Atlantic Beach Roundabout Feasibility Study

Duval County, FL

June 2025

Atlantic Beach Roundabout Feasibility Study

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDIX

ACRONYMS

AADT	Annual Average Daily Traffic
AWSC	All Way Stop Control
CMAQ	Congestion Mitigation and Air Quality
COAB	City of Atlantic Beach
EB	Eastbound
FDOT	Florida Department of Transportation
FY	Fiscal Year
JFRD	Jacksonville Fire and Rescue Division
LOS	Level of Service
LRE	Long Range Estimating
NB	Northbound
PD&E	Project Development and Environment
ROW	Right-of-Way
SB	Southbound
TALU	Transportation Alternative Program, Population > 200K)
TTCP	Temporary Traffic Control Plan
TIP	Transportation Improvement Program
TPO	Transportation Planning Organization
UAO	Utility Agent/Owners
VPD	Vehicles per Day
VPD	Vehicles per Hour
WB	Westbound

1 INTRODUCTION

The North Florida Transportation Planning Organization (TPO) is partnered with the City of Atlantic Beach, FL (COAB) to conduct a Roundabout Feasibility Study at the 5 point intersection of Seminole Road, Plaza and Sherry Drive. The study location is depicted in Figure 1.

Atlantic Beach is a community with approximately 14,000 citizens and is the northernmost of the three beaches communities in Duval County. Much of the development in the city is residential, with single-family homes accounting for most of the developed land areas. Less than 10% of the incorporated area remains undeveloped.

This study updates a 2004 feasibility study and considers modern design guidance. Issues considered include:

- Safety (all-way stops vs. roundabout)
- Traffic flow and operation
- Impacts to existing intersection (e.g. right-of-way)
- Cost

Figure 1 – Study Area

2 EXISTING CONDITIONS

Table 1 summarizes the characteristics of the Seminole Road intersection and connecting roadways. Surrounding land use is primarily residential with the exception of the Atlantic Beach Fire Station and Police Department, which have direct frontage onto Seminole Road in the southwest quadrant of the intersection. Other area attractors are Atlantic Beach City Hall and Jack Russell Park, located directly to the west of the Fire and Police Departments, Howell Park and Atlantic Beach Elementary School on Sherry Drive.

Seminole Road and Sherry Drive are classified as two-lane undivided major collectors. On Plaza, the east leg is a two-lane divided local road and the west leg is a two-lane undivided minor collector.

Red brick pavers highlight intersection features such as pedestrian crosswalks on each leg and a driveway apron at the fire station. Other notable features are the decorative tide clock in the landscaped splitter island between Sherry Drive and the south leg of Seminole Road and the "In Search of Atlantis" sculpture in Frazier Park on the east leg of Plaza. The intersection has pedestrian scale streetlights throughout and a cobra style luminary at the slip lane between Seminole Road and Sherry Drive.

Brick pavers highlight existing intersection features, including the crosswalks at each approach.

The intersection operates under All Way Stop Control (AWSC). The posted speed limit (PSL) is 25 mph on all legs of the intersection, except for the east leg of Plaza which has a 20 mph PSL.

Atlantic Beach Elementary School is located along Sherry Drive, less than a half mile (½) south of the intersection. The school day starts at 8:30 a.m. and ends at 3 p.m. The posted school zone begins on Sherry Drive approximately a quarter mile (¼) south of the Seminole Road intersection.

A tide clock is positioned in the splitter island between Sherry Drive and Seminole Road.

Table 1 – Roadway Characteristics Summary

Characteristic	Description
Cross Section	Seminole Road: Two-lane undivided urban section
	Sherry Drive: Two-lane undivided urban section
	Plaza (EB): Two-lane undivided urban section Plaza (WB): Two-lane divided urban section
Functional Classification	Major Collector: Seminole Road, Sherry Drive
	Minor Collector: Plaza EB
	Local Road: Plaza WB
Intersection Control	All Way Stop Control (AWSC)
Posted Speed Limit	Plaza East Leg: 20 mph
	All other approaches: 25 mph
Lighting	Cobra style luminary between Seminole Road and Sherry Drive Pedestrian scale streetlights at intersection
Pedestrian Facilities	Seminole Road (NB): sidewalk west side of roadway Sherry Drive (NB): sidewalk east side of roadway Seminole Road (SB): sidewalk both sides of roadway Plaza (EB/WB): sidewalk both sides of roadway Crosswalks at all intersection approaches
Bicycle Facilities	None
Mid-Block Crossings	Three within Sherry Dr school zone; none at intersection
General Land Use	Residential, Public Buildings (City Hall, Emergency Services)
School Zone	None

2.1 EXISTING TRAFFIC VOLUMES

The Florida Department of Transportation (FDOT) conducted weekday peak hour turning movement counts at the Seminole Road intersection from 6 to 9 a.m. and 4 to 7 p.m. The count sheets and FDOT peak seasonal factor report are included in Appendix A.

Peak hour vehicle count volumes are depicted in Figure 2. The a.m. peak is from 8 to 9:00 a.m., which corresponds with the morning bell schedule at Atlantic Beach Elementary School. The PM peak hour is from 5 to 6:00 p.m. About 970 vehicles per hour (VPH) pass through the intersection in the AM peak hour and 1,101 VPH in the PM peak hour. In both peak hours, the north leg of Seminole Road (southbound) has the heaviest traffic volume followed by the west leg (eastbound) of Plaza.

Benesch obtained current Annual Average Daily Traffic (AADT) from FDOT's Florida Traffic Online database for portable traffic monitoring station 72-9230, Seminole Road, 0.1 miles north of Atlantic Boulevard. The most recent count shows 6,500 vehicles per day (VPD) in 2024 travelling on the corridor.

Bike and pedestrian volumes are depicted in Figure 3. Overall, there were 75 pedestrians and 69 bicyclists recorded in the three-hour AM count period, with approximately half occurring in the AM peak hour. In the 3-hour PM period, there were 61 pedestrians and 44 bicyclists recorded, with 16% in the PM peak hour. In both peak hours, more people are walking and biking along the north leg of Seminole Road and Sherry Drive, which is consistent with the field review.

Although weekend traffic counts were not conducted, events at Jack Russell Park increase the number of users through the intersection. Most notably, this includes yoga and a farmer's market with over 60 vendors, held on Sundays between 10:00 a.m. and 2:00 p.m.

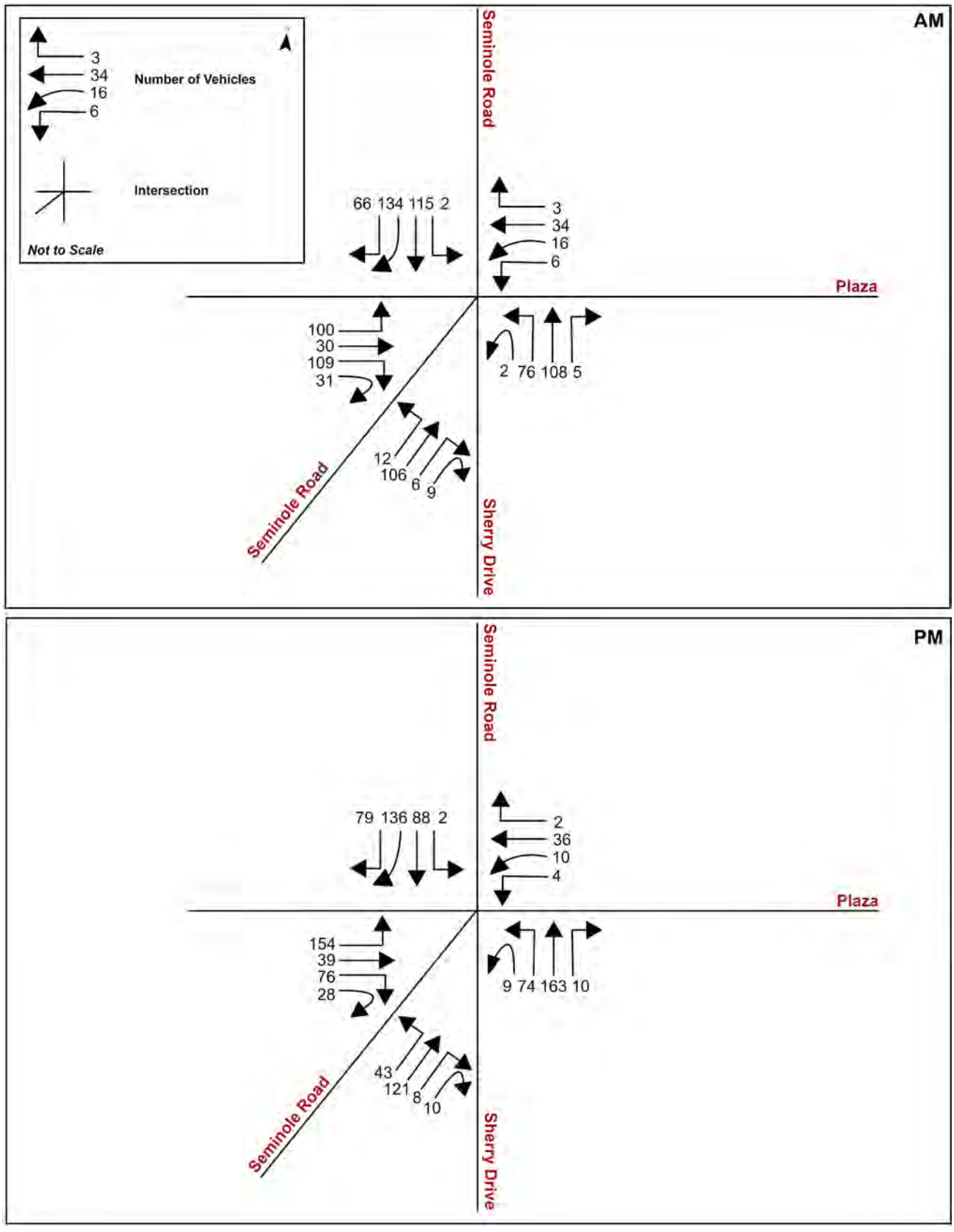


Figure 2 – 2024 Weekday Peak Hour Traffic Volume

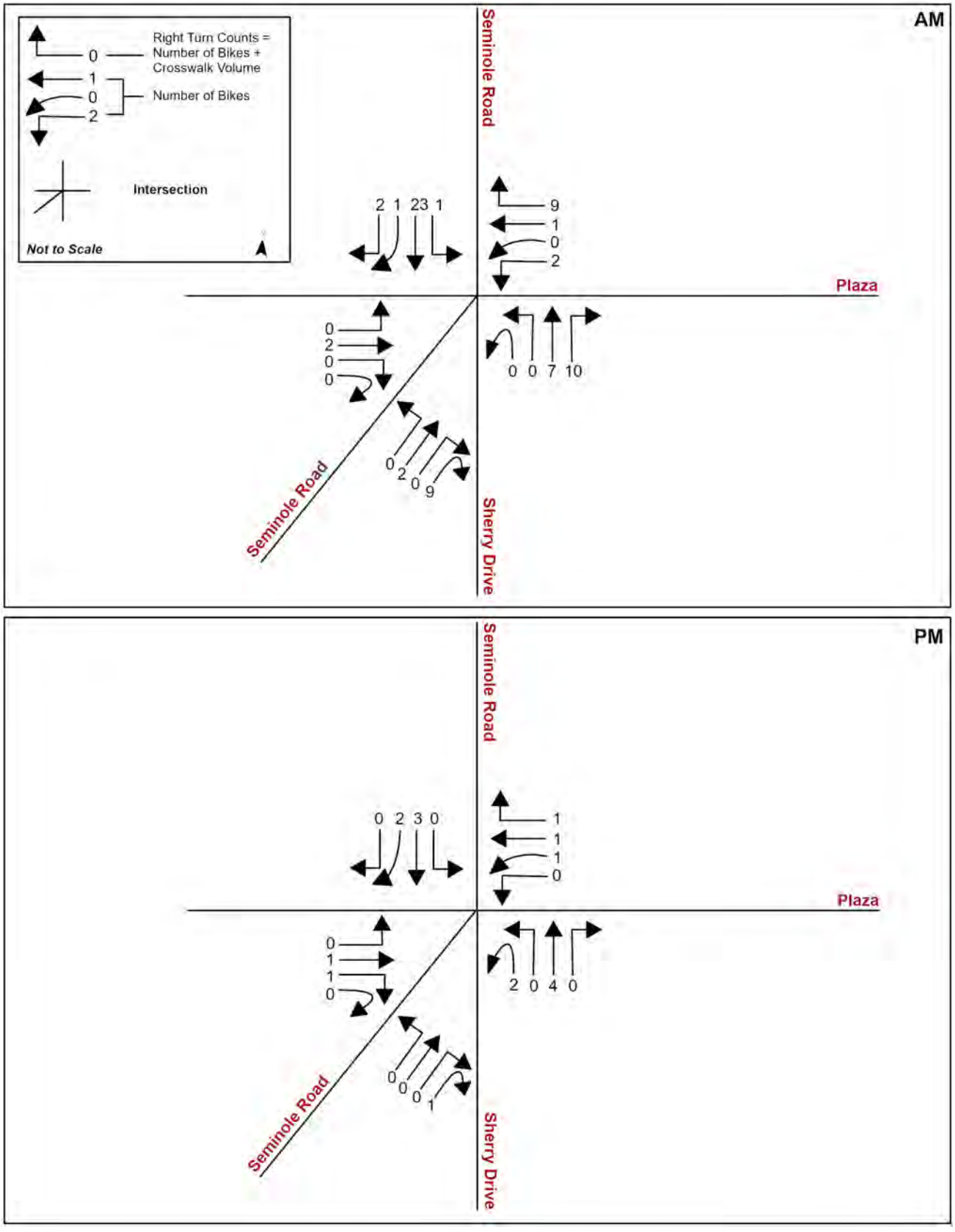


Figure 3 – 2024 Weekday Peak Hour Pedestrian Volume

2.2 FIELD REVIEW

Benesch conducted field review and observation Tuesday (a.m.) and Wednesday (p.m.), February 11-12, 2025. The weather was clear and dry. The review team did not observe any ongoing construction in the study area during this time. Observations are listed below with photos provided in Appendix B.

General Observations

- The five points geometry of the intersection adds to driver uncertainty and vehicular delay. The greatest distance between approaches is approximately 150 feet (Sherry Drive northbound to Seminole Road southbound). Approaching drivers must track the sequence of traffic at four other approaches across a large intersection, as well as the presence of pedestrians and bicyclists.
- Driver hesitancy and deferred right-of-way increases delay on the approaches.
- Multiple times, two drivers were observed to take the right-of-way and enter the intersection at the same time. The drivers would stop within the intersection to resolve who would defer.
- Vehicle turn signals did not offer clear intent of the direction of travel. For example, a driver on Seminole Road southbound may use their left turn signal, but it is unclear to others if their chosen path is Sherry Drive or eastbound Plaza.
- The intersection experiences a significant increase in vehicular traffic volumes at school arrival and dismissal times. Delay times and queues increase greatly, particularly on Seminole Road southbound where the team observed vehicle queues in excess of 20 cars.

A.M. Observations

- In the AM peak, the team observed queues of 23+ passenger cars on the north leg (southbound) Seminole Road.
- Prior to the morning bell at Atlantic Beach Elementary School, many school children walking and on bikes were observed moving through the intersection and along the sidewalk on the east side of Sherry Drive. There was no crossing guard at the intersection. Peak times were from 8-8:20 a.m.
- At Atlantic Beach Elementary School , most vehicles entering from the north would exit the school parking lot and continue south to Atlantic Boulevard, rather than returning northbound up Sherry Drive.

P.M. Observations

- The Atlantic Beach Elementary School release bell coincides with an afternoon peak, with vehicle queue lengths of two to three at each leg. Vehicle delays were minimal.
- As 3 p.m. neared, the Plaza eastbound approach grew modestly, while the Seminole Road southbound approach experienced a significant surge. Southbound queues stacked greater than 25 vehicles, blocking residential driveways on the west side of Seminole Road.

