TRAFFIC SAFETY STUDY

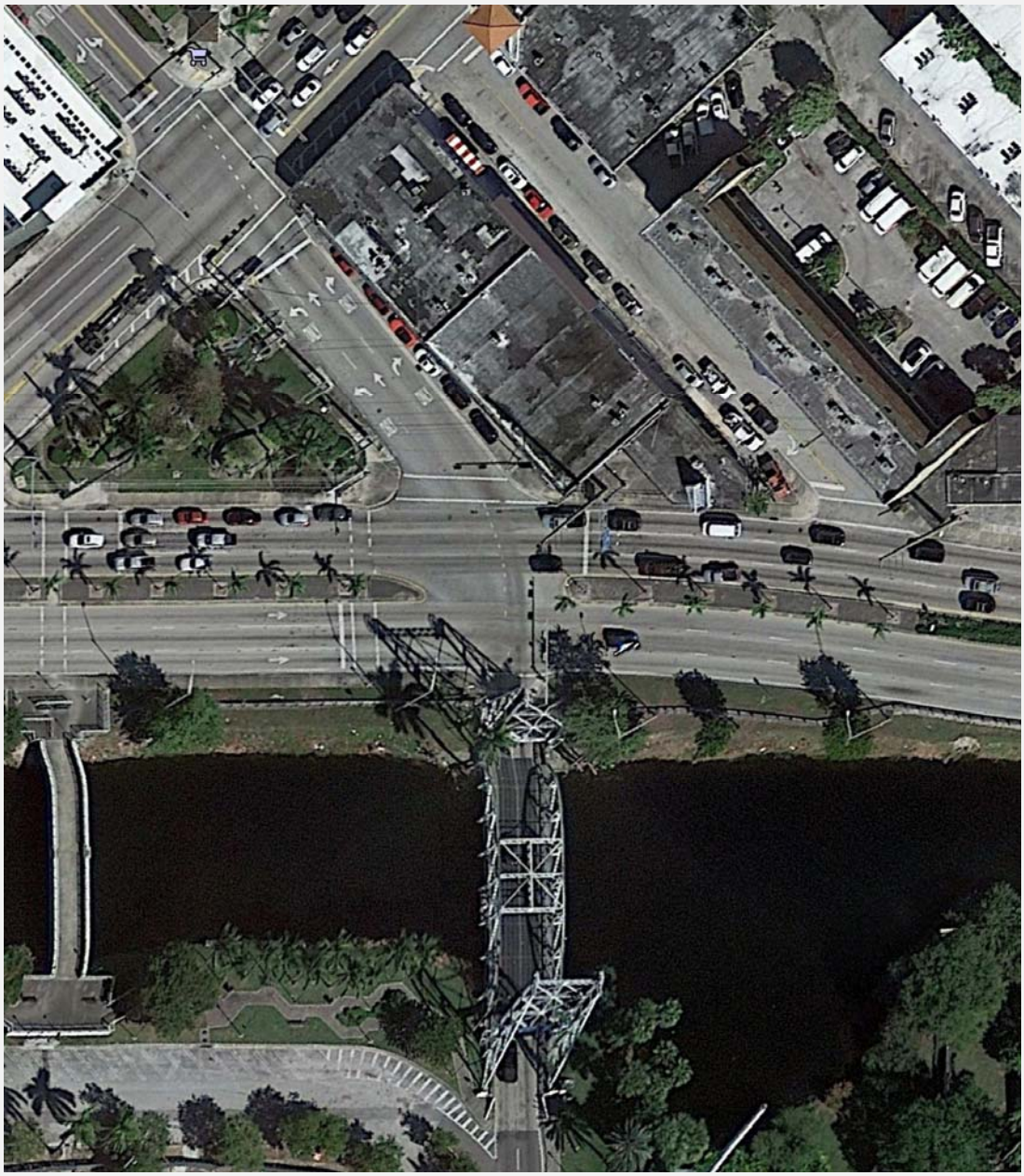
FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX – TRAFFIC OPERATIONS

TWO 24

Districtwide Traffic Operations & Safety Studies
FPID 250650-5-32-01
Contract C-AA02

June 2021

SR 25/OKEECHOBEE ROAD/US 27
AT SE 1 AVENUE/S HOOK SQUARE AND LINDSEY COURT
SECTION NO. 87090000
(MP 13.720 & MP 13.763)



FDOT Project Manager: Cristina Morales, E.I.

SAFETY STUDY

District Six Traffic Operations

District-Wide Traffic Operations & Safety Studies

FM: 250650-5-32-01

Contract No. C-AA02

Task Work Order No. 24

SR 25/OKEECHOBEE ROAD/US 27

AT SE 1 AVENUE/S HOOK DRIVE AND LINDSEY COURT

SECTION NO. 87090000

(MP 13.720 & MP 13.763)

FDOT Project Manager: Cristina Morales, E.I.

ENGINEER'S CERTIFICATION

I, Keffler Castro, PE No. 66437, certify that I currently hold an active Professional Engineer's License in the State of Florida, and I am competent, through education or experience, to provide engineering services in both the civil and the traffic engineering disciplines contained in this report. I further certify that this report was prepared by me or under my responsible charge, as defined in Chapter 61G15-18.001 F.A.C., and that all statements, conclusions, and recommendations made herein are true and correct to the best of my knowledge and ability.

Project Description:

SAFETY STUDY

SR 25/OKEECHOBEE ROAD/US 27

AT SE 1 AVENUE/S HOOK DRIVE AND LINDSEY COURT

SECTION 87090000 (MP 13.720 AND MP 13.763)

6/29/2021

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1. EXECUTIVE SUMMARY

C. H. Perez & Associates Consulting Engineers, Inc. (CHP) was retained by the Florida Department of Transportation (FDOT) District Six Traffic Operations' Office (referred from hereon as the Department) to perform a Traffic Safety Study for the intersections of SR 25/Okeechobee Road/US 27 at SE 1 Avenue/S Hook Square and Lindsey Court in Miami-Dade County. The study was initiated after a review of the 2018 Spot High Crash Locations (HCL) list, and following two fatal crashes that occurred near the intersection. The objective of this study was to identify crash patterns and probable causes with potential countermeasures to identify, develop, and evaluate cost-effective potential safety improvements targeted at reducing the most prevalent or abnormal crash patterns within the study limits.

The crash analysis revealed the following information:

- The intersection experienced a total of 78 crashes during the three years, with a yearly breakdown of 24, 28, and 26 crashes (2016, 2017, and 2018), respectively. *Note that the two intersections were analyzed as a single intersection, given their proximity.*
- Based on crash severity, 64 crashes (82.1%) were property damage only, and 12 crashes (15.4%) were injury-type crashes. There were two (2) fatal crashes reported during the three-year study period. The two fatalities occurred at night. In the first fatality, the at-fault motorist traveled at an estimated speed of 72 MPH in a 40 MPH posted speed limit zone. In the second fatality, a fixed object crash, the motorist traveled at an estimated speed of 65 MPH and tested positive for drug use.
- The percent of crashes during nighttime (night/dusk/dawn) was 29.4% (23 crashes), close to the district-wide average of 29.5%.
- The percent of crashes during wet/slippery pavement conditions was 23.1% (18 crashes), above the district-wide average of 15%.
- The leading crash types were rear-end with 35 crashes, sideswipe with 17 crashes, angle crashes 12 crashes, and fixed object 10 crashes.
- Of the 35 rear-end crashes, 17 involved westbound vehicles, 16 eastbound vehicles, and two (2) northbound vehicles. The peak period for the rear-end crashes is from 3 PM to 6 PM, with nine (9) crashes. Seven (7) (20%) crashes occurred during nighttime, and nine (9) (25.7%) crashes occurred under wet pavement conditions. Based on the review of the police reports, careless driving was the contributing cause of the majority of the rear-end crashes.
- Of the 17 sideswipe crashes, eight (8) involved westbound vehicles, five (5) northbound vehicles, and four (4) involved eastbound vehicles. There was not specific peak period for the sideswipe crashes. Based on the review of the police reports, improper Passing was the contributing cause of the majority of the sideswipe crashes.
- Of the 12 angle crashes, six (6) involved westbound vehicles crashing against northbound vehicles, and six (6) involved eastbound vehicles crashing against northbound vehicles. There was not specific peak period for the angle crashes. There were a total of five (5) (41.7%) crashes occurring during nighttime, and one (1) (8.3%) crash occurred under wet pavement conditions. The contributing causes of the majority of angle crashes were red-light running.
- Nine (9) of the ten fixed object crashes occurred during nighttime, between midnight and 6 AM. Five (5) fixed object crashes occurred during the weekend.
- There were no crashes relating to pedestrian and bicyclist crashes during the three-year study period. A review of the Signal Four Analytics Database for pedestrian and bicyclist crashes that occurred from January 1, 2019, through April 14, 2021, revealed no pedestrian and bicyclist crashes either.

Based on a review of the crash data for the period starting on January 1, 2016 through December 31, 2018, the field observations, and the result of the benefit/cost analysis, the following improvements are recommended:

- ***Install additional signal heads facing the eastbound and westbound approaches***.
- ***Install rigid retroreflective backplates facing the eastbound and westbound approaches.***
- ***Install an internally illuminated street name sign facing the eastbound approach.***

  The implementation of these two improvements will require the following:
  - *Replace the mast-arms facing eastbound and westbound approaches. Based on the information available (excluding survey). It appears that there is enough right-of-way to install the new mast arms.*
  - *There are transmission/distribution power lines and cable lines running along the north side of SR 25/Okeechobee Road. Given the height of the transmission/distribution power lines and cable lines, these will have to be de-energized to install the mast arm. Therefore, coordination with Florida Power and Light is necessary.*
  - *Reconstruct the curb ramps and sidewalk at the northwest corner.*
  - *Replace the pedestrian signal heads and sign attached to the mast arm facing westbound.*
  - *Coordination with the Miami-Dade County Traffic and Signal Division.*
  - *Replace the luminaire attached to the westbound mast arm. We have assumed the cost for a new mast-arm with an attached luminaire.*
- ***Install flexible retroreflective backplates facing the northbound approach.*** *This improvement requires coordination with the Miami-Dade County Traffic and Signal Division.*
- ***Install speed feedback signs facing the westbound approach.***
- ***Enforcement. The Department should coordinate with the local Police Department to enforce speed limits and red-light running, especially involving eastbound and westbound vehicles.***
- ***Increase the All Red-Clearance Interval from 2 to 2.6 for northbound traffic.*** *This improvement requires coordination with the Miami-Dade County Traffic and Signal Division.*
- ***Given the conditions observed during the field review, the results of the operational analysis, and that the intersection is coordinated with Hialeah Drive, additional signal timing modifications were discarded.***
- ***Consider conducting a lighting study to determine if the lighting level along the north side of Okeechobee Road is adequate.***

In addition, the following non-safety improvements are recommended.

- *Install pedestrian countdown signal heads at the northwest corner (facing westbound).*
- ***Upgrade all crosswalks to high emphasis at SE 1 Avenue.***
- ***Upgrade all crosswalks to high emphasis, pedestrian signs, and push buttons at Hialeah Drive.*** *This is recommended based on the high pedestrian activity observed during the field reviews.*

The preliminary construction cost for implementing the above safety improvements was estimated at approximately **$ 393,500.00** dollars, potentially reducing nearly three **(3)** crashes per year in the study area after implementation. This will result in a benefit/cost ratio of **11.8,** indicating that the safety improvements are economically viable.

2. INTRODUCTION

C. H. Perez & Associates Consulting Engineers, Inc. (CHP) was retained by the Florida Department of Transportation (FDOT) District Six Traffic Operations' Office (referred from hereon as the Department) to perform a Traffic Safety Study at the signalized intersection of SR 25/Okeechobee Road/US 27 at SE 1 Avenue/S Hook Square and Lindsey Court in Miami-Dade County. The study was initiated after a review of the 2018 Spot High Crash Locations (HCL) list, and following two fatal crashes that occurred near the intersection.

This study aims to develop safety improvements and perform benefit/cost analysis to identify suitable and cost-effective improvements. These actions will directly mitigate the identified abnormal crash patterns and their associated probable causes. We have developed and sketched the improvements to identify the modifications required clearly. The operational benefits and construction costs associated with the improvements have been quantified using a benefit/cost analysis to identify the most effective improvements. Finally, these efforts have been documented and presented in this report.

The report followed the procedures and guidelines outlined in the Department's Manual on Uniform Traffic Studies (MUTS), the 2010 Highway Capacity Manual (HCM), the 2009 Manual on Uniform Traffic Control Devices (MUTCD), the Traffic Engineering Manual (TEM), and the Highway Safety Improvement Program Guidelines (HSIPG). Specifically, this report covered the following topic items:

- Existing Conditions
- Crash Analysis
- Traffic Data Collection
- Field Observations
- Proposed Improvements
- Traffic Operational Analysis for Existing and Proposed Conditions
- Benefit/Cost Analysis
- Recommendations and Conclusions

Figure 1 on the next page shows the project study area.

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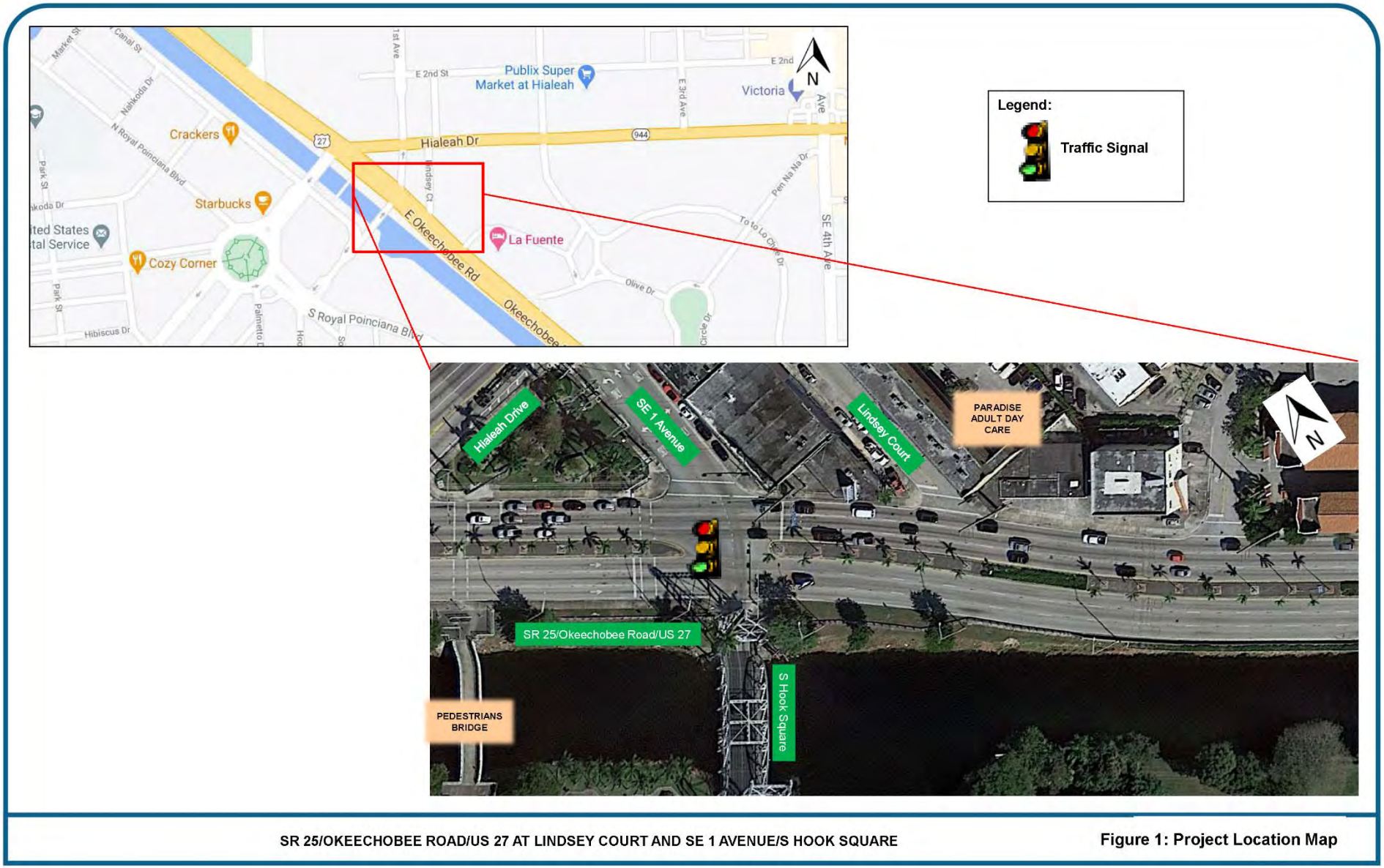


FIGURE 1: PROJECT LOCATION MAP

3. EXISTING CONDITIONS

3.1 ROADWAY CHARACTERISTICS

SR 25/Okeechobee Road/US 27 at SE 1 Avenue/S Hook Square is a four-leg signalized intersection located in Miami-Dade County. SR 25/Okeechobee Road is identified as section 87090000 on the State Highway System (SHS). SR 25/Okeechobee Road has a northwest-southeast orientation, but it will be considered an east-west roadway for this study. Within the study limits, SR 25/Okeechobee Road is a divided six-lane urban principal arterial other with a posted speed limit of 40 mph in both directions separated by a landscaped raised median. There is a canal along the south side of the arterial.

