ◆ assignment of historical growth,
- ◆ evaluation of total traffic

Each of these steps is outlined herein.

PROJECT DESCRIPTION

St. Andrews Episcopal Academy is an existing pre-Kindergarten through 12th Grade private school. The current student allowance is: pre-Kindergarten 70 students and kindergarten through 12th grade is 240 students. The proposal is to expand the facilities and support facilities to accommodate the same 70 pre-kindergarten students and up to 80 additional kindergarten through 12th grade students in 2017. The final phase of the project which is set for 2024 will provide for an additional 228 K-12 students. The total enrollment would then be 628 K-12 students and 70 pre-k students. The project location is shown in **Figure 1**. The site plan is included in **Appendix A**.

EXISTING LANE GEOMETRICS

The study area was reviewed to determine the existing number and type of lanes and the traffic control along the roadway. Each roadway is described below.


- Indian River Drive is a two-lane arterial with a north/south alignment. There is a roundabout located near the southern boundary of the project at Citrus Avenue..
- US 1 is a 4 lane divided state arterial with a north/south alignment.
- Orange Avenue is a two lane arterial with an east/east alignment.
- 2nd Street is a two-lane collector with a north/south alignment.
- Boston Avenue is two-lane local roadway.
- Citrus Avenue is a four-lane arterial with an east/west.

Figure 2 illustrates the existing lanes and the traffic control.



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LEGEND

 SIGNAL


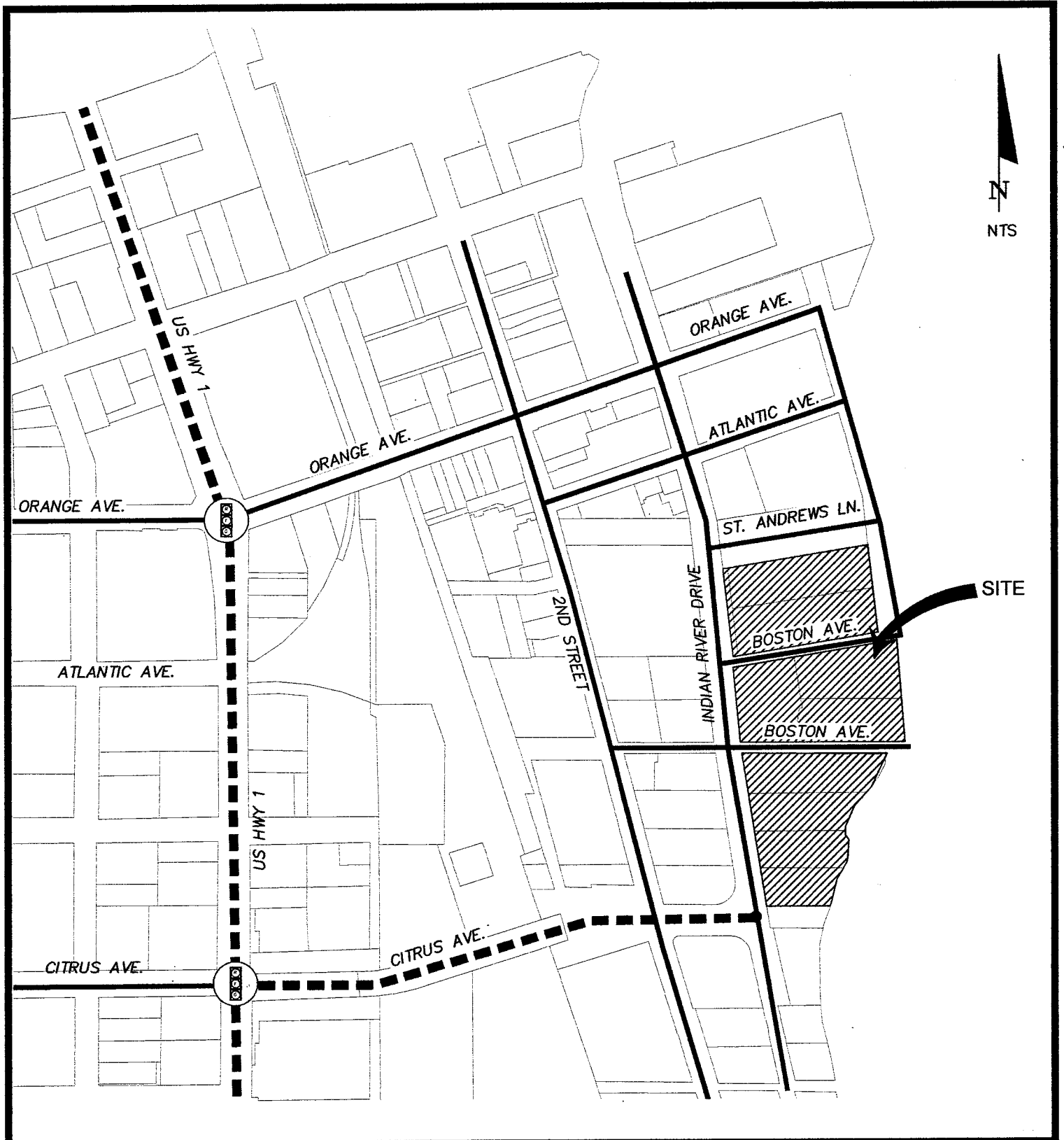
 SITE

FIGURE 1
PROJECT LOCATION
ST. ANDREWS EPISCOPAL
ACADEMY

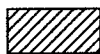


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LEGEND



SIGNAL



SITE

4 LANES
 2 LANES

FIGURE 2
 EXISTING LANE GEOMETRY
 ST. ANDREWS EPISCOPAL
 ACADEMY

SEPT. 14 2014

PROJECT TRAFFIC

To estimate traffic generated by the St. Andrew's Episcopal Academy, the ITE Trip Generation, 9th Edition trip rates were applied. The land use code 565 which is daycare was used to reflect travel characteristics for the pre-kindergarten activities. Land use code 536 was used to calculate the trip generation for a private kindergarten through 12th grade. These calculations provide an estimate of the typical generation. **Table 1** shows the number of new trips with additional students. **Table 2** summarizes the total new trips at project buildout, 2024.

PROJECT DISTRIBUTION/ ASSIGNMENT/ IMPACT

The project traffic was distributed by general geographic direction and then assigned to the roadway network based on the existing location of students and staff at the academy.

Distribution/Assignment – **Figure 3** summarizes the project percent impact on the roadway links.

BACKGROUND TRAFFIC

The Growth rate was calculated using the St. Lucie County TPO AADT data from 2008 through 2013. The growth rate was calculated as negative 4%. A 1% growth rate was applied in spite of the negative trend. While there are some infill and rehab projects in the area, the City agreed that a growth rate was appropriate to represent any potential projects in the area. The existing traffic along was grown and the project traffic was added to develop total traffic. **Appendix B** provides the growth rate data.

TABLE 1: Trip Generation- Additional Students 2017

DAILY

Description	Land Use Code	Additional Students	Daily Equation	Daily Trips
Private k-12	536	80	$T=2.48(x)$	198

AM

Description	Land Use Code	Additional Students	AM Equation	AM Trips	% In	% Out	AM In	AM Out
Private k-12	536	80	$T=0.81(x)$	65	61	39	40	25

PM

Description	Land Use Code	Additional Students	PM Equation	PM Trips	% In	% Out	PM In	PM Out
Private k-12	536	80	$T=0.17(x)$	14	43	57	6	8

Source: Trip Generation, 9th Edition

TABLE 2: Trip Generation- Additional Number of Students- Buildout 2024

DAILY

Description	Land Use Code	Students	Daily Equation	Daily Trips
Private k-12	536	388	$T=2.48(x)$	962

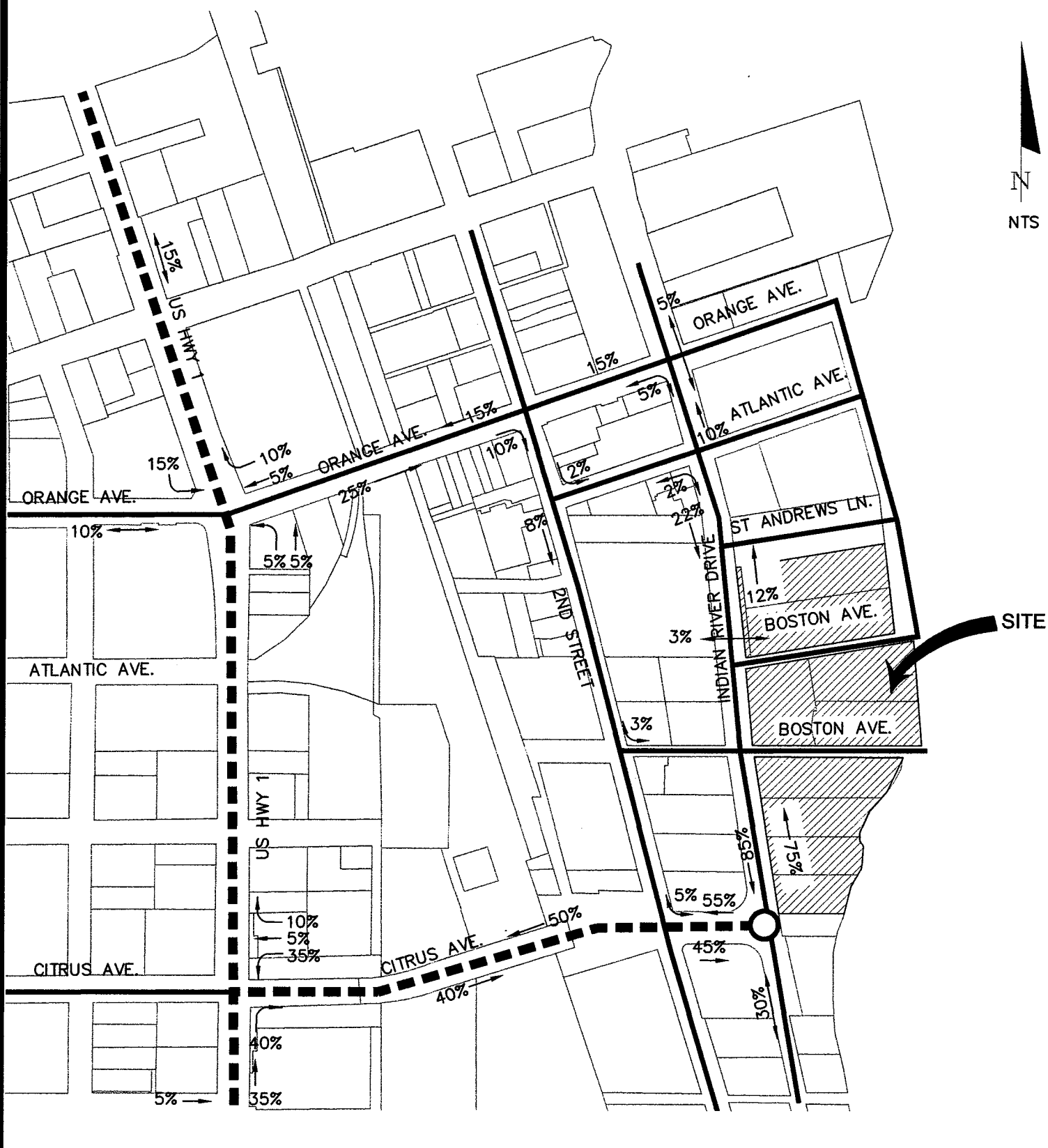
AM

Description	Land Use Code	Students	AM Equation	AM Trips	% In	% Out	AM In	AM Out
Private k-12	536	388	$T=0.81(x)$	314	61	39	192	122

PM

Description	Land Use Code	Students	PM Equation	PM Trips	% In	% Out	PM In	PM Out
Private k-12	536	388	$T=0.17(x)$	66	43	57	28	38




Source: Trip Generation, 9th Edition



LEGEND

FIGURE 3

Susan E. O'Rourke, P.E., Inc.
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-  SITE
-  4 LANES
-  2 LANES

PROJECT % ASSIGNMENT
 ST. ANDREWS EPISCOPAL
 ACADEMY

APRIL 29, 2015

STUDY AREA

The project traffic was assigned to the network in terms of project impact on each link. The project percent was calculated to determine significance. The new guidelines call for analysis on the adjacent link where there is a 1% impact and area roadways where there is a 5% impact. **Tables 3a** and **3b** and **Tables 4a** and **4b** summarizes the project percent impact on the roadway network calculated by the project two way trips divided by the roadway two-way capacity for the 2017 AM and PM period and project buildout AM and PM periods, respectively.

TABLE 3a: AM Project Percent Impact 2017

Segment		To	Lanes	(1) Roadway Classification	5% or Greater	Two-way Capacity	Project Traffic	Project % of Capacity	Project Greater than 5% impact or 1% adjacent link	Project Percent Assignment	
Orange Ave	7th Street	US 1	2	Non-State Arterial Class II	NO	958	3	0.34%	NO	5%	
		US 1	2nd Street	2	Non-State Arterial Class II	NO	1197	16	1.36%	NO	25%
		2nd Street	Indian River Drive	2	Non-State Arterial Class II	NO	958	10	1.02%	NO	15%
Citrus Avenue	7th Street	US 1	4LD	Non-State Arterial Class I	NO	1350	3	0.24%	NO	5%	
		US 1	2nd Street	4LD	Non-State Arterial Class I	NO	2920	33	1.11%	NO	50%
		2nd Street	Indian River Drive	2	Non-State Arterial Class I	NO	1197	36	2.99%	NO	55%
US 1	Avenue A	Orange Avenue	4LD	State Signalized Arterial Flow Class II	NO	2920	10	0.33%	NO	15%	
	Orange Ave	Citrus Avenue	4LD	State Signalized Arterial Flow Class II	NO	2920	7	0.22%	NO	10%	
	Citrus	Delaware	4LD	State Signalized Arterial Flow Class II	NO	2920	26	0.89%	NO	40%	
2nd Street	North	Orange Avenue	2L	Non-State Signalized Class II	NO	1197	0	0.00%	NO	0%	
	Orange Ave	Citrus Avenue	2L	Non-State Signalized Class II	NO	1197	7	0.54%	NO	10%	
Indian River Drive	Avenue A	Orange	2L	Non-State Signalized Class I	NO	1197	3	0.27%	NO	5%	
	Orange Ave	Citrus Avenue	2L	Non-State Signalized Class I	NO	1197	55	4.62%	NO	85%	
	Citrus Ave	South	2L	Uninterrupted Flow Highway	NO	2170	20	0.90%	NO	30%	
Boston Avenue	2nd Street	Indian River Drive	2L	Non-State Signalized Class II	NO	1197	2	0.16%	NO	3%	
	Indian River Drive	Water	2L	Non-State Signalized Class II	NO	1197	29	2.44%	NO	45%	

1) St. Lucie County Comprehensive Plan Classification

2) FDOT 2012 Corresponding LOS

Total 65
 Trips In 40
 Trips Out 25
 Growth Rate 1.005
 Years Grown 2

TABLE 3b: PM Project Percent Impact 2017

Segment	From	To	Lanes	(1) Roadway Classification	5% or Greater	Two-way Capacity	Project Traffic	Project % of Capacity	Project Greater than 5% impact or 1% adjacent link	Project Percent Assignment	
Orange Ave	7th Street	US 1	2	Non-State Arterial Class II	NO	958	1	0.07%	NO	5%	
		US 1	2nd Street	4LD+	Non-State Arterial Class II	NO	1197	4	0.29%	NO	25%
		2nd Street	Indian River Drive	4LD	Non-State Arterial Class II	NO	958	2	0.22%	NO	15%
Citrus Avenue	7th Street	US 1	4LD	Non-State Arterial Class I	NO	1350	1	0.05%	NO	5%	
		US 1	2nd Street	4LD	Non-State Arterial Class I	NO	2920	7	0.24%	NO	50%
		2nd Street	Indian River Drive	4LD	Non-State Arterial Class I	NO	1197	8	0.64%	NO	55%
US 1	Avenue A	Orange Avenue	4LD	State Signalized Arterial Flow Class II	NO	2920	2	0.07%	NO	15%	
	Orange Ave	Citrus Avenue	4LD	State Signalized Arterial Flow Class II	NO	2920	1	0.05%	NO	10%	
	Citrus	Delaware	4LD	State Signalized Arterial Flow Class II	NO	2920	6	0.19%	NO	40%	
2nd Street	North	Orange Avenue	2L	Non-State Signalized Class II	NO	1197	0	0.00%	NO	0%	
	Orange Ave	Citrus Avenue	2L	Non-State Signalized Class II	NO	1197	1	0.12%	NO	10%	
Indian River Drive	Avenue A	Orange	2L	Non-State Signalized Class II	NO	1197	1	0.06%	NO	5%	
	Orange Ave	Citrus Avenue	2L	Non-State Signalized Class II	NO	1197	12	0.99%	NO	85%	
	Citrus Ave	South	2L	Uninterrupted Flow Highway	NO	2170	4	0.19%	NO	30%	
Boston Avenue	2nd Street	Indian River Drive	2L	Non-State Signalized Class II	NO	1197	0	0.04%	NO	3%	
	Indian River Drive	Water	2L	Non-State Signalized Class II	NO	1197	6	0.53%	NO	45%	