Northbound vehicles on Sherry Dr. queue at the 5-points intersection following afternoon school dismissal.

2.3 UTILITIES

At the study intersection, utilities from multiple companies are located under and above the road. Based on information provided through Sunshine One Call (Sunshine 811), Utility Agent/Owners (UAOs) are listed in Table 2. These include cable, fiberoptic and telephone lines, water and overhead electric. Above ground pedestals, poles, junction boxes and other utility markers adjacent to existing right-of-way are also present at the study intersections.

Table 2 – Utilities

Service Area Name[1]	Utility Type
Comcast Cablevision	Telephone/Cable/Telecommunications
City of Atlantic Beach	Water/Wastewater
IQ Fiber	Telephone/Cable/Telecommunications
Jacksonville Electric Authority	Power
AT&T/Distribution	Telephone/Cable/Telecommunications

[1]*Source: Sunshine OneCall (Sunshine 811)*

2.4 OPERATIONAL ANALYSIS

Benesch conducted capacity analysis for the existing intersection using Synchro 11 traffic software. Field review observations and turning movement counts were used to refine the analysis models for the AM and PM peak hours. Table 3 includes a summary of the results while the output worksheets are provided in Appendix C.

Level of Service (LOS) and control delay are outputs provided by Synchro that reflect capacity of an intersection. LOS has a direct relationship to control delay as outlined in the Highway Capacity Manual by the Transportation Research Board and acts as a letter grade for capacity (A-F). At each intersection, LOS and control delay is calculated for the overall intersection, each approach and each lane group. LOS A (up to 10 seconds/vehicle of delay) represents a low level and favorable conditions while LOS F represents significant delays and long queues, which may spill upstream. An intersection overall may still operate acceptably even if individual approaches or lane groups have an unacceptable LOS.

Traffic and model data indicate that the largest vehicle movements are southbound on Seminole Road and eastbound on Plaza during both the AM and PM peak hours. Consistent with drivers returning to their homes in the afternoon, delays increase on both northbound approaches (Sherry Drive and Seminole Road) for the p.m. peak hour. Westbound Plaza has a consistently lower delay than all other approaches.

Synchro modeling indicates that the intersection operates at an acceptable LOS during the AM and PM peak hours under existing conditions. Delays from all approaches are approximately 10 seconds, which is the threshold between LOS A and B. However, Synchro cannot properly predict delay due to driver indecision and the calculated delay is likely understated due to software limitations in analysis of an atypical 5-leg intersection. Synchro likely underestimates driver delay, as confirmed during field review and in discussion with Atlantic Beach officials and residents. Therefore, while Synchro modeling places this intersection at a level of minor delay (up to 20 seconds), at peak times the true delay may be greater, particularly on southbound Seminole Road.

Table 3 – Intersection Operational Analysis

Intersection	Control Type	Approach/ Movement	A.M. Peak Hour		P.M. Peak Hour	
			LOS	Delay (sec.)	LOS	Delay (sec.)
Approaches	AWSC	EB (Plaza)	B	10.0	B	10.4
		WB (Plaza)	A	8.4	A	8.4
		NB (Sherry Drive)	A	9.7	B	10.2
		SB (Seminole Road)	B	10.4	B	10.1
		NB (Seminole Road)	A	9.2	A	9.6
Intersection	AWSC	N/A	A	9.7	A	9.9

3 SAFETY ASSESSMENT

Benesch obtained 11 years of crash records (01/01/2014 to 12/31/2024) from the University of Florida's Signal Four Analytics for the study intersection. As part of the analysis, we thoroughly reviewed all crashes involving pedestrians, bicyclists, fatal and incapacitating crashes to confirm crash type, location, road surface and lighting conditions. We also reviewed the description of the crash events to determine if a crash pattern could be identified at the study intersection. Figure 43 depicts a heat map of the location and frequency of crashes at the intersection. The north leg of Seminole Road has the greatest density of crashes, followed by the south leg of Seminole Road and the west leg of Plaza.

Per Table 4 and Figure 54**,** a total of 56 crashes were identified at the intersection during the study period, with a predominance of rear-end (24; 42.9%), Angle (7, 12.5%) and Off Road (6, 10.7%) crashes. Eight crashes (14.3%) were classified as Other, which are crashes where the area of initial impact is not easily categorized.

The following crash trends are identified:

- Three reported pedestrian crashes and four reported bicycle crashes
- One reported fatality, which was a result of a medical emergency
- No reported incapacitating injury crashes
- 75% of the total crashes (42) resulted in no reported injuries
- 5.1 crashes per year on average at the intersection
- Four crashes (7.1%) had wet pavement conditions
- 13 crashes (23%) occurred at night/dusk/dawn
- 93% of all crashes occurred under dry pavement conditions

The crashes can also be categorized into several Florida Strategic Highway Safety Plan (SHSP) emphasis areas:

- Roadways – Intersection Related (33, 42%), Lane Departure (7, 9%)
- Road Users – Aging Road User (18, 23%), Commercial vehicle (5, 6%), Teen Driver (6, 8%)
- User Behavior – Distracted (6, 8%), Aggressive Driving (2, 3%); Occupant Protection (no restraint) (1, 1%)

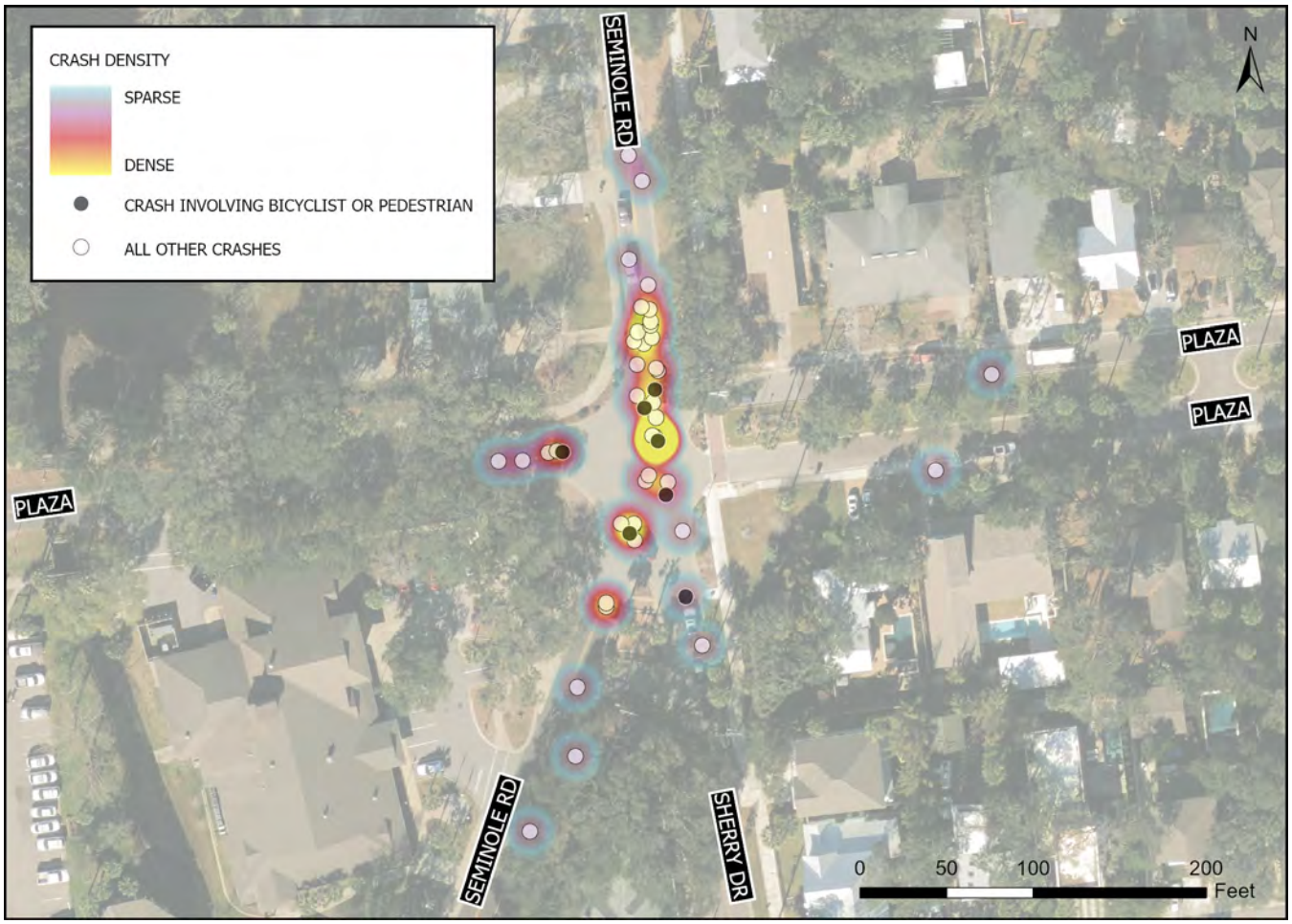


Figure 4 – Crash Location and Frequency

Table 4 – Crash Summary by Year

Seminole Rd at Plaza Rd		Years											Total	Severe Crashes	Yearly Mean Crashes	%
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024				
Crash Type	Angle	1	1	1	0	3	0	0	0	1	0	0	7	0	0.7	12.5%
	Bicycle	1	0	1	0	0	0	0	0	0	2	0	4	0	0.4	7.1%
	Left Turn	0	0	0	0	1	0	0	0	0	0	1	2	0	0.2	3.6%
	Off Road	0	0	1	0	0	0	2	1	0	1	1	6	0	0.6	10.7%
	Other	1	2	1	1	1	1	0	0	0	0	1	8	0	0.8	14.3%
	Pedestrian	0	0	1	0	0	0	0	0	1	1	0	3	0	0.3	5.4%
	Rear End	2	0	1	1	6	1	3	4	4	1	1	24	0	2.3	42.9%
	Sideswipe	0	0	0	0	0	0	0	2	0	0	0	2	0	0.2	3.6%
	Total	***5***	***3***	***6***	***2***	***11***	***2***	***5***	***7***	***6***	***5***	***4***	***56***	***0***	***5.3***	***100%***
Injury Severity	Fatal (Within 30 Days)	0	0	0	0	0	0	0	1	0	0	0	1	-	0.1	1.8%
	Non-Incapacitating Injury	1	0	0	1	0	2	0	0	1	0	1	6	-	0.6	10.7%
	Possible Injury	0	0	2	0	2	0	0	0	0	3	0	7	-	0.7	12.5%
	No Injury	4	3	4	1	9	0	5	6	5	2	3	42	-	4	75.0%
	Total	***5***	***3***	***6***	***2***	***11***	***2***	***5***	***7***	***6***	***5***	***4***	***56***	***-***	***5.3***	***100%***
Lighting Condition	Daylight	5	3	5	1	9	2	3	5	5	2	3	43	0	4.1	76.8%
	Dusk	0	0	0	1	0	0	0	0	0	0	0	1	0	0.1	1.8%
	Dark – Lighted	0	0	1	0	2	0	2	2	1	3	1	12	0	1.1	21.4%
	Total	***5***	***3***	***6***	***2***	***11***	***2***	***5***	***7***	***6***	***5***	***4***	***56***	***0***	***5.3***	***100%***
Surface Condition	Dry	5	3	5	2	9	2	5	7	5	5	4	52	0	4.9	92.9%
	Wet	0	0	1	0	2	0	0	0	1	0	0	4	0	0.4	7.1%
	Sand	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
	Total	***5***	***3***	***6***	***2***	***11***	***2***	***5***	***7***	***6***	***5***	***4***	***56***	***0***	***5.3***	***100%***

TOTAL CRASHES

Crash History by Year	Fatal (K)	Incapacitating (A)	Non-incapacitating (B)	Possible Injury (C)	No Reported Injury (O)	Total Crashes
2014	0	0	1	0	4	5
2015	0	0	0	0	3	3
2016	0	0	0	2	4	6
2017	0	0	1	0	1	2
2018	0	0	0	2	9	11
2019	0	0	2	0	0	2
2020	0	0	0	0	5	5
2021	1	0	0	0	6	7
2022	0	0	1	0	5	6
2023	0	0	0	3	2	5
2024	0	0	1	0	3	4
TOTAL	1	0	6	7	42	56
% of Total	1.8%	0.0%	10.7%	12.5%	75.0%	

Figure 5 – Crash Statistics

As depicted in Figure 65, crashes are broadly spread throughout the day from 8 a.m. to 9 p.m., with notable peaks in crash frequency observed at 12 p.m. and 5 p.m.

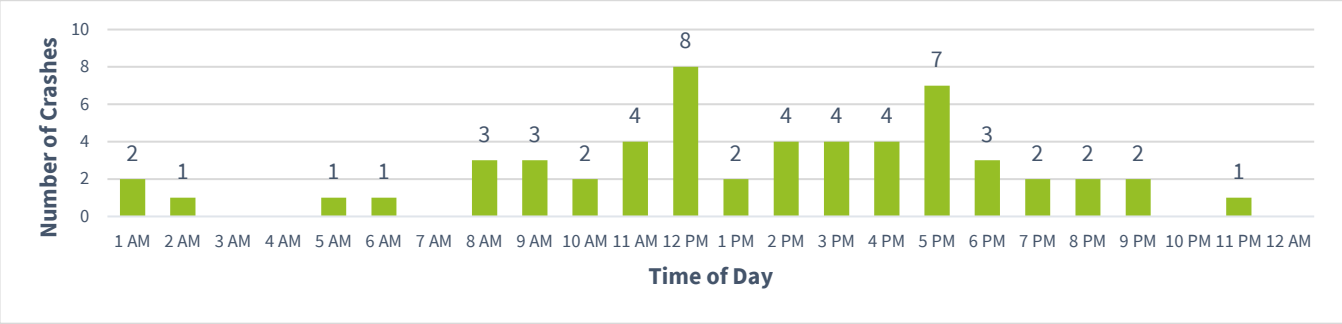


Figure 6 – Crashes by Time of Day

3.1 FATAL AND INCAPACITATING INJURY CRASHES

Crash Severity is depicted in Figure 76. One fatal crash was reported at the study intersection over the 11-year study period. A detailed summary is presented in Table 5. The crash occurred during daylight hours and with dry road conditions. The crash was caused by a driver losing control of the vehicle, resulting in a collision with a tree and a traffic sign. The investigation concluded that the driver suffered a medical emergency at the wheel. There were no incapacitating injury crashes reported.

Figure 7 – Crash Severity Map

Table 5 – Fatal and Incapacitating Crash Summary

Date	Crash Type	Injury Severity	Day, Time, Lighting, Road Conditions	Brief Summary	Potential Countermeasure[1]
4/2/2021	Off Road	Fatal	Friday, 2:41 p.m. Daylight, Dry	V1 was SB on Sherry Dr, lost control of his vehicle and struck a sign and a tree.	N/A; fatality is a result of a medical condition

3.2 PEDESTRIAN AND BICYCLE CRASHES

Also known as non-motorists, pedestrians and bicyclists are especially vulnerable to impacts from motor vehicles, which are larger, heavier and likely to be traveling at a higher rate of speed. As depicted in Figure 87, four bicycle crashes and three pedestrian crashes were reported at the Seminole Road intersection during the study period (2014-2024).