S Hook Square forms a one-way pair with Curtiss Parkway going over the canal, thus connecting the cities of Hialeah and Miami Springs. S Hook Square does not have a posted speed limit, but Curtis Parkway has a posted speed limit of 20 MPH. There are pedestrian crosswalks located at the north, south, and west legs of the intersection. A pedestrian signal is provided for the north leg crosswalk, and there is also one pedestrian signal head located at the northwest corner for the west leg crosswalk. All pedestrian signal heads are countdown, except for the pedestrian signal head facing westbound at the north leg of SE 1 Avenue.

SR 25/Okeechobee Road at Lindsay Court is a three-legged un-signalized intersection located approximately 200 feet east of SE 1 Avenue/S Hook Square. There is no posted speed limit on Lindsey Court. Lindsay Court serves a few commercial properties at the northwest quadrant and an adult daycare at the northeast quadrant at the intersection.

The Florida Department of Transportation (FDOT) Florida Traffic Online (2019), includes two traffic monitoring sites within the study area, which provide the following Average Annual Daily Traffic (AADT) and daily heavy vehicle percentage. East of the study intersection, the 2019 Average Annual Daily Traffic (AADT) along SR 25/Okeechobee Road is 54,000 vehicles per day (vpd), based on the Portable Traffic Monitoring Site (PTMS) No. 870200, located at approximately 370 feet East of SE 1 Avenue/S Hook Square. South of SR 25/Okeechobee Road, the 2019 AADT along SE 1 Avenue/S Hook Square is 9,600 vpd, based on the PTMS No. 878633 located at approximately 115 feet south of SR 25/Okeechobee Road.

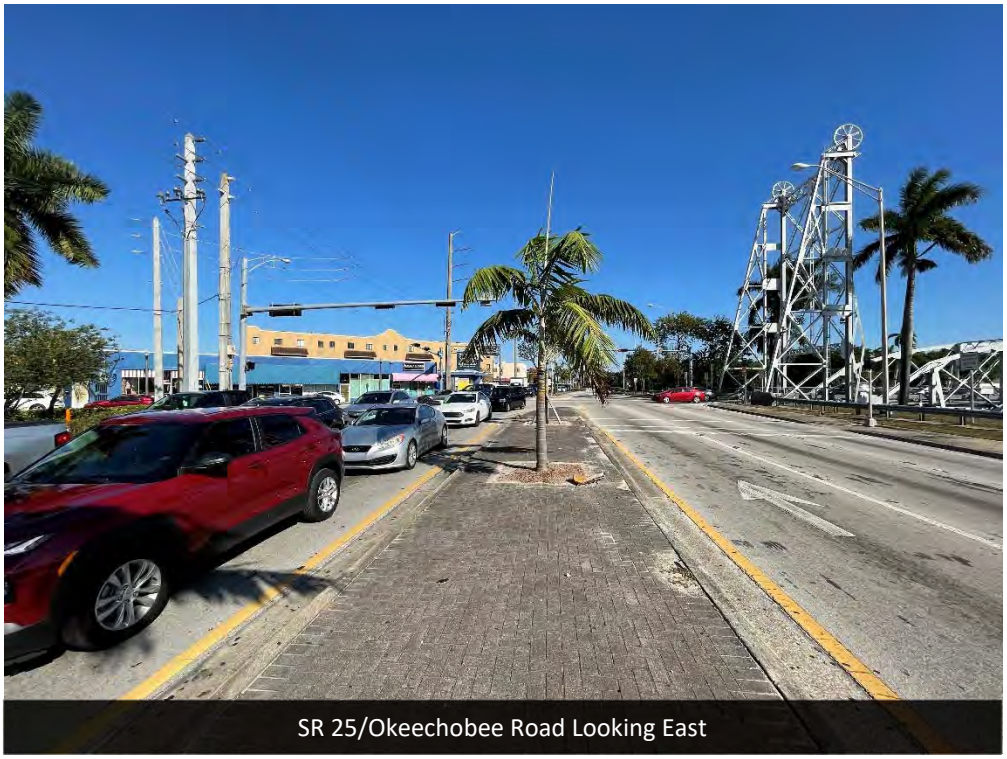
The approach geometry of SR 25/Okeechobee Road at SE 1 Avenue is as follows:

- Northbound Approach: A shared through/left-turn lane and a shared through/right-turn lane.
- Eastbound Approach: Three through lanes.
- Westbound Approach: Two through lanes and a shared through/right-turn lane.

Exhibits 1 and **2** provide additional information about the study location. An existing condition diagram of the study area is presented in **Figure 2**.

EXHIBIT 1: SR 25/OKEECHOBEE ROAD AT SE 1 AVENUE/S HOOK SQUARE

SE 1 Avenue/S Hook Square Looking North



SR 25/Okeechobee Road Looking East

EXHIBIT 2: SR 25/OKEECHOBEE ROAD AT SE 1 AVENUE/S HOOK SQUARE

SR 25/Okeechobee Road Looking West

Lindsey Court Looking South

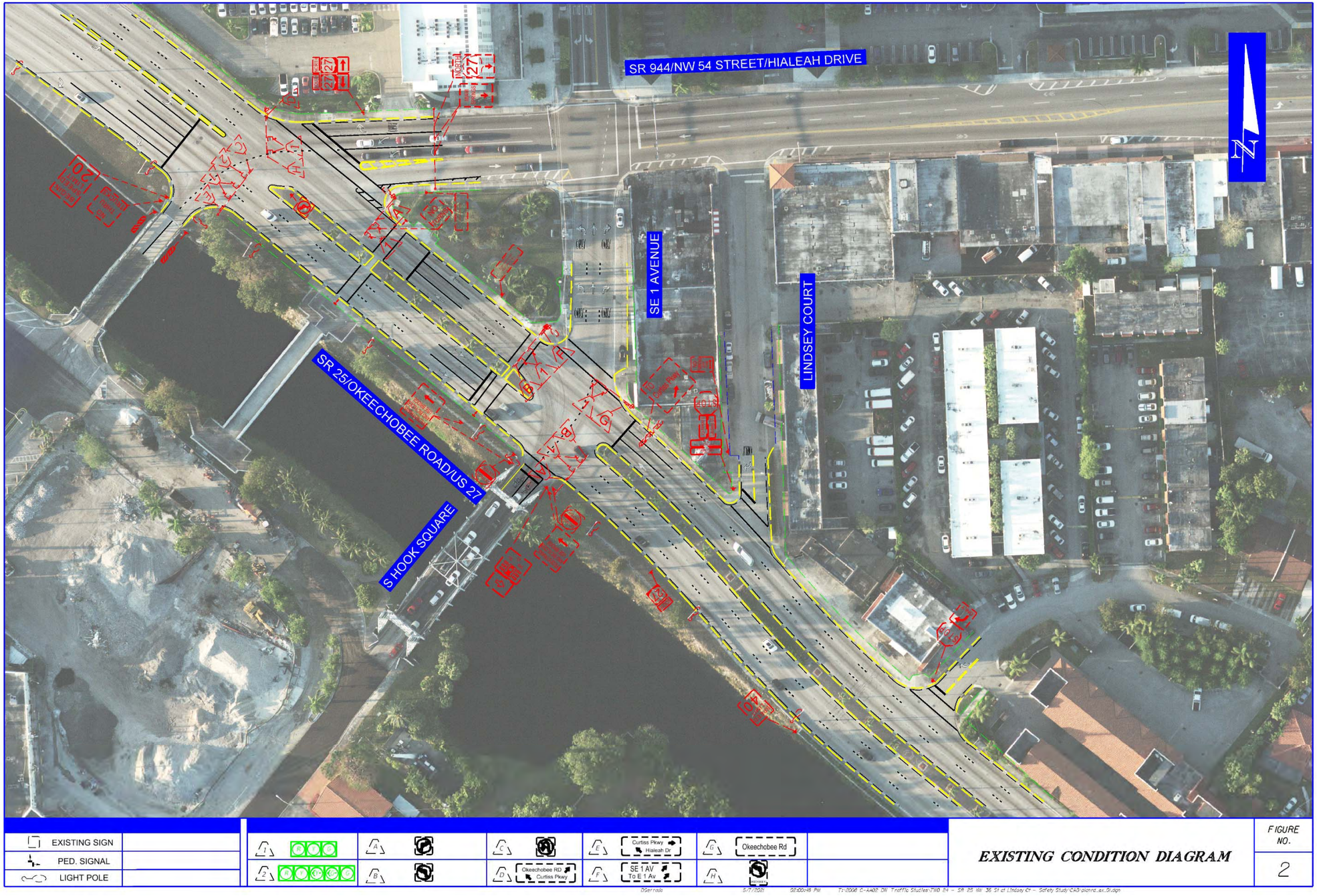
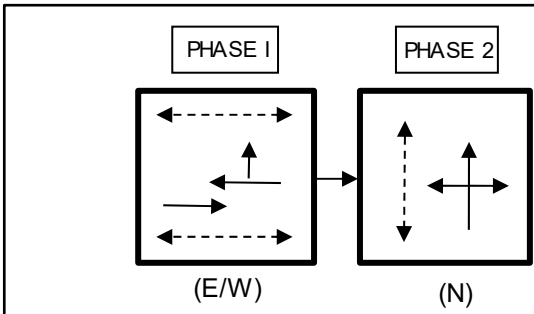


FIGURE 2: EXISTING CONDITION DIAGRAM

3.2 TRAFFIC CONTROL AND PEDESTRIAN FEATURES

The signalized intersection of SR 25/Okeechobee Road at SE 1 Avenue/S Hook Square is controlled via mast-arm traffic assembly. The eastbound and westbound left-turn movements are not allowed. Assuming a speed along S Hook Square of 25 MPH, which is the floating speed observed during the field reviews, and considering the geometry conditions preceding the intersection (bridge & curves), the northbound approach does not meet the minimum All-Red Clearance interval of 2.6 seconds stipulated in the Traffic Engineering Manual (TEM), Section 3.6.2.2 (Table 3.6.1). The Yellow Change Interval for all phases meets the minimum Yellow Change interval of 4 seconds for the Northbound approach and 4.4 seconds for the westbound approach as stipulated in the TEM 3.6.2.1. The signal timing information obtained from the Miami-Dade Traffic Signals & Signs Division database is included in **Appendix A**. The signal timing and phasing information is shown in **Figure 3**.



	AM PHASE		PM PHASE	
	I	II	I	II
MINIMUM GREEN	7	7	7	7
MAXIMUM GREEN	106	52	117	51
YELLOW	4.4	4	4.4	4
RED	2	2	2	2
WALK	7	7	7	7
FLASH	14	14	14	14
MINIMUM SPLIT	13.4	13	13.4	13
MAXIMUM SPLIT	112	58	123	57
CYCLE LENGTH	**170**		**180**	
OFFSET	**0**		**0**	

FIGURE 3: TRAFFIC SIGNAL PHASING AND TIMING

3.3 TRAFFIC DATA COLLECTION

The data collection efforts consisted of 72-hour Automated Traffic Recorders (ATRs) at SR 25/Okeechobee Road at SE 1 Avenue/S Hook Square (EB, WB, and NB approaches) and Lindsey Court (SB approach), and 6-hour Turning Movement Counts (TMCs) at SR 25/Okeechobee Road at SE 1 Avenue/S Hook Square. The ATRs were collected from Tuesday, April 13, 2021, through Thursday, April 15, 2021 (typical weekdays). The TMCs were performed on Tuesday, April 14, 2021, during the AM, Midday, and PM peak periods. Those periods were established based on an analysis of the traffic data available from the FDOT Florida Traffic Online application and an analysis of the crash data. From the TMCs, the peak periods were 7:30 AM to 8:30 AM, 12:30 PM to 1:30 PM, and 5:00 PM to 6:00 PM. The seasonal factor (0.98) was also obtained from the FDOT Florida Traffic Online application; however, to be more conservative, the seasonal factor was not applied to the TMCs. The peak hour TMCs for the intersection and some of the traffic characteristics of SR 25/Okeechobee Road/US 27 at SE 1 Avenue/S Hook Square are summarized in **Table 1**. The TMCs data sheets are also included in **Appendix B.**

TABLE 1: SUMMARY OF TRAFFIC CHARACTERISTICS

	Period		Traffic Characteristics	MOVEMENT					
				NBL	NBT	NBR	WBT	WBR	EBT
SR 25/Okeechobee Road at SE 1 Avenue	AM PEAK	8:30 AM	TMCs (VPH)	172	434	76	1391	127	2444
			ADJUSTED TMCs	172	434	76	1391	127	2444
			PEAK 15 MIN.	49	130	26	370	40	642
			PHF	0.88	0.83	0.73	0.94	0.79	0.95
		To	TRUCKS	1	10	1	53	6	137
			% TRUCKS	1%	2%	1%	4%	5%	6%
		7:30 AM	APPROACH TOTAL (VPH)	**682**			**1518**		**2444**
			PEDESTRIANS (Crossing the approach)	**1**			**2**		**1**
			INTERSECTION TOTAL (VPH)	4644					
	MIDDAY PEAK	1:30 PM	TMCs (VPH)	157	385	69	1448	106	1497
			ADJUSTED TMCs	157	385	69	1448	106	1497
			PEAK 15 MIN.	46	113	24	393	32	397
			PHF	0.85	0.85	0.72	0.92	0.83	0.94
		To	TRUCKS	2	5	1	74	0	106
			% TRUCKS	1%	1%	1%	5%	0%	7%
		12:30 PM	APPROACH TOTAL (VPH)	**611**			**1554**		**1497**
			PEDESTRIANS (Crossing the approach)	**0**			**0**		**0**
			INTERSECTION TOTAL (VPH)	3662					
	PM PEAK	6:00 PM	TMCs (VPH)	242	555	64	2181	114	1858
			ADJUSTED TMCs	242	555	64	2181	114	1858
			PEAK 15 MIN.	100	148	21	575	36	503
			PHF	0.61	0.94	0.76	0.95	0.79	0.92
		To	TRUCKS	0	7	1	66	1	29
			% TRUCKS	0%	1%	2%	3%	1%	2%
		5:00 PM	APPROACH TOTAL (VPH)	**861**			**2295**		**1858**
			PEDESTRIANS (Crossing the approach)	**0**			**0**		
			INTERSECTION TOTAL (VPH)	5014					

3.4 CRASH ANALYSIS

The crash data for the latest three-year period (January 1, 2016 to December 31, 2018) for Section 87090000 from MP 13.649 to 13.794 was downloaded from the FDOT's Crash Analysis Reporting (CAR) Online application, reviewed, and summarized for the study segment. The raw data for the segment included 146 crashes; however, upon reviewing the raw data and eliminating crashes that fell outside the study limits, 78 crashes remained and were used for this safety study. It is noted that the majority of the crashes that were eliminated occurred at the intersection of Hialeah Drive, which is approximately 340 feet west of SE 1 Avenue/S Hook Square (measured from centerline to centerline). Collision diagrams were developed by individually reviewing the police reports for all crashes and updating the database for crash information such as crash type, contributing cause, vehicle travel direction, number of injuries, etc. Given the geometric layout of this intersection, the expected value analysis was not performed. **The two intersections were analyzed as a single intersection, given their proximity.** The crash analysis revealed the following information:

- The intersection experienced a total of 78 crashes during the three years, with a yearly breakdown of 24, 28, and 26 crashes (2016, 2017, and 2018), respectively.
- Based on crash severity, 64 crashes (82.1%) were property damage only, and 12 crashes (15.4%) were injury-type crashes. There were two (2) fatal crashes reported during the three-year study period.
    - The first fatal crash (Crash No. 86728305-2017 Batch B2 No.26) occurred at the intersection of SR 25/Okeechobee Road and SE 1 Avenue/S Hook Square on Tuesday, March 7, 2017, at 5:26 AM. According to the police report, the crash occurred when a westbound vehicle failed to stay within its lane and sideswiped another westbound vehicle, which lost control and collided with a traffic light pole. The driver of the vehicle who struck the light pole died on the scene. The driver was estimated to be traveling at 72 MPH. The crash occurred under dusk lighting, clear weather, and dry pavement conditions. The fatal crash disposition prepared for this crash recommended the following actions:
        - *Trim trees and maintain signs.*
        - *Trim trees/maintain sign and provide a supplemental ground-mounted (most likely signal post) in the raised median for the subject destinations. It is suggested to consider combining the message with "E 1 Ave Next Signal" guide sign location approximately 500 feet east of SE 1 Avenue, if deemed feasible.*
        - *Relocate sign to the center raised median (would most likely have to be signal post).*
    - The second fatal crash (Crash No.87364434–2018 Batch B1 No. 4) occurred 50 feet east from SR 25/Okeechobee Road and Hialeah Drive (150 feet west of SE 1 Avenue) on Thursday, February 21, 2018, at 2:44 AM. According to the police report, the crash occurred when a westbound vehicle ran off the road and struck a utility pole. The driver died on the scene. The autopsy revealed that the driver was under the influence of drugs and alcohol and was estimated to be traveling at 65 MPH. The crash occurred under dark-lighted, cloudy weather, and dry pavement conditions. The fatal crash disposition prepared for this crash recommended the following actions:
        - *Perform a field review to assess the operation of SR 25/Okeechobee Road motorists and identify possible improvements to address run-off road crashes. In addition, during a field review, determine if additional speed limit signs should be installed for SR 25 near SE 1 Avenue due to its horizontal curvature.*
        - *Perform a skid test along SR 25/Okeechobee Road within the study limits to determine whether pavement rehabilitation improvements must be conducted.*

- The field review conducted to supplement the fatal crash disposition report (Crash No.87364434– 2018 Batch B1 No. 4) recommended the following actions:
  - *Evaluate the following existing guide signs to ensure that a consistent message is provided to motorists:*
    - *1st guide sign on westbound SR 25/Okeechobee Road, approximately 800 feet east of SE 1 Avenue, reads: "To Miami Springs Use Curtiss Pkwy"*
    - *2nd and 3rd guide signs on westbound SR 25/Okeechobee Road at SE 1 Avenue and SE 1 Avenue at Hialeah Drive, respectively, read: "To Curtiss Pkwy"*
  - *Trim the tree located 800 feet east of SE 1 Avenue that blocks westbound vehicles visibility to the "To Miami Spring Use Curtiss Pkwy" signs.*
  - *Install one additional 40 MPH posted speed limit sign for westbound SR 25/Okeechobee Road, on each side of the road, east of SE 1 Avenue.*
  - *Coordinate additional police enforcement for SR 25/Okeechobee Road in the study area. Based on RITIS data (i.e., Regional Integrated Transportation Information System data), the recommended enforcement periods are Saturday and Sunday between 1 AM and 6 AM.*

- A review of the Signal Four Analytics Database revealed an additional non-fatal crash in 2020. The non-fatal crash (Crash No. 89320189) occurred at SR 25/Okeechobee Road and SE 1 Avenue on Tuesday, June 16, 2020, at 2:46 AM. According to the police report, the crash occurred when an eastbound vehicle ran a red light and struck a northbound vehicle. The driver of the northbound vehicle was taken to a hospital and pronounced dead on Wednesday, August 12, 2020, at 1:49 PM.
- The percent of crashes during nighttime (night/dusk/dawn) was 29.4% (23 crashes), very close to the district-wide average of 29.5%.
- The percent of crashes during wet/slippery pavement conditions was 23.1% (18 crashes), above the district-wide average of 15%.
- The abnormal crash types were rear-end with 35 crashes, sideswipe with 17 crashes, angle crashes 12 crashes, and fixed object (10 crashes).
- Of the 35 rear-end crashes, 17 involved westbound vehicles, 16 eastbound vehicles, and two (2) northbound vehicles. The peak period for the rear-end crashes is from 3 PM to 6 PM, with nine (9) crashes. Seven (7) (20%) crashes occurred during nighttime, and nine (9) (25.7%) crashes occurred under wet pavement conditions. Based on the review of the police reports, careless driving was the contributing cause of the majority of the rear-end crashes. A review of the Signal Four Analytics Database for rear-end crashes that occurred from January 1, 2019, through April 14, 2021, revealed an additional 18 rear-end crashes (eight (8) in 2019, nine (9) in 2020, and one (1) in 2021). Of the 18 rear-end crashes, ten (10) involved westbound vehicles, six (6) involved eastbound vehicles and two (2) involved northbound vehicles. Careless or Negligent Manner was the contributing cause for the majority of these additional rear-end crashes.
- Of the 17 sideswipe crashes, eight (8) involved westbound vehicles, five (5) northbound vehicles, and four (4) involved eastbound vehicles. There was not specific peak period for the sideswipe crashes. Based on the review of the police reports, improper Passing was the contributing cause of the majority of the sideswipe crashes. A review of the Signal Four Analytics Database for the sideswipe crashes that occurred from January 1, 2019, through April 14, 2021, revealed an additional 13 sideswipe crashes (nine (9) in 2019 and four (4) in 2020). Of the additional 13 sideswipe crashes, seven (7) involved westbound vehicles, three (3) involved

northbound vehicles, and three (3) involved eastbound vehicles. Improper Passing was the contributing cause for the majority of these additional sideswipe crashes.

- Of the 12 angle crashes, six (6) involved northbound vehicles crashing against westbound vehicles, and six (6) involved northbound vehicles crashing against eastbound vehicles. There was no specific peak period for the angle crashes. Red-light running was the cause for the angle crashes. Eastbound vehicles were found at fault in four (4) angle crashes, northbound vehicles in two (2) crashes, and westbound vehicles in two (2) crashes. The vehicle at fault could not be determined in four (4) crashes due to conflicting statements. A review of the Signal Four Analytics Database for angle crashes from January 1, 2019, through April 14, 2021, revealed an additional 13 angle crashes (five (5) in 2019 and eight (8) in 2020). Of the 13 angle crashes, four (4) involved northbound vehicles crashing against westbound vehicles, and nine (9) involved northbound vehicles crashing against eastbound vehicles. Red-light running was the leading contributing cause for the angle crashes. Eastbound vehicles were found at fault in six (6) crashes, westbound vehicles in two (2) crashes, northbound vehicles in two (2) crashes. The vehicle at fault could not be determined in three (3) crashes due to conflicting statements.
- Nine of the ten fixed object crashes occurred during nighttime, between midnight and 6 AM. Five (5) fixed object crashes occurred during the weekend. Careless driving, driving too fast, and failed to keep in the proper lane were the contributing causes.
- There were no pedestrian and bicyclist crashes during the three-year study period. A review of the Signal Four Analytics Database for pedestrian and bicyclist crashes that occurred from January 1, 2019, through April 14, 2021, revealed no additional crashes.

Table 2. summarizes the crash statistics of the intersection and other categories such as lighting conditions and surface conditions**.** **Table 3** shows a summary of the leading crashes by direction. Histograms for the crashes are shown in **Figure 4**. The relative locations of the crashes are depicted on the collision diagram in **Appendix C.**

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TABLE 2: CRASH SUMMARY BY TYPE OF CRASH

SR 25/OKEECHOBEE ROAD AT SE 1 AVENUE AND LIDSEY COURT Segment/Spot with No Expected Values Available		Number of Crashes Year 2016	2017	2018	3 Year Total Crashes	Mean Crashes Per Year	%	Expected Annual Crash Value Abnormally High Crashes per year 90th percentile	95th percentile
CRASH TYPE	Rear End	7	13	15	35	11.67	44.9%	0.00	0.00
	Head On	0	0	0	0	0.00	0.0%	0.00	0.00
	Angle	4	2	6	12	4.00	15.4%	0.00	0.00
	Left Turn	0	0	0	0	0.00	0.0%	0.00	0.00
	Right Turn	4	0	0	4	1.33	5.1%	0.00	0.00
	Sideswipe	5	9	3	17	5.67	21.8%	0.00	0.00
	Backed Into	0	0	0	0	0.00	0.0%	0.00	0.00
	Pedestrian	0	0	0	0	0.00	0.0%	0.00	0.00
	Bicycle	0	0	0	0	0.00	0.0%	0.00	0.00
	Fixed Object	4	4	2	10	3.33	12.8%	0.00	0.00
	Other Non-Collisions	0	0	0	0	0.00	0.0%	0.00	0.00
	Overturn/Rollover	0	0	0	0	0.00	0.0%	0.00	0.00
	Others	0	0	0	0	0.00	0.0%	0.00	0.00
	Total Crashes	**24**	**28**	**26**	**78**	**26.00**	**100.0%**	**0.00**	**0.00**
SEVERITY	PDO Crashes	20	24	20	64	21.33	82.1%	0.00	0.00
	Fatal Crashes	0	1	1	2	0.67	2.6%	0.00	0.00
	Injury Crashes	4	3	5	12	4.00	15.4%	0.00	0.00
LIGHTING CONDITIONS	Daylight	12	22	21	55	18.33	70.5%	0.00	0.00
	Dusk	2	1	0	3	1.00	3.8%	0.00	0.00
	Dawn	0	0	0	0	0.00	0.0%	0.00	0.00
	Dark	10	5	5	20	6.67	25.6%	0.00	0.00
	Unknown	0	0	0	0	0.00	0.0%	0.00	0.00
SURFACE CONDITIONS	Dry	18	20	22	60	20.00	76.9%	0.00	0.00
	Wet	6	8	4	18	6.00	23.1%	0.00	0.00
	Others	0	0	0	0	0.00	0.0%	0.00	0.00
MONTH OF YEAR	January	5	0	0	5	1.67	6.4%	0.00	0.00
	February	1	2	1	4	1.33	5.1%	0.00	0.00
	March	2	2	2	6	2.00	7.7%	0.00	0.00
	April	0	5	5	10	3.33	12.8%	0.00	0.00
	May	3	1	2	6	2.00	7.7%	0.00	0.00
	June	5	3	2	10	3.33	12.8%	0.00	0.00
	July	1	2	2	5	1.67	6.4%	0.00	0.00
	August	1	2	3	6	2.00	7.7%	0.00	0.00
	September	0	2	1	3	1.00	3.8%	0.00	0.00
	October	3	2	0	5	1.67	6.4%	0.00	0.00
	November	1	3	4	8	2.67	10.3%	0.00	0.00
	December	2	4	4	10	3.33	12.8%	0.00	0.00
DAY OF WEEK	Monday	3	3	4	10	3.33	12.8%	0.00	0.00
	Tuesday	6	4	3	13	4.33	16.7%	0.00	0.00
	Wednesday	2	4	2	8	2.67	10.3%	0.00	0.00
	Thursday	3	5	6	14	4.67	17.9%	0.00	0.00
	Friday	4	5	3	12	4.00	15.4%	0.00	0.00
	Saturday	5	7	3	15	5.00	19.2%	0.00	0.00
	Sunday	1	0	5	6	2.00	7.7%	0.00	0.00
HOUR OF DAY	00:00-06:00	9	4	1	14	4.67	17.9%	0.00	0.00
	06:00-09:00	3	5	2	10	3.33	12.8%	0.00	0.00
	09:00-11:00	1	5	2	8	2.67	10.3%	0.00	0.00
	11:00-13:00	2	3	5	10	3.33	12.8%	0.00	0.00
	13:00-15:00	2	2	3	7	2.33	9.0%	0.00	0.00
	15:00-18:00	4	4	7	15	5.00	19.2%	0.00	0.00
	18:00-24:00	3	5	6	14	4.67	17.9%	0.00	0.00

TABLE 3: CRASH STATISTICS BY DIRECTION

SR 25/OKEECHOBEE ROAD AT SE 1 AVENUE AND LIDSEY COURT		Number of Crashes Year			3 Year Total Crashes	Mean Crashes Per Year	%
		2016	2017	2018			
CRASH TYPE	**Rear End**	**7**	**13**	**15**	**35**	**11.67**	
	E & E	2	4	10	16	5.33	45.7%
	W & W	5	9	3	17	5.67	48.6%
	N & N	0	0	2	2	0.67	5.7%
	S & S	0	0	0	0	0.00	0.0%
	Other	0	0	0	0	0.00	0.0%
	Angle	**4**	**2**	**6**	**12**	**4.00**	
	E & N	2	1	3	6	2.00	50.0%
	E & S	0	0	0	0	0.00	0.0%
	W & N	2	1	3	6	2.00	50.0%
	W & S	0	0	0	0	0.00	0.0%
	Other	0	0	0	0	0.00	0.0%
	Sideswipe	**5**	**9**	**3**	**17**	**5.67**	
	E & E	0	2	2	4	1.33	23.5%
	W & W	4	4	0	8	2.67	47.1%
	N & N	1	3	1	5	1.67	29.4%
	S & S	0	0	0	0	0.00	0.0%
	Other	0	0	0	0	0.00	0.0%
	Total Crashes	**24**	**28**	**26**	**78**	**26.00**	

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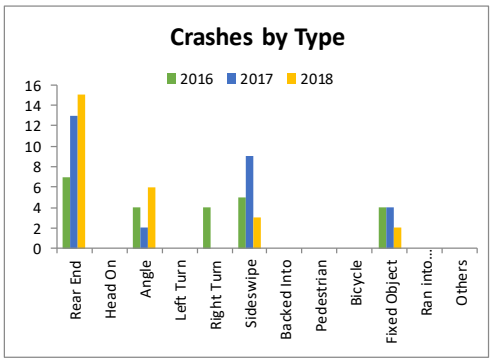
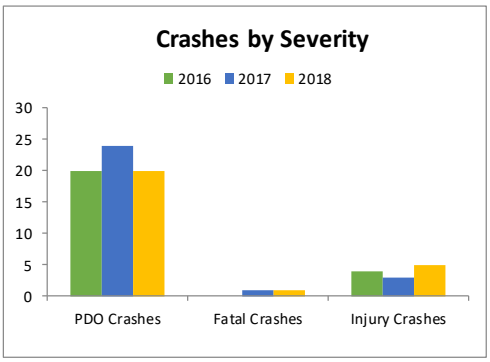
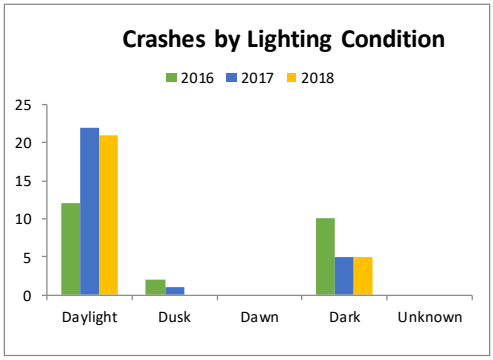
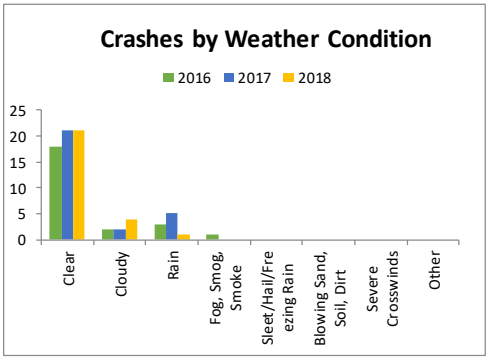
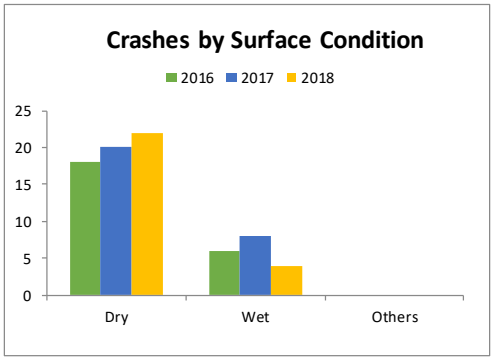
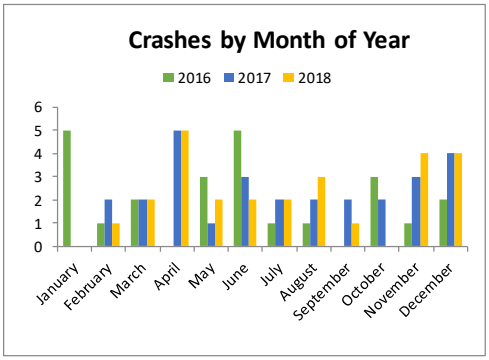


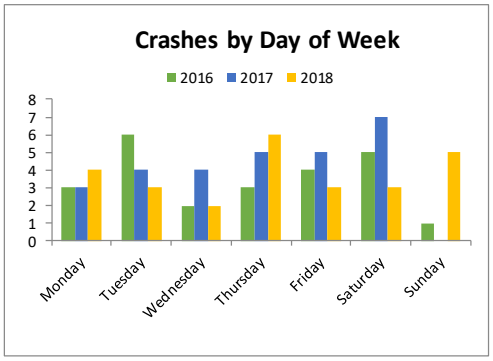












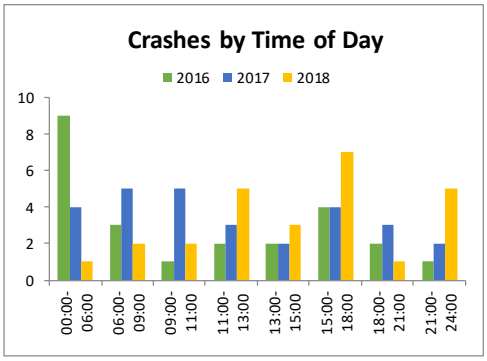


FIGURE 4: STUDY AREA CRASH HISTOGRAMS

3.5 FIELD REVIEW

Field reviews were conducted on Tuesday, April 13, 2021, from 7:00 AM to 9:30 AM, and from 4:30 PM to 6:00 PM. The findings of all field reviews are summarized below. **Exhibits 2** presents some of the observations identified during field reviews.