1) St. Lucie County Comprehensive Plan Classification

2) FDOT 2012 Corresponding LOS

Total 14
 Trips In 6
 Trips Out 8
 Growth Rate 1.005
 Years Grown 2

TABLE 4a: AM Project Percent Impact 2024

Segment		To	Lanes	(1) Roadway Classification	5% or Greater	Two-way Capacity	Project Traffic	Project % of Capacity	Project Greater than 5% impact or 1% on adjacent link	Project Percent Assignment
Orange Ave	7th Street	US 1	2	Non-State Arterial Class II	NO	958	16	1.64%	NO	5%
	US 1	2nd Street	2	Non-State Arterial Class II	Yes	1197	79	6.56%	Yes	25%
	2nd Street	Indian River Drive	2	Non-State Arterial Class II	Yes	958	47	4.92%	NO	15%
Citrus Avenue	7th Street	US 1	4LD	Non-State Arterial Class I	NO	1350	16	1.16%	NO	5%
	US 1	2nd Street	4LD	Non-State Arterial Class I	Yes	2920	157	5.38%	Yes	50%
	2nd Street	Indian River Drive	2	Non-State Arterial Class I	Yes	1197	173	14.43%	Yes	55%
US 1	Avenue A	Orange Avenue	4LD	State Signalized Arterial Flow Class II	NO	2920	47	1.61%	NO	15%
	Orange Ave	Citrus Avenue	4LD	State Signalized Arterial Flow Class II	NO	2920	31	1.08%	NO	10%
	Citrus	Delaware	4LD	State Signalized Arterial Flow Class II	Yes	2920	126	4.30%	NO	40%
2nd Street	North	Orange Avenue	2L	Non-State Signalized Class II	NO	1197	0	0.00%	NO	0%
	Orange Ave	Citrus Avenue	2L	Non-State Signalized Class II	NO	1197	31	2.62%	NO	10%
Indian River Drive	Avenue A	Orange	2L	Non-State Signalized Class I	NO	1197	16	1.31%	ND	5%
	Orange Ave	Citrus Avenue	2L	Non-State Signized Class I	NO	1197	267	22.30%	Yes	85%
	Citrus Ave	South	2L	Uninterrupted Flow Highway	NO	2170	94	4.34%	NO	30%
Boston Avenue	2nd Street	Indian River Drive	2L	Non-State Signalized Class II	NO	1197	9	0.79%	NO	3%
	Indian River Drive	Water	2L	Non-State Signalized Class II	Yes	1197	141	11.80%	Yes	45%

1) St. Lucie County Comprehensive Plan Classification

2) FDOT 2012 Corresponding LOS

Total 314
 Trips In 192
 Trips Out 122
 Growth Rate 1.005
 Years Grown 9

TABLE 4b: PM Project Percent Impact 2024

Segment	From	To	Lanes	(1) Roadway Classification	5% or Greater	Two-way Capacity	Project Traffic	Project % of Capacity	Project Greater than 5% impact or 1% on adjacent link	Project Percent Assignment
Orange Ave	7th Street	US 1	2	Non-State Arterial Class II	NO	958	3	0.34%	NO	5%
	US 1	2nd Street	4LD+	Non-State Arterial Class II	Yes	1197	17	1.38%	NO	25%
	2nd Street	Indian River Drive	4LD	Non-State Arterial Class II	Yes	958	10	1.03%	NO	15%
Citrus Avenue	7th Street	US 1	4LD	Non-State Arterial Class I	NO	1350	3	0.24%	NO	5%
	US 1	2nd Street	4LD	Non-State Arterial Class I	Yes	2920	33	1.13%	NO	50%
	2nd Street	Indian River Drive	4LD	Non-State Arterial Class I	Yes	1197	36	3.03%	NO	55%
US 1	Avenue A	Orange Avenue	4LD	State Signalized Arterial Flow Class II	NO	2920	10	0.34%	NO	15%
	Orange Ave	Citrus Avenue	4LD	State Signalized Arterial Flow Class II	NO	2920	7	0.23%	NO	10%
	Citrus	Delaware	4LD	State Signalized Arterial Flow Class II	Yes	2920	26	0.90%	NO	40%
2nd Street	North	Orange Avenue	2L	Non-State Signalized Class II	NO	1197	0	0.00%	NO	0%
	Orange Ave	Citrus Avenue	2L	Non-State Signalized Class II	NO	1197	7	0.55%	NO	10%
Indian River Drive	Avenue A	Orange	2L	Non-State Signalized Class II	NO	1197	3	0.28%	NO	5%
	Orange Ave	Citrus Avenue	2L	Non-State Signalized Class II	NO	1197	56	4.69%	NO	85%
	Citrus Ave	South	2L	Uninterrupted Flow Highway	NO	2170	20	0.91%	NO	30%
Boston Avenue	2nd Street	Indian River Drive	2L	Non-State Signalized Class II	NO	1197	2	0.17%	NO	3%
	Indian River Drive	Water	2L	Non-State Signalized Class II	Yes	1197	30	2.48%	NO	45%

1) St. Lucie County Comprehensive Plan Classification

2) FDOT 2012 Corresponding LOS

Total 66
 Trips In 28
 Trips Out 38
 Growth Rate 1.005
 Years Grown 9

TOTAL TRAFFIC/ CONCURRENCY REVIEW

The traffic volumes on US 1, Orange Avenue and Indian River were taken from the peak hour turning movement counts made by Susan E. O'Rourke, P.E., Inc. in August of 2014 and March 2015. The August 2014 counts were increased by 25% to adjust for the peak season. Counts taken in 2014 were grown to 2015 before being placed in tables as existing 2015 traffic. Although the historical growth calculation shows negative growth a 1% growth rate was used for all links. Boston Avenue counts were developed from the existing school trip generation. The total traffic was then compared to the available capacity to determine if the project causes the capacity to be exceeded. No links will be exceeded with growth and the additional project traffic.

2017

Table 5a and 5b summarize the traffic from existing, growth and project traffic for the AM and PM peak period for 2017 future traffic conditions on the adjacent links and the 5% links. Although no links are required to be shown, the link on Indian River Drive from Orange Avenue to Citrus Avenue was shown for informational purposes.

2024

Table 6a and 6b summarize the traffic from existing, growth and project traffic for the AM and PM peak period for 2024 future traffic conditions on the adjacent links and the 5% links. Although no links are required to be shown in the PM peak hour, the link on Indian River Drive from Orange Avenue to Citrus Avenue was shown for informational purposes.

Intersections

Four intersections were evaluated at the request of the City of Ft. Pierce; US 1 at Citrus Avenue, US 1 at Orange Avenue, Orange Avenue and 2nd Street and US 1 at Indian River Drive.

Counts were made in August of 2014 and April 2015 and adjusted for the peak season. To reflect the future conditions, the intersection volumes were grown by 1% per year. The project traffic was then added to that volume to estimate the 2017 and 2024 total traffic conditions.

The intersections were analyzed using the HCS methodology. The Indian Riverside Drive intersection is a round a bout. The round a bout was analyzed the HCS round a bout methodology. All intersections will operate at acceptable levels of service for 2017 and 2024 scenarios. The intersection data are included in **Appendix C**.

TABLE 5a: AM Link Analysis 2017

Segment	From	To	Lanes	(1) Roadway Classification	Two-way Capacity	Project Traffic	Project % of Capacity	Project Greater than 5% Impact	(2) AM Existing Volume	AM 2024 Volume	2024 AM Total Traffic w/o Project	2024 AM Total Traffic w/ Project	Does AM Project Meet Concurrency?	Project Percent Assignment
Indian River Drive (3)	Orange Ave	Citrus Avenue	2L	Non-State Signalized Class I	1197	55	4.62%	NO	651	664	666	721	YES	85%
1) St. Lucie County Comprehensive Plan Classification										Total		65		
2) FDOT 2012 Corresponding LOS													Trips In: 40	
3) 2015 TMC													Trips Out: 25	
4) 2014 TMC													Growth: 1.010	
5) Estimated Site Traffic													Years Grown: 2	

TABLE 5b: PM Link Analysis 2017

Segment	From	To	Lanes	(1) Roadway Classification	Two-way Capacity (2)	Project Traffic	Project % of Capacity	Project Greater than 5% Impact	(3) PM Existing Volume	PM 2024 Volume	2017 PM Total Traffic w/o Project	2024 PM Total Traffic w/ Project	Does PM Project Meet Concurrency?	Project Percent Assignment
Indian River Drive (3)	Orange Ave	Citrus Avenue	2L	Non-State Signalized Class II	1440	12	0.83%	NO	675	689	691	691	YES	85%
1) St. Lucie County Comprehensive Plan Classification										Total		14		
2) FDOT 2012 Corresponding LOS													Trips In: 6	
3) 2015 TMC													Trips Out: 8	
4) 2014 TMC													Growth: 1.010	
5) Estimated Site Traffic													Years Grown: 2	

TABLE 6a: AM Link Analysis 2024

Segment	From	To	Lanes	(1) Roadway Classification	Two-way Capacity	Project Traffic	Project % of Capacity	Project Greater than 5% Impact	(2) AM Existing Volume	AM 2024 Volume	2024 AM Total Traffic w/o Project	2024 AM Total Traffic w/ Project	Does AM Project Meet Concurrency?	Project Percent Assignment
Orange Ave (3)	US 1	2nd Street	2	Non-State Arterial Class II	1197	79	6.56%	Yes	283	310	310	388	YES	25%
Citrus Avenue (4)	US 1	2nd Street	4LD	Non-State Arterial Class I	2920	157	5.38%	Yes	624	682	682	839	YES	50%
		2nd Street	Indian River Drive	2	Non-State Arterial Class I	1197	173	14.43%	Yes	404	442	442	615	YES
Indian River Drive (3)	Orange Ave	Citrus Avenue	2L	Non-State Signalized Class I	1197	267	22.30%	Yes	651	712	714	981	YES	85%
Boston Avenue (5)	Indian River Drive	Water	2L	Non-State Signalized Class II	1197	141	11.80%	Yes	165	180	180	322	YES	45%

1) St. Lucie County Comprehensive Plan Classification

2) FDOT 2012 Corresponding LOS

3) 2015 TMC

4) 2014 TMC

5) Estimated Site Traffic

Trips In: 192
 Trips Out: 122
 Growth: 1.010
 Years Grown: 9

TABLE 6b: PM Link Analysis 2024

Segment	From	To	Lanes	(1) Roadway Classification	Two-way Capacity (2)	Project Traffic	Project % of Capacity	Project Greater than 5% Impact	(3) PM Existing Volume	PM 2024 Volume	2017 PM Total Traffic w/o Project	2024 PM Total Traffic w/ Project	Does PM Project Meet Concurrency?	Project Percent Assignment
Indian River Drive (3)	Orange Ave	Citrus Avenue	2L	Non-State Signalized Class II	1197	56	4.69%	NO	675	738	740	740	YES	85%

1) St. Lucie County Comprehensive Plan Classification

2) FDOT 2012 Corresponding LOS

3) 2015 TMC

4) 2014 TMC

5) Estimated Site Traffic

Total 66
 Trips In: 28
 Trips Out: 38
 Growth: 1.010
 Years Grown: 9

DROP OFF/ PICK UP REVIEW

The school drop off will coincide with the AM peak hour. The 6th through 12th grade students will be dropped off within a newly constructed drop off lane running parallel to Indian River Drive. The pre-k and lower school students will continue to drop off at the lower school. **Table 7** summarizes the trip generation for the entire school. The AM peak hour trips are 509 excluding the pre-k which will not be in the drop off total trips. There will be 310 entering and 199 exiting during the peak hour. This figure reflects children being dropped off as well as staff to remain on campus. Approximately 111 of the 310 entering vehicles will park and not be in the queue leaving 199 vehicles in the queue. Approximately half of the 199 vehicles will remain at the lower school leaving approximately 100 vehicles in the queue at the new drop off area. With 100 vehicles possible in the hour in drop off, the storage needed for these vehicles can be calculated using a simple queue formula;

Number of vehicles and 25 feet x confidence factor of 2.0/ 30 (number of cycles in process period = 30 cycles of 2 minutes each over the 60 minutes) =

$$(100 \times 25 \times 2) / 30 = 167 \text{ feet of storage.}$$

Pick Up

For pick up the process time will be longer at approximately 6 to 8 minutes. But the duration for pick up will be longer as students remain for extracurricular activities. So the same 199 vehicles arrive for pick up run for a 2 hour period.

$$(100 \times 25 \times 2) / 17 = 294 \text{ feet of storage. (17= Cycles of 7 minutes over 120 minutes)}$$

The new drop off/ pick up area provides approximately 590 feet of storage. Given the attention to drop off storage, the project will not adversely impact the adjacent streets.

CONCLUSION

The St. Andrews Episcopal Academy would have a net increase of 962 daily trips, 315 AM peak hour trips, and 65 PM peak hour trips. These trips would not cause the capacity of the roadway to be exceeded nor would the traffic require additional turn lanes into the project.

Based on the calculations and findings presented here and the size of the project, following the mitigation agreement, the project does not require additional analysis and is deemed to be consistent with transportation concurrency requirements as identified in Article XIV.

TABLE 7: Trip Generation- Total Enrollment (For Drop-off Analysis)

DAILY

Description	Land Use Code	Students	Daily Equation	Daily Trips
Private k-12	536	628	$T=2.48(x)$	1557
Pre K	565	70	$T=4.38(x)$	307
Total		698		1,864

AM

Description	Land Use Code	Students	AM Equation	AM Trips	% In	% Out	AM In	AM Out
Private k-12	536	628	$T=0.81(x)$	509	61	39	310	199
Pre K	565	70	$T=0.80(x)$	56	53	47	30	26
Total		698		565			340	225

PM

Description	Land Use Code	Students	PM Equation	PM Trips	% In	% Out	PM In	PM Out
Private k-12	536	628	$T=0.17(x)$	107	43	57	46	61
Pre K	565	70	$T=0.81(x)$	57	43	57	24	33
Total		698		163			70	93

Source: Trip Generation, 9th Edition

Description	Trips	In/Out
Daily	962	481/481
AM	315	192/123
PM	65	28/37

APPENDIX A

SITE PLAN

APPENDIX B

GROWTH RATE AND EXISTING TRAFFIC COUNT DATA

Historical Growth Calculation

Roadway	From	To	2008	2013	Growth
Indian River Drive	Savannah	Citrus	4720	4100	0.87
	Citrus	Orange	5333	4423	0.83
	Orange	Ave A	5102	4639	0.91
Orange Ave	25th St	US 1	7514	7175	0.95
US 1	Delaware	Citrus	31419	27451	0.87
	Citrus	Orange	29995	22239	0.74
Citrus	US 1	2nd St	5607	3237	0.58
Total			91698	75277	0.82