Figure 8 – Bicycle and Pedestrian Crash Map

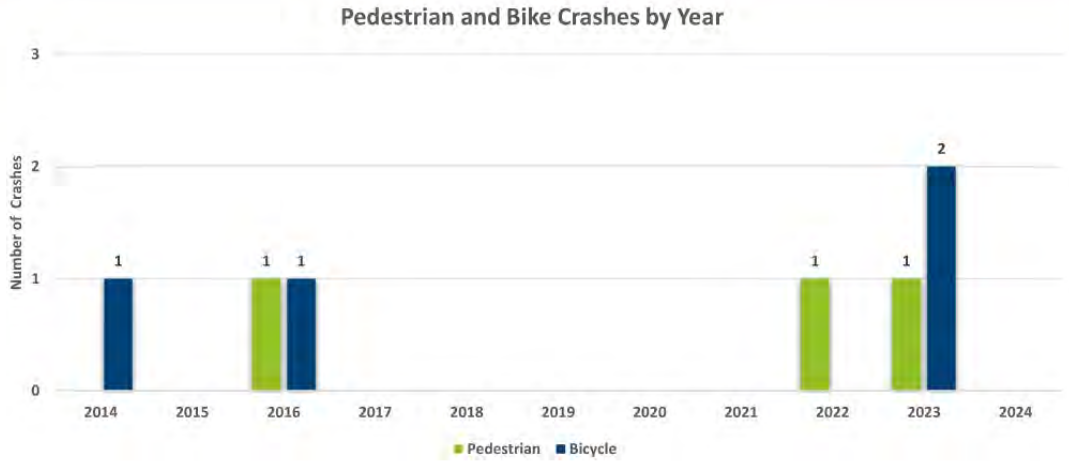
Benesch reviewed these crashes separately from motor vehicle crashes to quantify numbers and identify any trends and potential safety countermeasures. Crash statistics for non-motorist crashes are depicted in Figure 98. There were no bicycle or pedestrian crashes in seven of the eleven years reviewed, although there were three crashes in 2023. Four of seven non-motorist crashes resulted in possible injuries and the remaining three resulted in non-incapacitating injuries. Nearly all crashes occurred on dry pavement with 57% of crashes occurring during the day. Crashes occurred during peak times of day (AM, midday and PM).

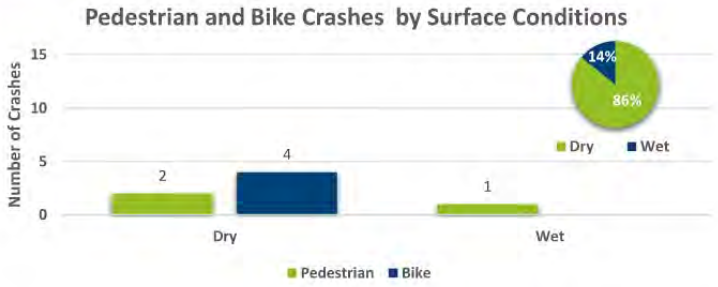
The crashes are described in Table 6. “Failure to yield right of way” is commonly cited in the crash reports, for both drivers and non-motorists.

PEDESTRIAN & BICYCLIST CRASHES

Crash History by Year	Fatal (K)	Incapacitating (A)	Non-Incapacitating (B)	Possible Injury (C)	No Reported Injury (O)	Total Crashes
2014	0	0	1	0	0	1
2015	0	0	0	0	0	0
2016	0	0	0	2	0	2
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	1	0	0	1
2023	0	0	0	3	0	3
2024	0	0	0	0	0	0
TOTAL	0	0	2	5	0	7
% of Total	0.0%	0.0%	3.6%	8.9%	0.0%	

Crash Statistics (2014 - 2024)





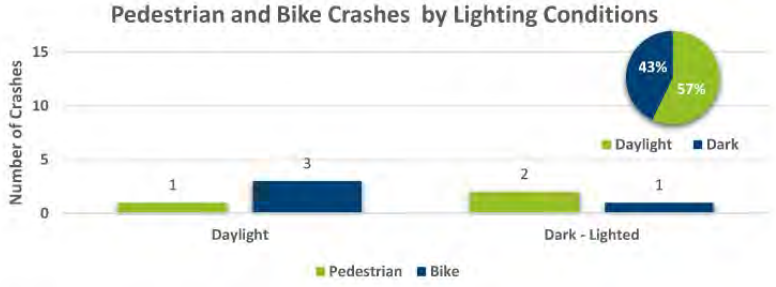


Figure 9 – Bicycle and Pedestrian Crash Statistics

Table 6 – Non-Motorist Crashes

Date	Crash Type	Injury Severity	Day, Time, Lighting, Road Conditions	Brief Summary
6/25/2014	Bicycle	Non-Incapacitating Injury	Wednesday, 9:50 a.m., Daylight, Dry	Bike 1 was WB on Plaza Rd, riding at a high rate of speed, failed to yield the right of way to traffic and was struck by V2 heading SB on Seminole Rd.
3/17/2016	Pedestrian	Possible Injury	Thursday, 8:55 p.m., Dark – Lighted, Wet	Ped 1 was crossing WB on Sherry Dr, wearing dark clothes, failed to yield right of way to traffic and was struck by V1 heading SB on Sherry Dr
9/14/2016	Bicycle	Possible Injury	Wednesday, 12:09 p.m., Daylight, Dry	V1 was SB on Seminole Rd, failed to yield right of way and struck Bike 1 crossing WB
4/4/2022	Pedestrian	Non-Incapacitating Injury	Monday, 11:33 a.m., Daylight, Dry	V1 was SB on Sherry Dr, struck the scooter being ridden by P1, causing P1 to fall resulting in minor scrapes on P1.
1/19/2023	Pedestrian	Possible Injury	Thursday, 6:30 a.m., Dark – Lighted, Dry	V1 was SB on Seminole Rd, failed to yield the right of way to Ped 1 crossing WB on Seminole Rd, and impacted Ped 1 right forearm.
8/13/2023	Bicycle	Possible Injury	Sunday, 8:30 a.m., Daylight, Dry	Bike 1 was crossing NB on Plaza Rd, failed to yield right of way for V1 heading EB on Plaza Rd who was stopped at the stop sign, and struck V1. Bike 1 assumed D1 would allow her to cross.
10/21/2023	Bicycle	Possible Injury	Saturday, 7:22 p.m., Dark – Lighted, Dry	V1 was NB on Seminole Rd, proceeded after stopping at the stop sign and struck Bike 1 crossing eastbound

3.3 STREET SIMPLIFIED

As part of a separate review, STREET simplified conducted a 70-hour analysis of the intersection over three days, from Thursday to Sunday on January 16 to 18, 2025. Cameras recorded vehicle movement and crosswalk user counts to identify intersection conflicts (near misses) between vehicles, bicyclists and pedestrians. For example, over three days there were 1,011 total conflicts:

- Through-Through: 803
- Right Angle Left-Through: 128
- Opposing Left-Through: 80

Based on 80 vehicle samples extracted, stop sign compliance is 100%.

Safety recommendations are to convert the existing brick inlay crosswalks to high visibility continental crosswalks, improve sight distance by trimming vegetation, provide additional pedestrian signage and improve the lighting conditions at approaches. The study also recommends converting the intersection to a mini roundabout.

An example of the near miss data collected by STREET simplified details vehicle and crosswalk conflicts (source: STREET simplified)

4 FUTURE CONDITIONS

4.1 TRAFFIC VOLUME PROJECTIONS

Benesch obtained historical AADT from FDOT's Florida Traffic Online database for portable traffic monitoring station 72-9230 on Seminole Road. Since 2012, traffic volumes fluctuated between a low of 6,400 VPD (2023) and a high of 7,000 VPD (2019). The most recent count indicates 6,500 VPD in 2024.

Using this information for a Trends analysis, Benesch calculated a compound annual growth rate of 0.27% per year on the corridor (rounded to 0.5%). The AADT data and trend analysis are provided in Appendix D. The modest growth rate is reasonable as more than 90% of Atlantic Beach is built out and most redevelopment is tear down and rebuild of existing units. There are no large land parcels which could be easily developed into additional residential units.

The future traffic analysis considers a horizon of 25 years, which represents a 2050 Design Year. Figure 109 illustrates the projected future traffic volumes. It's projected that approximately 1,100 to 1,200 VPH will enter the intersection in the peak hours, which is an increase of nearly 150 VPH over current peak conditions.

4.2 FUTURE TRAFFIC OPERATIONS

Table 7 provides a comparison of peak hour intersection operations in the 2050 Design Year for No Build (all way stop control) and Build (roundabout) conditions. The Synchro output worksheets are provided in Appendix E.

In the No Build configuration, overall delay is anticipated to remain at LOS B (under 20 seconds). Similar to the existing conditions, driver indecision at the intersection increases the delay above the levels accounted for in the Synchro analysis and at peak times the true delay may be greater, such as on southbound Seminole Road.

Under a Build scenario, LOS improves across all intersection approaches to LOS A. Continuous traffic flow into the roundabout should reduce queuing and blocked driveways on Seminole Road by funneling vehicles into the intersection. The roundabout will reduce driver speeds through the intersection as the ability to accelerate into a free space from the stop bar is replaced by a constrained path along the roundabout's curvature. Most significantly, the simplicity of replacing a five-way stop sequence with yields and right turns will reduce driver confusion, which is a significant contributor to delays experienced with the existing intersection.

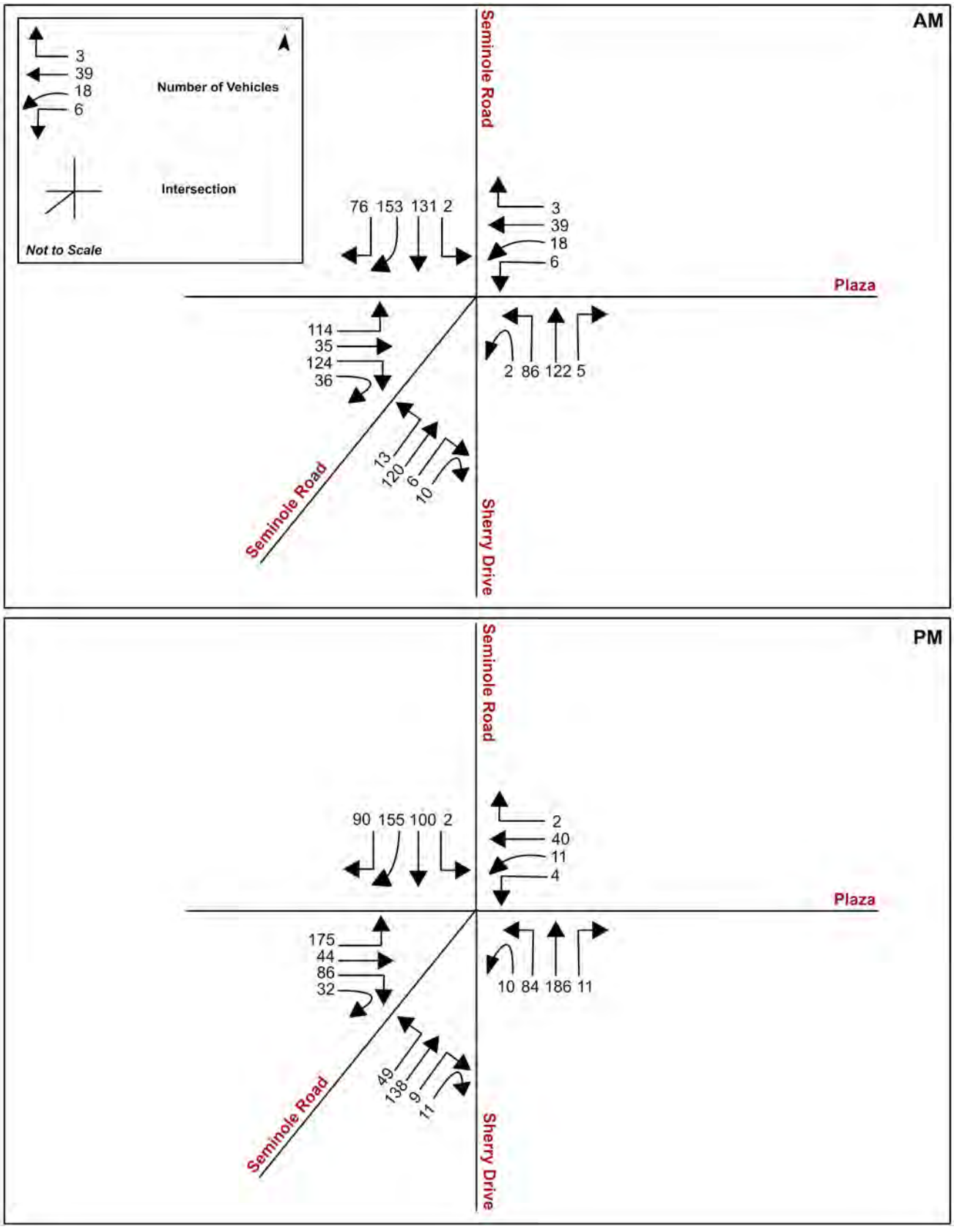


Figure 10 – 2050 Weekday Peak Hour Traffic Volumes

Table 7 – No Build/Build 2050 Operational Analysis

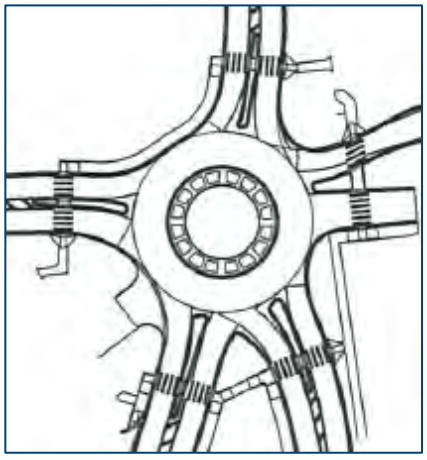
Intersection	Control Type	Approach/ Movement	A.M. Peak Hour		P.M. Peak Hour	
			LOS	Delay (sec.)	LOS	Delay (sec.)
No Build						
Approaches	AWSC	EB (Plaza)	B	11.2	B	11.8
		WB (Plaza)	A	8.7	A	8.7
		NB (Sherry Drive)	B	10.5	B	11.4
		SB (Seminole Road)	B	12.0	B	11.5
		NB (Seminole Road)	A	9.8	B	10.4
Intersection		N/A	B	10.7	B	11.0
Build						
Approaches	Roundabout	EB (Plaza)	A[1]	8.1	A	7.1
		WB (Plaza)	A	5.4	A	6.0
		NB (Sherry Drive)	A	6.3	A	7.8
		SB (Seminole Road)	A	6.9	A	6.4
		NB (Seminole Road)	A	6.5	A	6.3

5 ROUNDABOUT CONCEPT DEVELOPMENT

5.1 PRIOR STUDY

In 2004, the City of Atlantic Beach authorized a study to review the Seminole Road intersection and assess the feasibility of reconstructing the 5-point intersection to a roundabout. The study considered safety, operations, impacts to the existing intersection and cost.

Ultimately, the study recommended a single, one lane roundabout with an inscribed circle diameter of 96 feet and a central island diameter of 60 feet.



A view of the prior roundabout concept (source: GAI Consultants, April 2004)

5.2 MODERN ROUNDABOUT GUIDANCE

Since the prior study was completed, modern roundabout guidance has evolved significantly, incorporating new research, safety and best practices. There is a greater emphasis on bicycle and pedestrian access, crossing safety and accommodating trucks and large vehicles. New strategies to retrofit existing intersections to roundabouts include a "peanut" or "dog bone" design which incorporates two elongated roundabouts rather than a single traditional circular design.

FDOT provides geometric design guidance in the FDOT Design Manual (FDM), Chapter 213, Modern Roundabouts. Roadway geometry should encourage drivers to gradually slow down as they approach the roundabout, using features such as prominent landscaping in the central island to increase visibility of the central island and provide a visual cue to approaching drivers that they are entering a low-speed environment.[2]

Roundabouts also reduce the number of intersection conflict points, which improves safety by reducing speeds and severity of crashes.

5.3 PLANNING CONCEPT DESIGN

FDOT District 2 provided an initial planning concept for the intersection, featuring a peanut roundabout. This concept is depicted in Appendix F. Benesch progressed the concept to focus on constructability of the design and address constraints relating to the existing intersection geometry, right-of-way, design vehicle and physical locations of buildings, infrastructure and community artwork.

As depicted in Figure 1110, the result is two elongated roundabouts with a mountable curb and red brick paver truck apron. Each roundabout features a landscaped center island with artwork to make the island more prominent and provide aesthetics. Additional 3D renderings depicting the roundabout and its relationship to the intersection are provided in Appendix G.