AM PERIOD

- The northbound traffic was moderate, with queues occasionally extending to S Royal Poinciana Boulevard. However, there were no cycle failures observed.
- The eastbound traffic was moderate and slightly higher than the westbound direction. There were no cycle failures observed.
- The southbound right-turn traffic was low at Lindsey Court. Westbound queues spilled beyond SE 1 Avenue, occasionally blocking Lindsey Court's southbound right-turning vehicles.
- There was low pedestrian activity, with the majority of pedestrians crossing at the crosswalk south of Hialeah Drive.

PM PERIOD

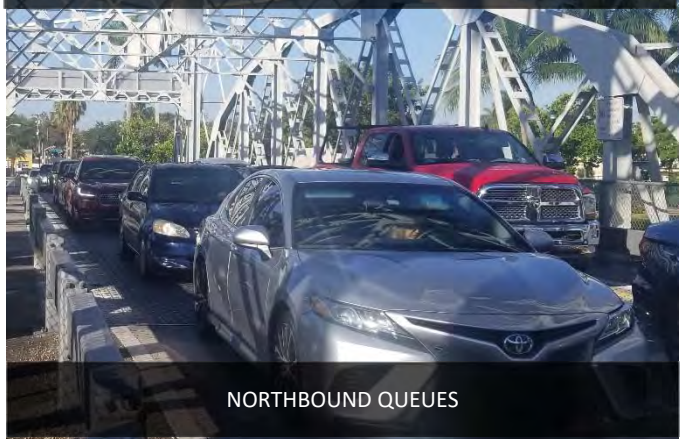
- The northbound traffic was heavy, with queues continuously extending to S Royal Poinciana Boulevard. There were cycle failures involving northbound left-turn vehicles, which blocked the intersection several times.
- The eastbound traffic was moderate with no cycle failures.
- The westbound traffic was heavy, with queues extending to Eucalyptus Drive. Occasional cycle failures involving westbound through vehicles were observed.
- There were a few illegal westbound U-Turn and eastbound left-turn movements.
- There were some aggressive northbound, eastbound, and westbound vehicles running the red light.
- The southbound right-turn traffic was low at Lindsey Court. Westbound queues blocked Lindsey Court's southbound right-turning vehicles.
- There was low pedestrian activity, with the majority of pedestrians crossing at the crosswalk south of Hialeah Drive.

OTHER OBSERVATIONS:

- All crosswalk pavement markings at SE 1 Avenue/S Hook Square need to be upgraded to high emphasis to comply with the current standard.
- The pedestrian push button signs are substandard or missing.
- The pedestrian signal head facing westbound at the north leg is not a countdown.
- The mast arm mounted signs "No turning on left" (R3-2) "No turning on right" (R3-1) need to be refurbished.
- The pavement markings at SE 1 Avenue/S Hook Drive and Lindsey Court need to be refurbished.
- There was illegal parking at Lindsey Court. Vehicles parking at the northwest corner-blocked visibility to the stop sign.
- Several westbound vehicles appeared to be traveling at high speed during the AM and PM field reviews and during a nighttime field review conducted on Tuesday, April 13, 2021, between 9:00 PM and 9:30 PM. See **Section 4.4**.
- Lighting appears to be adequate along the south side of SR 25/Okecchober Road. However, given the frequency of nighttime crashes involving westbound vehicles, the Department may consider conducting a light study.

EXHIBIT 3: FIELD OBSERVATIONS – AM

LOOKING SOUTH: S HOOK SQUARE



NORTHBOUND QUEUES

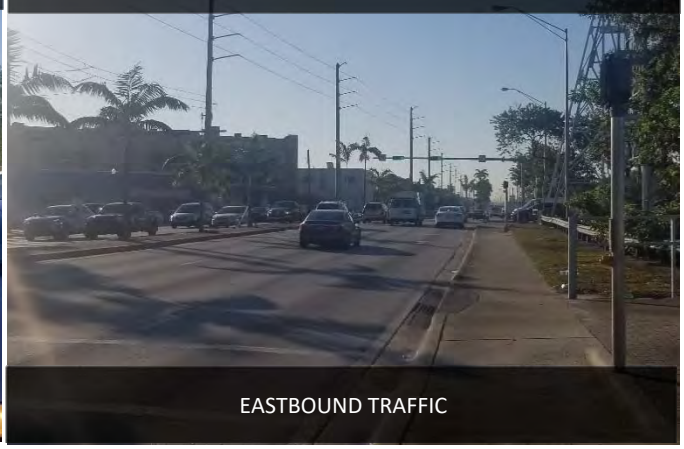
LOOKING WEST: SR 25/OKEECHOBEE ROAD

WESTBOUND QUEUES

LOOKING EAST: SR 25/OKEECHOBEE ROAD

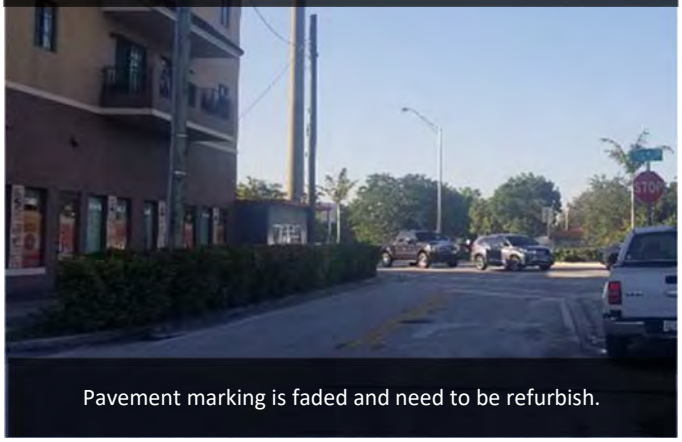
COUNTINUED: WESTBOUND QUEUES

LOOKING EAST: SR 25/OKEECHOBEE ROAD



EASTBOUND TRAFFIC

LOOKING SOUTH: LINDSEY COURT

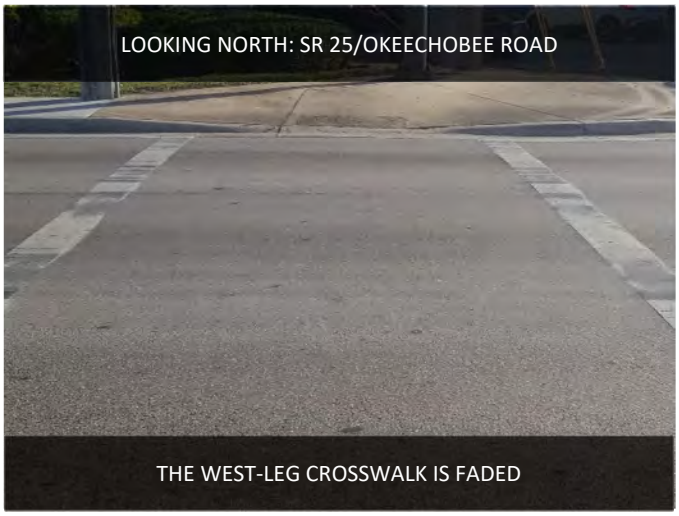


Pavement marking is faded and need to be refurbish.

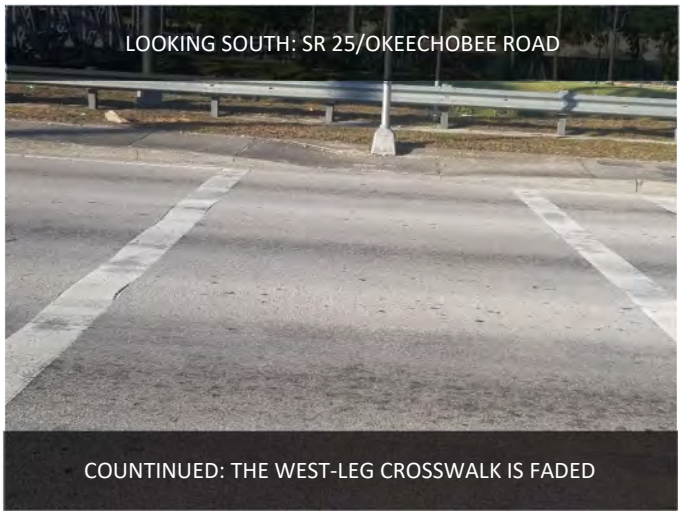
LOOKING WEST: SR 25/OKEECHOBEE RD

PEDESTRIAN CROSSING OKEECHOBEE ROAD

EXHIBIT 4: FIELD OBSERVATIONS – AM



THE WEST-LEG CROSSWALK IS FADED



COUNTINUED: THE WEST-LEG CROSSWALK IS FADED

THE NORTH-LEG CROSSWALK IS FADED

EXHIBIT 5: FIELD OBSERVATIONS – PM

LOOKING NORTH: S HOOK SQUARE

NORTHBOUND QUEUES

LOOKING SOUTH: S HOOK SQUARE

CONTINUED: NORTHBOUND QUEUES EXTEND UP TO S ROYAL POINCIANA BLVD

LOOKING EAST: SE 1 AVENUE

NORTHBOUND LEFT-TURNING VEHICLES ARE BLOCKING THE INTERSECTION.

LOOKING WEST: SR 25/OKEECHOBEE ROAD

CONTINUED: WESTBOUND TRAFFIC

LOOKING EAST: SR 25/OKEECHOBEE ROAD

WESTBOUND QUEUES

LOOKING WEST: SR 25/OKEECHOBEE ROAD

CONTINUED: WESTBOUND QUEUES AT CONTINUES AT OLIVE DRIVE

EXHIBIT 6: FIELD OBSERVATIONS – PM

LOOKING WEST: SR 25/OKEECHOBEE ROAD

EASTBOUND TRAFFIC

LOOKING NORTHEAST: SE 1 AVENUE

NORTHBOUND VEHICLES RAN A RED LIGHT

LOOKING EAST: SR 25/OKEECHOBEE ROAD

WESTBOUND VEHICLE MAKING A U-TURN

LOOKING WEST: SR 25/OKEECHOBEE ROAD

EASTBOUND PAVEMENT MARKING IS FADED

LOOKING NORTH: SR 25/OKEECHOBEE ROAD

THE WEST-LEG CROSSWALK IS FADED

LOOKING SOUTH: SR 25/OKEECHOBEE ROAD

WESTBOUND PAVEMENT MARKING IS FADED

EXHIBIT 7: FIELD OBSERVATIONS – PM

LOOKING WEST: SR 25/OKEECHOBEE ROAD

THE NORTH-LEG CROSSWALK IS FADED

LOOKING EAST: SR 25/OKEECHOBEE ROAD

THE "NO LEFT-TURN" (R3-2) AND THE "NO RIGHT-TURN" (R3-1) SIGNS ARE FADED

LOOKING SOUTH: SR 25/OKEECHOBEE ROAD

THE PEDESTRIAN PUSH BUTTON SIGN TO CROSS OKEECHOBEE ROAD IS MISSING

LOOKING NORTH: SR 25/OKEECHOBEE ROAD

THE PEDESTRIAN PUSH BUTTON AND SIGN TO CROSS OKEECHOBEE ROAD ARE SUBSTANDARD

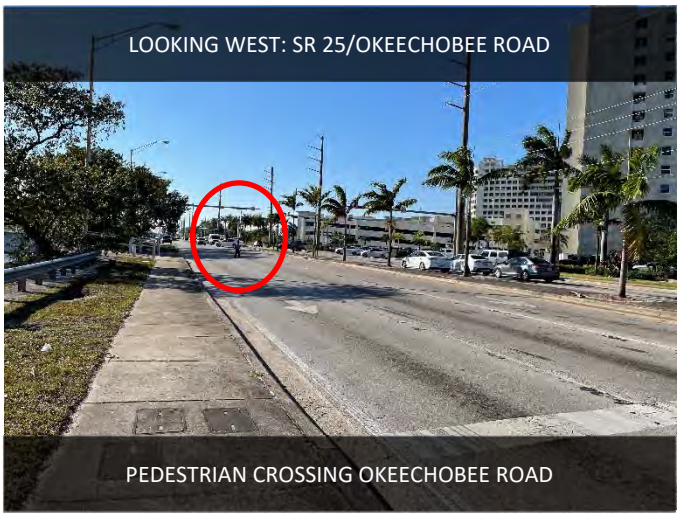
LOOKING EAST: SR 25/OKEECHOBEE ROAD

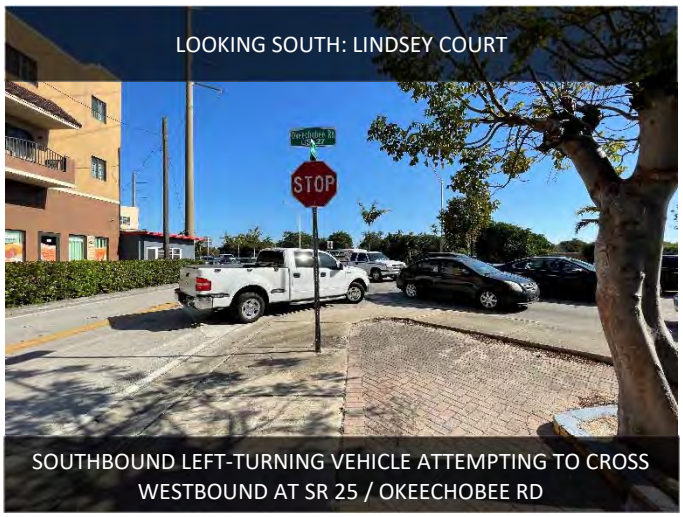
NO PEDESTRIAN PUSH BUTTON TO CROSS SE 1 AVENUE

LOOKING WEST: SR 25/OKEECHOBEE ROAD

NO PEDESTRIAN PUSH BUTTON TO CROSS SE 1 AVENUE

EXHIBIT 8: FIELD OBSERVATIONS – PM





4. IMPROVEMENTS DEVELOPMENT

4.1 CRASH PATTERNS AND COUNTERMEASURES

Table 4 details the crash types targeted for mitigation, probable contributing causes, and possible crash countermeasures. These countermeasures were used as the foundation for developing the conceptual safety improvements to reduce the identified crash patterns and improve motorists' safety (and traffic operations) in the study area.