-1.04

2013 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 9400 EAST-A1A TO US1

MOCF: 0.89
 PSCF

WEEK	DATES	SF	PSCF
1	01/01/2013 - 01/05/2013	1.02	1.15
2	01/06/2013 - 01/12/2013	0.98	1.10
3	01/13/2013 - 01/19/2013	0.94	1.06
* 4	01/20/2013 - 01/26/2013	0.93	1.04
* 5	01/27/2013 - 02/02/2013	0.91	1.02
* 6	02/03/2013 - 02/09/2013	0.90	1.01
* 7	02/10/2013 - 02/16/2013	0.88	0.99
* 8	02/17/2013 - 02/23/2013	0.87	0.98
* 9	02/24/2013 - 03/02/2013	0.86	0.97
*10	03/03/2013 - 03/09/2013	0.86	0.97
*11	03/10/2013 - 03/16/2013	0.86	0.97
*12	03/17/2013 - 03/23/2013	0.86	0.97
*13	03/24/2013 - 03/30/2013	0.87	0.98
*14	03/31/2013 - 04/06/2013	0.89	1.00
*15	04/07/2013 - 04/13/2013	0.90	1.01
*16	04/14/2013 - 04/20/2013	0.92	1.03
17	04/21/2013 - 04/27/2013	0.95	1.07
18	04/28/2013 - 05/04/2013	0.98	1.10
19	05/05/2013 - 05/11/2013	1.01	1.13
20	05/12/2013 - 05/18/2013	1.04	1.17
21	05/19/2013 - 05/25/2013	1.05	1.18
22	05/26/2013 - 06/01/2013	1.06	1.19
23	06/02/2013 - 06/08/2013	1.07	1.20
24	06/09/2013 - 06/15/2013	1.08	1.21
25	06/16/2013 - 06/22/2013	1.10	1.24
26	06/23/2013 - 06/29/2013	1.10	1.24
27	06/30/2013 - 07/06/2013	1.10	1.24
28	07/07/2013 - 07/13/2013	1.10	1.24
29	07/14/2013 - 07/20/2013	1.11	1.25
30	07/21/2013 - 07/27/2013	1.11	1.25
31	07/28/2013 - 08/03/2013	1.11	1.25
32	08/04/2013 - 08/10/2013	1.10	1.24
33	08/11/2013 - 08/17/2013	1.10	1.24
34	08/18/2013 - 08/24/2013	1.10	1.24
35	08/25/2013 - 08/31/2013	1.11	1.25
36	09/01/2013 - 09/07/2013	1.12	1.26
37	09/08/2013 - 09/14/2013	1.12	1.26
38	09/15/2013 - 09/21/2013	1.13	1.27
39	09/22/2013 - 09/28/2013	1.11	1.25
40	09/29/2013 - 10/05/2013	1.09	1.22
41	10/06/2013 - 10/12/2013	1.07	1.20
42	10/13/2013 - 10/19/2013	1.06	1.19
43	10/20/2013 - 10/26/2013	1.05	1.18
44	10/27/2013 - 11/02/2013	1.05	1.18
45	11/03/2013 - 11/09/2013	1.04	1.17
46	11/10/2013 - 11/16/2013	1.04	1.17
47	11/17/2013 - 11/23/2013	1.04	1.17
48	11/24/2013 - 11/30/2013	1.03	1.16
49	12/01/2013 - 12/07/2013	1.03	1.16
50	12/08/2013 - 12/14/2013	1.02	1.15
51	12/15/2013 - 12/21/2013	1.02	1.15
52	12/22/2013 - 12/28/2013	0.98	1.10
53	12/29/2013 - 12/31/2013	0.94	1.06

* PEAK SEASON

18-FEB-2014 08:46:30

830UPD

4_9400_PKSEASON.TXT

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: US 1
FILENAME: Orange Ave and US 1
COUNT DATE: 3/19/2014
REPORT DATE: 4/28/2015
E/W STREET: Orange Ave
CITY: Fort Pierce
DAY: Thursday
ANALYSIS YEAR: 2015
CONTROL:

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
7:00-7:15	14	180	5	1	124	18	21	7	7	0	1	0	378	1853
7:15-7:30	14	179	3	5	146	14	23	3	12	1	1	1	402	1955
7:30-7:45	8	220	4	3	191	28	33	9	6	2	3	3	510	1992
7:45-8:00	27	173	8	6	205	25	48	34	8	11	14	4	563	2011
8:00-8:15	17	156	16	6	166	19	45	26	9	5	9	6	480	1980
8:15-8:30	11	145	12	4	156	21	32	23	7	10	13	5	439	
8:30-8:45	16	187	10	10	201	19	27	24	8	10	9	8	529	
8:45-9:00	25	204	15	2	187	12	37	26	10	9	5	0	592	
AM PEAK HOUR IS FROM: 7:45AM TO 8:45AM														
Volumes	71	661	46	26	728	84	152	107	32	36	45	23	2011	
Season Factor	71	661	46	26	728	84	152	107	32	36	45	23	2011	
Growth	71	661	46	26	728	84	152	107	32	36	45	23	2011	
PROJECT	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	71	661	46	26	728	84	152	107	32	36	45	23	2011	

Seasonal Factor: 1
 Growth Rate: 1.01
 Years Grown: 0

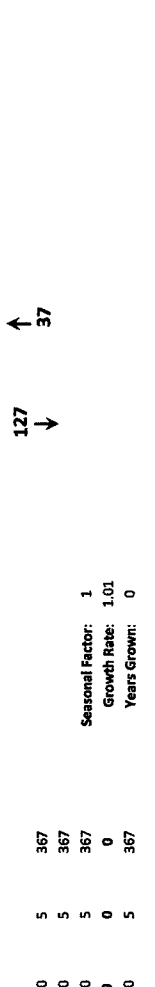
15 Min Period lanes	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
4:00-4:15	29	187	13	5	207	15	31	28	7	23	18	6	569	2419
4:15-4:30	29	237	19	2	236	25	42	11	13	13	22	5	654	2491
4:30-4:45	25	212	17	7	197	22	38	21	9	27	24	9	608	2474
4:45-5:00	18	211	22	2	206	16	38	22	12	14	17	10	588	2481
5:00-5:15	28	229	16	6	209	25	45	21	13	19	25	5	641	2506
5:15-5:30	15	243	21	5	228	27	49	18	7	11	12	1	637	
5:30-5:45	25	236	19	9	210	22	36	23	5	15	7	8	615	
5:45-6:00	26	227	11	8	233	24	32	13	9	11	13	6	613	
PM PEAK HOUR IS FROM: 5:00PM TO 6:00PM														
Volumes	94	935	67	28	880	98	162	75	34	56	57	20	2506	
Season Factor	94	935	67	28	880	98	162	75	34	56	57	20	2506	
Growth	94	935	67	28	880	98	162	75	34	56	57	20	2506	
PROJECT	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	94	935	67	28	880	98	162	75	34	56	57	20	2506	

Seasonal Factor: 1
 Growth Rate: 1.01
 Years Grown: 0

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: 2nd Ave
FILENAME: Orange Ave and 2nd Ave
COUNT DATE: 3/18/2015
REPORT DATE: 3/18/2015
E/W STREET: Orange Ave
CITY: Fort Pierce
DAY: Wednesday
ANALYSIS YEAR: 2015
CONTROL:

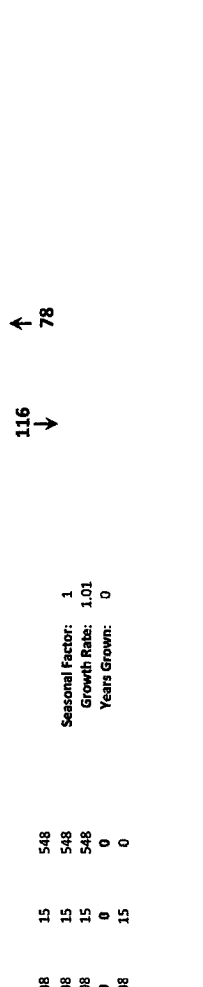
15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
7:00-7:15	0	1	2	0	3	0	0	1	1	0	1	0	9	179
7:15-7:30	0	1	1	3	4	0	2	16	1	0	12	0	40	263
7:30-7:45	1	4	3	4	9	4	3	13	3	2	15	2	63	316
7:45-8:00	2	5	4	3	10	1	3	15	4	3	14	3	67	332
8:00-8:15	3	1	4	3	12	8	9	23	10	3	15	2	93	367
8:15-8:30	1	5	3	3	16	4	6	21	20	2	12	0	93	
8:30-8:45	4	3	2	0	15	4	6	20	12	1	11	1	79	
8:45-9:00	4	2	5	3	17	5	8	25	17	2	12	2	102	



AM PEAK HOUR IS FROM: 8:00AM TO 9:00AM
 Volumes 12 11 14 9 60 21 29 89 59 5 50 367
 Season Factor 12 11 14 9 60 21 29 89 59 5 50 367
 Growth 12 11 14 9 60 21 29 89 59 5 50 367
PROJECT 0 0 0 0 0 0 0 0 0 0 0 0 0
 Total 12 11 14 9 60 21 29 89 59 5 50 367

Seasonal Factor: 1
 Growth Rate: 1.01
 Years Growth: 0

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
4:00-4:15	2	8	7	8	8	4	14	27	13	4	25	2	122	499
4:15-4:30	7	8	2	1	17	4	9	27	6	3	21	5	110	531
4:30-4:45	7	8	6	4	10	5	11	39	8	2	23	3	126	548
4:45-5:00	1	8	6	3	14	13	14	38	13	2	25	4	141	522
5:00-5:15	8	8	6	3	18	5	7	28	14	15	36	6	154	470
5:15-5:30	2	12	6	4	11	6	14	37	6	3	24	2	127	
5:30-5:45	3	5	5	4	7	7	12	33	3	2	15	4	100	
5:45-6:00	2	11	6	2	6	3	8	25	9	3	12	2	89	

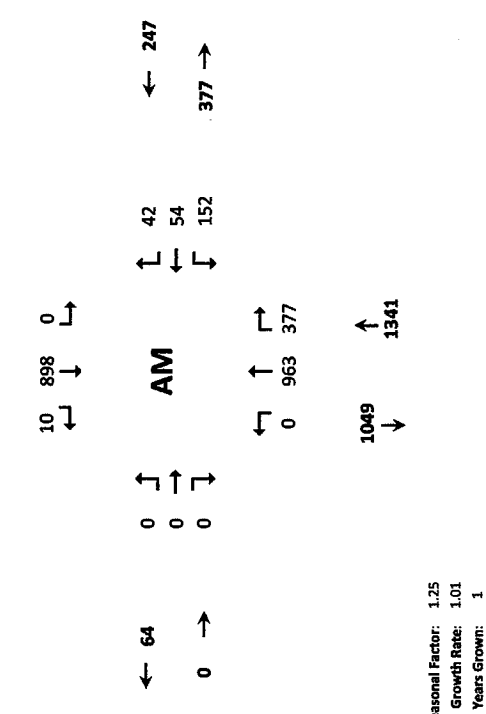


PM PEAK HOUR IS FROM: 4:30 PM TO 5:30 PM
 Volumes 18 36 24 14 53 29 46 46 142 41 22 108 15 548
 Season Factor 18 36 24 14 53 29 46 46 142 41 22 108 15 548
 Growth 18 36 24 14 53 29 46 46 142 41 22 108 15 548
PROJECT 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 Total 18 36 24 14 53 29 46 46 142 41 22 108 15 548

Seasonal Factor: 1
 Growth Rate: 1.01
 Years Growth: 0

TURNING MOVEMENT VOLUME COUNTS

US 1
 FILENAME: SAFC
 COUNT DATE: 8/28/2014
 REPORT DATE: 4/28/2015
 DAY: Thursday
 ANALYSIS YEAR: 2015-AM Peak Hour
 CITY: Ft. Pierce
 E/W STREET: Citrus Avenue
 CONTROL:



15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
7:00-7:15	0	153	30	0	155	1	0	0	0	11	2	8	360
7:15-7:30	0	192	73	0	140	3	0	0	0	9	7	13	437
7:30-7:45	0	210	97	0	168	4	0	0	0	27	6	9	521
7:45-8:00	0	194	69	0	190	2	0	0	0	43	15	15	528
8:00-8:15	0	185	61	0	177	0	0	0	0	24	13	4	464
8:15-8:30	0	174	72	0	176	2	0	0	0	26	9	5	464
8:30-8:45	0	180	58	0	155	1	0	0	0	20	8	6	428
8:45-9:00	0	190	58	0	167	4	0	0	0	24	2	6	451
AM PEAK HOUR IS FROM: 7:30 AM TO 8:30 AM													
Volumes	0	763	299	0	711	8	0	0	0	120	43	33	1977
Season Factor	0	954	374	0	889	10	0	0	0	150	54	41	2471
Growth	0	963	377	0	898	10	0	0	0	152	54	42	2496
PROJECT	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	963	377	0	898	10	0	0	0	152	54	42	2496

TURNING MOVEMENT VOLUME COUNTS

CONTROL:

E/W STREET: Citrus Avenue

US 1

SAEC

FILENAME: 8/28/2014

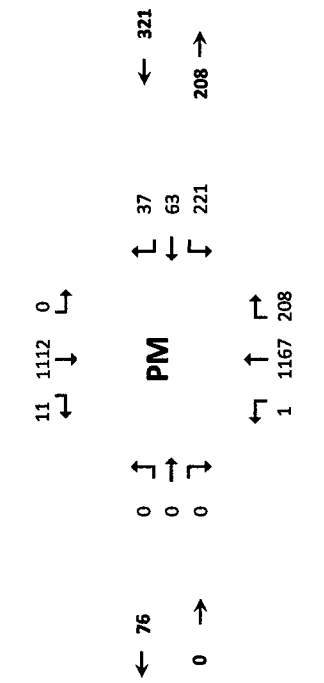
COUNT DATE: 8/28/2014

REPORT DATE: 4/28/2015

DAY: Thursday

ANALYSIS YEAR: 2015- PM Peak Hour

CITY: Ft. Pierce



15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
4:00-4:15	0	176	41	0	201	2	0	0	0	60	15	3	498
4:15-4:30	0	206	32	0	202	3	0	0	0	42	9	5	499
4:30-4:45	0	221	30	0	212	3	0	0	0	35	6	5	512
4:45-5:00	1	237	47	0	200	1	0	0	0	41	7	11	545
5:00-5:15	0	240	49	0	222	4	0	0	0	68	27	8	618
5:15-5:30	0	226	39	0	247	1	0	0	0	31	10	5	559
5:30-5:45	0	193	26	0	140	1	0	0	0	29	6	4	399
5:45-6:00	1	182	24	0	163	0	0	0	0	15	2	0	387

PM PEAK HOUR IS FROM: 4:30 PM TO 5:30PM

Volumes	1	924	165	0	881	9	0	0	0	175	50	29	2234
Season Factor	1	1155	206	0	1101	11	0	0	0	219	63	36	2793
Growth	1	1167	208	0	1112	11	0	0	0	221	63	37	2820
PROJECT	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1167	208	0	1112	11	0	0	0	221	63	37	2820

Seasonal Factor: 1.25
Growth Rate: 1.01
Years Grown: 1

TURNING MOVEMENT VOLUME COUNTS

CONTROL:

E/W STREET: Citrus Avenue

N/S STREET: Indian River Drive

FILENAME: SAEC

COUNT DATE: 8/27/2014

REPORT DATE: 9/15/2014

DAY: Wednesday

ANALYSIS YEAR: 2015- AM Peak Hour

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
7:00-7:15	7	23	0	0	22	9	6	0	7	0	0	0	74	527
7:15-7:30	5	37	0	0	24	16	28	0	6	0	0	0	116	571
7:30-7:45	17	52	0	0	20	16	51	0	8	0	0	0	164	585
7:45-8:00	15	64	0	0	25	22	38	0	9	0	0	0	173	544
8:00-8:15	6	29	0	0	18	27	32	0	6	0	0	0	118	437
8:15-8:30	5	33	0	0	24	32	33	0	3	0	0	0	130	
8:30-8:45	17	39	0	0	29	17	16	0	5	0	0	0	123	
8:45-9:00	3	18	0	0	12	13	17	0	3	0	0	0	66	

AM PEAK HOUR IS FROM: 7:30 AM TO 8:30AM

Volumes	43	178	0	0	87	97	154	0	26	0	0	0	585
Season Factor	54	223	0	0	109	121	193	0	33	0	0	0	731
Growth	54	225	0	0	110	122	194	0	33	0	0	0	739
PROJECT	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	54	225	0	0	110	122	194	0	33	0	0	0	739

Seasonal Factor: 1.25
 Growth Rate: 1.01
 Years Growth: 1

232 ↓
 ↑ 419

122 ↓
 110 ↓

← 177
 ↓ 194
 0
 33
 → 227

↑ 0
 ← 0
 ↓ 0

← 0
 0 →

↑ 143
 ↓ 279

↑ 0
 ← 0
 ↓ 0

← 0
 0 →

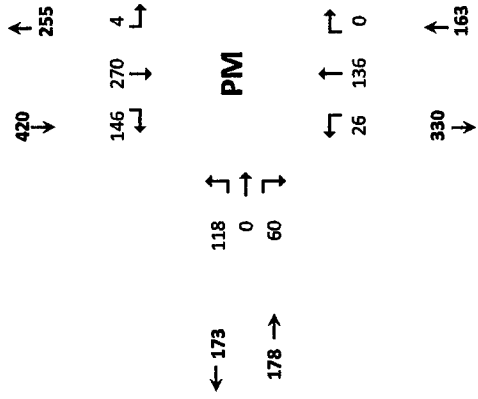
TURNING MOVEMENT VOLUME COUNTS

N/S STREET: Indian River Drive **E/W STREET:** Citrus Avenue **CONTROL:**
FILENAME: SAEC
COUNT DATE: 8/27/2014 **DAY:** Wednesday **CITY:** Ft. Pierce
REPORT DATE: 4/28/2015 **ANALYSIS YEAR:** 2015 - PM Peak Hour

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
4:00-4:15	6	27	0	0	73	13	26	0	11	0	0	1	157	604
4:15-4:30	5	34	0	1	44	21	29	0	5	0	0	0	139	609
4:30-4:45	4	19	0	1	51	23	23	0	11	0	0	0	132	601
4:45-5:00	7	23	0	1	66	40	25	0	14	0	0	0	176	588
5:00-5:15	5	33	0	0	55	33	17	0	18	0	0	1	162	472
5:15-5:30	2	29	0	0	50	21	22	0	7	0	0	0	131	
5:30-5:45	3	29	0	1	38	20	22	0	6	0	0	0	119	
5:45-6:00	4	15	0	0	20	7	10	0	4	0	0	0	60	