[2] FDOT Design Manual, Chapter 213, January 1, 2025

Figure 11 – Aerial Rendering of Roundabout Concept

5.3.1 Emergency Vehicle Access

Atlantic Beach Police and Fire services are located in the southwest quadrant of the intersection, between Plaza and Seminole Road. An emergency vehicle access drive for Fire Station No. 55 opens directly into the intersection. As indicated by a traffic count, the driveway gets fairly light usage by various vehicles throughout the day.

The peanut concept allows emergency vehicles to pass between the two roundabouts to enter the intersection and also facilitates equipment backing maneuvers into the driveway. In addition to signage, visual cues within the islands, such as the raised brick, artwork and nearby grass medians encourage non-emergency vehicles to follow the roundabout travel way and not cut through the center.

During construction, the maintenance of traffic plan must be coordinated to ensure uninterrupted access to the driveway. During the Town Hall (see Section 6.2), it was stated that a previous eight-month blockage of the emergency access didn't cause major issues, suggesting this issue can be successfully ameliorated.

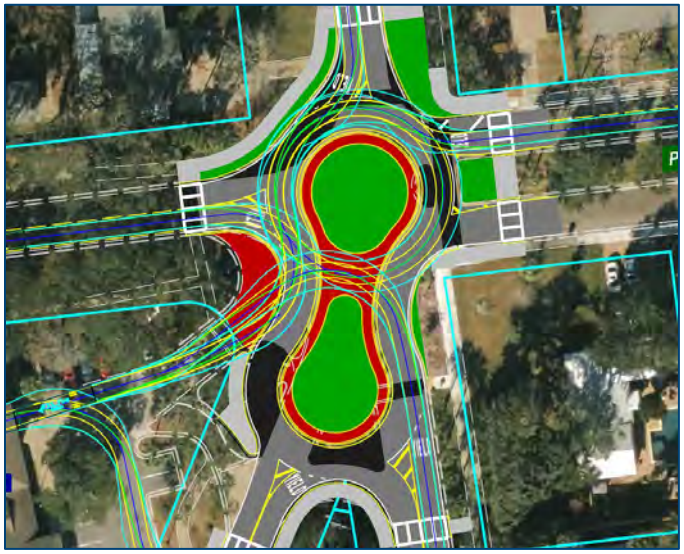
Atlantic Beach Fire Department Dwy		
Time	**Class**	**Entry/Exit**
6:40:25 AM	Light	Entry
7:10:08 AM	Light	Entry
7:13:19 AM	Bicycle	Exit
7:13:22 AM	Bicycle	Exit
7:21:01 AM	Light	Entry
8:10:30 AM	Bicycle	Entry
8:10:33 AM	Bicycle	Entry
5:23:18 PM	Heavy	Exit
6:02:13 PM	Heavy	Entry
6:03:13 PM	Light	Exit

The Atlantic Beach Fire Department driveway is lightly used through the day by a variety of vehicle types.

5.3.2 Design Vehicle and Circulation

Constraints to the roundabout include the amount of developable right-of-way within the existing intersection to accommodate an adequate turning radius for larger vehicles. While Atlantic Beach is primarily residential, considerations must still be made for emergency equipment and commercial vehicles travelling the area, such as delivery trucks, moving vans and construction trucks and trailers.

Benesch performed a vehicle path simulation for the proposed roundabout using AutoTURN 11 software. The design vehicle is SU-30, a commercial truck with a 30-foot length and 20-foot wheelbase. Designing the roundabout to accommodate the SU-30 ensures that all vehicles up to its size can navigate the travel lanes smoothly, avoiding contact



Vehicle movements through the roundabout are simulated using AutoTURN (source: FDOT)

with the curbs and maintaining safe maneuvers. The truck apron provides an area for overtracking by larger vehicles, such as fire trucks or tractor trailers.

AutoTURN simulations for various movements through the intersection are provided Appendix H.

5.3.3 Community Artwork

Redesigning the intersection requires relocating two iconic structures: the "In Search of Atlantis" sculpture on Plaza and the tide clock between Seminole Road and Sherry Drive.

"In Search of Atlantis" is located in Frazier Park, which is the boulevard median on the east leg of Plaza. Benesch anticipates relocating the sculpture to a prominent position within the center island which will mitigate the potential 4(f) issues associated with impacts to the park. A similar approach is applied to the tide clock. By incorporating both prominent existing features, the project is cohesive with the past while updating intersection safety and operations.

During construction, both artworks are within the project area and will require temporary relocation or safekeeping before they can be displayed within the completed roundabout.

Defining artwork of Atlantic Beach, such as the "In Search of Atlantis" sculpture (foreground) and tide clock (background), will feature prominently within the roundabout center islands.

5.4 IMPROVEMENT COSTS

Table 8 summarizes the preliminary construction cost estimate for the concept plan. Costs are developed using the FDOT Long Range Estimating (LRE) System. The estimate is for planning purposes only and will be refined during the PD&E and design phases which include more detailed analysis of engineering feasibility and design parameters, ROW acquisition, utility relocation and environmental review and permitting.

The roundabout concept is estimated to cost approximately $1.8 million to construct, with an overall cost of $2.45 million. The LRE itemized composite report of costs is provided in Appendix I.

Table 8 – Improvement Cost Estimate

Description	Percentage	Cost[1]
Roadway		$923,856
Signing and Pavement Marking		$61,124
Lighting		$204,600
Subtotal		**$1,189,580**
MOT	10%	$118,958
Construction Subtotal		$1,308,538
Mobilization	12%	$157,025
Construction Subtotal		$1,465,563
Project Unknowns	20%	$293,113
Construction Subtotal		$1,758,675
Contingency		$50,000
Construction Total		**$1,808,675**
CEI (15% Construction Subtotal)	15%	$271,301
PE (15% Construction Subtotal)	15%	$271,301
Land Acquisition Reserve		$100,000
Subtotal		**$642,603**
PROJECT TOTAL		**$2,451,278**

[1] *Slight variations in totals due to rounding*

6 PUBLIC ENGAGEMENT

6.1 INTERAGENCY COORDINATION

In conjunction with the North Florida TPO, Benesch coordinated throughout the study with the Atlantic Beach City Manager, Public Works Department and FDOT District 2. Benesch also consulted with the Atlantic Beach Police Department and Jacksonville Fire and Rescue Division (JFRD), who are contracted to provide fire protection and emergency medical services, due to the proximity of their access to and frequent use of the intersection.

The TPO and Benesch team held a study kick-off meeting October 16, 2024 at Atlantic Beach City Hall. The Atlantic Beach Manager, Mayor, Planning Director, Engineer and Police Chief attended. Discussion focused on existing traffic volumes, future traffic growth, design features of the roundabout concept, right-of-way and emergency vehicle access for JFRD. The team discussed next steps, which included refinements to the concept, project funding, schedule and community outreach at the first quarter City of Atlantic Beach Town Hall.

6.2 CITY OF ATLANTIC BEACH TOWN HALL

Benesch presented the study at the quarterly Atlantic Beach Town Hall on January 25, 2025. Public comment followed the presentation. In general, the response to the roundabout feasibility study was positive, with support for its design, aesthetics and potential to improve the intersection's traffic flow and queuing. Stated concerns include:

- **Pedestrian Safety** due to continuous vehicle flow and lack of vehicle gaps.
- **Roundabout Navigation** including how to prevent vehicles from driving through the center.
- **Child Safety** due to children walking and biking to and from Atlantic Beach Elementary School. A citizen suggested the Atlantic Beach Police Department conduct a roundabout safety lesson at Atlantic Beach Elementary School.
- **Increased Delays** from having to circulate through the roundabout rather than make a direct left turn.
- **Large Vehicles** being unable to navigate the roundabout.
- **Neighborhood Construction Impacts** due to maintenance of traffic detours. The expected 6-12 month construction time frame may create significant traffic issues beyond the intersection. Multiple citizens suggested opening the Atlantic Beach Country Club gate to allow access to Mayport Road. Atlantic Beach officials noted that this suggestion is likely unfeasible as the development's roads are private.
- **Project Costs and Funding.**

6.3 NORTH FLORIDA TPO

Benesch presented the study at the May TPO meetings to the committees and Board:

- Citizens Advisory Committee (CAC) – May 7, 2025
- Technical Advisory Committee (TAC) – May 7, 2025
- Board – May 8, 2025

7 NEXT STEPS

The North Florida TPO and its consultant, Benesch, conducted this feasibility study at the request of the City of Atlantic Beach. Features of the proposed roundabout include a dual roundabout ("peanut") design, mountable truck apron and landscaped raised center islands. The proposed design incorporates aesthetic qualities of the existing intersection, such as brick pavers and artwork. The roundabout will improve traffic flow, reduce driver speeds and improve pedestrian and vehicle safety by reducing the number of conflict points.

The estimated improvement cost is ~$2.5 million. Primary concerns to be addressed with the advancement of the project include:

- Temporary Traffic Control Plan (TTCP) and impacts to neighborhoods and streets during construction, such as East Coast Drive, Ocean Boulevard and Parkside Drive.
- Emergency vehicle access for the Atlantic Beach Police and Fire Services.
- Trees and utilities near the project limits may require pruning, removal, relocation and/or replacement.
- Temporary relocation or safekeeping of the "In Search of Atlantis" statue and Atlantic Beach tide clock.
- Pedestrian and bicycle safety countermeasures at the intersection. Coordinate with the North FL TPO and Duval County School Board regarding potential for using Safe Routes to School funding, due to the proximity of Atlantic Beach Elementary School.
- Ongoing public outreach, regarding the project schedule, TTCP and impacts. Implement an educational campaign for roundabout safety and operations with targeted outreach to students, considering the number of children that pass through the intersection.

An aerial view of the proposed roundabout, looking south from Seminole Road.

APPENDICES

APPENDIX A

Traffic Count Data

Location: Sherry Dr/Seminole Rd -- Plaza Road
Date: 8/20/2024
Site Code: 16716701

	Seminole Rd (North) Southbound					Plaza Road Westbound					Sherry Dr Northbound					Seminole Rd (South) Northeastbound					Plaza Road Eastbound				
Start Time	Right	Right to Seminole Rd (South)	Thru	Left	U-Turn	Right	Thru	Left to Seminole Rd (South)	Left	U-Turn	Right	Thru	Left	Left to Seminole Rd (South)	U-Turn	Right to Sherry Dr	Right to Plaza Road	Left to Seminole Rd (North)	Left to Plaza Road	U-Turn	Right to Seminole Rd (South)	Right	Thru	Left	U-Turn
06:00 AM	5	6	5	0	0	0	2	1	0	0	0	3	4	0	0	0	0	6	0	0	2	3	2	3	0
06:15 AM	9	17	10	0	0	0	1	4	0	0	1	4	1	0	0	0	0	7	0	0	1	7	5	11	0
06:30 AM	3	21	21	0	0	0	3	1	2	0	0	8	1	0	0	0	1	12	0	0	3	7	5	7	0
06:45 AM	12	18	39	1	0	0	2	4	1	0	0	13	9	1	0	1	1	18	0	0	2	12	5	9	0
07:00 AM	19	37	20	0	0	0	7	3	0	0	0	16	5	0	0	1	1	11	1	0	6	18	5	10	0
07:15 AM	13	40	33	0	0	0	7	2	0	0	0	14	6	3	0	1	0	23	1	0	4	15	6	12	0
07:30 AM	16	43	39	0	0	0	10	6	0	0	1	6	5	0	0	2	1	14	0	0	9	12	2	24	0
07:45 AM	14	24	39	0	0	1	8	4	1	0	2	21	13	2	0	1	1	17	0	0	4	35	5	23	0
08:00 AM	11	32	29	0	0	0	11	6	2	0	1	23	18	1	0	3	1	24	1	0	7	24	4	23	0
08:15 AM	10	28	38	0	0	0	8	4	1	0	2	31	27	0	0	3	3	21	6	0	8	40	8	19	0
08:30 AM	20	38	18	1	0	1	8	2	2	0	1	27	17	0	0	1	0	26	3	0	8	18	10	29	0
08:45 AM	23	32	26	0	0	1	6	3	0	0	0	23	11	0	0	1	1	31	1	0	7	23	7	26	0
Total	**155**	**336**	**317**	**2**	**0**	**3**	**73**	**40**	**9**	**0**	**8**	**189**	**117**	**7**	**0**	**14**	**10**	**210**	**13**	**0**	**61**	**214**	**64**	**196**	**0**

Peak Hour: 8:00 AM - 9:00 AM
Peak 15: 8:15 AM - 8:30 AM
PHF: 0.904669

Location: Sherry Dr/Seminole Rd -- Plaza Road
Date: 8/20/2024
Site Code: 16716701

	Seminole Rd (North) Southbound					Plaza Road Westbound					Sherry Dr Northbound					Seminole Rd (South) Northeastbound					Plaza Road Eastbound				
Start Time	Right	Right to Seminole Rd (South)	Thru	Left	U-Turn	Right	Thru	Left to Seminole Rd (South)	Left	U-Turn	Right	Thru	Left	Left to Seminole Rd (South)	U-Turn	Right to Sherry Dr	Right to Plaza Road	Left to Seminole Rd (North)	Left to Plaza Road	U-Turn	Right to Seminole Rd (South)	Right	Thru	Left	U-Turn
06:00 AM	5	6	5	0	0	0	2	1	0	0	0	3	4	0	0	0	0	5	0	0	2	3	2	3	0
06:15 AM	9	17	10	0	0	0	1	4	0	0	1	4	1	0	0	0	0	7	0	0	1	7	5	10	0
06:30 AM	3	21	20	0	0	0	3	1	2	0	0	8	1	0	0	0	1	12	0	0	2	6	5	7	0
06:45 AM	12	18	39	1	0	0	2	4	1	0	0	13	8	1	0	1	1	17	0	0	2	12	5	9	0
07:00 AM	19	37	20	0	0	0	7	3	0	0	0	16	5	0	0	1	0	10	1	0	6	18	5	10	0
07:15 AM	13	40	33	0	0	0	7	2	0	0	0	13	6	3	0	1	0	22	1	0	4	15	5	11	0
07:30 AM	16	43	39	0	0	0	9	5	0	0	1	6	5	0	0	2	1	13	0	0	9	12	2	21	0
07:45 AM	14	24	37	0	0	1	8	4	1	0	2	19	13	2	0	1	1	15	0	0	3	35	4	22	0
08:00 AM	11	32	28	0	0	0	11	6	2	0	1	23	18	1	0	3	1	23	1	0	7	24	4	21	0
08:15 AM	10	27	37	0	0	0	8	4	1	0	2	30	27	0	0	3	3	20	6	0	8	39	8	18	0
08:30 AM	20	35	18	1	0	1	8	2	2	0	1	27	16	0	0	1	0	25	3	0	7	18	9	29	0
08:45 AM	21	32	25	0	0	1	6	3	0	0	0	22	11	0	0	1	1	28	1	0	7	21	6	25	0
Total	**153**	**332**	**311**	**2**	**0**	**3**	**72**	**39**	**9**	**0**	**8**	**184**	**115**	**7**	**0**	**14**	**9**	**197**	**13**	**0**	**58**	**210**	**60**	**186**	**0**

Location: Sherry Dr/Seminole Rd -- Plaza Road
Date: 8/20/2024
Site Code: 16716701

	Seminole Rd (North) Southbound					Plaza Road Westbound					Sherry Dr Northbound					Seminole Rd (South) Northeastbound					Plaza Road Eastbound				
Start Time	Right	Right to Seminole Rd (South)	Thru	Left	U-Turn	Right	Thru	Left to Seminole Rd (South)	Left	U-Turn	Right	Thru	Left	Left to Seminole Rd (South)	U-Turn	Right to Sherry Dr	Right to Plaza Road	Left to Seminole Rd (North)	Left to Plaza Road	U-Turn	Right to Seminole Rd (South)	Right	Thru	Left	U-Turn
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
06:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	0
07:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0
07:45 AM	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	1	0	1	1	0
08:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0
08:15 AM	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	0
08:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0
08:45 AM	2	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	2	1	1	0
Total	**2**	**4**	**6**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**5**	**2**	**0**	**0**	**0**	**1**	**13**	**0**	**0**	**3**	**4**	**4**	**10**	**0**