TABLE 4: PROBABLE CAUSES & CRASH COUNTERMEASURES

Crash Pattern(s)	Probable Cause(s)	Countermeasure(s)
Rear-End	• Traffic Congestion and Lack of capacity • Poor visibility to traffic control signals	• Signal optimization • Provide additional signal heads • Install retroreflective backplates • Install speed feedback signs • Relocate stop bar
Angle	• Traffic Congestion and Lack of capacity • Poor visibility to traffic control signals • Red-light running and speeding	• Signal optimization • Increase the All-red clearance interval • Install retroreflective backplates • Relocate stop bar • Install speed feedback signs • Enforcement
Fixed-Object	• Speeding	• Install speed feedback signs • Enforcement • Improve lighting
Nighttime	• Red-light running and speeding	• Install retroreflective backplates • Install speed feedback signs • Improve lighting • Enforcement

4.2 PROPOSED IMPROVEMENTS

The following conceptual improvements were developed based on the operational conditions, field review, and crash history of SR 25/Okeechobee Road at SE 1 Avenue/S Hook Square. Rear-end, angle, fixed-object, and nighttime were the main crash types targeted for mitigation. While developing the following improvements, consideration was given whether any improvements would be physically and economically feasible. The improvements have been detailed and graphically depicted in **Figure 5**. The proposed improvements are as follows:

- ***Install additional signal heads facing the eastbound and westbound approaches****. This improvement is proposed to improve visibility to the signal heads and considering the high volume of trucks.*

- ***Install <u>rigid</u> retroreflective backplates facing the eastbound and westbound approaches.*** *This improvement is proposed to improve visibility to the signal heads and considering the high volume of trucks.*
- ***Install an internally illuminated street name sign facing the eastbound approach.***

  The implementation of these two improvements will require the following:
  - *Replace the mast-arms facing eastbound and westbound approaches. Based on the information available (excluding survey). It appears that there is enough right-of-way to install the new mast arms.*
  - *There are transmission/distribution power lines and cable lines running along the north side of SR 25/Okeechobee Road. Given the height of the transmission/distribution power lines and cable lines, these will have to be de-energized to install the mast arm. Therefore, coordination with Florida Power and Light is necessary.*
  - *Reconstruct the curb ramps and sidewalk at the northwest corner.*
  - *Replace the pedestrian signal heads and sign attached to the mast arm facing westbound.*
  - *Coordination with the Miami-Dade County Traffic and Signal Division.*
  - *Replace the luminaire attached to the westbound mast arm. We have assumed the cost for a new mast-arm with an attached luminaire.*
- ***Install <u>flexible</u> retroreflective backplates facing the northbound approach.*** *This improvement requires coordination with the Miami-Dade County Traffic and Signal Division.*

  TARGET: REAR-END, SIDESWIPE, AND ANGLE CRASHES

- ***Install speed feedback signs facing the westbound approach.***

  TARGET: ANGLE, FIXED-OBJECT, AND NIGHTTIME CRASHES

- ***Enforcement. The Department should coordinate with the local Police Department to enforce speed limits and red-light running, especially involving eastbound and westbound vehicles.***
- ***Increase the All Red-Clearance Interval from 2 to 2.6 for northbound traffic.*** *This improvement requires coordination with the Miami-Dade County Traffic and Signal Division.*

  TARGET: REAR-END AND ANGLE CRASHES

- ***Given the conditions observed during the field review, the results of the operational analysis, and that the intersection is coordinated with Hialeah Drive, additional signal timing modifications were discarded.***
- ***Consider conducting a lighting study to determine if the lighting level along the north side of Okeechobee Road is adequate.***

  TARGET: NIGHT-TIME AND FIXED-OBJECT CRASHES

In addition, the following non-safety improvements are recommended.

- *Install pedestrian countdown signal heads at the northwest corner (facing westbound).*
- ***<u>Upgrade all crosswalks to high emphasis at SE 1 Avenue.</u>***
- ***<u>Upgrade all crosswalks to high emphasis, pedestrian signs, and push buttons at Hialeah Drive.</u>*** *<u>This is recommended based on the high pedestrian activity observed during the field reviews.</u>*

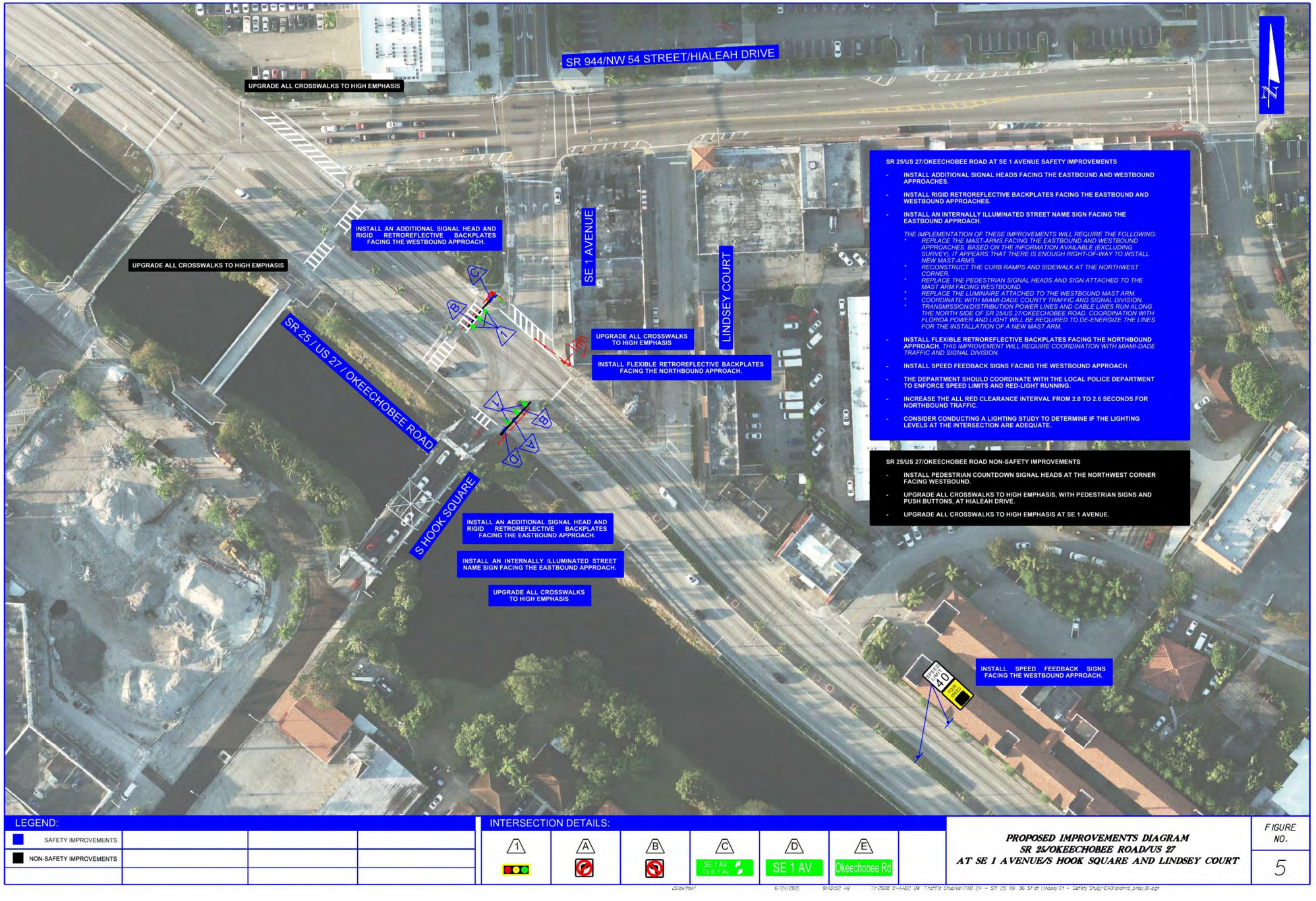


FIGURE 5: PROPOSED IMPROVEMENT DIAGRAM

4.3 TRAFFIC OPERATIONAL ANALYSIS

An operational analysis for SR 25/Okeechobee Road/US 27 at SE 1 Avenue/S Hook Square was performed for the typical AM, Midday, and PM peak traffic periods using Synchro Traffic Software. The analysis evaluates existing conditions and the proposed conditions, including increasing the all-red clearance interval for the northbound phase from 2 to 2.6 sec. The primary Measures of Effectiveness (MOEs) used to assess intersection performance under the existing and proposed conditions included total delay (control and queue), Level of Service (LOS), volume/capacity (v/c), and 95th Percentile Queue (feet). Synchro output sheets are included in **Appendix D.**

EXISTING CONDITIONS

The operational analysis summary for the AM, Midday and PM existing conditions indicates the following:

- AM Period: The intersection operates at LOS C with a delay of approximately 29.7 seconds per vehicle (sec/veh) during the AM peak hour. The operational analysis indicates that the most critical approach is northbound with LOS E and a delay of 70.4 sec/veh. Based on the operational analysis, the most critical movement is eastbound through with 95th percentile queues of 904 feet, respectively.

- Midday Period: The intersection operates at LOS C with a delay of approximately 20.4 sec/veh during the Midday peak hour. The operational analysis indicates that the most critical approach is northbound with LOS D and a delay of 51.5 sec/veh. The most critical movements are the northeast bound left-turn movements with LOS D, and a delay of 51.5 sec/veh.

- PM Period: The intersection operates at LOS D with a delay of approximately 43.5 sec/veh during the PM peak hour. The operational analysis indicates that the most critical approach is northbound with LOS F and a delay of 131.1 sec/veh, respectively. The most critical movements are the northbound left-turn with LOS F, and v/c of 1.12, respectively.

PROPOSED CONDITIONS

The operational analysis summary for the AM, Midday and PM proposed conditions indicate the following:

- AM Period: The intersection will operate at the same LOS C, with a slight overall increase in delay of 1 sec/veh.

- Midday Period: The intersection will operate at the same LOS C, with a slight overall increase in delay of 0.7 sec/veh.

- PM Period: The intersection will operate at the same LOS D, with a slight overall increase in delay of 2.9 sec/veh. The northbound left-turn will also operate at the same LOS F, with an overall increase in delay of 14.9 sec/veh.

The results of the AM, Midday, and PM existing and proposed conditions are presented in **Table 5**.

TABLE 5: OPERATIONAL ANALYSIS SUMMARY

	Lane Group	Move-ment	Existing Conditions Volume (vph)	Delay (s-veh)	LOS	v/c	95% Queue (ft)*	Proposed Conditions Volume (vph)	Delay (s-veh)	LOS	v/c	95% Queue (ft)*	Proposed vs Existing AM Δ Delay (s-veh)	Δ Delay %	Δ LOS	Δ v/c	Δ 95% Queue Feet	Δ 95% Queue %
AM PEAK	SB	LT	0					0										
		TR	0					0										
		RT	0					0										
		Appr		0.0	A				0.0	A								
	EB	LT	0					0										
		TR	2444	25.3	C	0.83	904	2444	26.3	C	0.84	904	1.0	4%	Worse	1%	0	0%
		RT	0					0										
		Appr		25.3	C				26.3	C			1.0	4%	Worse	-	-	-
	WB	LT	0					0										
		TR	1391	16.3	B	0.53	408	1391	16.9	B	0.53	408	0.6	4%	Same	0%	0	0%
		RT	127					127										
		Appr		16.3	B				16.9	B			0.6	4%	Same	-	-	-
	NB	LT 2	172					172										
		LT 1	434	70.4	E	0.89	455	434	72.0	E	0.90	461	1.6	2%	Same	1%	6	1%
		RT	76					76										
		Appr		70.4	E				72.0	E			1.6	2%	Same	-	-	-
	Intersection			29.7	C				30.7	C			1.0	3%	Worse	-	-	-

	Lane Group	Move-ment	Existing Conditions Volume (vph)	Delay (s-veh)	LOS	v/c	95% Queue (ft)*	Proposed Conditions Volume (vph)	Delay (s-veh)	LOS	v/c	95% Queue (ft)*	Proposed vs Existing MID Δ Delay (s-veh)	Δ Delay %	Δ LOS	Δ v/c	Δ 95% Queue Feet	Δ 95% Queue %
MIDDAY PEAK	SB	LT	0					0										
		TR	0					0										
		RT	0					0										
		Appr		0.0	A				0.0	A								
	EB	LT	0					0										
		TR	1497	13.2	B	0.53	336	1497	14.0	B	0.54	346	0.8	6%	Same	2%	10	3%
		RT	0					0										
		Appr		13.2	B				14.0	B			0.8	6%	Same	-	-	-
	WB	LT	0					0										
		TR	1448	13.6	B	0.56	365	1448	14.5	B	0.57	375	0.9	7%	Same	2%	10	3%
		RT	106					106										
		Appr		13.6	B				14.5	B			0.9	7%	Same	-	-	-
	NB	LT 2	157					157										
		LT 1	385	51.5	D	0.82	312	385	51.9	D	0.83	313	0.4	1%	Same	1%	1	0%
		RT	69					69										
		Appr		51.5	D				51.9	D			0.4	1%	Same	-	-	-
	Intersection			20.4	C				21.1	C			0.7	3%	Worse	-	-	-

	Lane Group	Move-ment	Existing Conditions Volume (vph)	Delay (s-veh)	LOS	v/c	95% Queue (ft)*	Proposed Conditions Volume (vph)	Delay (s-veh)	LOS	v/c	95% Queue (ft)*	Proposed vs Existing PM Δ Delay (s-veh)	Δ Delay %	Δ LOS	Δ v/c	Δ 95% Queue Feet	Δ 95% Queue %
PM PEAK	SB	LT	0					0										
		TR	0					0										
		RT	0					0										
		Appr		0.0	A				0.0	A								
	EB	LT	0					0										
		TR	1858	19.9	B	0.63	542	1858	19.9	B	0.63	542	0.0	0%	Same	0%	0	0%
		RT	0					0										
		Appr		19.9	B				19.9	B			0.0	0%	Same	-	-	-
	WB	LT	0					0										
		TR	2181	24.5	C	0.78	768	2181	24.5	C	0.78	768	0.0	0%	Same	0%	0	0%
		RT	114					114										
		Appr		24.5	C				24.5	C			0.0	0%	Same	-	-	-
	NB	LT 2	242					242										
		LT 1	555	131.1	F	1.12	875	555	146.0	F	1.15	894	14.9	11%	Same	3%	19	2%
		RT	64					64										
		Appr		131.1	F				146.0	F			14.9	11%	Same	-	-	-
	Intersection			43.5	D				46.4	D			2.9	7%	Same	-	-	-

LT: Left-turn, TR: Through, RT: Right-turn, APPR: Approach

4.4 SPOT SPEED STUDY

Based on the high speeds observed during the field reviews and severity of fixed object crashes involving westbound vehicles, a 24-Hr Spot Speed Study. The study was performed on SR 25/Okeechobee Road westbound lanes 300 feet east of SE 1 Avenue/S Hook Square, between Thursday, May 6, 2021 (10 AM) and Friday, May 7, 2021 (10 AM). The study results were compared to the existing posted speed using the Department's Speed Zoning Manual guidelines. These guidelines are as follows: "A speed limit should not differ from the 85th percentile speed or upper limit of the 10-mph pace by more than 3 mph, and it shall not be less than 8 mph. A speed limit of 4 to 8 mph less than the 85th percentile speed shall be supported by a supplemental investigation." The speed statistics and an evaluation of existing speeds are presented in **Table 6**.

TABLE 6: SPOT SPEED STUDY RESULTS

Spot Speed Study							Posted Speed Criteria		
Posted Speed (MPH)	**Direction**	**85th Percentile**	**10-Mile Pace Range**	**10-Mile Pace Upper Speed**	**Δ_1**	**Δ_2**	**Does speed limit differ from the 85th percentile speed or upper limit of the 10 mi/h pace by more than 3 mi/h?**	**Number of Vehicles (24-hour) > 40 MPH**	**% of Vehicles > 40 MPH**
40	WB	49.4	35 to 44	44	9.4	4	Yes	8844	52%

Δ_1 = Posted Speed - 85th Percentile
Δ_2 = Posted Speed - Upper Limit of 10-Mile Pace

As shown in **Table 6**, the results reveal that the posted speed criteria are not met on SR 25/Okeechobee Road westbound approach. Furthermore, the spot speed study reveals that a high percentage of westbound vehicles travel above the posted speed limit of 40 mph. Therefore, the installation of speed feedback signs in the westbound direction near SE 1 Avenue/S Hook Square is recommended. The data sheets are included in **Appendix B**.