PM PEAK HOUR IS FROM: 4:15PM TO 5:15PM
Volumes 21 109 0 3 216 117 94 0 48 0 0 0 1 609
Season Factor 26 136 0 4 270 146 118 0 60 0 0 0 1 761
Growth 26 136 0 4 270 146 118 0 60 0 0 0 1 761
PROJECT 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Total 26 136 0 4 270 146 118 0 60 0 0 0 1 761

Seasonal Factor: 1.25
Growth Rate: 1.01
Years Grown: 0



Traffic Counts and Level of Service Report Fall 2013

Roadway Name	Location	AADT	PK Hr Service Capacity	AM PK Hr PK Dir		PM PK Hr PK Dir			
				Volume	LOS	Volume	LOS	Volume	V/C
ORANGE AVE	7TH ST to US 1	7,175	220	458	D	407	D	0.916	0.814
ORANGE AVE	US 1 to 2ND ST	2,804	590	178	B	174	B	0.481	0.470
ORANGE AVE	2ND ST to INDIAN RIVER DR	2,804	240	178	C	174	C	0.742	0.725
PAAR DR	PORT ST LUCIE BLVD to DARWIN BLVD	2,000	630	149	B	143	B	0.403	0.386
PAAR DR	DARWIN BLVD to TULIP BLVD	1,800	630	162	B	136	B	0.438	0.368
PAAR DR	PORT ST LUCIE BLVD to SAVONA BLVD	2,000	630	149	B	143	B	0.403	0.386
PAAR DR	SAVONA BLVD to ROSSER BLVD	2,000	630	149	B	143	B	0.403	0.386
PEACOCK BLVD	CALIFORNIA BLVD to CASHMERE BLVD	2,800	630	250	8	198	B	0.676	0.535
PEACOCK LOOP	UNIVERSITY DR to CALIFORNIA BLVD	7,300	830	565	C	466	B	0.734	0.971
PETERSON RD	BENT CREEK DR to HARTMAN RD	900	460	73	B	55	B	0.270	0.204
PICOS RD	CAMPBELL RD to KINGS HWY	1,300	420	101	B	92	B	0.421	0.383
PORT ST LUCIE BLVD	DARWIN BLVD to GATLIN BLVD	28,000	1,760	1,710	D	1,606	C	0.972	0.945
PORT ST LUCIE BLVD	GATLIN BLVD to DEL RIO BLVD	37,500	2,530	2,413	D	2,025	D	0.954	0.800
PORT ST LUCIE BLVD	DEL RIO BLVD to CAMEO BLVD	50,389	2,530	3,370	F	3,058	F	1.262	1.145
PORT ST LUCIE BLVD	CAMEO BLVD to FLORIDA'S TURNPIKE	50,389	2,650	3,370	F	3,058	F	1.272	1.154
PORT ST LUCIE BLVD	FLORIDA'S TURNPIKE to BAYSHORE BLVD	50,389	2,450	3,370	F	3,058	F	1.248	1.133
PORT ST LUCIE BLVD	BAYSHORE BLVD to AIROSO BLVD	49,969	2,940	3,158	F	3,129	F	1.074	1.064
PORT ST LUCIE BLVD	AIROSO BLVD to FLORESTA DR	48,491	2,940	2,985	F	2,616	C	1.015	0.915
PORT ST LUCIE BLVD	FLORESTA DR to VETERANS MEMORIAL PKWY	62,136	2,940	4,453	F	3,321	F	1.515	1.130
PORT ST LUCIE BLVD	VETERANS MEMORIAL PKWY to MORNINGSIDE BLVD	44,089	2,940	2,654	C	2,354	B	0.928	0.981
PORT ST LUCIE BLVD	MORNINGSIDE BLVD to US 1	41,143	2,810	3,124	F	1,949	C	1.052	0.894
PRIMA VISTA BLVD	BAYSHORE BLVD to AIROSO BLVD	28,448	1,850	1,379	B	1,349	B	0.938	0.918
PRIMA VISTA BLVD	AIROSO BLVD to FLORESTA DR	26,066	1,850	1,311	B	1,369	B	0.892	0.931
PRIMA VISTA BLVD	FLORESTA DR to NARANJA AVE	29,000	1,670	2,030	F	1,368	D	1.147	0.819
PRIMA VISTA BLVD	NARANJA AVE to RIO MAR DR	29,000	1,590	2,030	F	1,368	D	1.208	0.860
PRIMA VISTA BLVD	RIO MAR DR to US 1	30,718	1,670	1,774	F	1,782	F	1.002	1.007
PRIMA VISTA BLVD	US 1 to 300 FEET EAST OF US-1	7,800	1,850	434	B	453	B	0.295	0.308
Q AVENUE	ANGLE RD to 25TH STREET	4,700	570	263	B	260	B	0.797	0.788
Q AVENUE	25TH STREET to 17TH STREET	2,900	570	198	B	224	B	0.600	0.679

* Volumes shown were adjusted using FDOT Seasonal Factors

* AADT = Annual Average Daily Traffic

Traffic Counts and Level of Service Report Fall 2013

Roadway Name	Location	AADT	PK Hr Service Capacity	AM PM PK Hr PK DIF		PM PK Hr PK DIF				
				Volume	LOS	V/C	LOS	Volume	LOS	V/C
GLADES CUT-OFF RD	RANGE LINE RD to 0.6 MILE EAST OF RESERVE BL...	1,800	1,120	135	B	0.321	B	153	B	0.364
GLADES CUT-OFF RD	RESERVE BLVD to COMMERCE CENTER DR	2,900	1,120	393	B	0.936	B	341	B	0.812
GLADES CUT-OFF RD	MARTIN COUNTY LINE to RANGE LINE RD	1,800	430	135	B	0.563	B	153	B	0.638
GLADES CUT-OFF RD	COMMERCE CENTER DR to MIDWAY RD	1,783	830	135	B	0.281	B	123	B	0.256
GLADES CUT-OFF RD	MIDWAY RD to JENKINS RD	6,000	830	401	B	0.835	B	358	B	0.746
GLADES CUT-OFF RD	JENKINS RD to SELVITZ RD	4,800	830	294	B	0.613	B	266	B	0.554
GRAHAM RD	KINGS HWY to JENKINS RD	2,800	460	219	B	0.811	B	175	B	0.648
GREEN RIVER PKWY	BERKSHIRE BLVD to MARIPOSA AVE	3,451	1,140	240	B	0.600	B	219	B	0.548
GREEN RIVER PKWY	MARIPOSA AVE to MELALEUCA	3,451	1,140	240	B	0.600	B	219	B	0.548
GREEN RIVER PKWY	MELALEUCA to WALTON RD	3,451	1,140	240	B	0.600	B	219	B	0.548
HARTMAN RD	OKEECHOBEE RD to PETERSON RD	4,800	790	302	B	0.657	B	297	B	0.646
HARTMAN RD	PETERSON RD to DELAWARE AVE	4,800	630	302	B	0.816	B	297	B	0.803
HARTMAN RD	DELAWARE AVE to ORANGE AVE	4,800	770	302	C	0.570	C	297	C	0.560
HEADER CANAL RD	OKEECHOBEE RD to ORANGE AVE	447	740	32	B	0.133	B	29	B	0.121
HILLMOOR DR	TIFFANY AVE to LENNARD RD	3,600	600	229	B	0.654	B	269	B	0.769
INDJIAN RIVER DR	MARTIN COUNTY LINE to WALTON RD	5,400	1,140	326	B	0.815	B	357	B	0.893
INDJIAN RIVER DR	WALTON RD to MIDWAY RD	3,800	1,140	297	B	0.743	B	298	B	0.745
INDJIAN RIVER DR	MIDWAY RD to SAVANNAH RD	5,369	1,140	465	C	0.581	C	484	C	0.605
INDJIAN RIVER DR	SAVANNAH RD to CITRUS AVE	4,100	1,140	366	B	0.915	B	383	B	0.958
INDJIAN RIVER DR	CITRUS AVE to ORANGE AVE	4,423	730	263	C	0.526	C	301	C	0.602
INDJIAN RIVER DR	ORANGE AVE to AVENUE A	4,639	790	271	B	0.589	B	264	B	0.574
INDJIAN RIVER DR	AVENUE D to SEAWAY DR	5,876	600	343	D	0.572	D	404	D	0.673
INDJIAN RIVER DR	AVENUE A to AVENUE D	5,876	630	343	B	0.927	B	404	C	0.685
INDRIO RD	3 MILES WEST OF I-95 to INTERSTATE 95 - WEST...	1,318	1,120	96	B	0.229	B	104	B	0.248
INDRIO RD	INTERSTATE 95 - WEST RAMPS to INTERSTATE 95 ...	1,318	3,130	96	B	0.057	B	104	B	0.062
INDRIO RD	INTERSTATE 95 - EAST RAMPS to KOBLEGARD RD	10,129	3,130	579	B	0.347	B	609	B	0.365
INDRIO RD	KOBLEGARD RD to JOHNSTON RD	10,129	640	579	C	0.965	D	609	D	0.952
INDRIO RD	JOHNSTON RD to EMERSON RD	10,129	800	579	C	0.772	C	609	C	0.812
INDRIO RD	EMERSON RD to KINGS HWY	9,745	840	587	C	0.743	C	494	C	0.625

* Volumes shown were adjusted using FDOT Seasonal Factors

* AADT = Annual Average Daily Traffic

Traffic Counts and Level of Service Report
Fall 2013

Roadway Name	Location	AADT	PK-RT Service Capacity	AM PK RT PK DIR		PM PK RT PK DIR				
				Volume	LOS	Volume	LOS	V/C	V/C	
TULIP BLVD	PAAR DR to DARWIN BLVD	3,300	550	227	C	217	C	0.597	C	0.571
US 1	MARTIN COUNTY LINE to LENNARD RD	48,802	3,770	2,222	C	2,613	C	0.748	C	0.880
US 1	LENNARD RD to PORT ST LUCIE BLVD	48,802	3,590	2,222	C	2,613	C	0.785	C	0.923
US 1	MARIPOSA AVE to JENNINGS RD	33,607	2,940	1,613	B	1,712	B	0.672	B	0.713
US 1	JENNINGS RD to TIFFANY AVE	33,607	2,940	1,613	B	1,712	B	0.672	B	0.713
US 1	TIFFANY AVE to WALTON RD	33,607	2,940	1,613	B	1,712	B	0.672	B	0.713
US 1	WALTON RD to VILLAGE GREEN DR	43,377	2,940	2,350	B	2,107	B	0.979	B	0.878
US 1	VILLAGE GREEN DR to SPANISH LAKES BLVD	52,770	3,090	2,803	C	2,625	C	0.934	C	0.875
US 1	SPANISH LAKES BLVD to PRIMA VISTA BLVD	52,770	2,810	2,803	D	2,625	D	0.998	D	0.934
US 1	PRIMA VISTA BLVD to RIO MAR DR	35,436	3,090	1,639	B	1,613	B	0.650	B	0.640
US 1	RIO MAR DR to KITTERMAN RD	29,505	2,810	1,442	C	1,306	C	0.661	C	0.599
US 1	KITTERMAN RD to SAEGER AVE	29,505	2,940	1,442	B	1,306	B	0.601	B	0.544
US 1	SAEGER AVE to EASY ST	29,505	2,450	1,442	D	1,306	D	0.589	D	0.533
US 1	EASY ST to MIDWAY RD	27,709	3,090	1,292	B	1,255	B	0.513	B	0.498
US 1	MIDWAY RD to WEATHERBEE RD	29,941	1,860	1,407	D	1,424	D	0.756	D	0.766
US 1	MIDWAY RD to FARMER'S MARKET RD	29,941	1,960	1,407	B	1,424	B	0.902	B	0.913
US 1	FARMER'S MARKET RD to EDWARDS RD	29,941	1,960	1,407	B	1,424	B	0.902	B	0.913
US 1	EDWARDS RD to SAVANNAH RD	31,459	1,770	1,441	D	1,413	D	0.814	D	0.798
US 1	GARDENIA AVE to VIRGINIA AVE	31,459	1,770	1,441	D	1,413	D	0.814	D	0.798
US 1	SAVANNAH RD to GARDENIA AVE	31,459	1,500	1,441	D	1,413	D	0.961	D	0.942
US 1	VIRGINIA AVE to OHIO AVE	30,672	1,770	1,477	D	1,489	D	0.834	D	0.841
US 1	OHIO AVE to GEORGIA AVE	30,672	1,770	1,477	D	1,489	D	0.834	D	0.841
US 1	GEORGIA AVE to DELAWARE AVE	25,426	1,770	1,311	C	1,253	C	0.986	C	0.942
US 1	DELAWARE AVE to CITRUS AVE	27,451	1,500	1,391	D	1,355	D	0.927	D	0.903
US 1	CITRUS AVE to ORANGE AVE	22,239	1,500	1,107	D	998	D	0.738	D	0.665
US 1	ORANGE AVE to AVENUE A	27,451	1,500	1,391	D	1,355	D	0.927	D	0.903
US 1	AVENUE A to AVENUE C	27,451	1,500	1,391	D	1,355	D	0.927	D	0.903
US 1	AVENUE C to AVENUE D	27,451	1,500	1,391	D	1,355	D	0.927	D	0.903
US 1	AVENUE D to SEAWAY DR	27,451	1,500	1,391	D	1,355	D	0.927	D	0.903

* Volumes shown were adjusted using FDOT Seasonal Factors

* AADT = Annual Average Daily Traffic

APPENDIX C
INTERSECTION DATA AND ANALYSIS

TURNING MOVEMENT VOLUME COUNTS

CONTROL:

E/W STREET: Citrus Avenue

N/S STREET: Indian River Drive

FILENAME: SAEC

COUNT DATE: 8/27/2014

DAY: Wednesday

CITY: Ft. Pierce

REPORT DATE: 4/28/2015

ANALYSIS YEAR: 2017- AM Peak Hour

258 ↑
↓ 458

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
7:00-7:15	7	23	0	0	22	9	6	0	7	0	0	0	74	527
7:15-7:30	5	37	0	0	24	16	28	0	6	0	0	0	116	571
7:30-7:45	17	52	0	0	20	16	51	0	8	0	0	0	164	585
7:45-8:00	15	64	0	0	25	22	38	0	9	0	0	0	173	544
8:00-8:15	6	29	0	0	18	27	32	0	6	0	0	0	118	437
8:15-8:30	5	33	0	0	24	32	33	0	3	0	0	0	130	
8:30-8:45	17	39	0	0	29	17	16	0	5	0	0	0	123	
8:45-9:00	3	18	0	0	12	13	17	0	3	0	0	0	66	

← 194 ↓ 216 ↑ 258
 ↓ 0 ← 0 ↓ 0
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 ↓ 0 ↑ 0 ↓ 0
 ← 250 →

AM

↑ 153 ↓ 297

AM PEAK HOUR IS FROM: 7:30 AM TO 8:30 AM

Volumes 43 178 0 0 87 97 154 0 26 0 0 0 0 585
 Season Factor 54 223 0 0 109 121 193 0 33 0 0 0 0 731
 Growth 55 229 0 0 112 125 198 0 33 0 0 0 0 753
 Percentage 0% 30% 0% 0% 30% 55% 45% 0% 0% 0% 0% 0% 0%
 PROJECT 0 12 0 0 8 14 18 0 0 0 0 0 0 51
 Total 55 241 0 0 120 139 216 0 33 0 0 0 0 805

Trips In: 40
 Trips Out: 25
 Seasonal Factor: 1.25
 Growth Rate: 1.01
 Years Growth: 3

TURNING MOVEMENT VOLUME COUNTS

CONTROL:

E/W STREET: Citrus Avenue

N/S STREET: Indian River Drive

FILENAME: SAEC

COUNT DATE: 8/27/2014

DAY: Wednesday

CITY: Ft. Pierce

REPORT DATE: 4/28/2015

ANALYSIS YEAR: 2017 - PM Peak Hour

440 ↑
↓ 267

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
4:00-4:15	6	27	0	0	73	13	26	0	11	0	0	1	157	604
4:15-4:30	5	34	0	1	44	21	29	0	5	0	0	0	139	609
4:30-4:45	4	19	0	1	51	23	23	0	11	0	0	0	132	601
4:45-5:00	7	23	0	1	66	40	25	0	14	0	0	0	176	588
5:00-5:15	5	33	0	0	55	33	17	0	18	0	0	1	162	472
5:15-5:30	2	29	0	0	50	21	22	0	7	0	0	0	131	
5:30-5:45	3	29	0	1	38	20	22	0	6	0	0	0	119	
5:45-6:00	4	15	0	0	20	7	10	0	4	0	0	0	60	