Location: Sherry Dr/Seminole Rd -- Plaza Road
Date: 8/20/2024
Site Code: 16716701

	Seminole Rd (North) Southbound					Plaza Road Westbound					Sherry Dr Northbound					Seminole Rd (South) Northeastbound					Plaza Road Eastbound				
Start Time	Right	Right to Seminole Rd (South)	Thru	Left	Peds	Right	Thru	Left to Seminole Rd (South)	Left	Peds	Right	Thru	Left	Left to Seminole Rd (South)	Peds	Right to Sherry Dr	Right to Plaza Road	Left to Seminole Rd (North)	Left to Plaza Road	Peds	Right to Seminole Rd (South)	Right	Thru	Left	Peds
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	1	0	0	0	0	0	0	2	0	1	0	0	2	2	0	0	0	2	0	0	1	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
07:00 AM	0	0	1	0	0	0	0	0	0	2	0	1	0	0	4	1	0	0	0	4	0	0	0	0	0
07:15 AM	0	0	1	0	0	0	1	0	0	1	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0
07:30 AM	0	1	5	0	0	0	0	1	0	6	0	0	1	0	4	0	0	0	0	4	0	0	0	0	0
07:45 AM	0	1	7	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	1	0	0	0
08:00 AM	2	0	14	0	0	0	0	0	0	6	1	2	0	0	1	0	0	1	0	1	0	0	0	0	0
08:15 AM	0	0	9	1	0	0	0	0	0	0	0	3	0	0	6	0	0	0	0	6	0	0	1	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	1	0	0	1	0	1	0	0	0	0	0
08:45 AM	0	1	0	0	0	0	1	0	2	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
Total	**2**	**3**	**38**	**1**	**2**	**0**	**2**	**1**	**2**	**23**	**1**	**9**	**1**	**0**	**25**	**3**	**1**	**2**	**0**	**25**	**0**	**1**	**2**	**0**	**0**

Location: Sherry Dr/Seminole Rd -- Plaza Road
Date: 8/20/2024
Site Code: 16716702

	Seminole Rd (North) Southbound					Plaza Road Westbound					Sherry Dr Northbound					Seminole Rd (South) Northeastbound					Plaza Road Eastbound				
Start Time	Right	Right to Seminole Rd (South)	Thru	Left	U-Turn	Right	Thru	Left to Seminole Rd (South)	Left	U-Turn	Right	Thru	Left	Left to Seminole Rd (South)	U-Turn	Right to Sherry Dr	Right to Plaza Road	Left to Seminole Rd (North)	Left to Plaza Road	U-Turn	Right to Seminole Rd (South)	Right	Thru	Left	U-Turn
04:00 PM	24	37	25	0	0	1	7	4	1	0	0	31	15	1	0	3	2	36	7	0	7	11	4	25	0
04:15 PM	21	50	16	0	0	0	4	3	0	0	4	39	16	2	0	2	0	27	5	0	10	9	4	34	0
04:30 PM	21	40	21	0	0	0	5	9	0	0	2	38	16	1	0	2	2	35	8	0	10	15	9	28	0
04:45 PM	18	32	16	0	0	0	12	1	1	0	0	38	14	1	0	3	3	34	5	0	4	10	10	34	0
05:00 PM	20	32	18	1	0	0	9	1	0	0	1	47	15	1	0	3	4	38	10	0	5	21	7	27	0
05:15 PM	16	33	26	0	0	0	11	1	0	0	4	34	29	2	0	1	0	20	13	0	5	20	10	38	0
05:30 PM	28	29	21	0	0	0	6	3	1	0	1	39	9	0	0	2	0	36	7	0	12	15	5	44	0
05:45 PM	12	38	20	0	0	1	8	4	2	0	3	38	18	5	0	3	3	23	11	0	5	17	15	40	0
06:00 PM	21	37	18	0	0	0	9	1	1	0	3	26	15	1	0	4	4	30	5	0	14	15	11	23	0
06:15 PM	18	32	13	0	0	0	9	5	0	0	1	28	13	3	0	3	3	20	9	0	8	5	10	33	0
06:30 PM	18	35	17	0	0	2	6	2	0	0	2	38	16	0	0	5	11	19	0	0	9	11	12	40	0
06:45 PM	15	27	12	1	0	0	5	1	0	0	0	37	14	0	0	4	9	23	7	0	9	5	11	32	0
Total	**232**	**422**	**223**	**2**	**0**	**4**	**91**	**35**	**6**	**0**	**21**	**433**	**190**	**17**	**0**	**35**	**41**	**341**	**87**	**0**	**98**	**154**	**108**	**398**	**0**

Peak Hour: 5:00 PM - 6:00 PM
Peak 15: 5:45 PM - 6:00 PM
PHF: 0.984023

Location: Sherry Dr/Seminole Rd -- Plaza Road
Date: 8/20/2024
Site Code: 16716702

	Seminole Rd (North) Southbound					Plaza Road Westbound					Sherry Dr Northbound					Seminole Rd (South) Northeastbound					Plaza Road Eastbound				
Start Time	Right	Right to Seminole Rd (South)	Thru	Left	U-Turn	Right	Thru	Left to Seminole Rd (South)	Left	U-Turn	Right	Thru	Left	Left to Seminole Rd (South)	U-Turn	Right to Sherry Dr	Right to Plaza Road	Left to Seminole Rd (North)	Left to Plaza Road	U-Turn	Right to Seminole Rd (South)	Right	Thru	Left	U-Turn
04:00 PM	23	36	23	0	0	1	7	3	1	0	0	31	15	1	0	2	2	35	7	0	7	11	4	25	0
04:15 PM	21	47	15	0	0	0	4	3	0	0	4	39	15	2	0	2	0	27	5	0	10	9	4	34	0
04:30 PM	21	40	21	0	0	0	5	9	0	0	2	38	16	1	0	2	2	35	8	0	10	15	8	27	0
04:45 PM	17	31	16	0	0	0	12	1	1	0	0	37	14	1	0	3	3	33	5	0	4	10	10	33	0
05:00 PM	19	31	18	1	0	0	9	1	0	0	1	47	15	1	0	3	4	38	10	0	5	21	7	27	0
05:15 PM	16	33	26	0	0	0	11	1	0	0	4	34	29	2	0	1	0	20	13	0	5	20	10	38	0
05:30 PM	28	27	21	0	0	0	6	3	1	0	1	38	9	0	0	2	0	36	7	0	12	15	5	44	0
05:45 PM	12	37	19	0	0	1	8	4	2	0	3	38	16	5	0	3	3	23	11	0	5	16	15	40	0
06:00 PM	21	37	18	0	0	0	9	1	1	0	3	26	15	1	0	4	4	30	5	0	14	15	11	23	0
06:15 PM	18	32	13	0	0	0	9	5	0	0	1	28	13	3	0	3	3	20	9	0	8	5	10	33	0
06:30 PM	18	32	17	0	0	2	6	2	0	0	2	38	16	0	0	5	11	19	0	0	9	11	12	40	0
06:45 PM	15	27	12	1	0	0	5	1	0	0	0	37	14	0	0	4	9	23	7	0	9	5	11	31	0
Total	**229**	**410**	**219**	**2**	**0**	**4**	**91**	**34**	**6**	**0**	**21**	**431**	**187**	**17**	**0**	**34**	**41**	**339**	**87**	**0**	**98**	**153**	**107**	**395**	**0**

Location: Sherry Dr/Seminole Rd -- Plaza Road
Date: 8/20/2024
Site Code: 16716702

	Seminole Rd (North) Southbound					Plaza Road Westbound					Sherry Dr Northbound					Seminole Rd (South) Northeastbound					Plaza Road Eastbound				
Start Time	Right	Right to Seminole Rd (South)	Thru	Left	U-Turn	Right	Thru	Left to Seminole Rd (South)	Left	U-Turn	Right	Thru	Left	Left to Seminole Rd (South)	U-Turn	Right to Sherry Dr	Right to Plaza Road	Left to Seminole Rd (North)	Left to Plaza Road	U-Turn	Right to Seminole Rd (South)	Right	Thru	Left	U-Turn
04:00 PM	1	1	2	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
04:15 PM	0	3	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
04:45 PM	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0
05:00 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	**3**	**12**	**4**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**3**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**1**	**1**	**3**	**0**

Location: Sherry Dr/Seminole Rd -- Plaza Road
Date: 8/20/2024
Site Code: 16716702

	Seminole Rd (North) Southbound					Plaza Road Westbound					Sherry Dr Northbound					Seminole Rd (South) Northeastbound					Plaza Road Eastbound				
Start Time	Right	Right to Seminole Rd (South)	Thru	Left	Peds	Right	Thru	Left to Seminole Rd (South)	Left	Peds	Right	Thru	Left	Left to Seminole Rd (South)	Peds	Right to Sherry Dr	Right to Plaza Road	Left to Seminole Rd (North)	Left to Plaza Road	Peds	Right to Seminole Rd (South)	Right	Thru	Left	Peds
04:00 PM	0	0	0	1	0	0	0	0	0	0	0	9	0	0	1	0	0	0	0	1	0	1	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1	0	1	0	0	0	0	0
04:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
04:45 PM	0	1	1	1	0	0	1	2	0	0	0	4	1	0	6	0	0	0	0	6	0	0	0	0	0
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	1	0	0	0	0	0	1	0	0	0
05:30 PM	0	1	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0
05:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	1	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	5	0	0	0	1	0	5	0	3	0	0	0	0	12	0	0	0	0	0	1	0	0	0	0
06:45 PM	0	0	1	0	0	0	0	0	0	2	0	0	0	0	4	0	0	0	0	0	3	0	0	0	0
Total	**0**	**8**	**6**	**2**	**0**	**1**	**2**	**8**	**0**	**6**	**0**	**19**	**1**	**2**	**29**	**1**	**0**	**1**	**0**	**9**	**6**	**2**	**2**	**0**	**0**

2024 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 7201 BEACHES JAX.

MOCF: 0.94

WEEK	DATES	SF	PSCF
1	01/01/2024 - 01/06/2024	1.10	1.17
2	01/07/2024 - 01/13/2024	1.10	1.17
3	01/14/2024 - 01/20/2024	1.09	1.16
4	01/21/2024 - 01/27/2024	1.07	1.14
5	01/28/2024 - 02/03/2024	1.05	1.12
6	02/04/2024 - 02/10/2024	1.03	1.10
7	02/11/2024 - 02/17/2024	1.01	1.07
8	02/18/2024 - 02/24/2024	1.00	1.06
9	02/25/2024 - 03/02/2024	0.99	1.05
10	03/03/2024 - 03/09/2024	0.98	1.04
11	03/10/2024 - 03/16/2024	0.96	1.02
12	03/17/2024 - 03/23/2024	0.96	1.02
*13	03/24/2024 - 03/30/2024	0.95	1.01
*14	03/31/2024 - 04/06/2024	0.94	1.00
*15	04/07/2024 - 04/13/2024	0.93	0.99
*16	04/14/2024 - 04/20/2024	0.92	0.98
*17	04/21/2024 - 04/27/2024	0.92	0.98
*18	04/28/2024 - 05/04/2024	0.93	0.99
*19	05/05/2024 - 05/11/2024	0.93	0.99
*20	05/12/2024 - 05/18/2024	0.93	0.99
*21	05/19/2024 - 05/25/2024	0.93	0.99
*22	05/26/2024 - 06/01/2024	0.94	1.00
*23	06/02/2024 - 06/08/2024	0.95	1.01
*24	06/09/2024 - 06/15/2024	0.96	1.02
*25	06/16/2024 - 06/22/2024	0.96	1.02
26	06/23/2024 - 06/29/2024	0.97	1.03
27	06/30/2024 - 07/06/2024	0.98	1.04
28	07/07/2024 - 07/13/2024	0.99	1.05
29	07/14/2024 - 07/20/2024	0.99	1.05
30	07/21/2024 - 07/27/2024	1.00	1.06
31	07/28/2024 - 08/03/2024	1.01	1.07
32	08/04/2024 - 08/10/2024	1.02	1.09
33	08/11/2024 - 08/17/2024	1.03	1.10
34	08/18/2024 - 08/24/2024	1.03	1.10
35	08/25/2024 - 08/31/2024	1.04	1.11
36	09/01/2024 - 09/07/2024	1.04	1.11
37	09/08/2024 - 09/14/2024	1.05	1.12
38	09/15/2024 - 09/21/2024	1.05	1.12
39	09/22/2024 - 09/28/2024	1.04	1.11
40	09/29/2024 - 10/05/2024	1.03	1.10
41	10/06/2024 - 10/12/2024	1.02	1.09
42	10/13/2024 - 10/19/2024	1.01	1.07
43	10/20/2024 - 10/26/2024	1.02	1.09
44	10/27/2024 - 11/02/2024	1.02	1.09
45	11/03/2024 - 11/09/2024	1.02	1.09
46	11/10/2024 - 11/16/2024	1.02	1.09
47	11/17/2024 - 11/23/2024	1.04	1.11
48	11/24/2024 - 11/30/2024	1.05	1.12
49	12/01/2024 - 12/07/2024	1.07	1.14
50	12/08/2024 - 12/14/2024	1.09	1.16
51	12/15/2024 - 12/21/2024	1.10	1.17
52	12/22/2024 - 12/28/2024	1.10	1.17
53	12/29/2024 - 12/31/2024	1.09	1.16

* PEAK SEASON

APPENDIX B

Field Review Photos

Looking north on Plaza at the crosswalk

Looking east on Plaza

Looking east on Plaza at the “In Search of Atlantis” sculpture.

Looking NE on Plaza Crosswalk

Light fixture in Plaza median, looking NE

Plaza Curb Island looking NW

Sprinkler System in plaza median, looking N

Plaza Median looking NE

Plaza Overhead Utilities facing SE, In Search of Atlantis Statue in shot

Curb Ramp, NE quadrant of intersection

Sliced Curb, Storm Grate & Manhole at Seminole Rd SB Sidewalk east side of road

Fire Hydrant in Plaza Median, looking N

Plaza Memorial, looking W

Looking NE at Plaza WB

Looking W at intersection from Plaza WB

E side of Seminole Rd SB Light Pole

Seminole Rd SB Crosswalk

Seminole Rd SB Sidewalk East of Road

Utilities, Facing E standing N of intersection

Seminole Rd SB Sidewalk W side of road, facing S

Seminole Rd SB Crosswalk facing E

Utilities on N side of Plaza EB

Plaza EB Crosswalk, facing S

Plaza EB Sidewalk on N side of road, facing W

Decorative Structure in-front of JFRD

AB intersection, facing NE looking at Plaza WB

AB Intersection Facing East

AB intersection, facing E looking at plaza WB

AB intersection, facing E looking at plaza WB

AB intersection, facing SE looking at Sherry Dr

JFRD Crosswalk, facing SE

JFRD Crosswalk, facing SE

Drainage Structure in JFRD driveway, facing NE

Seminole Rd NB Crosswalk, facing E

Facing S looking at Seminole Rd NB

JFRD Parking Lot facing E

Tide Clock, facing S looking at both Sherry Dr & Seminole Rd NB

Drainage Structure, facing S

Intersection, facing NE looking at Plaza WB

Intersection, facing N looking at Seminole Rd SB

Intersection, facing NE looking at Sherry Dr

Seminole Southbound Approach facing N 2/11/25@2:50PM

Seminole Southbound Approach facing N 2:56PM

Seminole Southbound Approach facing N 2:56PM

Seminole Southbound Approach facing N 2:57PM

Seminole Southbound Approach facing S 2:58PM

Seminole Southbound Approach facing N 3:00PM

Plaza Eastbound Approach facing W 3:00PM

Seminole Southbound Approach facing N 3:03PM

Seminole Northbound Approach facing S 3:09PM

Looking SE at Plaza WB

Plaza WB Crosswalk facing S

Looking at Plaza EB facing W

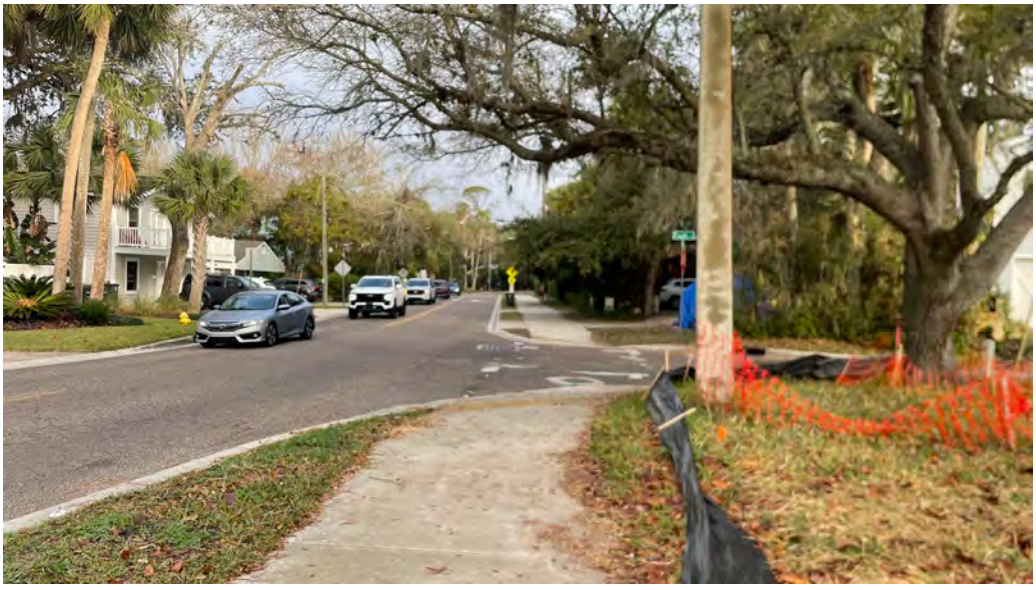
Seminole Southbound Approach facing NB
2/12/25@8:05AM