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4.5 BENEFIT/COST ANALYSIS

A benefit/cost (b/c) ratio analysis was performed for the proposed improvements. This analysis required estimating the potential reduction of crashes upon implementing the safety improvements and estimating the preliminary construction cost. Generally, if the safety improvements result in a b/c ratio of 1.0 or more, then the proposed safety improvements are deemed economically viable and could be implemented barring other constraints.

Cost Estimate

The preliminary construction costs estimate for the safety improvements within the study area are summarized as shown in **Table 7**. The estimate includes costs for construction, preliminary engineering, maintenance of traffic, mobilization, construction engineering inspection, and a contingency amount to cover unexpected costs. Based on the information available (excluding survey), it appears that there is enough right-of-way to install the new mast-arms. The preliminary construction cost for implementing the safety improvements is estimated at approximately **$ 393,500.00** dollars. A detailed cost estimate showing costs for individual construction pay items and the cost estimate for right-of-way acquisition prepared by the Department are included in **Appendix E.**

TABLE 7: PRELIMINARY CONSTRUCTION COST

SAFETY IMPROVEMENTS		COST
ROADWAY	$	5,963.90
SIGNING & PAVEMENT MARKINGS	$	33,335.61
SIGNALIZATION	$	149,512.89
LIGHTING	$	2,039.60
SUBTOTAL	**$**	**190,852.00**
20% Maintenance of Traffic	$	38,170.40
10% Mobilization	$	19,085.20
32% Preliminary Engineering	$	61,072.64
18% Construction Engineering & Inspection	$	34,353.36
Project Contigency	$	50,000.00
GRAND TOTAL	**$**	**393,533.60**

Crash Reduction Factors (CRF)

To estimate the safety benefits realized from undertaking the above safety improvements, an estimate of the potential number of crashes that can be reduced due to each improvement was calculated using crash reduction factors (CRFs) associated with that improvement. A list of CRF values for the various improvements was obtained either from the Department's database and/or from the FHWA's *Crash Modification Factors Clearinghouse (CMF) database and the Department's Traffic Safety Portal*. **Table 8** illustrates in detail the crash reduction computations related to the recommended safety improvements. The table indicates that if the above safety improvements were to be implemented, there is a potential to reduce nearly three (**3)** crashes per year.

TABLE 8: CRASH REDUCTION COMPUTATIONS

PROPOSED IMPROVEMENT	CRF	CRF Reduction	Adjusted CRF	Source	CRASH TYPE TARGETED	CRASHES TARGETED	CRASHES REDUCED
Add Yellow Retroreflective Backplates (CMF ID 1410)	15.0%	30%	11%	CMF Clearinghouse	Rear End	35	3.68
					Sideswipe	17	1.79
					Angle	12	1.26
Improve Signal Visibility (CMF ID 4111 and 4112) (Adding Signal Heads)	9.8%	50%	5%	CMF Clearinghouse	Rear End	31.33	1.53
					Sideswipe	15.22	0.75
					Angle	10.74	0.53
Install Dynamic Speed Feedback Signs (CMF ID 6885 or 6886)	5.0%	50%	3%	CMF Clearinghouse	Fixed-Object	10	0.25
TOTAL CRASHES REDUCED IN 3 YEARS							**9.78**
CRASHES REDUCED PER YEAR							**3.26**

Benefit/Cost Analysis Summary

Benefits for the safety improvements were estimated using the annual crash cost values established by the Department, and the estimated annual number of crashes reduced. The estimated safety benefits were compared to the annualized construction cost estimate for the proposed safety improvement to determine the benefit-to-cost ratio (b/c). The b/c ratio value for the proposed improvements at the intersection was determined to be **11.8,** as shown in **Table 9.** Given such a high positive b/c ratio value, the recommended safety improvements described above appear to be economically feasible. Detailed calculations of the b/c ratio analysis are included in **Appendix F**.

TABLE 9: SUMMARY OF BENEFIT/COST ANALYSIS

DESCRIPTION	COST
Safety Benefits	$ 402,794.35
Annualized Cost of Project	$ 34,034.71
SAFETY B/C	**11.8**
NPV	**$ 3,129,091.49**

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5. CONCLUSION AND RECOMMENDATIONS

Based on the safety and operational deficiencies identified through the historical crash data analysis, field observation of operating conditions, as well as the economic analysis of the safety improvement costs and crash reduction benefits, it is recommended that the safety improvements listed below at SR 25/Okeechobee Road at SE 1 Avenue/S Hook Square be implemented to address these deficiencies.

- ***Install additional signal heads facing the eastbound and westbound approaches****.*
- ***Install rigid retroreflective backplates facing the eastbound and westbound approaches.***
- ***Install an internally illuminated street name sign facing the eastbound approach.***

  The implementation of these two improvements will require the following:
  - *Replace the mast-arms facing eastbound and westbound approaches. Based on the information available (excluding survey). It appears that there is enough right-of-way to install the new mast arms.*
  - *There are transmission/distribution power lines and cable lines running along the north side of SR 25/Okeechobee Road. Given the height of the transmission/distribution power lines and cable lines, these will have to be de-energized to install the mast arm. Therefore, coordination with Florida Power and Light is necessary.*
  - *Reconstruct the curb ramps and sidewalk at the northwest corner.*
  - *Replace the pedestrian signal heads and sign attached to the mast arm facing westbound.*
  - *Coordination with the Miami-Dade County Traffic and Signal Division.*
  - *Replace the luminaire attached to the westbound mast arm. We have assumed the cost for a new mast-arm with an attached luminaire.*
- ***Install flexible retroreflective backplates facing the northbound approach.*** *This improvement requires coordination with the Miami-Dade County Traffic and Signal Division.*
- ***Install speed feedback signs facing the westbound approach.***
- ***Enforcement. The Department should coordinate with the local Police Department to enforce speed limits and red-light running, especially involving eastbound and westbound vehicles.***
- ***Increase the All Red-Clearance Interval from 2 to 2.6 for northbound traffic.*** *This improvement requires coordination with the Miami-Dade County Traffic and Signal Division.*
- ***Given the conditions observed during the field review, the results of the operational analysis, and that the intersection is coordinated with Hialeah Drive, additional signal timing modifications were discarded.***
- ***Consider conducting a lighting study to determine if the lighting level along the north side of Okeechobee Road is adequate.***

In addition, the following non-safety improvements are recommended.

- *Install pedestrian countdown signal heads at the northwest corner (facing westbound).*
- ***Upgrade all crosswalks to high emphasis at SE 1 Avenue.***
- ***Upgrade all crosswalks to high emphasis, pedestrian signs, and push buttons at Hialeah Drive.*** *This is recommended based on the high pedestrian activity observed during the field reviews.*

The preliminary construction cost for implementing the above safety improvements was estimated at approximately **$ 393,500.00** dollars, potentially reducing nearly three **(3)** crashes per year in the study area after implementation. This will result in a benefit/cost ratio of **11.8,** indicating that the safety improvements are economically viable.

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APPENDIX A – SIGNAL TIMING DATA

TOD Schedule Report

for 2845: Okeechobee Rd&E 1 Av

Print Date: 9/24/2019

Print Time: 5:18 PM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2845	Okeechobee Rd&E 1 Av	DOW-3		[15] EVENING/NIGHT	180	0	N/A	1	Max 2

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	NWT	-	NBT	-	SET	-	-
0	117	0	51	0	117	0	0

Active Phase Bank: Phase Bank 1

Phase	Walk (Phase Bank 1 2 3)	Don't Walk (1 2 3)	Min Initial (1 2 3)	Veh Ext (1 2 3)	Max Limit (1 2 3)	Max 2 (1 2 3)	Yellow	Red
1 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2 NWT	7 - 7 - 7	14 - 14 - 14	7 - 7 - 7	1 - 1 - 1	50 - 50 - 50	0 - 60 - 60	4.4	2
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 NBT	7 - 7 - 7	14 - 14 - 14	7 - 7 - 7	3 - 2.5 - 2.5	18 - 18 - 18	55 - 60 - 60	4	2
5 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6 SET	7 - 7 - 7	14 - 14 - 14	7 - 7 - 7	1 - 1 - 1	50 - 50 - 50	0 - 60 - 60	4.4	2
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0

Last In Service Date: unknown

Permitted Phases

	12345678
Default	-2-4-6--
External Permit 0	--------
External Permit 1	--------
External Permit 2	--------

TOD Schedule Report

for 2845: Okeechobee Rd&E 1 Av

Print Date: 9/24/2019

Print Time: 5:18 PM

Current TOD Schedule	Plan	Cycle	Green Time 1 -	2 NWT	3 -	4 NBT	5 -	6 SET	7 -	8 -	Ring Offset	Offset
	2	120	0	73	0	35	0	73	0	0	0	0
	3	160	0	101	0	47	0	101	0	0	0	0
	4	160	0	101	0	47	0	101	0	0	0	0
	5	110	0	65	0	33	0	65	0	0	0	0
	6	110	0	65	0	33	0	65	0	0	0	0
	7	170	0	106	0	52	0	106	0	0	0	0
	8	95	0	49	0	34	0	49	0	0	0	0
	10	110	0	59	0	39	0	59	0	0	0	0
	12	120	0	65	0	43	0	65	0	0	0	0
	13	130	0	73	0	45	0	73	0	0	0	0
	14	130	0	70	0	48	0	70	0	0	0	0
	15	180	0	117	0	51	0	117	0	0	0	0
	17	110	0	59	0	39	0	59	0	0	0	0
	18	110	0	60	0	38	0	60	0	0	0	0

Local TOD Schedule

Time	Plan	DOW
0000	Free	Su M T W Th F S
0500	2	M T W Th F
0600	7	M T W Th F
0900	18	Su S
0930	13	M T W Th F
1400	15	M T W Th F
1930	18	M T W Th F
2000	Free	Su S
2100	Free	M T W Th F

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--------	SuM T W ThF S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--------	SuM T W ThF S

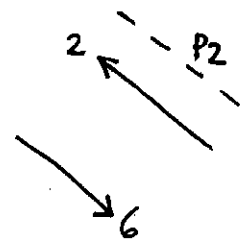
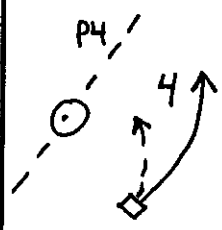
*** Settings**

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

No Calendar Defined/Enabled

SIGNAL OPERATING PLAN

N

Timing Phases	Direction	SE B	NW B		NB	Ped Heads				Movements/Display/Actuation
	Head No.	6	2	8	4		P2		P4	
	Dwell									
	Clear to									
	Dwell									
	Clear to									
(2+6) NW/SE OKEECHOBEE RD (Recall)	Dwell	G	G		R		W/F		DW	
	Clear to (4)	Y	Y		R		DW		DW	
	Dwell									
	Clear to									
	Dwell									
	Clear to									
(4) NB E 1 AVE (Actuated)	Dwell	R	R		G		DW		W/F	
	Clear to (2+6)	R	R		Y		DW		DW	
Flashing Operation		FY	FY		FR					Page 1 of 1

Miami-Dade County Public Works Department

Drawn	Date	OKEECHOBEE RD & E 1 AVE		
Checked H. HERNANDEZ	Date 11/5/03	Placed in Service	Phasing No.	Asset Number
		Date 12/20/03 By TCD	6	2845

TwoPhaseNoPeds

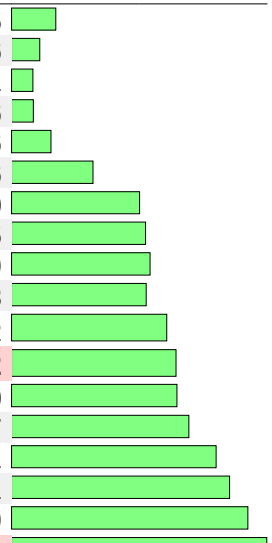
APPENDIX B – TRAFFIC COUNTS

72-Hour Volume Counts

CH Perez and Associates Consulting Engineers Inc.
9594 NW 41st Street, Suite 201, Miami, Florida 33178
Phone: (305) 592-1070 & Fax: (305) 592-1078

SR 25/Okeechobee Rd Westbound
At East of Lindsay Ct
Date Start: 13-Apr-21
Date End: 15-Apr-21

Start Time	Mon 12-Apr-21	Tue 13-Apr-21	Wed 14-Apr-21	Thu 15-Apr-21	Fri 16-Apr-21	Average Day	Sat 17-Apr-21	Sun 18-Apr-21	Week Average
12:00 AM	*	323	524	457	*	435	*	*	435
01:00	*	218	328	282	*	276	*	*	276
02:00	*	156	229	248	*	211	*	*	211
03:00	*	191	252	205	*	216	*	*	216
04:00	*	320	472	366	*	386	*	*	386
05:00	*	681	940	766	*	796	*	*	796
06:00	*	1030	1468	1253	*	1250	*	*	1250
07:00	*	1174	1486	1256	*	1305	*	*	1305
08:00	*	1196	1566	1284	*	1349	*	*	1349
09:00	*	1221	1336	1381	*	1313	*	*	1313
10:00	*	**1553**	1552	1431	*	1512	*	*	1512
11:00	*	1516	**1769**	**1520**	*	**1602**	*	*	**1602**
12:00 PM	*	1550	1720	1560	*	1610	*	*	1610
01:00	*	1629	1893	1658	*	1727	*	*	1727
02:00	*	1815	2169	1988	*	1991	*	*	1991
03:00	*	1975	2340	2049	*	2121	*	*	2121
04:00	*	2197	2433	2268	*	2299	*	*	2299
05:00	*	**2500**	**2556**	**2391**	*	**2482**	*	*	**2482**
06:00	*	2257	2170	2062	*	2163	*	*	2163
07:00	*	1877	1590	1586	*	1684	*	*	1684
08:00	*	1458	1447	1283	*	1396	*	*	1396
09:00	*	1245	1037	1018	*	1100	*	*	1100
10:00	*	962	918	917	*	932	*	*	932
11:00	*	803	691	765	*	753	*	*	753
Day Total	0	29847	32886	29994	0	30909	0	0	30909
% Avg. WkDay	0.0%	96.6%	106.4%	97.0%	0.0%				
% Avg. Week	0.0%	96.6%	106.4%	97.0%	0.0%	100.0%	0.0%	0.0%	
AM Peak	-	10:00	11:00	11:00	-	11:00	-	-	11:00
Vol.	-	1553	1769	1520	-	1602	-	-	1602
PM Peak	-	17:00	17:00	17:00	-	17:00	-	-	17:00
Vol.	-	2500	2556	2391	-	2482	-	-	2482
Grand Total	0	29847	32886	29994	0	30909	0	0	30909



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SR 25/Okeechobee Rd Westbound
At East of Lindsay Ct
Date Start: 13-Apr-21
Date End: 15-Apr-21