← 182 124 ↓ 155 ↓ 440 ↓ 267 ↑

186 → 0 27 155 4

↑ 1 ↓ 1 ← 1 ↓ 1 ← 1

↓ 0 → 0 ↓ 0 ↓ 0 ↓ 0

PM

↑ 169 342 ↓

PM PEAK HOUR IS FROM: 4:15PM TO 5:15PM

Volumes	21	109	0	3	216	117	94	0	48	0	0	1	609
Season Factor	26	136	0	4	270	146	118	0	60	0	0	1	761
Growth	27	140	0	4	278	151	121	0	62	0	0	1	784
Percentage	0%	30%	0%	0%	30%	55%	45%	0%	0%	0%	0%	0%	0%
PROJECT	0	2	0	0	2	4	3	0	0	0	0	0	11
Total	27	142	0	4	281	155	124	0	62	0	0	1	796

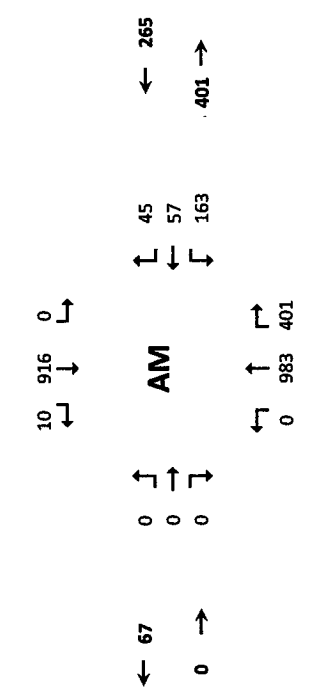
Trips In: 6
Trips Out: 8
Seasonal Factor: 1.25
Growth Rate: 1.01
Years Growth: 3

ROUNABOUT REPORT																	
General Information									Site Information								
Analyst	AAA								Intersection	Indian River Drive and Citrus							
Agency or Co.	SOR								E/W Street Name	Citrus Ave							
Date Performed	4/28/2015								N/S Street Name	Indian River Drive							
Time Period	AM								Analysis Year	2017 w/ Project							
Peak Hour Factor	0.92								Project ID								
Project Description:																	
Volume Adjustment and Site Characteristics																	
	EB				WB				NB				SB				
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U	
Number of Lanes (N)	0	1	0		0	0	0		0	1	0		0	1	0		
Lane Assignment	LTR								LTR				LTR				
Right-Turn Bypass	None				None				None				None				
Conflicting Lanes	1				1				1				1				
Volume (V), veh/h	216	0	33	0	0	0	0	0	55	241	0	0	0	120	139	0	
Heavy Veh. Adj. (f_{HV}), %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Pedestrians Crossing	0				0				0				0				
Critical and Follow-Up Headway Adjustment																	
	EB			WB			NB			SB							
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass					
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929					
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858					
Flow Computations																	
	EB			WB			NB			SB							
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass					
Circulating Flow (V_c), pc/h	134			574			242			62							
Exiting Flow (V_{ex}), pc/h	0			217			512			171							
Entry Flow (V_e), pc/h		279			0			331			290						
Entry Volume veh/h		271						321			282						
Capacity and v/c Ratios																	
	EB			WB			NB			SB							
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass					
Capacity (C_{PCE}), pc/h		988			0			887			1063						
Capacity (c), veh/h		959			0			861			1032						
v/c Ratio (X)		0.28						0.37			0.27						
Delay and Level of Service																	
	EB			WB			NB			SB							
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass					
Lane Control Delay (d), s/veh		6.6						8.5			6.2						
Lane LOS		A			F			A			A						
Lane 95% Queue		1.2						1.7			1.1						
Approach Delay, s/veh	6.64						8.52			6.16							
Approach LOS, s/veh	A						A			A							
Intersection Delay, s/veh	7.17																
Intersection LOS	A																

ROUNDBABOUT REPORT																
General Information							Site Information									
Analyst	AAA						Intersection	Indian River Drive and Citrus								
Agency or Co.	SOR						E/W Street Name	Citrus Ave								
Date Performed	4/28/2015						N/S Street Name	Indian River Drive								
Time Period	PM						Analysis Year	2017 w/ Project								
Peak Hour Factor	0.92						Project ID									
Project Description:																
Volume Adjustment and Site Characteristics																
	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	0	0		0	1	0		0	1	0	
Lane Assignment	LTR				LTR				LTR				LTR			
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	124	0	62	0	0	0	0	0	27	142	0	0	0	281	155	4
Heavy Veh. Adj. (f _{HV}), %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Pedestrians Crossing	0				0				0				0			
Critical and Follow-Up Headway Adjustment																
	EB			WB			NB			SB						
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass				
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929				
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858				
Flow Computations																
	EB			WB			NB			SB						
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass				
Circulating Flow (V _c), pc/h	319			332			143			30						
Exiting Flow (V _{ex}), pc/h	0			204			302			384						
Entry Flow (V _e), pc/h		208			0			189			492					
Entry Volume veh/h		202						183			478					
Capacity and v/c Ratios																
	EB			WB			NB			SB						
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass				
Capacity (c _{PCE}), pc/h		822			0			979			1096					
Capacity (c), veh/h		798			0			951			1064					
v/c Ratio (X)		0.25						0.19			0.45					
Delay and Level of Service																
	EB			WB			NB			SB						
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass				
Lane Control Delay (d), s/veh		7.3						5.7			8.4					
Lane LOS		A			F			A			A					
Lane 95% Queue		1.0						0.7			2.4					
Approach Delay, s/veh	7.30						5.65			8.35						
Approach LOS, s/veh	A						A			A						
Intersection Delay, s/veh	7.53															
Intersection LOS	A															

TURNING MOVEMENT VOLUME COUNTS

US 1
 FILENAME: SAEC
 COUNT DATE: 8/28/2014
 REPORT DATE: 4/18/2015
 DAY: Thursday
 ANALYSIS YEAR: 2017 - AM Peak Hour
 E/W STREET: Citrus Avenue
 CITY: Ft. Pierce
 CONTROL:



15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
7:00-7:15	0	153	30	0	155	1	0	0	0	0	11	2	8	360
7:15-7:30	0	192	73	0	140	3	0	0	0	0	9	7	13	437
7:30-7:45	0	210	97	0	168	4	0	0	0	0	27	6	9	521
7:45-8:00	0	194	69	0	190	2	0	0	0	0	43	15	15	528
8:00-8:15	0	185	61	0	177	0	0	0	0	0	24	13	4	464
8:15-8:30	0	174	72	0	176	2	0	0	0	0	26	9	5	464
8:30-8:45	0	180	58	0	155	1	0	0	0	0	20	8	6	428
8:45-9:00	0	190	58	0	167	4	0	0	0	0	24	2	6	451

← 67 ↓ 0 → 0
 ↑ 45 ← 57 ↓ 163
 ← 265
 .401 →

926 ↓ ↑ 1028
 10 ↓ 916 ↓ 0 ↓
 1079 ↓ ↑ 1384

AM PEAK HOUR IS FROM:
 Volumes: 0 763 299 0 711 8 0 0 0 0 0 120 43 33 1977
 Season Factor: 0 954 374 0 889 10 0 0 0 0 0 150 54 41 2471
 Growth: 0 983 385 0 916 10 0 0 0 0 0 155 55 42 2546
 Percentage: 0% 0% 40% 0% 0% 0% 0% 0% 0% 0% 0% 35% 5% 10%
 PROJECT: 0 0 16 0 0 0 0 0 0 0 0 9 1 3 29
 Total: 0 983 401 0 916 10 0 0 0 0 0 163 57 45 2575

Trips In: 40
 Trips Out: 25
 Seasonal Factor: 1.25
 Growth Rate: 1.01
 Years Grown: 3

TURNING MOVEMENT VOLUME COUNTS

CONTROL:

E/W STREET: Citrus Avenue

US 1

FILENAME: SAEC

COUNT DATE: 8/28/2014

DAY: Thursday

ANALYSIS YEAR: 2017- PM Peak Hour

CITY: Ft. Pierce

REPORT DATE: 4/28/2015

1146 ↓ ↑ 1228

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
4:00-4:15	0	176	41	0	201	2	0	0	0	0	15	3	498	2054
4:15-4:30	0	206	32	0	202	3	0	0	0	42	9	5	499	2174
4:30-4:45	0	221	30	0	212	3	0	0	0	35	6	5	512	2234
4:45-5:00	1	237	47	0	200	1	0	0	0	41	7	11	545	2121
5:00-5:15	0	240	49	0	222	4	0	0	0	68	27	8	618	1963
5:15-5:30	0	226	39	0	247	1	0	0	0	31	10	5	559	
5:30-5:45	0	193	26	0	140	1	0	0	0	29	6	4	399	
5:45-6:00	1	182	24	0	163	0	0	0	0	15	2	0	387	

← 78 0 → 0 ↓ 0 →

12 1135 0 ↓ ↓ ↓

↑ 38 ↓ 65 ↓ 228

← 331 215 →

PM

1 1190 215 ↑ ↓

1363 ↓ ↑ 1406

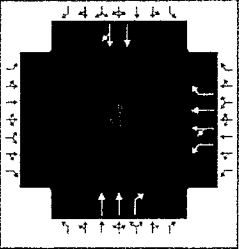
Trips In: 6
Trips Out: 8
Seasonal Factor: 1.25
Growth Rate: 1.01
Years Grown: 3

PM PEAK HOUR IS FROM: 4:30 PM TO 5:30 PM

Volumes	1	924	165	0	881	9	0	0	0	0	175	50	29	2234
Season Factor	1	1155	206	0	1101	11	0	0	0	0	219	63	36	2793
Growth	1	1190	212	0	1135	12	0	0	0	0	225	64	37	2877
Percentage	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%	35%	5%	10%	
PRDICT	0	0	2	0	0	0	0	0	0	0	3	0	1	6
Total	1	1190	215	0	1135	12	0	0	0	0	228	65	38	2884

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Susan E O'Rourke P.E., Inc.			Duration, h	0.25
Analyst	AAA	Analysis Date	Apr 28, 2015	Area Type	Other
Jurisdiction	Fort Pierce	Time Period	AM	PHF	0.95
Intersection	Citrus Ave	Analysis Year	2017 with project	Analysis Period	1> 7:00
File Name	c5.s.Citrus Ave and US 1 2017 am.xus				
Project Description	HCS Export				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h				163	57	45		983	401		918	10

Signal Information													
Cycle, s	120.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On	Green	79.0	29.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	2.0	2.0	0.0	0.0	0.0	0.0			

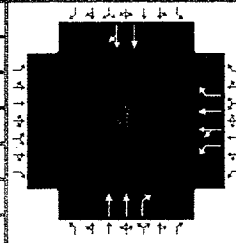
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				9.0		7.0		8.0
Phase Duration, s				35.0		85.0		85.0
Change Period, (Y+R _c), s				6.0		6.0		6.0
Max Allow Headway (MAH), s				2.9		0.0		0.0
Queue Clearance Time (g _s), s				11.7				
Green Extension Time (g _e), s				0.4		0.0		0.0
Phase Call Probability				1.00				
Max Out Probability				0.00				

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement				3	8	18		2	12		6	16
Adjusted Flow Rate (v), veh/h				172	60	37		1035	412		966	0
Adjusted Saturation Flow Rate (s), veh/h/ln				1774	1863	1579		1773	1579		1863	0
Queue Service Time (g _s), s				9.7	1.5	2.2		7.0	14.5		5.8	0.0
Cycle Queue Clearance Time (g _c), s				9.7	1.5	2.2		7.0	14.5		5.8	0.0
Green Ratio (g/C)				0.24	0.24	0.24		0.66	0.66		0.66	
Capacity (c), veh/h				429	900	381		2335	1039		2453	
Volume-to-Capacity Ratio (X)				0.400	0.067	0.097		0.443	0.396		0.394	0.000
Available Capacity (c _a), veh/h				429	900	381		2335	1039		2453	
Back of Queue (Q), veh/ln (50th percentile)				4.6	0.7	0.9		2.0	5.0		1.8	0.0
Queue Storage Ratio (RQ) (50th percentile)				0.00	0.00	0.00		0.00	0.00		0.00	0.00
Uniform Delay (d ₁), s/veh				38.2	35.1	35.3		2.9	9.5		2.9	
Incremental Delay (d ₂), s/veh				2.8	0.1	0.5		0.6	1.1		0.5	0.0
Initial Queue Delay (d ₃), s/veh				0.0	0.0	0.0		0.0	0.0		0.0	0.0
Control Delay (d), s/veh				41.0	35.2	35.8		3.5	10.6		3.3	
Level of Service (LOS)				D	D	D		A	B		A	
Approach Delay, s/veh / LOS	0.0			39.0		D		5.6	A		3.3	A
Intersection Delay, s/veh / LOS				8.1					A			

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.8	C	2.5	B	2.4	B
Bicycle LOS Score / LOS			0.7	A	1.7	A	1.3	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Susan E O'Rourke P.E., Inc.			Duration, h	0.25		
Analyst	AAA	Analysis Date	Apr 28, 2015	Area Type	Other		
Jurisdiction	Fort Pierce	Time Period	PM	PHF	0.95		
Intersection	Citrus Ave	Analysis Year	2017 with project	Analysis Period	1> 7:00		
File Name	c5.s.Citrus Ave and US 1 2017 pm.xus						
Project Description	HCS Export						



Demand Information	EB			WB			NB			SB				
	L	T	R	L	T	R	L	T	R	L	T	R		
Approach Movement														
Demand (v), veh/h				228	65	38				1190	215		1135	12

Signal Information				Signal Phases											
Cycle, s	120.0	Reference Phase	2												
Offset, s	0	Reference Point	End												
Uncoordinated	No	Simult. Gap E/W	On												
Force Mode	Fixed	Simult. Gap N/S	On												
Green	79.0	29.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				9.0		7.0		8.0
Phase Duration, s				35.0		85.0		85.0
Change Period, (Y+Rc), s				6.0		6.0		6.0
Max Allow Headway (MAH), s				2.9		0.0		0.0
Queue Clearance Time (gs), s				16.2				
Green Extension Time (ge), s				0.5		0.0		0.0
Phase Call Probability				1.00				
Max Out Probability				0.00				

Movement Group Results	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement				3	8	18		2	12		6	16	
Adjusted Flow Rate (v), veh/h				240	68	29		1253	216		599	598	
Adjusted Saturation Flow Rate (s), veh/h/ln				1774	1863	1579		1773	1579		1863	1862	
Queue Service Time (gs), s				14.2	1.7	1.7		9.8	6.5		19.4	8.3	
Cycle Queue Clearance Time (gc), s				14.2	1.7	1.7		9.8	6.5		19.4	8.3	
Green Ratio (g/C)				0.24	0.24	0.24		0.66	0.66		0.66	0.66	
Capacity (c), veh/h				429	900	381		2335	1039		1226	1226	
Volume-to-Capacity Ratio (X)				0.560	0.076	0.077		0.536	0.208		0.488	0.488	
Available Capacity (ca), veh/h				429	900	381		2335	1039		1226	1226	
Back of Queue (Q), veh/ln (50th percentile)				6.8	0.8	0.7		2.5	2.3		2.5	2.5	
Queue Storage Ratio (RQ) (50th percentile)				0.00	0.00	0.00		0.00	0.00		0.00	0.00	
Uniform Delay (d1), s/veh				39.9	35.1	35.2		3.1	8.1		3.0	3.0	
Incremental Delay (d2), s/veh				5.2	0.2	0.4		0.9	0.5		1.4	1.4	
Initial Queue Delay (d3), s/veh				0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (d), s/veh				45.1	35.3	35.6		4.0	8.6		4.4	4.4	
Level of Service (LOS)				D	D	D		A	A		A	A	
Approach Delay, s/veh / LOS	0.0			42.3			D	4.7			A		
Intersection Delay, s/veh / LOS	8.8						A						

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.8	C	2.5	B	2.4	B
Bicycle LOS Score / LOS			0.8	A	1.7	A	1.5	A

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: US 1
FILENAME: Orange Ave and US 1
COUNT DATE: 3/19/2014
REPORT DATE: 4/28/2015
DAY: Thursday
CITY: Fort Pierce
ANALYSIS YEAR: 2017
E/W STREET: Orange Ave
CONTROL:

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
7:00-7:15	14	180	5	1	124	18	21	7	7	0	1	0	378	1853
7:15-7:30	14	179	3	5	146	14	23	3	12	1	1	1	402	1955
7:30-7:45	8	220	4	3	191	28	33	9	6	2	3	3	510	1992
7:45-8:00	27	173	8	6	205	25	48	34	8	11	14	4	563	2011
8:00-8:15	17	156	16	6	166	19	45	26	9	5	9	6	480	1980
8:15-8:30	11	145	12	4	156	21	32	23	7	10	13	5	439	
8:30-8:45	16	187	10	10	201	19	27	24	8	10	9	8	529	
8:45-9:00	25	204	15	2	187	12	37	26	10	9	5	0	532	