Seminole Southbound Approach facing NB 8:17AM

Seminole Southbound Approach facing NB 8:17AM

Utilities, NE of intersection, E of Seminole Rd SB

Sherry Drive facing S towards Atlantic Blvd 8:04AM



Sherry Drive facing N towards intersection 8:19AM

Sherry Drive facing S towards Atlantic Blvd 8:31AM

APPENDIX C

Existing Operational Analysis

Synchro Output

A.M. Peak Hour

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Traffic Vol, veh/h	16	3	2	108	5	2	115	134	106	6
Future Vol, veh/h	16	3	2	108	5	2	115	134	106	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	2	2	2	3	3	3	5	5
Mvmt Flow	18	3	2	120	6	2	128	149	118	7
Number of Lanes	1	0	0	1	0	0	1	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	
Opposing Lanes	1	1	0
Conflicting Approach Left	NE	WB	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	WB	NE	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay, s/veh	8.6	9.2	9.2
HCM LOS	A	A	A

Lane	NELn1	NBLn1	WBLn1	SBLn1
Vol Left, %	88%	2%	88%	1%
Vol Thru, %	0%	94%	0%	46%
Vol Right, %	12%	4%	12%	53%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	121	115	25	251
LT Vol	106	2	22	2
Through Vol	0	108	0	115
RT Vol	15	5	3	134
Lane Flow Rate	134	128	28	279
Geometry Grp	1	1	1	1
Degree of Util (X)	0.187	0.164	0.039	0.325
Departure Headway (Hd)	5.011	4.62	5.083	4.196
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	715	776	702	856
Service Time	3.052	2.654	3.132	2.223
HCM Lane V/C Ratio	0.187	0.165	0.04	0.326
HCM Control Delay, s/veh	9.2	8.6	8.3	9.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.6	0.1	1.4

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	30	31	16	34	3	12	106	6	2	134	66
Future Vol, veh/h	100	30	31	16	34	3	12	106	6	2	134	66
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	4	4	4	0	0	0	5	5	5	3	3	3
Mvmt Flow	111	33	34	18	38	3	13	118	7	2	149	73
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.5	8.5	9	9.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	62%	30%	1%
Vol Thru, %	85%	19%	64%	66%
Vol Right, %	5%	19%	6%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	161	53	202
LT Vol	12	100	16	2
Through Vol	106	30	34	134
RT Vol	6	31	3	66
Lane Flow Rate	138	179	59	224
Geometry Grp	1	1	1	1
Degree of Util (X)	0.185	0.243	0.082	0.282
Departure Headway (Hd)	4.83	4.894	5.008	4.52
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	740	730	711	792
Service Time	2.879	2.946	3.07	2.563
HCM Lane V/C Ratio	0.186	0.245	0.083	0.283
HCM Control Delay, s/veh	9	9.5	8.5	9.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.9	0.3	1.2

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	30	109	6	34	3	76	108	5	2	115	66
Future Vol, veh/h	100	30	109	6	34	3	76	108	5	2	115	66
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	4	4	4	0	0	0	2	2	2	3	3	3
Mvmt Flow	111	33	121	7	38	3	84	120	6	2	128	73
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.6	8.8	10.2	9.7
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	40%	42%	14%	1%
Vol Thru, %	57%	13%	79%	63%
Vol Right, %	3%	46%	7%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	189	239	43	183
LT Vol	76	100	6	2
Through Vol	108	30	34	115
RT Vol	5	109	3	66
Lane Flow Rate	210	266	48	203
Geometry Grp	1	1	1	1
Degree of Util (X)	0.293	0.357	0.071	0.27
Departure Headway (Hd)	5.022	4.834	5.347	4.781
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	708	738	674	744
Service Time	3.103	2.908	3.347	2.862
HCM Lane V/C Ratio	0.297	0.36	0.071	0.273
HCM Control Delay, s/veh	10.2	10.6	8.8	9.7
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	1.2	1.6	0.2	1.1

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	30	109	16	34	76	5	12	6
Future Vol, veh/h	30	109	16	34	76	5	12	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	4	4	0	0	2	2	5	5
Mvmt Flow	33	121	18	38	84	6	13	7
Number of Lanes	1	0	0	1	1	0	1	0

Approach	EB	NE
Opposing Approach	WB	
Opposing Lanes	1	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	WB
Conflicting Lanes Right	1	1
HCM Control Delay, s/veh	7.7	7.6
HCM LOS	A	A

Lane	NELn1	NBLn1	EBLn1	WBLn1
Vol Left, %	44%	94%	0%	39%
Vol Thru, %	0%	0%	18%	61%
Vol Right, %	56%	6%	82%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	27	83	170	56
LT Vol	12	78	0	22
Through Vol	0	0	30	34
RT Vol	15	5	140	0
Lane Flow Rate	30	92	189	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.037	0.113	0.194	0.08
Departure Headway (Hd)	4.403	4.392	3.704	4.601
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	818	804	950	783
Service Time	2.405	2.486	1.8	2.602
HCM Lane V/C Ratio	0.037	0.114	0.199	0.079
HCM Control Delay, s/veh	7.6	8.1	7.7	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.7	0.3

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	100	109	76	108	115	134	106	9
Future Vol, veh/h	100	109	76	108	115	134	106	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	4	4	2	2	3	3	5	5
Mvmt Flow	111	121	84	120	128	149	118	10
Number of Lanes	1	0	0	1	1	0	1	0

Approach	EB	SB
Opposing Approach		NB
Opposing Lanes	0	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right	NB	NE
Conflicting Lanes Right	1	1
HCM Control Delay, s/veh	12.1	13.4
HCM LOS	B	B

Lane	NELn1	NBLn1	EBLn1	SBLn1
Vol Left, %	93%	42%	42%	0%
Vol Thru, %	0%	58%	0%	37%
Vol Right, %	7%	0%	58%	63%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	127	186	240	315
LT Vol	118	78	100	0
Through Vol	0	108	0	115
RT Vol	9	0	140	200
Lane Flow Rate	141	207	267	350
Geometry Grp	1	1	1	1
Degree of Util (X)	0.237	0.335	0.402	0.502
Departure Headway (Hd)	6.059	5.833	5.43	5.165
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	590	614	659	696
Service Time	4.128	3.897	3.49	3.221
HCM Lane V/C Ratio	0.239	0.337	0.405	0.503
HCM Control Delay, s/veh	11	11.8	12.1	13.4
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	0.9	1.5	1.9	2.8

P.M. Peak Hour

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Traffic Vol, veh/h	10	2	9	163	10	2	88	136	121	8
Future Vol, veh/h	10	2	9	163	10	2	88	136	121	8
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	0	0	1	1	1	2	2	2	0	0
Mvmt Flow	10	2	9	166	10	2	90	139	123	8
Number of Lanes	1	0	0	1	0	0	1	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	
Opposing Lanes	1	1	0
Conflicting Approach Left	NE	WB	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	WB	NE	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay, s/veh	9	8.7	9.2
HCM LOS	A	A	A

Lane	NELn1	NBLn1	WBLn1	SBLn1
Vol Left, %	87%	5%	88%	1%
Vol Thru, %	0%	90%	0%	39%
Vol Right, %	13%	5%	13%	60%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	182	16	226
LT Vol	121	9	14	2
Through Vol	0	163	0	88
RT Vol	18	10	2	136
Lane Flow Rate	142	186	16	231
Geometry Grp	1	1	1	1
Degree of Util (X)	0.194	0.234	0.023	0.268
Departure Headway (Hd)	4.924	4.536	5.108	4.186
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	728	791	698	858
Service Time	2.963	2.566	3.157	2.213
HCM Lane V/C Ratio	0.195	0.235	0.023	0.269
HCM Control Delay, s/veh	9.2	9	8.3	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.9	0.1	1.1

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	154	39	28	10	36	2	43	121	8	2	136	79
Future Vol, veh/h	154	39	28	10	36	2	43	121	8	2	136	79
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	2	2	2
Mvmt Flow	157	40	29	10	37	2	44	123	8	2	139	81
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.3	8.6	9.5	9.5
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	70%	21%	1%
Vol Thru, %	70%	18%	75%	63%
Vol Right, %	5%	13%	4%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	172	221	48	217
LT Vol	43	154	10	2
Through Vol	121	39	36	136
RT Vol	8	28	2	79
Lane Flow Rate	176	226	49	221
Geometry Grp	1	1	1	1
Degree of Util (X)	0.238	0.311	0.07	0.285
Departure Headway (Hd)	4.882	4.972	5.161	4.631
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	730	717	687	771
Service Time	2.945	3.038	3.245	2.69
HCM Lane V/C Ratio	0.241	0.315	0.071	0.287
HCM Control Delay, s/veh	9.5	10.3	8.6	9.5
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.9	1.3	0.2	1.2

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	154	39	76	4	36	2	74	163	10	2	88	79
Future Vol, veh/h	154	39	76	4	36	2	74	163	10	2	88	79
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	0	0	0	1	1	1	2	2	2
Mvmt Flow	157	40	78	4	37	2	76	166	10	2	90	81
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11	8.8	10.7	9.3
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	30%	57%	10%	1%
Vol Thru, %	66%	14%	86%	52%
Vol Right, %	4%	28%	5%	47%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	247	269	42	169
LT Vol	74	154	4	2
Through Vol	163	39	36	88
RT Vol	10	76	2	79
Lane Flow Rate	252	274	43	172
Geometry Grp	1	1	1	1
Degree of Util (X)	0.347	0.376	0.064	0.229
Departure Headway (Hd)	4.961	4.932	5.401	4.778
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	718	722	667	743
Service Time	3.039	3.01	3.401	2.862
HCM Lane V/C Ratio	0.351	0.38	0.064	0.231
HCM Control Delay, s/veh	10.7	11	8.8	9.3
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	1.6	1.8	0.2	0.9

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	39	76	10	36	74	10	43	8
Future Vol, veh/h	39	76	10	36	74	10	43	8
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	0	0	1	1	0	0
Mvmt Flow	40	78	10	37	76	10	44	8
Number of Lanes	1	0	0	1	1	0	1	0

Approach	EB	NE
Opposing Approach	WB	
Opposing Lanes	1	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	WB
Conflicting Lanes Right	1	1
HCM Control Delay, s/veh	7.6	7.8
HCM LOS	A	A

Lane	NELn1	NBLn1	EBLn1	WBLn1
Vol Left, %	70%	89%	0%	28%
Vol Thru, %	0%	0%	27%	72%
Vol Right, %	30%	11%	73%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	61	93	143	50
LT Vol	43	83	0	14
Through Vol	0	0	39	36
RT Vol	18	10	104	0
Lane Flow Rate	62	95	146	51
Geometry Grp	1	1	1	1
Degree of Util (X)	0.077	0.117	0.156	0.064
Departure Headway (Hd)	4.434	4.445	3.849	4.538
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	810	811	935	791
Service Time	2.448	2.445	1.857	2.553
HCM Lane V/C Ratio	0.077	0.117	0.156	0.064
HCM Control Delay, s/veh	7.8	8	7.6	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.4	0.6	0.2

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	154	76	74	163	88	136	121	10
Future Vol, veh/h	154	76	74	163	88	136	121	10
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	1	2	2	0	0
Mvmt Flow	157	78	76	166	90	139	123	10
Number of Lanes	1	0	0	1	1	0	1	0

Approach	EB	SB
Opposing Approach		NB
Opposing Lanes	0	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right	NB	NE
Conflicting Lanes Right	1	1
HCM Control Delay, s/veh	12.6	12.9
HCM LOS	B	B

Lane	NELn1	NBLn1	EBLn1	SBLn1
Vol Left, %	94%	34%	60%	0%
Vol Thru, %	0%	66%	0%	29%
Vol Right, %	6%	0%	40%	71%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	174	246	258	303
LT Vol	164	83	154	0
Through Vol	0	163	0	88
RT Vol	10	0	104	215
Lane Flow Rate	178	251	263	309
Geometry Grp	1	1	1	1
Degree of Util (X)	0.3	0.406	0.412	0.457
Departure Headway (Hd)	6.075	5.829	5.629	5.319
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	588	612	634	671
Service Time	4.162	3.908	3.707	3.394
HCM Lane V/C Ratio	0.303	0.41	0.415	0.461
HCM Control Delay, s/veh	11.8	12.9	12.6	12.9
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.3	2	2	2.4

APPENDIX D

Traffic Volume Projections

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2024 HISTORICAL AADT REPORT

COUNTY: 72 - DUVAL

SITE: 9230 - SEMINOLE RD. .1 MI. N. OF ATLANTIC BLVD.