Start	Tue	13-Apr-21		Wed	14-Apr-21		Thu	15-Apr-21		Daily Average	
Time	A.M.	P.M.		A.M.	P.M.		A.M.	P.M.		A.M.	P.M.
12:00	75	381		172	408		141	374		129	388
12:15	80	406		126	444		107	376		104	409
12:30	88	386		129	440		124	410		114	412
12:45	80	377		97	428		85	400		87	402
01:00	53	430		87	512		92	406		77	449
01:15	58	423		71	422		73	427		67	424
01:30	53	400		92	442		63	415		69	419
01:45	54	376		78	517		54	410		62	434
02:00	41	400		54	493		63	496		53	463
02:15	43	473		54	500		71	488		56	487
02:30	53	464		58	581		56	496		56	514
02:45	19	478		63	595		58	508		47	527
03:00	56	485		68	544		44	483		56	504
03:15	43	461		60	581		53	495		52	512
03:30	51	507		61	598		48	549		53	551
03:45	41	522		63	617		60	522		55	554
04:00	61	502		77	614		61	556		66	557
04:15	77	469		107	619		80	605		88	564
04:30	95	578		145	602		126	561		122	580
04:45	87	**648**		143	598		99	546		110	597
05:00	107	**644**		156	**636**		128	**595**		130	**625**
05:15	155	**634**		248	**649**		172	**622**		192	**635**
05:30	189	**644**		274	**661**		250	**564**		238	**623**
05:45	230	578		262	**610**		216	**610**		236	**599**
06:00	209	585		347	617		301	573		286	592
06:15	265	536		349	566		289	553		301	552
06:30	287	609		406	536		372	530		355	558
06:45	269	527		366	451		291	406		309	461
07:00	248	483		338	435		275	413		287	444
07:15	309	481		400	432		296	442		335	452
07:30	335	459		396	364		352	330		361	384
07:45	282	454		352	359		333	401		322	405
08:00	292	371		383	369		321	343		332	361
08:15	292	357		396	396		342	354		343	369
08:30	321	427		410	357		306	321		346	368
08:45	291	303		377	325		315	265		328	298
09:00	281	337		330	253		325	292		312	294
09:15	267	323		308	289		323	275		299	296
09:30	301	298		326	262		369	221		332	260
09:45	372	287		372	233		364	230		369	250
10:00	400	243		364	236		328	224		364	234
10:15	359	272		394	235		335	264		363	257
10:30	**410**	257		401	262		**391**	230		401	250
10:45	**384**	190		393	185		**377**	199		**385**	191
11:00	**394**	228		**439**	196		**362**	221		**398**	215
11:15	**394**	240		**427**	184		**405**	206		**409**	210
11:30	366	168		**476**	163		386	180		**409**	170
11:45	362	167		**427**	148		367	158		385	158
Total	9579	20268		11922	20964		10449	19545		10650	20258
Combined Total	29847			32886			29994			30908	
Peak	10:30	04:45	-	11:00	05:00	-	10:30	05:00	-	10:45	05:00
Vol.	1582	2570	-	1769	2556	-	1535	2391	-	1601	2482
P.H.F.	0.965	0.992		0.929	0.967		0.948	0.961		0.979	0.977
ADT	ADT 30,909			AADT 30,909							

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SR 25/Okeechobee Rd Eastbound
At West of SE 1 Avenue
Date Start: 13-Apr-21
Date End: 15-Apr-21

Start Time	Mon 12-Apr-21	Tue 13-Apr-21	Wed 14-Apr-21	Thu 15-Apr-21	Fri 16-Apr-21	Average Day	Sat 17-Apr-21	Sun 18-Apr-21	Week Average
12:00 AM	*	272	265	309	*	282	*	*	282
01:00	*	174	163	191	*	176	*	*	176
02:00	*	156	158	188	*	167	*	*	167
03:00	*	239	251	268	*	253	*	*	253
04:00	*	452	449	465	*	455	*	*	455
05:00	*	1090	1085	1104	*	1093	*	*	1093
06:00	*	2394	2451	2285	*	2377	*	*	2377
07:00	*	3128	**3155**	2878	*	3054	*	*	3054
08:00	*	**3161**	3136	**3077**	*	**3125**	*	*	**3125**
09:00	*	2636	2582	2509	*	2576	*	*	2576
10:00	*	2173	2065	2186	*	2141	*	*	2141
11:00	*	2171	2138	2123	*	2144	*	*	2144
12:00 PM	*	2119	2030	2205	*	2118	*	*	2118
01:00	*	2169	2186	2162	*	2172	*	*	2172
02:00	*	2259	2255	2215	*	2243	*	*	2243
03:00	*	2361	2322	2432	*	2372	*	*	2372
04:00	*	2301	2460	2452	*	2404	*	*	2404
05:00	*	**2556**	**2648**	**2701**	*	**2635**	*	*	**2635**
06:00	*	2140	2080	2122	*	2114	*	*	2114
07:00	*	1538	1669	1612	*	1606	*	*	1606
08:00	*	1342	1269	1418	*	1343	*	*	1343
09:00	*	1016	1080	1073	*	1056	*	*	1056
10:00	*	783	804	840	*	809	*	*	809
11:00	*	460	496	519	*	492	*	*	492
Day Total	0	39090	39197	39334	0	39207	0	0	39207
% Avg. WkDay	0.0%	99.7%	100.0%	100.3%	0.0%				
% Avg. Week	0.0%	99.7%	100.0%	100.3%	0.0%	100.0%	0.0%	0.0%	
AM Peak	-	08:00	07:00	08:00	-	08:00	-	-	08:00
Vol.	-	3161	3155	3077	-	3125	-	-	3125
PM Peak	-	17:00	17:00	17:00	-	17:00	-	-	17:00
Vol.	-	2556	2648	2701	-	2635	-	-	2635
Grand Total	0	39090	39197	39334	0	39207	0	0	39207

CH Perez and Associates Consulting Engineers Inc.
9594 NW 41st Street, Suite 201, Miami, Florida 33178
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SR 25/Okeechobee Rd Eastbound
At West of SE 1 Avenue
Date Start: 13-Apr-21
Date End: 15-Apr-21

Start	Tue	13-Apr-21		Wed	14-Apr-21		Thu	15-Apr-21		Daily Average	
Time	A.M.	P.M.		A.M.	P.M.		A.M.	P.M.		A.M.	P.M.
12:00	90	520		77	492		84	537		84	516
12:15	70	509		71	510		88	578		76	532
12:30	55	560		65	497		76	541		65	533
12:45	57	530		52	531		61	549		57	537
01:00	42	530		50	551		62	541		51	541
01:15	53	544		40	500		49	479		47	508
01:30	42	536		36	623		47	601		42	587
01:45	37	559		37	512		33	541		36	537
02:00	27	605		32	504		45	558		35	556
02:15	33	496		36	600		44	577		38	558
02:30	44	585		49	596		55	473		49	551
02:45	52	573		41	555		44	607		46	578
03:00	41	553		50	553		54	604		48	570
03:15	47	585		54	499		50	596		50	560
03:30	64	614		75	651		77	606		72	624
03:45	87	609		72	619		87	626		82	618
04:00	78	566		98	574		94	600		90	580
04:15	92	584		94	615		101	668		96	622
04:30	146	539		120	660		136	579		134	593
04:45	136	612		137	611		134	605		136	609
05:00	168	**614**		176	**602**		159	**664**		168	**627**
05:15	249	**687**		228	**698**		246	**711**		241	**699**
05:30	301	**638**		329	**700**		305	**674**		312	**671**
05:45	372	**617**		352	**648**		394	**652**		373	**639**
06:00	411	607		439	548		409	578		420	578
06:15	571	540		594	531		527	537		564	536
06:30	686	501		660	518		656	525		667	515
06:45	726	492		758	483		693	482		726	486
07:00	681	402		652	438		704	392		679	411
07:15	743	380		**828**	440		719	415		763	412
07:30	**850**	382		**874**	403		801	413		**842**	399
07:45	**854**	374		**801**	388		654	392		**770**	385
08:00	**810**	376		**825**	323		**699**	378		**778**	359
08:15	**836**	366		755	352		**807**	309		**799**	342
08:30	778	322		815	306		**827**	370		807	333
08:45	737	278		741	288		**744**	361		741	309
09:00	658	290		700	295		588	287		649	291
09:15	638	253		660	286		608	268		635	269
09:30	706	256		660	265		687	250		684	257
09:45	634	217		562	234		626	268		607	240
10:00	547	191		471	209		560	228		526	209
10:15	556	222		552	217		551	222		553	220
10:30	545	197		563	193		553	195		554	195
10:45	525	173		479	185		522	195		509	184
11:00	521	121		521	128		546	181		529	143
11:15	519	132		524	139		540	147		528	139
11:30	551	105		554	116		539	104		548	108
11:45	580	102		539	113		498	87		539	101
Total	18046	21044		17898	21299		17583	21751		17845	21367
Combined Total	39090			39197			39334			39212	
Peak	07:30	05:00	-	07:15	05:00	-	08:00	05:00	-	07:30	05:00
Vol.	3350	2556	-	3328	2648	-	3077	2701	-	3189	2636
P.H.F.	0.981	0.930		0.952	0.946		0.930	0.950		0.947	0.943
ADT	ADT 39,207			AADT 39,207							

CH Perez and Associates Consulting Engineers Inc.
9594 NW 41st Street, Suite 201, Miami, Florida 33178
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S Hook Square Northbound
At South of SR 25/Okechobee Rd
Date Start: 13-Apr-21
Date End: 15-Apr-21

Start Time	Mon 12-Apr-21	Tue 13-Apr-21	Wed 14-Apr-21	Thu 15-Apr-21	Fri 16-Apr-21	Average Day	Sat 17-Apr-21	Sun 18-Apr-21	Week Average
12:00 AM	*	77	95	89	*	87	*	*	87
01:00	*	30	45	52	*	42	*	*	42
02:00	*	27	42	34	*	34	*	*	34
03:00	*	22	45	25	*	31	*	*	31
04:00	*	53	44	57	*	51	*	*	51
05:00	*	149	152	131	*	144	*	*	144
06:00	*	366	361	401	*	376	*	*	376
07:00	*	687	740	786	*	738	*	*	738
08:00	*	**771**	**814**	**1017**	*	**867**	*	*	**867**
09:00	*	654	710	757	*	707	*	*	707
10:00	*	626	701	749	*	692	*	*	692
11:00	*	691	713	788	*	731	*	*	731
12:00 PM	*	727	720	745	*	731	*	*	731
01:00	*	733	754	738	*	742	*	*	742
02:00	*	854	849	858	*	854	*	*	854
03:00	*	941	885	931	*	919	*	*	919
04:00	*	**983**	909	911	*	934	*	*	934
05:00	*	940	**910**	**983**	*	**944**	*	*	**944**
06:00	*	774	798	831	*	801	*	*	801
07:00	*	642	627	629	*	633	*	*	633
08:00	*	503	493	551	*	516	*	*	516
09:00	*	375	355	325	*	352	*	*	352
10:00	*	254	230	250	*	245	*	*	245
11:00	*	165	182	185	*	177	*	*	177
Day Total	0	12044	12174	12823	0	12348	0	0	12348
% Avg. WkDay	0.0%	97.5%	98.6%	103.8%	0.0%				
% Avg. Week	0.0%	97.5%	98.6%	103.8%	0.0%	100.0%	0.0%	0.0%	
AM Peak	-	08:00	08:00	08:00	-	08:00	-	-	08:00
Vol.	-	771	814	1017	-	867	-	-	867
PM Peak	-	16:00	17:00	17:00	-	17:00	-	-	17:00
Vol.	-	983	910	983	-	944	-	-	944
Grand Total	0	12044	12174	12823	0	12348	0	0	12348

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S Hook Square Northbound
At South of SR 25/Okechobee Rd
Date Start: 13-Apr-21
Date End: 15-Apr-21

Start Time	Tue 13-Apr-21 A.M.	P.M.	Wed 14-Apr-21 A.M.	P.M.	Thu 15-Apr-21 A.M.	P.M.	Daily Average A.M.	P.M.
12:00	17	200	28	214	27	180	24	198
12:15	13	186	20	167	16	212	16	188
12:30	19	154	33	144	34	177	29	158
12:45	28	187	14	195	12	176	18	186
01:00	6	162	11	227	13	198	10	196
01:15	8	163	13	173	15	178	12	171
01:30	7	181	11	178	10	165	9	175
01:45	9	227	10	176	14	197	11	200
02:00	6	221	12	215	7	193	8	210
02:15	6	200	10	219	10	238	9	219
02:30	7	243	9	210	10	229	9	227
02:45	8	190	11	205	7	198	9	198
03:00	5	223	12	192	1	197	6	204
03:15	6	220	15	226	10	262	10	236
03:30	3	**250**	10	223	7	233	7	235
03:45	8	**248**	8	244	7	239	8	244
04:00	10	**240**	5	230	13	209	9	226
04:15	12	**254**	6	222	7	217	8	231
04:30	14	246	21	225	16	240	17	237
04:45	17	243	12	232	21	**245**	17	**240**
05:00	17	227	16	220	14	**236**	16	**228**
05:15	26	236	29	**233**	30	**257**	28	**242**
05:30	59	244	44	**225**	42	**253**	48	**241**
05:45	47	233	63	**232**	45	237	52	234
06:00	51	219	44	**241**	61	241	52	234
06:15	66	215	86	210	96	228	83	218
06:30	115	174	109	183	108	189	111	182
06:45	134	166	122	164	136	173	131	168
07:00	165	158	179	163	160	166	168	162
07:15	147	160	163	158	190	160	167	159
07:30	170	177	**208**	150	199	173	192	167
07:45	**205**	147	**190**	156	**237**	130	**211**	144
08:00	**193**	156	**196**	152	**255**	159	**215**	156
08:15	**211**	128	**241**	125	**261**	143	**238**	132
08:30	**199**	114	197	112	**270**	150	**222**	125
08:45	168	105	180	104	231	99	193	103
09:00	184	137	189	92	187	80	187	103
09:15	165	94	173	92	206	86	181	91
09:30	172	76	171	91	186	92	176	86
09:45	133	68	177	80	178	67	163	72
10:00	137	83	222	77	175	75	178	78
10:15	135	63	162	63	207	69	168	65
10:30	175	59	162	48	194	54	177	54
10:45	179	49	155	42	173	52	169	48
11:00	177	59	189	54	186	61	184	58
11:15	168	37	166	43	198	46	177	42
11:30	170	45	178	43	200	49	183	46
11:45	176	24	180	42	204	29	187	32
Total	4153	7891	4462	7712	4886	7937	4503	7849
Combined Total	12044		12174		12823		12352	
Peak	07:45	03:30	07:30	05:15	07:45	04:45	07:45	04:45
Vol.	808	992	835	931	1023	991	886	951
P.H.F.	0.957	0.976	0.866	0.954	0.947	0.964	0.931	0.982
ADT	ADT 12,347		AADT 12,347					

CH Perez and Associates Consulting Engineers Inc.
9594 NW 41st Street, Suite 201, Miami, Florida 33178
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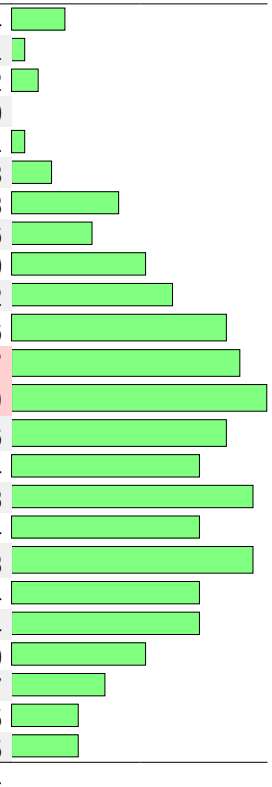
Lindsey Ct Southbound
At North of SR 25/Okeechobee Rd
Date Start: 13-Apr-21
Date End: 15-Apr-21

Start Time	Mon 12-Apr-21	Tue 13-Apr-21	Wed 14-Apr-21	Thu 15-Apr-21	Fri 16-Apr-21	Average Day	Sat 17-Apr-21	Sun 18-Apr-21	Week Average
12:00 AM	*	5	4	3	*	4	*	*	4
01:00	*	3	1	0	*	1	*	*	1
02:00	*	3	1	1	*	2	*	*	2
03:00	*	0	0	0	*	0	*	*	0
04:00	*	3	0	1	*	1	*	*	1
05:00	*	3	3	3	*	3	*	*	3
06:00	*	7	9	8	*	8	*	*	8
07:00	*	4	3	10	*	6	*	*	6
08:00	*	11	6	12	*	10	*	*	10
09:00	*	7	12	18	*	12	*	*	12
10:00	*	14	**14**	20	*	16	*	*	16
11:00	*	**17**	13	**22**	*	**17**	*	*	**17**
12:00 PM	*	14	17	**27**	*	**19**	*	*	**19**
01:00	*	**21**	9	19	*	16	*	*	16
02:00	*	19	11	13	*	14	*	*	14
03:00	*	16	15	23	*	18	*	*	18
04:00	*	14	9	20	*	14	*	*	14
05:00	*	10	**19**	25	*	18	*	*	18
06:00	*	8	16	17	*	14	*	*	14
07:00	*	11	15	16	*	14	*	*	14
08:00	*	14	11	4	*	10	*	*	10
09:00	*	6	7	7	*	7	*	*	7
10:00	*	4	2	8	*	5	*	*	5
11:00	*	4	5	6	*	5	*	*	5
Day Total	0	218	202	283	0	234	0	0	234
% Avg. WkDay	0.0%	93.2%	86.3%	120.9%	0.0%				
% Avg. Week	0.0%	93.2%	86.3%	120.9%	0.0%	100.0%	0.0%	0.0%	
AM Peak	-	11:00	10:00	11:00	-	11:00	-	-	11:00
Vol.	-	17	14	22	-	17	-	-	17
PM Peak	-	13:00	17:00	12:00	-	12:00	-	-	12:00
Vol.	-	21	19	27	-	19	-	-	19
Grand Total	0	218	202	283	0	234	0	0	234