AM PEAK HOUR IS FROM: 7:45AM TO 8:45AM
 Volumes: 71 661 46 26 728 84 152 107 32 36 45 23 2011
 Season Factor: 71 661 46 26 728 84 152 107 32 36 45 23 2011
 Growth: 72 674 47 27 743 86 155 109 33 37 46 23 2051
 Percentage: 5% 0% 15% 0% 0% 0% 5% 0% 0% 0% 0% 10%
PROJECT 1 0 6 0 0 2 0 0 0 0 0 0 0 11
 Total: 74 676 47 33 743 86 155 111 33 46 23 2062

Trips In: 40
 Trips Out: 25
 Seasonal Factor: 1
 Growth Rate: 1.01
 Years Grown: 2

15 Min Period lanes	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
4:00-4:15	29	187	13	5	207	15	31	28	7	23	18	6	569	2419
4:15-4:30	29	237	19	2	236	25	42	11	13	13	22	5	654	2491
4:30-4:45	25	212	17	7	197	22	38	21	9	27	24	9	608	2474
4:45-5:00	18	211	22	2	206	16	38	22	12	14	17	10	588	2481
5:00-5:15	28	229	16	6	209	25	45	21	13	19	25	5	641	2506
5:15-5:30	15	243	21	5	228	27	49	18	7	11	12	1	637	
5:30-5:45	25	256	19	9	210	22	36	23	5	15	7	8	615	
5:45-6:00	26	227	11	8	233	24	32	13	9	11	13	6	613	

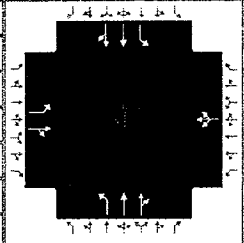
PM PEAK HOUR IS FROM: 5:00PM TO 6:00PM
 Volumes: 94 935 67 28 880 98 162 75 34 56 57 20 2506
 Season Factor: 94 935 67 28 880 98 162 75 34 56 57 20 2506
 Growth: 96 954 68 29 886 100 165 77 35 0% 5% 10%
 Percentage: 5% 5% 0% 15% 0% 0% 0% 0% 0% 0% 0% 1% 3
PROJECT 0 0 0 1 0 0 0 0 0 0 0 0 1 3
 Total: 96 954 68 29 886 100 165 77 35 57 59 21 2560

Trips In: 6
 Trips Out: 8
 Seasonal Factor: 1.01
 Growth Rate: 1.01
 Years Grown: 2



HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Susan E O'Rourke P.E., Inc.			Duration, h	0.25		
Analyst	SOR	Analysis Date	Apr 28, 2015	Area Type	Other		
Jurisdiction	Fort Pierce	Time Period	AM	PHF	0.95		
Intersection	Orange Ave	Analysis Year	2017 with project	Analysis Period	1> 7:00		
File Name	c5.s.Orange and US 1 2017 am.xus						
Project Description	HCS Export						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	155	111	33	37	46	23	74	676	47	33	743	86

Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
	Green	52.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Red	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

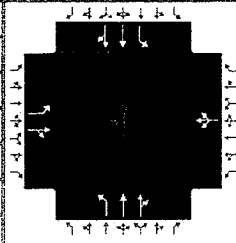
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		10.0		12.0		6.0		6.0
Phase Duration, s		31.0		31.0		58.0		58.0
Change Period, (Y+R _c), s		6.0		6.0		6.0		6.0
Max Allow Headway (MAH), s		3.0		3.2		0.0		0.0
Queue Clearance Time (g _s), s		11.6		7.7				
Green Extension Time (g _e), s		0.4		0.1		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (v), veh/h	163	141			101		78	379	372	35	438	424
Adjusted Saturation Flow Rate (s), veh/h/ln	1774	1807			1785		639	1863	1828	709	1863	1802
Queue Service Time (g _s), s	9.6	8.0			5.7		12.0	14.1	14.5	4.3	17.4	18.1
Cycle Queue Clearance Time (g _c), s	9.6	8.0			5.7		30.1	14.1	14.5	18.8	17.4	18.1
Green Ratio (g/C)	0.21	0.21			0.21		0.43	0.43	0.43	0.43	0.43	0.43
Capacity (c), veh/h	370	376			372		240	807	792	281	807	781
Volume-to-Capacity Ratio (X)	0.441	0.375			0.272		0.324	0.469	0.469	0.123	0.543	0.543
Available Capacity (c _a), veh/h	370	376			372		240	807	792	281	807	781
Back of Queue (Q), veh/ln (50th percentile)	4.6	3.9			2.7		2.1	5.8	5.9	0.8	7.1	7.4
Queue Storage Ratio (RQ) (50th percentile)	0.00	0.00			0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	41.4	40.8			39.9		35.2	17.3	18.0	29.8	18.0	19.4
Incremental Delay (d ₂), s/veh	3.8	2.8			1.8		3.5	2.0	2.0	0.9	2.6	2.7
Initial Queue Delay (d ₃), s/veh	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	45.2	43.6			41.7		38.7	19.3	20.0	30.7	20.6	22.1
Level of Service (LOS)	D	D			D		D	B	C	C	C	C
Approach Delay, s/veh / LOS	44.5		D	41.7		D	21.5		C	21.7		C
Intersection Delay, s/veh / LOS	25.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.9	C	2.1	B	2.3	B
Bicycle LOS Score / LOS	1.0	A	0.7	A	1.2	A	1.2	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Susan E O'Rourke P.E., Inc.			Duration, h	0.25		
Analyst	AAA	Analysis Date	Apr 28, 2015	Area Type	Other		
Jurisdiction	Fort Pierce	Time Period	PM	PHF	0.95		
Intersection	Orange Ave	Analysis Year	2017 with project	Analysis Period	1> 7:00		
File Name	c5.s.Orange and US 1 2017 pm.xus						
Project Description	HCS Export						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	165	77	35	57	59	21	96	954	68	29	898	100

Signal Information				Signal Timing and Phases																		
Cycle, s	120.0	Reference Phase	2																			
Offset, s	0	Reference Point	End																			
Uncoordinated	No	Simult. Gap E/W	On																			
Force Mode	Fixed	Simult. Gap N/S	On																			
		Green		44.0	29.0	29.0	0.0	0.0	0.0													
		Yellow		4.0	4.0	4.0	0.0	0.0	0.0													
		Red		2.0	2.0	2.0	0.0	0.0	0.0													

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		10.0		12.0		6.0		6.0
Phase Duration, s		35.0		35.0		50.0		50.0
Change Period, (Y+R _c), s		6.0		6.0		6.0		6.0
Max Allow Headway (MAH), s		2.9		3.2		0.0		0.0
Queue Clearance Time (g _s), s		11.9		9.3				
Green Extension Time (g _e), s		0.4		0.2		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (v), veh/h	174	107			134		101	538	527	31	528	512
Adjusted Saturation Flow Rate (s), veh/h/ln	1774	1784			1794		540	1863	1825	528	1863	1803
Queue Service Time (g _s), s	9.9	5.8			7.3		15.6	28.8	29.1	6.5	28.0	28.4
Cycle Queue Clearance Time (g _c), s	9.9	5.8			7.3		44.0	28.8	29.1	35.5	28.0	28.4
Green Ratio (g/C)	0.24	0.24			0.24		0.37	0.37	0.37	0.37	0.37	0.37
Capacity (c), veh/h	429	431			434		130	683	669	126	683	661
Volume-to-Capacity Ratio (X)	0.405	0.249			0.308		0.777	0.788	0.788	0.243	0.774	0.774
Available Capacity (c _a), veh/h	429	431			434		130	683	669	126	683	661
Back of Queue (Q), veh/ln (50th percentile)	4.6	2.7			3.5		4.4	13.2	13.3	1.0	12.8	12.9
Queue Storage Ratio (RQ) (50th percentile)	0.00	0.00			0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	38.2	36.7			37.3		54.6	26.8	27.6	48.8	26.6	27.9
Incremental Delay (d ₂), s/veh	2.8	1.4			1.8		35.6	8.9	9.1	4.5	8.3	8.6
Initial Queue Delay (d ₃), s/veh	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	41.1	38.1			39.1		90.2	35.7	36.7	53.4	34.9	36.5
Level of Service (LOS)	D	D			D		F	D	D	D	C	D
Approach Delay, s/veh / LOS	39.9		D	39.1		D	40.9		D	36.2		D
Intersection Delay, s/veh / LOS	38.8						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.9	C	2.1	B	2.3	B
Bicycle LOS Score / LOS	1.0	A	0.7	A	1.4	A	1.4	A

TURNING MOVEMENT VOLUME COUNTS

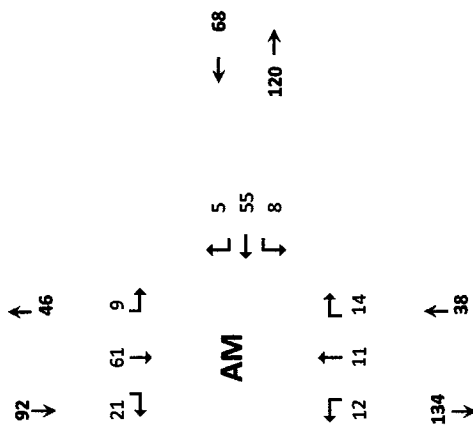
N/S STREET: 2nd Ave **E/W STREET:** Orange Ave
FILENAME: Orange Ave and 2nd Ave **CITY:** Fort Pierce
COUNT DATE: 3/18/2015 **DAY:** Wednesday
REPORT DATE: 3/18/2015 **ANALYSIS YEAR:** 2017

CONTROL:

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
7:00-7:15	0	1	2	0	3	0	0	1	1	0	1	0	9	179
7:15-7:30	0	1	1	3	4	0	2	16	1	0	12	0	40	263
7:30-7:45	1	4	3	4	9	4	3	13	3	2	15	2	63	316
7:45-8:00	2	5	4	3	10	1	3	15	4	3	14	3	67	332
8:00-8:15	3	1	4	3	12	8	9	23	10	3	15	2	93	367
8:15-8:30	1	5	3	3	16	4	6	21	20	2	12	0	93	
8:30-8:45	4	3	2	0	15	4	6	20	12	1	11	1	79	
8:45-9:00	4	2	5	3	17	5	8	25	17	2	12	2	102	

AM PEAK HOUR IS FROM: 8:00AM TO 9:00AM
 Volumes 12 11 14 9 60 21 29 89 59 8 50 5 367
 Season Factor 12 11 14 9 60 21 29 89 59 8 50 5 367
 Growth 12 11 14 9 61 21 30 91 60 8 51 5 374
 Percentage 0% 0% 0% 0% 0% 0% 0% 15% 10% 0% 15% 0%
PROJECT 0 0 0 0 0 0 0 6 4 0 4 0 14
Total 12 11 14 9 61 21 30 97 64 8 55 5 388

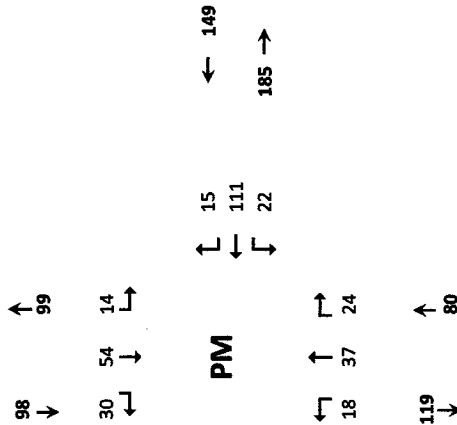
Trips In: 40
 Trips Out: 25
 Seasonal Factor: 1
 Growth Rate: 1.01
 Years Grown: 2



15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
4:00-4:15	2	8	7	8	8	4	14	27	13	4	25	2	122	499
4:15-4:30	7	8	2	1	17	4	9	27	6	3	21	5	110	531
4:30-4:45	7	8	6	4	10	5	11	39	8	2	23	3	126	548
4:45-5:00	1	8	6	3	14	13	14	38	13	2	25	4	141	522
5:00-5:15	8	8	6	3	18	5	7	28	14	15	36	6	154	470
5:15-5:30	2	12	6	4	11	6	14	37	6	3	24	2	127	
5:30-5:45	3	5	5	4	7	7	12	33	3	2	15	4	100	
5:45-6:00	2	11	6	2	6	3	8	25	9	3	12	2	89	

PM PEAK HOUR IS FROM: 4:30 PM TO 5:30 PM
 Volumes 18 36 24 14 53 29 46 142 41 22 108 15 548
 Season Factor 18 36 24 14 53 29 46 142 41 22 108 15 548
 Growth 18 37 24 14 54 30 47 145 42 22 110 15 559
 Percentage 0% 0% 0% 0% 0% 0% 0% 15% 10% 0% 15% 0% 5%
PROJECT 0 0 0 0 0 0 0 1 1 1 0 1 0 3
Total 18 37 24 14 54 30 47 146 42 22 111 15 3

Trips In: 6
 Trips Out: 8
 Seasonal Factor: 1.01
 Growth Rate: 1.01
 Years Grown: 2



ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	AAA	Intersection	Orange and 2nd
Agency/Co.	SOR	Jurisdiction	Fort Pierce
Date Performed	4/28/2015	Analysis Year	2017 w/ project
Analysis Time Period	AM		

Project ID	
East/West Street: Orange Ave	North/South Street: 2nd Ave

Volume Adjustments and Site Characteristics						
Approach	Eastbound			Westbound		
	L	T	R	L	T	R
Movement						
Volume (veh/h)	30	97	5	8	55	5
% Thrus Left Lane						
Approach	Northbound			Southbound		
	L	T	R	L	T	R
Movement						
Volume (veh/h)	12	11	14	9	61	21
% Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate (veh/h)	132		68		37		91	
% Heavy Vehicles	0		0		0		0	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.2		0.1		0.3		0.1	
Prop. Right-Turns	0.0		0.1		0.4		0.2	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.0		-0.0		-0.2		-0.1	

Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20		3.20	
xs, initial	0.12		0.06		0.03		0.08	
hd, final value (s)	4.29		4.31		4.29		4.28	
xs, final value	0.16		0.08		0.04		0.11	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, ts (s)	2.3		2.3		2.3		2.3	

Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	382		318		287		341	
Delay (s/veh)	8.09		7.69		7.49		7.79	
LOS	A		A		A		A	
Approach: Delay (s/veh)	8.09		7.69		7.49		7.79	
LOS	A		A		A		A	
Intersection Delay (s/veh)	7.86							
Intersection LOS	A							

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	AAA	Intersection	Orange and 2nd
Agency/Co.	SOR	Jurisdiction	Fort Pierce
Date Performed	4/28/2015	Analysis Year	2017 w/ project
Analysis Time Period	PM		

Project ID	
East/West Street: Orange Ave	North/South Street: 2nd Ave

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
	L	T	R	L	T	R
Movement						
Volume (veh/h)	47	146	42	22	111	15
%Thrus Left Lane						

Approach	Northbound			Southbound		
	L	T	R	L	T	R
Movement						
Volume (veh/h)	18	37	24	14	54	30
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate (veh/h)	235		148		79		98	
% Heavy Vehicles	0		0		0		0	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.2		0.1		0.2		0.1	
Prop. Right-Turns	0.2		0.1		0.3		0.3	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		-0.0		-0.1		-0.2	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.21		0.13		0.07		0.09	
hd, final value (s)	4.45		4.59		4.79		4.75	
x, final value	0.29		0.19		0.11		0.13	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t _s (s)	2.5		2.6		2.8		2.8	

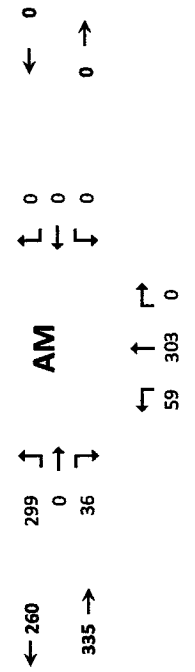
Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	485		398		329		348	
Delay (s/veh)	9.27		8.65		8.36		8.45	
LOS	A		A		A		A	
Approach: Delay (s/veh)	9.27		8.65		8.36		8.45	
LOS	A		A		A		A	
Intersection Delay (s/veh)	8.84							
Intersection LOS	A							

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: Indian River Drive **E/W STREET:** Citrus Avenue **CONTROL:**
FILENAME: SAEC **DAY:** Wednesday **CITY:** Ft. Pierce
COUNT DATE: 8/27/2014 **ANALYSIS YEAR:** 2024- AM Peak Hour
REPORT DATE: 4/28/2015