YEAR	AADT	DIRECTION 1		DIRECTION 2		*K FACTOR	D FACTOR	T FACTOR
2024	6500 F		0		0	9.00	54.90	2.00
2023	6400 C	N	0	S	0	9.00	55.40	2.70
2022	6800 V		0		0	9.00	54.30	1.80
2021	6800 R		0		0	9.00	54.50	12.60
2020	6800 T		0		0	9.00	55.40	2.10
2019	7000 S		0		0	9.00	55.90	1.20
2018	6900 F		0		0	9.00	55.80	1.40
2017	6800 C	N	0	S	0	9.00	56.10	1.30
2016	6700 R		0		0	9.00	56.20	1.50
2015	6600 T		0		0	9.00	56.30	1.10
2014	6500 S					9.00	56.40	1.00
2013	6500 F		0		0	9.00	57.10	1.00
2012	6500 C	N	0	S	0	9.00	57.80	2.10

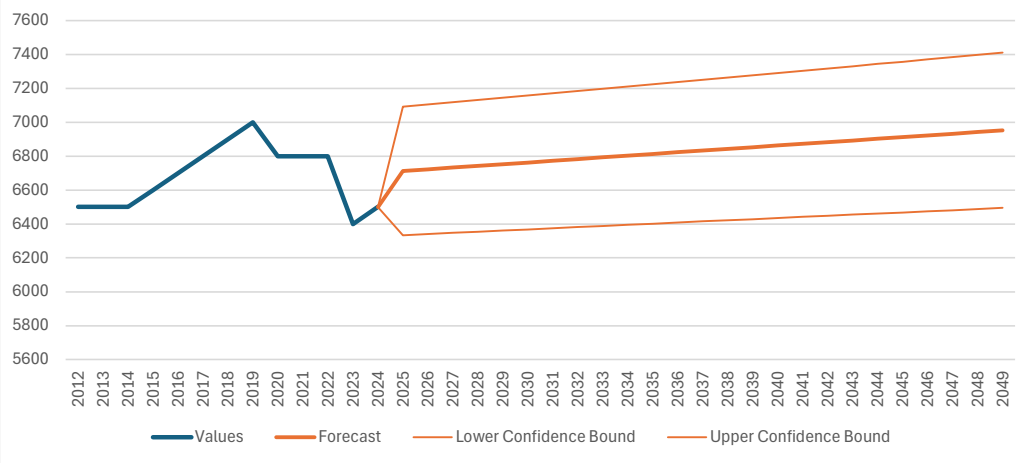
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Timeline	Values	Forecast	Lower Confidence Bound	Upper Confidence Bound
2012	6500			
2013	6500			
2014	6500			
2015	6600			
2016	6700			
2017	6800			
2018	6900			
2019	7000			
2020	6800			
2021	6800			
2022	6800			
2023	6400			
2024	6500	6500	6500.00	6500.00
2025		6713.07859	6333.58	7092.58
2026		6723.086	6340.54	7105.64
2027		6733.0934	6347.47	7118.72
2028		6743.10081	6354.38	7131.82
2029		6753.10822	6361.27	7144.94
2030		6763.11562	6368.14	7158.09
2031		6773.12303	6374.98	7171.26
2032		6783.13044	6381.80	7184.46
2033		6793.13785	6388.60	7197.67
2034		6803.14525	6395.38	7210.91
2035		6813.15266	6402.13	7224.17
2036		6823.16007	6408.86	7237.46
2037		6833.16748	6415.57	7250.76
2038		6843.17488	6422.26	7264.09
2039		6853.18229	6428.93	7277.43
2040		6863.1897	6435.58	7290.80
2041		6873.19711	6442.20	7304.19
2042		6883.20451	6448.81	7317.60
2043		6893.21192	6455.39	7331.03
2044		6903.21933	6461.95	7344.49
2045		6913.22673	6468.50	7357.96
2046		6923.23414	6475.02	7371.45
2047		6933.24155	6481.52	7384.96
2048		6943.24896	6488.00	7398.50
2049		6953.25636	6494.46	7412.05

453

18.1302545

0.27% CAGR



APPENDIX E

Future Operational Analysis

Synchro Output

Existing Intersection Configuration

A.M. Peak Hour

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Traffic Vol, veh/h	18	3	2	122	5	2	131	153	120	6
Future Vol, veh/h	18	3	2	122	5	2	131	153	120	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	2	2	2	3	3	3	5	5
Mvmt Flow	20	3	2	136	6	2	146	170	133	7
Number of Lanes	1	0	0	1	0	0	1	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	
Opposing Lanes	1	1	0
Conflicting Approach Left	NE	WB	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	WB	NE	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay, s/veh	8.9	9.9	9.6
HCM LOS	A	A	A

Lane	NELn1	NBLn1	WBLn1	SBLn1
Vol Left, %	88%	2%	89%	1%
Vol Thru, %	0%	95%	0%	46%
Vol Right, %	12%	4%	11%	53%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	136	129	27	286
LT Vol	120	2	24	2
Through Vol	0	122	0	131
RT Vol	16	5	3	153
Lane Flow Rate	151	143	30	318
Geometry Grp	1	1	1	1
Degree of Util (X)	0.216	0.188	0.044	0.378
Departure Headway (Hd)	5.145	4.732	5.251	4.277
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	694	755	677	839
Service Time	3.204	2.778	3.321	2.312
HCM Lane V/C Ratio	0.218	0.189	0.044	0.379
HCM Control Delay, s/veh	9.6	8.9	8.6	9.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.7	0.1	1.8

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	114	35	36	18	39	3	13	120	6	2	153	76
Future Vol, veh/h	114	35	36	18	39	3	13	120	6	2	153	76
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	4	4	4	0	0	0	5	5	5	3	3	3
Mvmt Flow	127	39	40	20	43	3	14	133	7	2	170	84
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.1	8.8	9.4	10
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	62%	30%	1%
Vol Thru, %	86%	19%	65%	66%
Vol Right, %	4%	19%	5%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	185	60	231
LT Vol	13	114	18	2
Through Vol	120	35	39	153
RT Vol	6	36	3	76
Lane Flow Rate	154	206	67	257
Geometry Grp	1	1	1	1
Degree of Util (X)	0.214	0.287	0.096	0.331
Departure Headway (Hd)	4.979	5.031	5.188	4.644
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	715	709	683	770
Service Time	3.05	3.104	3.276	2.705
HCM Lane V/C Ratio	0.215	0.291	0.098	0.334
HCM Control Delay, s/veh	9.4	10.1	8.8	10
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.8	1.2	0.3	1.5

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	114	35	124	6	39	3	86	122	5	2	131	76
Future Vol, veh/h	114	35	124	6	39	3	86	122	5	2	131	76
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	4	4	4	0	0	0	2	2	2	3	3	3
Mvmt Flow	127	39	138	7	43	3	96	136	6	2	146	84
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.9	9.2	11.2	10.5
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	40%	42%	13%	1%
Vol Thru, %	57%	13%	81%	63%
Vol Right, %	2%	45%	6%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	213	273	48	209
LT Vol	86	114	6	2
Through Vol	122	35	39	131
RT Vol	5	124	3	76
Lane Flow Rate	237	303	53	232
Geometry Grp	1	1	1	1
Degree of Util (X)	0.349	0.43	0.083	0.327
Departure Headway (Hd)	5.309	5.099	5.626	5.064
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	677	707	636	711
Service Time	3.339	3.126	3.665	3.094
HCM Lane V/C Ratio	0.35	0.429	0.083	0.326
HCM Control Delay, s/veh	11.2	11.9	9.2	10.5
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	1.6	2.2	0.3	1.4

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	35	124	18	39	86	5	13	6
Future Vol, veh/h	35	124	18	39	86	5	13	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	4	4	0	0	2	2	5	5
Mvmt Flow	39	138	20	43	96	6	14	7
Number of Lanes	1	0	0	1	1	0	1	0

Approach	EB	NE
Opposing Approach	WB	
Opposing Lanes	1	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	WB
Conflicting Lanes Right	1	1
HCM Control Delay, s/veh	8	7.7
HCM LOS	A	A

Lane	NELn1	NBLn1	EBLn1	WBLn1
Vol Left, %	45%	95%	0%	38%
Vol Thru, %	0%	0%	18%	62%
Vol Right, %	55%	5%	82%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	93	195	63
LT Vol	13	88	0	24
Through Vol	0	0	35	39
RT Vol	16	5	160	0
Lane Flow Rate	32	103	217	70
Geometry Grp	1	1	1	1
Degree of Util (X)	0.04	0.13	0.231	0.091
Departure Headway (Hd)	4.502	4.539	3.834	4.686
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	797	793	940	767
Service Time	2.522	2.552	1.845	2.704
HCM Lane V/C Ratio	0.04	0.13	0.231	0.091
HCM Control Delay, s/veh	7.7	8.2	8	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.9	0.3

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	114	124	86	122	131	153	120	10
Future Vol, veh/h	114	124	86	122	131	153	120	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	4	4	2	2	3	3	5	5
Mvmt Flow	127	138	96	136	146	170	133	11
Number of Lanes	1	0	0	1	1	0	1	0

Approach	EB	SB
Opposing Approach		NB
Opposing Lanes	0	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right	NB	NE
Conflicting Lanes Right	1	1
HCM Control Delay, s/veh	14.7	17.5
HCM LOS	B	C

Lane	NELn1	NBLn1	EBLn1	SBLn1
Vol Left, %	93%	42%	42%	0%
Vol Thru, %	0%	58%	0%	36%
Vol Right, %	7%	0%	58%	64%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	143	210	274	360
LT Vol	133	88	114	0
Through Vol	0	122	0	131
RT Vol	10	0	160	229
Lane Flow Rate	159	233	304	400
Geometry Grp	1	1	1	1
Degree of Util (X)	0.292	0.411	0.498	0.624
Departure Headway (Hd)	6.606	6.334	5.891	5.62
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	542	567	609	648
Service Time	4.664	4.391	3.945	3.62
HCM Lane V/C Ratio	0.293	0.411	0.499	0.617
HCM Control Delay, s/veh	12.4	13.8	14.7	17.5
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	1.2	2	2.8	4.4

P.M. Peak Hour

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Traffic Vol, veh/h	11	2	10	186	11	2	100	155	138	9
Future Vol, veh/h	11	2	10	186	11	2	100	155	138	9
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	0	0	1	1	1	2	2	2	0	0
Mvmt Flow	11	2	10	190	11	2	102	158	141	9
Number of Lanes	1	0	0	1	0	0	1	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	
Opposing Lanes	1	1	0
Conflicting Approach Left	NE	WB	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	WB	NE	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay, s/veh	9.4	9.3	9.6
HCM LOS	A	A	A

Lane	NELn1	NBLn1	WBLn1	SBLn1
Vol Left, %	87%	5%	88%	1%
Vol Thru, %	0%	90%	0%	39%
Vol Right, %	13%	5%	12%	60%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	158	207	17	257
LT Vol	138	10	15	2
Through Vol	0	186	0	100
RT Vol	20	11	2	155
Lane Flow Rate	161	211	17	262
Geometry Grp	1	1	1	1
Degree of Util (X)	0.227	0.272	0.025	0.312
Departure Headway (Hd)	5.06	4.637	5.287	4.28
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	706	773	672	837
Service Time	3.115	2.681	3.359	2.319
HCM Lane V/C Ratio	0.228	0.273	0.025	0.313
HCM Control Delay, s/veh	9.6	9.4	8.5	9.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	1.1	0.1	1.3

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	175	44	32	11	40	2	49	138	9	2	155	90
Future Vol, veh/h	175	44	32	11	40	2	49	138	9	2	155	90
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	2	2	2
Mvmt Flow	179	45	33	11	41	2	50	141	9	2	158	92
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.2	9	10.1	10.3
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	70%	21%	1%
Vol Thru, %	70%	18%	75%	63%
Vol Right, %	5%	13%	4%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	196	251	53	247
LT Vol	49	175	11	2
Through Vol	138	44	40	155
RT Vol	9	32	2	90
Lane Flow Rate	200	256	54	252
Geometry Grp	1	1	1	1
Degree of Util (X)	0.28	0.365	0.083	0.335
Departure Headway (Hd)	5.04	5.128	5.495	4.781
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	704	694	656	744
Service Time	3.134	3.22	3.495	2.868
HCM Lane V/C Ratio	0.284	0.369	0.082	0.339
HCM Control Delay, s/veh	10.1	11.2	9	10.3
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	1.1	1.7	0.3	1.5

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	175	44	86	4	40	2	84	186	11	2	100	90
Future Vol, veh/h	175	44	86	4	40	2	84	186	11	2	100	90
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	0	0	0	1	1	1	2	2	2
Mvmt Flow	179	45	88	4	41	2	86	190	11	2	102	92
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12.4	9.2	12	10
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	30%	57%	9%	1%
Vol Thru, %	66%	14%	87%	52%
Vol Right, %	4%	28%	4%	47%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	305	46	192
LT Vol	84	175	4	2
Through Vol	186	44	40	100
RT Vol	11	86	2	90
Lane Flow Rate	287	311	47	196
Geometry Grp	1	1	1	1
Degree of Util (X)	0.417	0.45	0.074	0.276
Departure Headway (Hd)	5.231	5.204	5.688	5.079
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	688	694	629	707
Service Time	3.26	3.233	3.73	3.111
HCM Lane V/C Ratio	0.417	0.448	0.075	0.277
HCM Control Delay, s/veh	12	12.4	9.2	10
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	2.1	2.3	0.2	1.1

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	44	86	11	40	84	11	49	9
Future Vol, veh/h	44	86	11	40	84	11	49	9
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	0	0	1	1	0	0
Mvmt Flow	45	88	11	41	86	11	50	9
Number of Lanes	1	0	0	1	1	0	1	0

Approach	EB	NE
Opposing Approach	WB	
Opposing Lanes	1	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	WB
Conflicting Lanes Right	1	1
HCM Control Delay, s/veh	7.8	8
HCM LOS	A	A

Lane	NELn1	NBLn1	EBLn1	WBLn1
Vol Left, %	71%	90%	0%	27%
Vol Thru, %	0%	0%	27%	73%
Vol Right, %	29%	10%	73%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	105	162	55
LT Vol	49	94	0	15
Through Vol	0	0	44	40
RT Vol	20	11	118	0
Lane Flow Rate	70	107	165	56
Geometry Grp	1	1	1	1
Degree of Util (X)	0.088	0.134	0.179	0.072
Departure Headway (Hd)	4.517	4.493	3.898	4.62
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	795	800	924	777
Service Time	2.536	2.506	1.909	2.639
HCM Lane V/C Ratio	0.088	0.134	0.179	0.072
HCM Control Delay, s/veh	8	8.2	7.8	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.6	0.2

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations								
Traffic Vol, veh/h	175	86	84	186	100	155	138	11
Future Vol, veh/h	175	86	84	186	100	155	138	11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	1	1	1	1	2	2	0	0
Mvmt Flow	179	88	86	190	102	158	141	11
Number of Lanes	1	0	0	1	1	0	1	0

Approach	EB	SB
Opposing Approach		NB
Opposing Lanes	0	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right	NB	NE
Conflicting Lanes Right	1	1
HCM Control Delay, s/veh	15.6	16.4
HCM LOS	C	C

Lane	NELn1	NBLn1	EBLn1	SBLn1
Vol Left, %	94%	34%	60%	0%
Vol Thru, %	0%	66%	0%	29%
Vol Right, %	6%	0%	40%	71%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	198	280	293	345
LT Vol	187	94	175	0
Through Vol	0	186	0	100
RT Vol	11	0	118	245
Lane Flow Rate	202	286	299	352
Geometry Grp	1	1	1	1
Degree of Util (X)	0.375	0.506	0.513	0.57
Departure Headway (Hd)	6.682	6.375	6.171	5.833
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	537	563	583	616
Service Time	4.747	4.435	4.231	3.89
HCM Lane V/C Ratio	0.376	0.508	0.513	0.571
HCM Control Delay, s/veh	13.7	15.8	15.6	16.4
HCM Lane LOS	B	C	C	C
HCM 95th-tile Q	1.7	2.8	2.9	3.6

Roundabout Configuration

A.M. Peak Hour

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	344	73	240	402
Demand Flow Rate, veh/h	359	73	245	414
Vehicles Circulating, veh/h	356	526	337	185
Vehicles Exiting, veh/h	243	56	301	414
Ped Vol Crossing Leg, #/h	0	9	9	0
Ped Cap Adj	1.000	0.999	0.999	1.000
Approach Delay, s/veh	8.1	5.4	6.3	6.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	359	73	245	414
Cap Entry Lane, veh/h	960	807	979	1143
Entry HV Adj Factor	0.959	1.000	0.981	0.970
Flow Entry, veh/h	344	73	240	402
Cap Entry, veh/h	921	806	958	1108
V/C Ratio	0.374	0.091	0.251	0.362
Control Delay, s/veh	8.1	5.4	6.3	6.9
LOS	A	A	A	A
95th %tile Queue, veh	2	0	1	2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Approach	NE
Entry Lanes	1
Conflicting Circle Lanes	1
Adj Approach Flow, veh/h	165
Demand Flow Rate, veh/h	174
Vehicles Circulating, veh/h	476
Vehicles Exiting, veh/h	239
Ped Vol Crossing Leg, #/h	9
Ped Cap Adj	0.999
Approach Delay, s/veh	6.3
Approach LOS	A