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
7:00-7:15	7	23	0	0	22	9	6	0	7	0	0	0	74	527
7:15-7:30	5	37	0	0	24	16	28	0	6	0	0	0	116	571
7:30-7:45	17	52	0	0	20	16	51	0	8	0	0	0	164	585
7:45-8:00	15	64	0	0	25	22	38	0	9	0	0	0	173	544
8:00-8:15	6	29	0	0	18	27	32	0	6	0	0	0	118	437
8:15-8:30	5	33	0	0	24	32	33	0	3	0	0	0	130	
8:30-8:45	17	39	0	0	29	17	16	0	5	0	0	0	123	
8:45-9:00	3	18	0	0	12	13	17	0	3	0	0	0	66	



AM PEAK HOUR IS FROM: 7:30 AM TO 8:30 AM

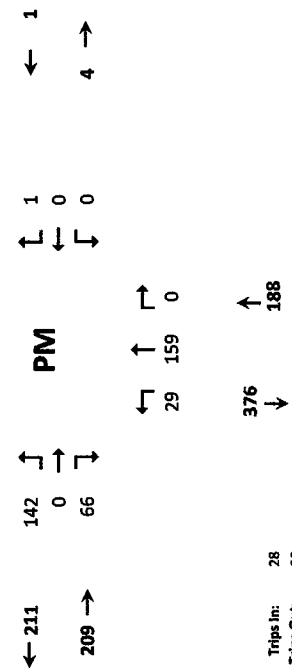
Volumes	43	178	0	0	87	97	154	0	26	0	0	0	585
Season Factor	54	223	0	0	109	121	193	0	33	0	0	0	731
Growth	59	246	0	0	120	134	213	0	36	0	0	0	808
Percentage	0%	30%	0%	0%	30%	55%	45%	0%	0%	0%	0%	0%	0%
PROJECT	0	58	0	0	37	67	86	0	0	0	0	0	248
Total	59	303	0	0	157	201	299	0	36	0	0	0	1055

Trips In: 192
 Trips Out: 122
 Seasonal Factor: 1.25
 Growth Rate: 1.01
 Years Growth: 10

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: Indian River Drive **E/W STREET:** Citrus Avenue **CONTROL:**
FILENAME: SAEC **CITY:** Ft. Pierce
COUNT DATE: 8/27/2014 **DAY:** Wednesday
REPORT DATE: 4/28/2015 **ANALYSIS YEAR:** 2024-PM Peak Hour

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
4:00-4:15	6	27	0	0	73	13	26	0	11	0	0	1	157	604
4:15-4:30	5	34	0	1	44	21	29	0	5	0	0	0	139	609
4:30-4:45	4	19	0	1	51	23	23	0	11	0	0	0	132	601
4:45-5:00	7	23	0	1	66	40	25	0	14	0	0	0	176	588
5:00-5:15	5	33	0	0	55	33	17	0	18	0	0	1	162	472
5:15-5:30	2	29	0	0	50	21	22	0	7	0	0	0	131	
5:30-5:45	3	29	0	1	38	20	22	0	6	0	0	0	119	
5:45-6:00	4	15	0	0	20	7	10	0	4	0	0	0	60	



PM PEAK HOUR IS FROM: 4:15PM TO 5:15PM
 Volumes: 21 109 0 3 216 117 94 0 48 0 0 0 1 609
 Season Factor: 26 136 0 4 270 146 118 0 60 0 0 0 1 761
 Growth: 29 151 0 4 298 162 130 0 66 0 0 0 1 841
 Percentage: 0% 30% 0% 0% 30% 55% 45% 0% 0% 0% 0% 0% 0%
PROJECT 0 8 0 0 11 21 13 0 0 0 0 0 0 53
Total 29 159 0 4 310 182 142 0 66 0 0 0 1 894

Trips In: 28
 Trips Out: 38
 Seasonal Factor: 1.25
 Growth Rate: 1.01
 Years Grown: 10

ROUNDBABOUT REPORT

General Information

Analyst AAA
 Agency or Co. SOR
 Date Performed 4/28/2015
 Time Period AM
 Peak Hour Factor 0.92

Site Information

Intersection Indian River Drive and Citrus
 E/W Street Name Citrus Ave
 N/S Street Name Indian River Drive
 Analysis Year 2024 w/ Project
 Project ID

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	0	0		0	1	0		0	1	0	
Lane Assignment	LTR								LTR				LTR			
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	299	0	36	0	0	0	0	0	59	303	0	0	0	157	201	0
Heavy Veh. Adj. (f _{HV}), %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V _c), pc/h	176			740			335			66		
Exiting Flow (V _{ex}), pc/h	0			291			674			216		
Entry Flow (V _e), pc/h		375			282			405			401	
Entry Volume veh/h		364						393			389	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c _{PCE}), pc/h		948			0			809			1058	
Capacity (c), veh/h		920			0			785			1027	
v/c Ratio (X)		0.40						0.50			0.38	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		8.4						11.6			7.5	
Lane LOS		A			F			B			A	
Lane 95% Queue		1.9						2.8			1.8	
Approach Delay, s/veh	8.43						11.60			7.52		
Approach LOS, s/veh	A						B			A		
Intersection Delay, s/veh	9.21											
Intersection LOS	A											

ROUNDBOUT REPORT

General Information

Analyst AAA
 Agency or Co. SOR
 Date Performed 4/28/2015
 Time Period PM
 Peak Hour Factor 0.92

Site Information

Intersection Indian River Drive and Citrus
 E/W Street Name Citrus Ave
 N/S Street Name Indian River Drive
 Analysis Year 2024 w/ Project
 Project ID

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	0	0		0	1	0		0	1	0	
Lane Assignment	LTR								LTR				LTR			
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	142	0	66	0	0	0	0	0	29	159	0	0	0	310	182	4
Heavy Veh. Adj. (f _{HV}), %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V _c), pc/h	351			373			163			32		
Exiting Flow (V _{ex}), pc/h	0			236			341			421		
Entry Flow (V _e), pc/h		233			478			210			555	
Entry Volume veh/h		226						204			539	

Capacity and v/c Ratios

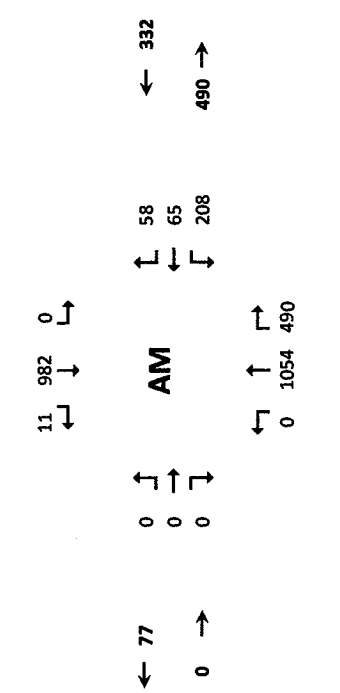
	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c _{PCE}), pc/h		795			0			960			1094	
Capacity (c), veh/h		772			0			932			1062	
v/c Ratio (X)		0.29						0.22			0.51	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		8.0						6.0			9.4	
Lane LOS		A			F			A			A	
Lane 95% Queue		1.2						0.8			3.0	
Approach Delay, s/veh	8.05						6.03			9.36		
Approach LOS, s/veh	A						A			A		
Intersection Delay, s/veh	8.36											
Intersection LOS	A											

TURNING MOVEMENT VOLUME COUNTS

US 1
 FILENAME: SAEC
 COUNT DATE: 8/28/2014
 REPORT DATE: 4/28/2015
 DAY: Thursday
 ANALYSIS YEAR: 2024-AM Peak Hour
 CITY: Ft. Pierce
 E/W STREET: Citrus Avenue
 CONTROL:



15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
7:00-7:15	0	153	30	0	155	1	0	0	0	11	2	8	360
7:15-7:30	0	192	73	0	140	3	0	0	0	9	7	13	437
7:30-7:45	0	210	97	0	168	4	0	0	0	27	6	9	521
7:45-8:00	0	194	69	0	190	2	0	0	0	43	15	15	528
8:00-8:15	0	185	61	0	177	0	0	0	0	24	13	4	464
8:15-8:30	0	174	72	0	176	2	0	0	0	26	9	5	464
8:30-8:45	0	180	58	0	155	1	0	0	0	20	8	6	428
8:45-9:00	0	190	58	0	167	4	0	0	0	24	2	6	451

AM PEAK HOUR IS FROM: 7:30 AM TO 8:30 AM
 Volumes: 0 763 299 0 711 8 0 0 0 0 43 33 1977
 Season Factor: 0 954 374 0 889 10 0 0 0 0 150 54 41 2471
 Growth: 0 1054 413 0 982 11 0 0 0 0 166 59 46 2730
 Percentage: 0% 0% 40% 0% 0% 0% 0% 0% 0% 0% 35% 5% 10%
 PROJECT: 0 0 77 0 0 0 0 0 0 0 43 6 12 138
 Total: 0 1054 490 0 982 11 0 0 0 0 208 65 58 2868

Trips In: 192
 Trips Out: 122
 Seasonal Factor: 1.25
 Growth Rate: 1.01
 Years Grown: 10

TURNING MOVEMENT VOLUME COUNTS

CONTROL:

E/W STREET: Citrus Avenue

US 1

SAEC

FILENAME: 8/28/2014

COUNT DATE: 8/28/2014

DAY: Thursday

CITY: Ft. Pierce

REPORT DATE: 4/28/2015

ANALYSIS YEAR: 2024- PM Peak Hour

1229 ↓ ↑ 1320

12 1216 0 ↻
 ↻ 44 ← 370
 ↻ 71 ←
 ↻ 255 →

PM

0 ↻ ↻ 0
 0 ↻ ↻ 0
 0 ↻ ↻ 0

← 85 ↻ 0 →

1471 ↓ ↑ 1516

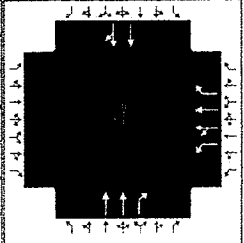
15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
4:00-4:15	0	176	41	0	201	2	0	0	0	60	15	3	498	2054
4:15-4:30	0	206	32	0	202	3	0	0	0	42	9	5	499	2174
4:30-4:45	0	221	30	0	212	3	0	0	0	35	6	5	512	2234
4:45-5:00	1	237	47	0	200	1	0	0	0	41	7	11	545	2121
5:00-5:15	0	240	49	0	222	4	0	0	0	68	27	8	618	1963
5:15-5:30	0	226	39	0	247	1	0	0	0	31	10	5	559	
5:30-5:45	0	193	26	0	140	1	0	0	0	29	6	4	399	
5:45-6:00	1	182	24	0	163	0	0	0	0	15	2	0	387	

PM PEAK HOUR IS FROM: 4:30 PM TO 5:30PM

Volumes	1	924	165	0	881	9	0	0	0	175	50	29	2234	Trips In: 28
Season Factor	1	1155	206	0	1101	11	0	0	0	219	63	36	2793	Trips Out: 38
Growth	1	1276	228	0	1216	12	0	0	0	242	69	40	3085	Seasonal Factor: 1.25
Percentage	0%	0%	40%	0%	0%	0%	0%	0%	0%	35%	5%	10%		Growth Rate: 1.01
PROJECT	0	0	11	0	0	0	0	0	0	13	2	4	30	Years Grown: 10
Total	1	1276	239	0	1216	12	0	0	0	255	71	44	3115	

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Susan E O'Rourke P.E., Inc.			Duration, h	0.25		
Analyst	AAA	Analysis Date	Apr 28, 2015	Area Type	Other		
Jurisdiction	Fort Pierce	Time Period	AM	PHF	0.95		
Intersection	Citrus Ave	Analysis Year	2024 with project	Analysis Period	1> 7:00		
File Name	c5.s.Citrus Ave and US 1 2024 am.xus						
Project Description	HCS Export						



Demand Information	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Approach Movement													
Demand (v), veh/h				208	65	58			1054	490		982	11

Signal Information				Signal Phases																
Cycle, s	120.0	Reference Phase	2																	
Offset, s	0	Reference Point	End																	
Uncoordinated	No	Simult. Gap E/W	On																	
Force Mode	Fixed	Simult. Gap N/S	On																	
		Green		79.0	29.0	0.0	0.0	0.0	0.0											
		Yellow		4.0	4.0	0.0	0.0	0.0	0.0											
		Red		2.0	2.0	0.0	0.0	0.0	0.0											

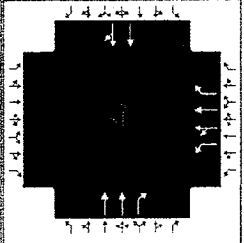
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				9.0		7.0		8.0
Phase Duration, s				35.0		85.0		85.0
Change Period, (Y+Rc), s				6.0		6.0		6.0
Max Allow Headway (MAH), s				2.9		0.0		0.0
Queue Clearance Time (gs), s				14.8				
Green Extension Time (ge), s				0.5		0.0		0.0
Phase Call Probability				1.00				
Max Out Probability				0.00				

Movement Group Results	EB			WB			NB			SB					
	L	T	R	L	T	R	L	T	R	L	T	R			
Assigned Movement				3	8	18		2	12		6	16			
Adjusted Flow Rate (v), veh/h				219	68	51		1109	505		517	517			
Adjusted Saturation Flow Rate (s), veh/h/ln				1774	1863	1579		1773	1579		1863	1862			
Queue Service Time (gs), s				12.8	1.7	3.0		7.9	19.3		15.8	6.5			
Cycle Queue Clearance Time (gc), s				12.8	1.7	3.0		7.9	19.3		15.8	6.5			
Green Ratio (g/C)				0.24	0.24	0.24		0.66	0.66		0.66	0.66			
Capacity (c), veh/h				429	900	381		2335	1039		1226	1226			
Volume-to-Capacity Ratio (X)				0.511	0.076	0.132		0.475	0.486		0.422	0.422			
Available Capacity (ca), veh/h				429	900	381		2335	1039		1226	1226			
Back of Queue (Q), veh/ln (50th percentile)				6.1	0.8	1.2		2.1	6.8		2.1	2.1			
Queue Storage Ratio (RQ) (50th percentile)				0.00	0.00	0.00		0.00	0.00		0.00	0.00			
Uniform Delay (d1), s/veh				39.4	35.1	35.6		3.0	10.3		2.9	2.9			
Incremental Delay (d2), s/veh				4.3	0.2	0.7		0.7	1.6		1.1	1.1			
Initial Queue Delay (d3), s/veh				0.0	0.0	0.0		0.0	0.0		0.0	0.0			
Control Delay (d), s/veh				43.7	35.3	36.4		3.7	11.9		4.0	4.0			
Level of Service (LOS)				D	D	D		A	B		A	A			
Approach Delay, s/veh / LOS	0.0			40.9			D	6.3			A		4.0		A
Intersection Delay, s/veh / LOS	9.4						A								

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.8	C	2.5	B	2.4	B
Bicycle LOS Score / LOS			0.8	A	1.8	A	1.3	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Susan E O'Rourke P.E., Inc.			Duration, h	0.25		
Analyst	AAA	Analysis Date	Apr 28, 2015	Area Type	Other		
Jurisdiction	Fort Pierce	Time Period	PM	PHF	0.95		
Intersection	Citrus Ave	Analysis Year	2017 with project	Analysis Period	1> 7:00		
File Name	c5.s.Citrus Ave and US 1 2024 pm.xus						
Project Description	HCS Export						



Demand Information	EB			WB			NB			SB				
	L	T	R	L	T	R	L	T	R	L	T	R		
Approach Movement														
Demand (v), veh/h				255	71	44				1276	239		1216	12

Signal Information				Signal Timing (s)														
Cycle, s	120.0	Reference Phase	2															
Offset, s	0	Reference Point	End															
Uncoordinated	No	Simult. Gap E/W	On	Green	79.0	29.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				Red	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				9.0		7.0		8.0
Phase Duration, s				35.0		85.0		85.0
Change Period, (Y+Rc), s				6.0		6.0		6.0
Max Allow Headway (MAH), s				2.9		0.0		0.0
Queue Clearance Time (gs), s				18.2				
Green Extension Time (ge), s				0.5		0.0		0.0
Phase Call Probability				1.00				
Max Out Probability				0.00				

Movement Group Results	EB			WB			NB			SB					
	L	T	R	L	T	R	L	T	R	L	T	R			
Approach Movement															
Assigned Movement				3	8	18		2	12		6	16			
Adjusted Flow Rate (v), veh/h				268	75	36		1343	241		641	641			
Adjusted Saturation Flow Rate (s), veh/h/ln				1774	1863	1579		1773	1579		1863	1862			
Queue Service Time (gs), s				16.2	1.9	2.1		11.2	7.4		21.5	9.4			
Cycle Queue Clearance Time (gc), s				16.2	1.9	2.1		11.2	7.4		21.5	9.4			
Green Ratio (g/C)				0.24	0.24	0.24		0.66	0.66		0.66	0.66			
Capacity (c), veh/h				429	900	381		2335	1039		1226	1226			
Volume-to-Capacity Ratio (X)				0.626	0.083	0.094		0.575	0.232		0.523	0.523			
Available Capacity (ca), veh/h				429	900	381		2335	1039		1226	1226			
Back of Queue (Q), veh/ln (50th percentile)				7.9	0.9	0.9		2.7	2.6		2.8	2.8			
Queue Storage Ratio (RQ) (50th percentile)				0.00	0.00	0.00		0.00	0.00		0.00	0.00			
Uniform Delay (d1), s/veh				40.7	35.2	35.3		3.2	8.3		3.1	3.1			
Incremental Delay (d2), s/veh				6.8	0.2	0.5		1.0	0.5		1.6	1.6			
Initial Queue Delay (d3), s/veh				0.0	0.0	0.0		0.0	0.0		0.0	0.0			
Control Delay (d), s/veh				47.4	35.4	35.8		4.2	8.8		4.7	4.7			
Level of Service (LOS)				D	D	D		A	A		A	A			
Approach Delay, s/veh / LOS	0.0			43.9			D			4.9			A		
Intersection Delay, s/veh / LOS				9.4						A					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.9		C	2.8		C	2.5		B	2.4		B
Bicycle LOS Score / LOS				0.8		A	1.8		A	1.5		A

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: US 1 **E/W STREET:** Orange Ave **CONTROL:**
FILENAME: Orange Ave and US 1 **CITY:** Fort Pierce
COUNT DATE: 3/19/2014 **DAY:** Thursday
REPORT DATE: 4/28/2015 **ANALYSIS YEAR:** 2024

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
7:00-7:15	14	180	5	1	124	18	21	7	7	0	1	0	378	1853
7:15-7:30	14	179	3	5	146	14	23	3	12	1	1	1	402	1955
7:30-7:45	8	220	4	3	191	28	33	9	6	2	3	3	510	1992
7:45-8:00	27	173	8	6	205	25	48	34	8	11	14	4	563	2011
8:00-8:15	17	156	16	6	166	19	45	26	9	5	9	6	480	1980
8:15-8:30	11	145	12	4	156	21	32	23	7	10	13	5	439	
8:30-8:45	16	187	10	10	201	19	27	24	8	10	9	8	529	
8:45-9:00	25	204	15	2	187	12	37	26	10	9	5	0	532	

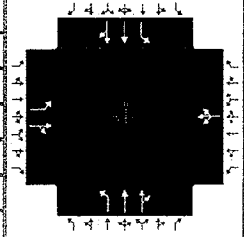
AM PEAK HOUR IS FROM: 7:45AM TO 8:45AM
 Volumes 71 661 46 26 728 84 152 107 32 36 45 23 2011
 Season Factor 71 661 46 26 728 84 152 107 32 36 45 23 2011
 Growth 78 723 50 28 796 92 166 117 35 39 49 25 2199
 Percentage 5% 5% 0% 15% 0% 0% 0% 5% 0% 0% 5% 10%
PROJECT 6 6 0 29 0 0 0 30 0 0 0 0 0 51
 Total 84 729 50 57 796 92 166 127 35 39 49 25 2250
 Trips In: 192 Trips Out: 122
 Seasonal Factor: 1 Growth Rate: 1.01
 Years Grown: 9

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
4:00-4:15	29	187	13	5	207	15	31	28	7	23	18	6	569	2419
4:15-4:30	29	237	19	2	236	25	42	11	13	13	22	5	654	2491
4:30-4:45	25	212	17	7	197	22	38	21	9	27	24	9	608	2474
4:45-5:00	18	211	22	2	206	16	38	22	12	14	17	10	588	2481
5:00-5:15	28	229	16	6	209	25	45	21	13	19	25	5	641	2506
5:15-5:30	15	243	21	5	228	27	49	18	7	11	12	1	637	
5:30-5:45	25	236	19	9	210	22	36	23	5	15	7	8	615	
5:45-6:00	26	227	11	8	233	24	32	13	9	11	13	6	613	

PM PEAK HOUR IS FROM: 5:00PM TO 6:00PM
 Volumes 94 935 67 28 880 98 162 75 34 34 56 57 20 2506
 Season Factor 94 935 67 28 880 98 162 75 34 34 56 57 20 2506
 Growth 103 1023 73 31 962 107 177 82 37 61 62 22 2741
 Percentage 5% 5% 0% 15% 0% 0% 0% 5% 0% 0% 5% 10%
PROJECT 2 2 0 4 0 0 0 1 0 0 2 4 4 15
 Total 105 1024 73 35 962 107 177 83 37 61 64 26 2756
 Trips In: 28 Trips Out: 38
 Seasonal Factor: 1 Growth Rate: 1.01
 Years Grown: 9

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Susan E O'Rourke P.E., Inc.			Duration, h	0.25		
Analyst	AAA	Analysis Date	Apr 28, 2015	Area Type	Other		
Jurisdiction	Fort Pierce	Time Period	AM	PHF	0.95		
Intersection	Orange Ave	Analysis Year	2024 with project	Analysis Period	1 > 7:00		
File Name	c5.s.Orange and US 1 2024 am.xus						
Project Description	HCS Export						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	166	127	35	39	49	25	84	729	50	57	796	92

Signal Information				EB				WB				NB				SB			
Cycle, s	120.0	Reference Phase	2	Green	52.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Offset, s	0	Reference Point	End	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Uncoordinated	No	Simult. Gap E/W	On	Red	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On																

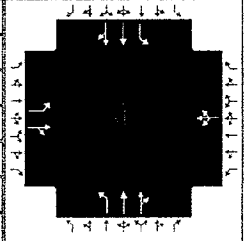
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		10.0		12.0		6.0		6.0
Phase Duration, s		31.0		31.0		58.0		58.0
Change Period, (Y+R _c), s		6.0		6.0		6.0		6.0
Max Allow Headway (MAH), s		3.0		3.2		0.0		0.0
Queue Clearance Time (g _s), s		12.4		8.2				
Green Extension Time (g _e), s		0.5		0.1		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (v), veh/h	175	160			108		88	408	401	60	470	454
Adjusted Saturation Flow Rate (s), veh/h/ln	1774	1809			1782		603	1863	1828	671	1863	1801
Queue Service Time (g _s), s	10.4	9.2			6.2		15.1	15.7	16.1	8.3	19.3	20.0
Cycle Queue Clearance Time (g _c), s	10.4	9.2			6.2		35.2	15.7	16.1	24.4	19.3	20.0
Green Ratio (g/C)	0.21	0.21			0.21		0.43	0.43	0.43	0.43	0.43	0.43
Capacity (c), veh/h	370	377			371		221	807	792	261	807	781
Volume-to-Capacity Ratio (X)	0.473	0.424			0.292		0.401	0.506	0.506	0.230	0.582	0.582
Available Capacity (c _a), veh/h	370	377			371		221	807	792	261	807	781
Back of Queue (Q), veh/ln (50th percentile)	5.0	4.5			2.9		2.6	6.4	6.6	1.5	7.9	8.2
Queue Storage Ratio (RQ) (50th percentile)	0.00	0.00			0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	41.7	41.3			40.0		37.8	17.7	18.4	32.4	18.4	19.8
Incremental Delay (d ₂), s/veh	4.3	3.5			2.0		5.4	2.3	2.3	2.1	3.1	3.2
Initial Queue Delay (d ₃), s/veh	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	46.0	44.7			42.0		43.2	19.9	20.7	34.4	21.5	23.0
Level of Service (LOS)	D	D			D		D	B	C	C	C	C
Approach Delay, s/veh / LOS	45.4		D	42.0		D	22.6		C	22.9		C
Intersection Delay, s/veh / LOS	26.9						C					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.9		C	2.9		C	2.1		B	2.3		B
Bicycle LOS Score / LOS	1.0		A	0.7		A	1.2		A	1.3		A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Susan E O'Rourke P.E., Inc.			Duration, h	0.25		
Analyst	AAA	Analysis Date	Apr 28, 2015	Area Type	Other		
Jurisdiction	Fort Pierce	Time Period	PM	PHF	0.95		
Intersection	Orange Ave	Analysis Year	2024 with project	Analysis Period	1 > 7:00		
File Name	c5.s.Orange and US 1 2024 pm.xus						
Project Description	HCS Export						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	177	83	37	61	64	26	105	1024	73	35	962	107

Signal Information				Signal Phases												
Cycle, s	120.0	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	No	Simult. Gap E/W	On													
Force Mode	Fixed	Simult. Gap N/S	On													
		Green		44.0	29.0	29.0	0.0	0.0	0.0							
		Yellow		4.0	4.0	4.0	0.0	0.0	0.0							
		Red		2.0	2.0	2.0	0.0	0.0	0.0							

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		10.0		12.0		6.0		6.0
Phase Duration, s		35.0		35.0		50.0		50.0
Change Period, (Y+Rc), s		6.0		6.0		6.0		6.0
Max Allow Headway (MAH), s		2.9		3.2		0.0		0.0
Queue Clearance Time (gs), s		12.7		10.2				
Green Extension Time (ge), s		0.4		0.2		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (v), veh/h	186	116			148		111	578	566	37	566	548
Adjusted Saturation Flow Rate (s), veh/h/ln	1774	1784			1788		503	1863	1824	490	1863	1802
Queue Service Time (gs), s	10.7	6.3			8.2		12.2	32.5	32.7	8.8	31.4	31.8
Cycle Queue Clearance Time (gc), s	10.7	6.3			8.2		44.0	32.5	32.7	41.6	31.4	31.8
Green Ratio (g/C)	0.24	0.24			0.24		0.37	0.37	0.37	0.37	0.37	0.37
Capacity (c), veh/h	429	431			432		111	683	669	106	683	661
Volume-to-Capacity Ratio (X)	0.435	0.269			0.344		0.994	0.846	0.847	0.348	0.829	0.830
Available Capacity (ca), veh/h	429	431			432		111	683	669	106	683	661
Back of Queue (Q), veh/ln (50th percentile)	5.0	3.0			3.9		5.9	15.3	15.4	1.3	14.7	14.7
Queue Storage Ratio (RQ) (50th percentile)	0.00	0.00			0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	38.6	36.9			37.6		57.2	27.7	28.6	53.3	27.4	28.8
Incremental Delay (d2), s/veh	3.2	1.5			2.2		83.6	12.3	12.6	8.8	11.2	11.5
Initial Queue Delay (d3), s/veh	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	41.7	38.4			39.8		140.8	40.0	41.1	62.0	38.6	40.3
Level of Service (LOS)	D	D			D		F	D	D	E	D	D
Approach Delay, s/veh / LOS	40.5		D	39.8		D	49.4		D	40.2		D
Intersection Delay, s/veh / LOS	44.2						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.9	C	2.1	B	2.3	B
Bicycle LOS Score / LOS	1.0	A	0.7	A	1.5	A	1.4	A

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: 2nd Ave
FILENAME: Orange Ave and 2nd Ave
COUNTY DATE: 3/18/2015
REPORT DATE: 4/28/2015
E/W STREET: Orange Ave
CITY: Fort Pierce
DAY: Wednesday
ANALYSIS YEAR: 2024
CONTROL:

15 Min Period	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
7:00-7:15	0	1	2	0	3	0	0	1	1	0	0	0	9	179
7:15-7:30	0	1	1	3	4	0	2	16	1	0	12	0	40	263
7:30-7:45	1	4	3	4	9	4	3	13	3	2	15	2	63	316
7:45-8:00	2	5	4	3	10	1	3	15	4	3	14	3	67	332
8:00-8:15	3	1	4	3	12	8	9	23	10	3	15	2	93	367
8:15-8:30	1	5	3	3	16	4	6	21	20	2	12	0	93	
8:30-8:45	4	3	2	0	15	4	6	20	12	1	11	1	79	
8:45-9:00	4	2	5	3	17	5	8	25	17	2	12	2	102	

AM PEAK HOUR IS FROM: 8:00AM TO 9:00AM

Volumes 12 11 14 9 60 21 29 89 59 8 50 5 367
 Season Factor 12 11 14 9 60 21 29 89 59 8 50 5 367
 Growth 13 12 15 10 66 23 32 97 65 9 55 5 401
 Percentage 0% 0% 0% 0% 0% 0% 0% 15% 10% 0% 15% 0% 66
PROJECT 0 0 0 0 0 0 0 29 19 0 18 0 66
 Total 13 12 15 10 66 23 32 126 84 9 73 5 468
 Trips In: 192
 Trips Out: 122
 Seasonal Factor: 1
 Growth Rate: 1.01
 Years Grown: 9



15 Min Period lanes	Northbound			Southbound			Eastbound			Westbound			ONE HOUR SUM	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		TOTAL
4:00-4:15	2	8	7	8	8	4	14	27	13	4	25	2	122	499
4:15-4:30	7	8	2	1	17	4	9	27	6	3	21	5	110	531
4:30-4:45	7	8	6	4	10	5	11	39	8	2	23	3	126	548
4:45-5:00	1	8	6	3	14	13	14	38	13	2	25	4	141	522
5:00-5:15	8	8	6	3	18	5	7	28	14	15	36	6	154	470
5:15-5:30	2	12	6	4	11	6	14	37	6	3	24	2	127	
5:30-5:45	3	5	5	4	7	7	12	33	3	2	15	4	100	
5:45-6:00	2	11	6	2	6	3	8	25	9	3	12	2	89	

PM PEAK HOUR IS FROM: 4:30 PM TO 5:30 PM

Volumes 18 36 24 14 53 29 46 142 41 22 108 15 548
 Season Factor 18 36 24 14 53 29 46 142 41 22 108 15 548
 Growth 20 39 26 15 58 32 50 155 45 24 118 16 599
 Percentage 0% 0% 0% 0% 0% 0% 0% 15% 10% 0% 15% 0% 5%
PROJECT 0 0 0 0 0 0 0 4 3 0 6 0 0 13
 Total 20 39 26 15 58 32 50 160 48 24 124 16 13
 Trips In: 28
 Trips Out: 38
 Seasonal Factor: 1
 Growth Rate: 1.01
 Years Grown: 9



ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	AAA	Intersection	Orange and 2nd
Agency/Co.	SOR	Jurisdiction	Fort Pierce
Date Performed	4/28/2015	Analysis Year	2024 w/ project
Analysis Time Period	AM		

Project ID	
East/West Street: Orange Ave	North/South Street: 2nd Ave

Volume Adjustments and Site Characteristics						
Approach	Eastbound			Westbound		
	L	T	R	L	T	R
Movement						
Volume (veh/h)	32	126	84	9	73	5
%Thrus Left Lane						

Approach	Northbound			Southbound		
	L	T	R	L	T	R
Movement						
Volume (veh/h)	13	12	15	10	66	23
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate (veh/h)	242		87		40		99	
% Heavy Vehicles	0		0		0		0	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.1		0.1		0.3		0.1	
Prop. Right-Turns	0.3		0.1		0.4		0.2	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.2		-0.0		-0.2		-0.1	

Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20		3.20	
xs, initial	0.22		0.08		0.04		0.09	
hd, final value (s)	4.15		4.48		4.60		4.56	
xs, final value	0.28		0.11		0.05		0.13	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, ts (s)	2.2		2.5		2.6		2.6	

Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	492		337		290		349	
Delay (s/veh)	8.75		8.02		7.85		8.22	
LOS	A		A		A		A	
Approach: Delay (s/veh)	8.75		8.02		7.85		8.22	
LOS	A		A		A		A	
Intersection Delay (s/veh)	8.43							
Intersection LOS	A							

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	AAA	Intersection	Orange and 2nd
Agency/Co.	SOR	Jurisdiction	Fort Pierce
Date Performed	4/28/2015	Analysis Year	2024 w/ project
Analysis Time Period	PM		

Project ID	
East/West Street: Orange Ave	North/South Street: 2nd Ave

Volume Adjustments and Site Characteristics						
Approach	Eastbound			Westbound		
	L	T	R	L	T	R
Movement						
Volume (veh/h)	50	160	48	24	124	16
%Thrus Left Lane						

Approach	Northbound			Southbound		
	L	T	R	L	T	R
Movement						
Volume (veh/h)	20	39	26	15	58	32
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate (veh/h)	258		164		85		105	
% Heavy Vehicles	0		0		0		0	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.2		0.1		0.2		0.1	
Prop. Right-Turns	0.2		0.1		0.3		0.3	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		-0.0		-0.1		-0.2	

Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.23		0.15		0.08		0.09	
hd, final value (s)	4.52		4.67		4.92		4.87	
x, final value	0.32		0.21		0.12		0.14	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t _s (s)	2.5		2.7		2.9		2.9	

Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	508		414		335		355	
Delay (s/veh)	9.67		8.93		8.56		8.67	
LOS	A		A		A		A	
Approach: Delay (s/veh)	9.67		8.93		8.56		8.67	
LOS	A		A		A		A	
Intersection Delay (s/veh)	9.15							
Intersection LOS	A							