Lane	Left	Bypass
Designated Moves	LR	R
Assumed Moves	LR	
RT Channelized		Yield
Lane Util	1.000	
Follow-Up Headway, s	2.609	2.609
Critical Headway, s	4.976	4.976
A (Intercept)	1380	1380
B (Slope)	1.02e-3	1.02e-3
Entry Flow, veh/h	162	12
Cap Entry Lane, veh/h	849	1015
Entry HV Adj Factor	0.952	0.952
Flow Entry, veh/h	154	11
Cap Entry, veh/h	808	966
V/C Ratio	0.191	0.011
Control Delay, s/veh	6.5	3.8
LOS	A	A
95th %tile Queue, veh	1	0

P.M. Peak Hour

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	345	58	297	354
Demand Flow Rate, veh/h	348	58	300	361
Vehicles Circulating, veh/h	292	661	428	203
Vehicles Exiting, veh/h	272	67	197	516
Ped Vol Crossing Leg, #/h	0	1	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.1	6.0	7.8	6.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	348	58	300	361
Cap Entry Lane, veh/h	1024	703	892	1122
Entry HV Adj Factor	0.990	1.000	0.990	0.981
Flow Entry, veh/h	345	58	297	354
Cap Entry, veh/h	1014	703	883	1100
V/C Ratio	0.340	0.082	0.336	0.322
Control Delay, s/veh	7.1	6.0	7.8	6.4
LOS	A	A	A	A
95th %tile Queue, veh	2	0	1	1

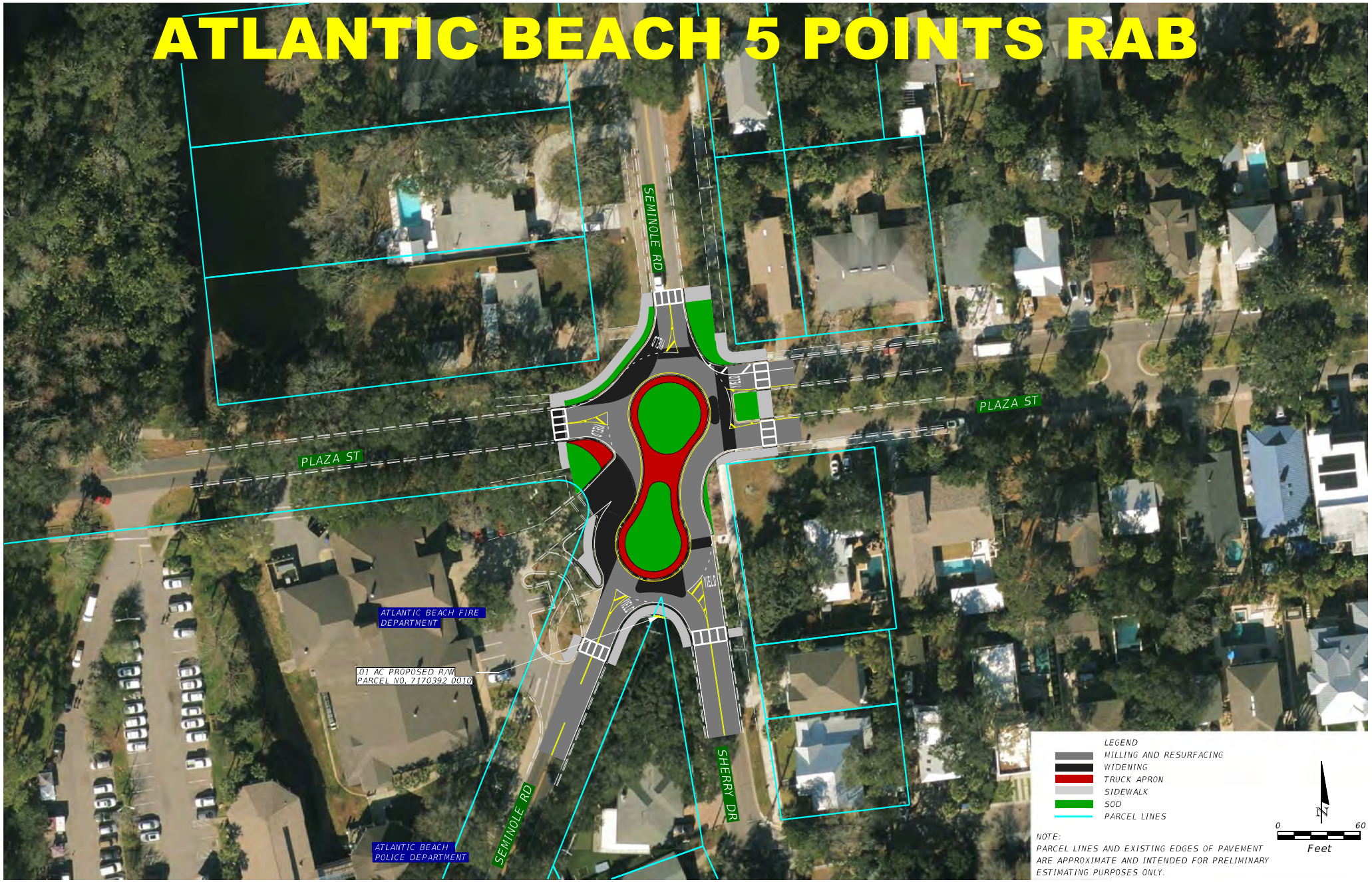
Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Approach	NE
Entry Lanes	1
Conflicting Circle Lanes	1
Adj Approach Flow, veh/h	211
Demand Flow Rate, veh/h	211
Vehicles Circulating, veh/h	425
Vehicles Exiting, veh/h	215
Ped Vol Crossing Leg, #/h	0
Ped Cap Adj	1.000
Approach Delay, s/veh	6.1
Approach LOS	A

Lane	Left	Bypass
Designated Moves	LR	R
Assumed Moves	LR	
RT Channelized		Yield
Lane Util	1.000	
Follow-Up Headway, s	2.609	2.609
Critical Headway, s	4.976	4.976
A (Intercept)	1380	1380
B (Slope)	1.02e-3	1.02e-3
Entry Flow, veh/h	200	11
Cap Entry Lane, veh/h	895	1129
Entry HV Adj Factor	1.000	1.000
Flow Entry, veh/h	200	11
Cap Entry, veh/h	895	1129
V/C Ratio	0.224	0.010
Control Delay, s/veh	6.3	3.3
LOS	A	A
95th %tile Queue, veh	1	0

APPENDIX F

FDOT Concept


ATLANTIC BEACH 5 POINTS RAB
SEMINOLE RD
PLAZA ST
PLAZA ST
YIELD
ATLANTIC BEACH FIRE DEPARTMENT
.01 AC PROPOSED R/W
PARCEL NO. 7170392 0010
ATLANTIC BEACH POLICE DEPARTMENT
SEMINOLE RD
SHERRY DR
LEGEND
MILLING AND RESURFACING
WIDENING
TRUCK APRON
SIDEWALK
SOD
PARCEL LINES
NOTE:
PARCEL LINES AND EXISTING EDGES OF PAVEMENT ARE APPROXIMATE AND INTENDED FOR PRELIMINARY ESTIMATING PURPOSES ONLY.
N
0
60
Feet

APPENDIX G

Concept Renderings

Concept

Concept

Concept

Concept

Concept

Concept

Concept

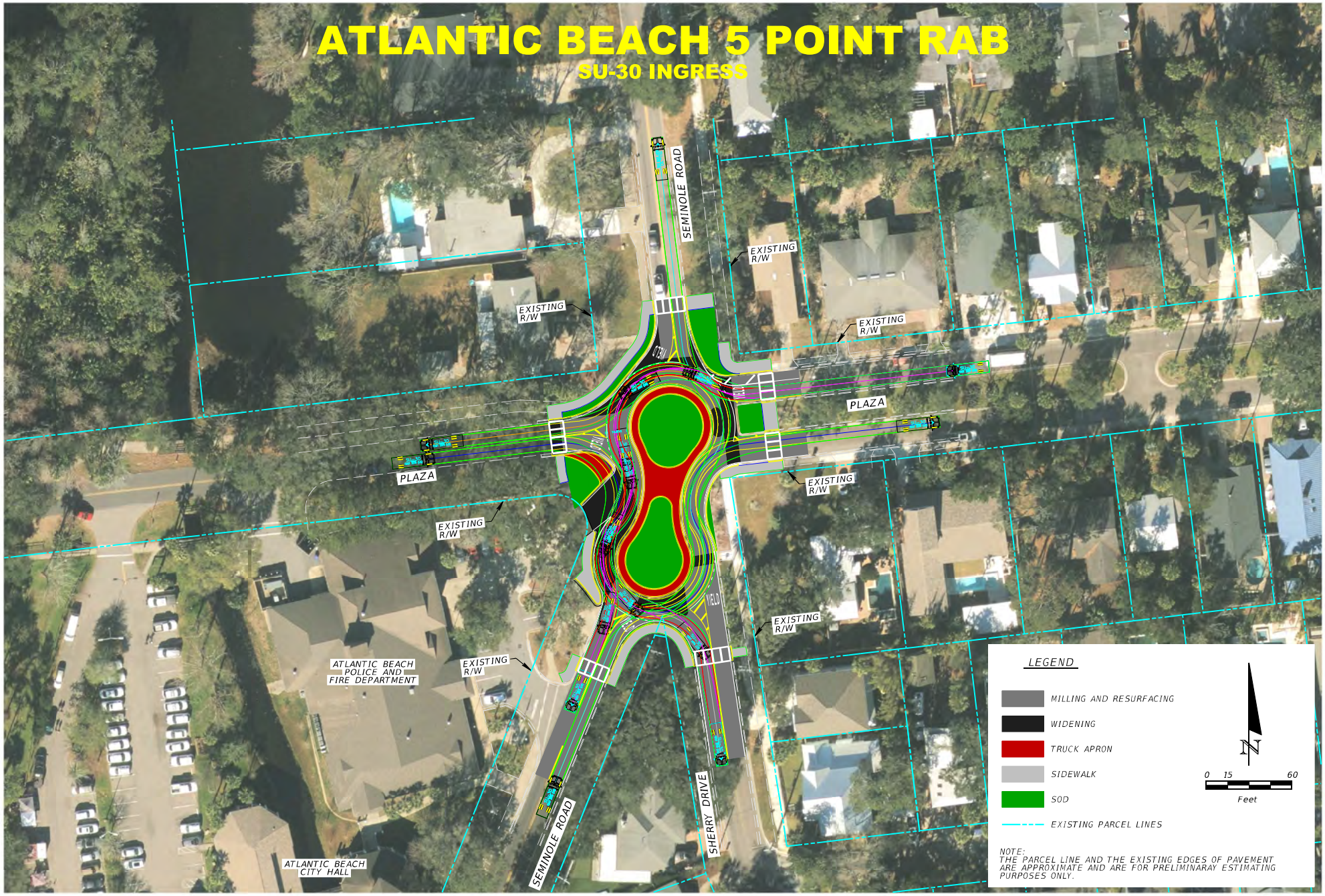
Concept

APPENDIX H

AutoTURN Modeling

ATLANTIC BEACH 5 POINT RAB

SU-30 INGRESS



APPENDIX I
Cost Estimates

Date: 12/12/2024 8:40:17 AM

FDOT Long Range Estimating System - Production

R4: Project Details Composite Report

By Version

Project: SEMINO-L-ER-AB **Letting Date:** 01/2099

Description: CONCEPTUAL ESTIMATE FOR INTERSECTION IMPROVEMENTS AT SEMINOLE RD/PLAZA RD/SHERRY DR IN ATLANTIC BEACH.

District: 02 **County:** 72 DUVAL

Project Manager:

Version 1-P Project Grand Total **$1,808,675.34**

Description: 12/12/24 (EH), CONCEPTUAL ESTIMATE FOR INTERSECTION IMPROVEMENTS AT SEMINOLE RD/PLAZA RD/SHERRY DR IN ATLANTIC BEACH.

Pay Items

Pay Item	Description	Total Quantity	Unit	Weighted Avg. Unit Price	Total Amount
102-1	MAINTENANCE OF TRAFFIC	10.00			$118,958.02
101-1	MOBILIZATION	12.00			$157,024.58
104-10-3	SEDIMENT BARRIER	1,100.35	LF	$4.25	$4,676.49
104-11	FLOATING TURBIDITY BARRIER	10.42	LF	$50.00	$521.00
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	10.42	LF	$35.00	$364.70
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,500.00	$4,500.00
104-18	INLET PROTECTION SYSTEM	5.00	EA	$225.00	$1,125.00
107-1	LITTER REMOVAL	0.91	AC	$5,000.00	$4,550.00
107-2	MOWING	0.91	AC	$7,500.00	$6,825.00
110-1-1	CLEARING & GRUBBING	0.38	AC	$725,000.00	$275,500.00
110-4-10	REMOVAL OF EXIST CONC	772.00	SY	$55.00	$42,460.00
120-6	EMBANKMENT	1,126.00	CY	$75.00	$84,450.00
160-4	TYPE B STABILIZATION	816.71	SY	$45.00	$36,751.95
285-709	OPTIONAL BASE,BASE GROUP 09	541.62	SY	$115.00	$62,286.30
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	1,418.23	SY	$10.00	$14,182.30
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	185.92	TN	$325.00	$60,424.00
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	98.08	TN	$415.00	$40,703.20
350-30-13	CONC PAVEMENT FOR ROUNDABOUT APRON, 12"	263.00	SY	$400.00	$105,200.00
425-1-315	INLETS, CURB TYPE P-1, PARTIAL	2.00	EA	$9,500.00	$19,000.00
425-2-43	MANHOLES, P-7, PARTIAL	2.00	EA	$7,000.00	$14,000.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	553.00	LF	$85.00	$47,005.00
520-2-4	CONCRETE CURB, TYPE D	358.00	LF	$80.00	$28,640.00
520-2-8	CONCRETE CURB, TYPE RA	427.00	LF	$75.00	$32,025.00
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	328.00	SY	$95.00	$31,160.00
570-1-2	PERFORMANCE TURF, SOD	625.52	SY	$12.00	$7,506.24
630-2-11	CONDUIT, F& I, OPEN TRENCH	1,100.00	LF	$22.00	$24,200.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	220.00	LF	$40.00	$8,800.00
635-2-11	PULL & SPLICE BOX, F&I, 13" X 24"	8.00	EA	$1,550.00	$12,400.00
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	12.00	EA	$600.00	$7,200.00

700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	4.00	EA	$1,500.00	$6,000.00
700-1-600	SINGLE COL GRND SIGN AS, REMOVE	8.00	EA	$55.00	$440.00
700-2-114	MULTI- COLUMN SIGN, F&I GM, 30.1-50 SF	4.00	EA	$9,000.00	$36,000.00
706-1-3	RAISED PAVMT MARK, TYPE B	14.00	EA	$25.00	$350.00
711-11-102	THERMOPLASTIC, STD, WHITE, SOLID, 8"	0.01	GM	$15,000.00	$150.00
711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	89.00	LF	$8.00	$712.00
711-11-124	THERMOPLASTIC, STD, WHITE, SOLID, 18"	17.00	LF	$10.00	$170.00
711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	436.00	LF	$12.00	$5,232.00
711-11-141	THERMOPLASTIC, STD, WHITE, DOT GUIDE, 6"	0.03	GM	$4,500.00	$135.00
711-11-224	THERMOPLASTIC, STD, YELLOW, SOLID, 18"	63.00	LF	$10.00	$630.00
711-12-160	THERMOPLASTIC, REFURBISH, WHITE, MESSAGE	5.00	EA	$175.00	$875.00
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	0.19	GM	$8,500.00	$1,615.00
711-16-201	THERMOPLASTIC, STD-OTH,YELLOW, SOLID, 6"	0.19	GM	$8,500.00	$1,615.00
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	4,000.00	LF	$4.00	$16,000.00
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	8.00	EA	$15,500.00	$124,000.00
715-69-000	LIGHT POLE COMPLETE, REMV POLE AND FND	6.00	EA	$2,000.00	$12,000.00
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	8.00	EA	$900.00	$7,200.00
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)	1.00	LS	$50,000.00	$50,000.00

Project Unknowns	20.00 %	$293,112.56
Design/Build	0.00 %	$0.00

Version 1-P Project Grand Total **$1,808,675.34**

benesch

NORTH FLORIDA TPO