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Lindsey Ct Southbound
At North of SR 25/Okeechobee Rd
Date Start: 13-Apr-21
Date End: 15-Apr-21

Start Time	Tue 13-Apr-21 A.M.	P.M.	Wed 14-Apr-21 A.M.	P.M.	Thu 15-Apr-21 A.M.	P.M.	Daily Average A.M.	P.M.
12:00	1	4	1	2	0	**9**	1	5
12:15	2	3	1	2	2	**7**	2	4
12:30	1	3	2	8	0	**8**	1	**6**
12:45	1	4	0	5	1	**3**	1	**4**
01:00	0	1	0	2	0	6	0	**3**
01:15	0	**9**	0	4	0	7	0	**7**
01:30	2	**8**	0	1	0	1	1	3
01:45	1	**3**	1	2	0	5	1	3
02:00	0	**7**	0	3	0	3	0	4
02:15	2	2	1	2	0	5	1	3
02:30	0	6	0	1	0	4	0	4
02:45	1	4	0	5	1	1	1	3
03:00	0	5	0	1	0	9	0	5
03:15	0	5	0	5	0	4	0	5
03:30	0	1	0	4	0	2	0	2
03:45	0	5	0	5	0	8	0	6
04:00	0	4	0	0	0	2	0	2
04:15	1	3	0	1	0	4	0	3
04:30	2	4	0	5	0	5	1	5
04:45	0	3	0	**3**	1	9	0	5
05:00	0	2	0	**1**	0	6	0	3
05:15	1	1	3	**6**	0	5	1	4
05:30	2	2	0	**10**	1	3	1	5
05:45	0	5	0	2	2	11	1	6
06:00	1	3	0	2	1	5	1	3
06:15	0	1	2	3	2	2	1	2
06:30	3	4	5	6	3	5	4	5
06:45	3	0	2	5	2	5	2	3
07:00	0	2	1	4	2	7	1	4
07:15	2	1	0	5	4	2	2	3
07:30	2	3	2	4	1	6	2	4
07:45	0	5	0	2	3	1	1	3
08:00	4	3	1	4	2	1	2	3
08:15	2	2	4	1	2	2	3	2
08:30	4	5	0	1	2	1	2	2
08:45	1	4	1	5	6	0	3	3
09:00	2	1	1	3	5	2	3	2
09:15	3	3	**8**	0	5	2	5	2
09:30	1	1	**1**	2	4	2	2	2
09:45	1	1	**2**	2	**4**	1	2	1
10:00	5	2	**6**	2	**7**	1	6	2
10:15	5	1	4	0	**5**	3	5	1
10:30	1	1	2	0	**6**	2	3	1
10:45	**3**	0	2	0	2	2	2	1
11:00	**7**	0	3	2	8	0	**6**	1
11:15	**1**	2	1	3	4	2	**2**	2
11:30	**7**	2	4	0	5	3	**5**	2
11:45	2	0	5	0	5	1	**4**	0
Total	77	141	66	136	98	185	82	154
Combined Total	218		202		283		236	
Peak	10:45	01:15	09:15	04:45	09:45	12:00	11:00	00:30
Vol.	18	27	17	20	22	27	17	20
P.H.F.	0.643	0.750	0.531	0.500	0.786	0.750	0.708	0.714
ADT		ADT 234		AADT 234				

6-Hour Turning Movement Counts

CH Perez and Associates Consulting Engineers Inc.

9594 NW 41st Street, Suite 201, Miami, Florida 33178

Turning Movement Counts
SR 25/Okeechobee Road at
SE 1 Avenue

File Name : Okeechobee Rd at SE 1 Ave
Site Code : 00100101
Start Date : 4/13/2021
Page No : 1

Groups Printed- Passenger Cars - Heavy Vehicles

	S Hook Square Southbound					SR 25/Okeechobee Road Westbound					SE 1 Avenue Northbound					SR 25/Okeechobee Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	28	260	0	0	288	25	80	33	0	138	0	509	0	1	510	936
07:15 AM	0	0	0	0	0	35	375	0	1	411	23	86	15	1	125	0	573	0	0	573	1109
07:30 AM	0	0	0	0	0	25	370	0	1	396	13	105	32	0	150	0	642	0	0	642	1188
07:45 AM	0	0	0	0	0	26	347	0	0	373	21	130	49	0	200	0	604	0	0	604	1177
Total	0	0	0	0	0	114	1352	0	2	1468	82	401	129	1	613	0	2328	0	1	2329	4410
08:00 AM	0	0	0	0	0	40	364	0	1	405	16	96	44	1	157	0	585	0	0	585	1147
08:15 AM	0	0	0	0	0	36	310	0	0	346	26	103	47	0	176	0	613	0	1	614	1136
08:30 AM	0	0	0	0	0	42	337	0	2	381	27	118	39	3	187	0	533	0	1	534	1102
08:45 AM	0	0	0	0	0	27	329	0	4	360	20	95	30	0	145	0	508	0	2	510	1015
Total	0	0	0	0	0	145	1340	0	7	1492	89	412	160	4	665	0	2239	0	4	2243	4400
*** BREAK ***																					
12:00 PM	0	0	0	0	0	22	319	0	0	341	20	116	34	0	170	0	375	0	0	375	886
12:15 PM	0	0	0	0	0	21	358	0	0	379	23	109	34	0	166	0	379	0	0	379	924
12:30 PM	0	0	0	0	0	26	337	0	0	363	14	87	39	0	140	0	397	0	0	397	900
12:45 PM	0	0	0	0	0	26	341	0	0	367	19	113	37	0	169	0	353	0	0	353	889
Total	0	0	0	0	0	95	1355	0	0	1450	76	425	144	0	645	0	1504	0	0	1504	3599
01:00 PM	0	0	0	0	0	22	377	0	0	399	12	102	35	0	149	0	370	0	0	370	918
01:15 PM	0	0	0	0	0	32	393	0	0	425	24	83	46	0	153	0	377	0	0	377	955
01:30 PM	0	0	0	0	0	20	322	0	2	344	22	86	44	0	152	0	357	0	0	357	853
01:45 PM	0	0	0	0	0	20	315	0	2	337	23	135	41	0	199	0	388	0	0	388	924
Total	0	0	0	0	0	94	1407	0	4	1505	81	406	166	0	653	0	1492	0	0	1492	3650
*** BREAK ***																					
04:00 PM	0	0	0	0	0	27	501	0	0	528	9	139	55	0	203	0	437	0	0	437	1168
04:15 PM	0	0	0	0	0	28	516	0	0	544	20	131	50	0	201	0	408	0	1	409	1154
04:30 PM	0	0	0	0	0	30	493	0	2	525	24	133	47	2	206	0	383	0	0	383	1114
04:45 PM	0	0	0	0	0	36	521	0	0	557	13	140	46	0	199	0	437	0	1	438	1194
Total	0	0	0	0	0	121	2031	0	2	2154	66	543	198	2	809	0	1665	0	2	1667	4630
05:00 PM	0	0	0	0	0	28	529	0	0	557	11	130	100	0	241	0	419	0	0	419	1217
05:15 PM	0	0	0	0	0	25	575	0	0	600	21	140	49	0	210	0	503	0	0	503	1313
05:30 PM	0	0	0	0	0	25	559	0	0	584	12	148	43	0	203	0	488	0	0	488	1275
05:45 PM	0	0	0	0	0	36	518	0	0	554	20	137	50	0	207	0	448	0	0	448	1209
Total	0	0	0	0	0	114	2181	0	0	2295	64	555	242	0	861	0	1858	0	0	1858	5014
Grand Total	0	0	0	0	0	683	9666	0	15	10364	458	2742	1039	7	4246	0	11086	0	7	11093	25703
Apprch %	0	0	0	0		6.6	93.3	0	0.1		10.8	64.6	24.5	0.2		0	99.9	0	0.1		
Total %	0	0	0	0	0	2.7	37.6	0	0.1	40.3	1.8	10.7	4	0	16.5	0	43.1	0	0	43.2	
Passenger Cars	0	0	0	0	0	644	9228	0	15	9887	451	2693	1030	6	4180	0	10538	0	6	10544	24611
% Passenger Cars	0	0	0	0	0	94.3	95.5	0	100	95.4	98.5	98.2	99.1	85.7	98.4	0	95.1	0	85.7	95.1	95.8
Heavy Vehicles	0	0	0	0	0	39	438	0	0	477	7	49	9	1	66	0	548	0	1	549	1092
% Heavy Vehicles	0	0	0	0	0	5.7	4.5	0	0	4.6	1.5	1.8	0.9	14.3	1.6	0	4.9	0	14.3	4.9	4.2

P&B CNL: Pedestrians and Biicyclistsl Crossing North Leg

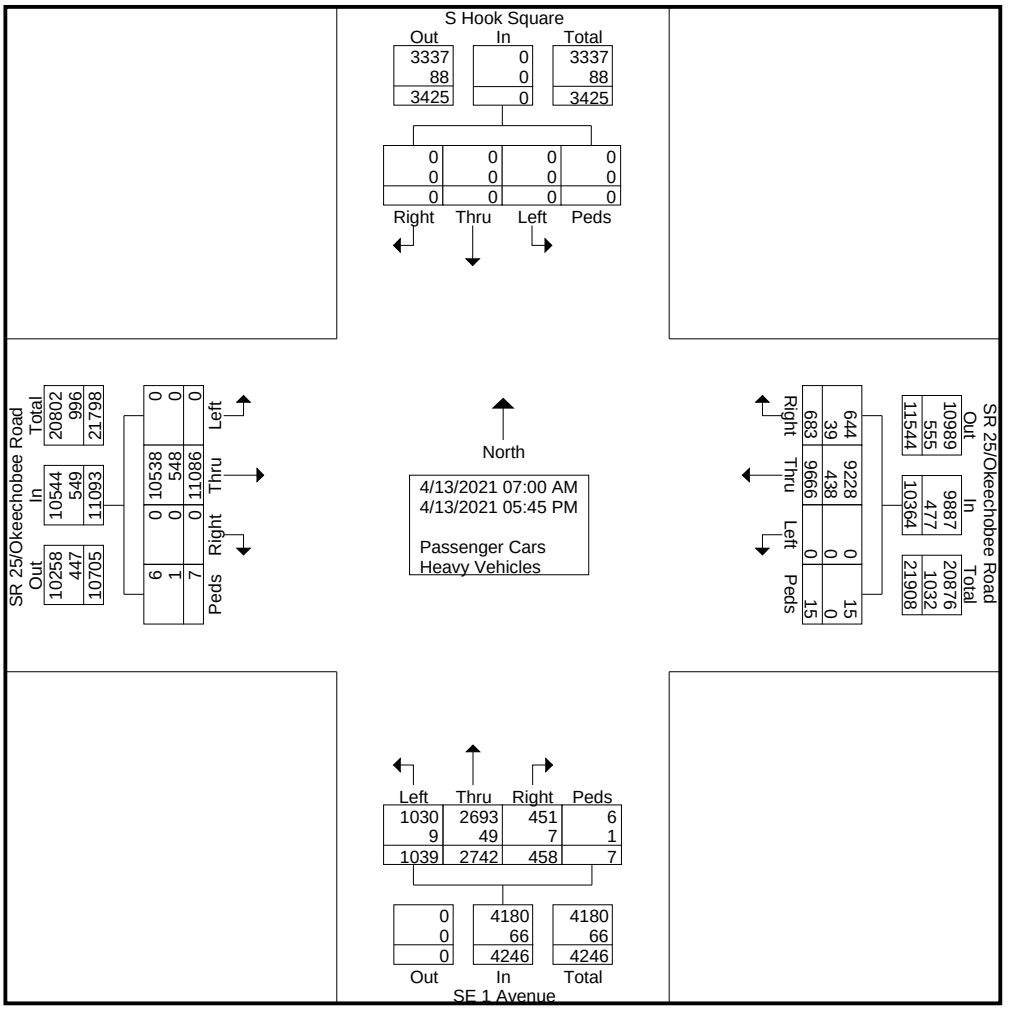
P&B CSL: Pedestrians and Biicyclistsl Crossing South Leg

P&B CWL: Pedestrians and Biicyclistsl Crossing West Leg

P&B CEL: Pedestrians and Biicyclistsl Crossing East Leg

CH Perez and Associates Consulting Engineers Inc.

9594 NW 41st Street, Suite 201, Miami, Florida 33178



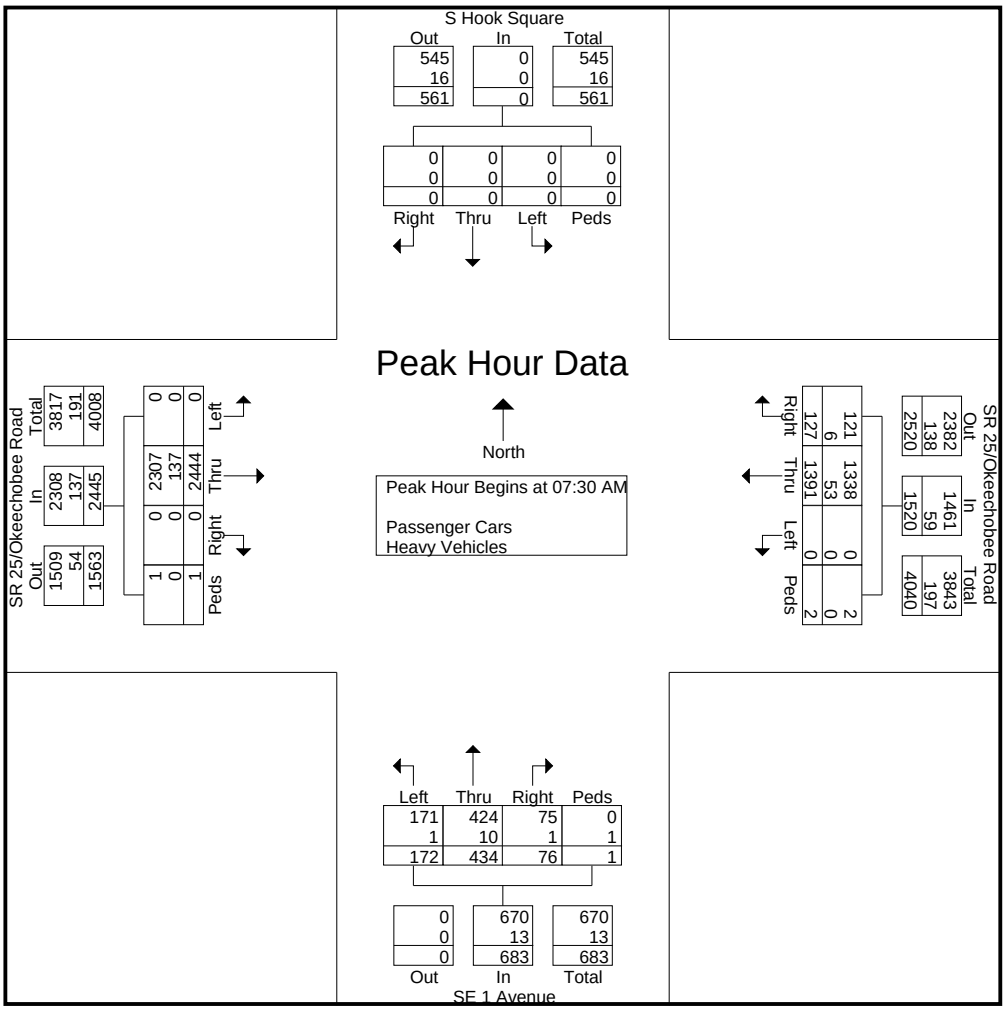
CH Perez and Associates Consulting Engineers Inc.

9594 NW 41st Street, Suite 201, Miami, Florida 33178

Turning Movement Counts
SR 25/Okeechobee Road at
SE 1 Avenue

File Name : Okeechobee Rd at SE 1 Ave
Site Code : 00100101
Start Date : 4/13/2021
Page No : 3

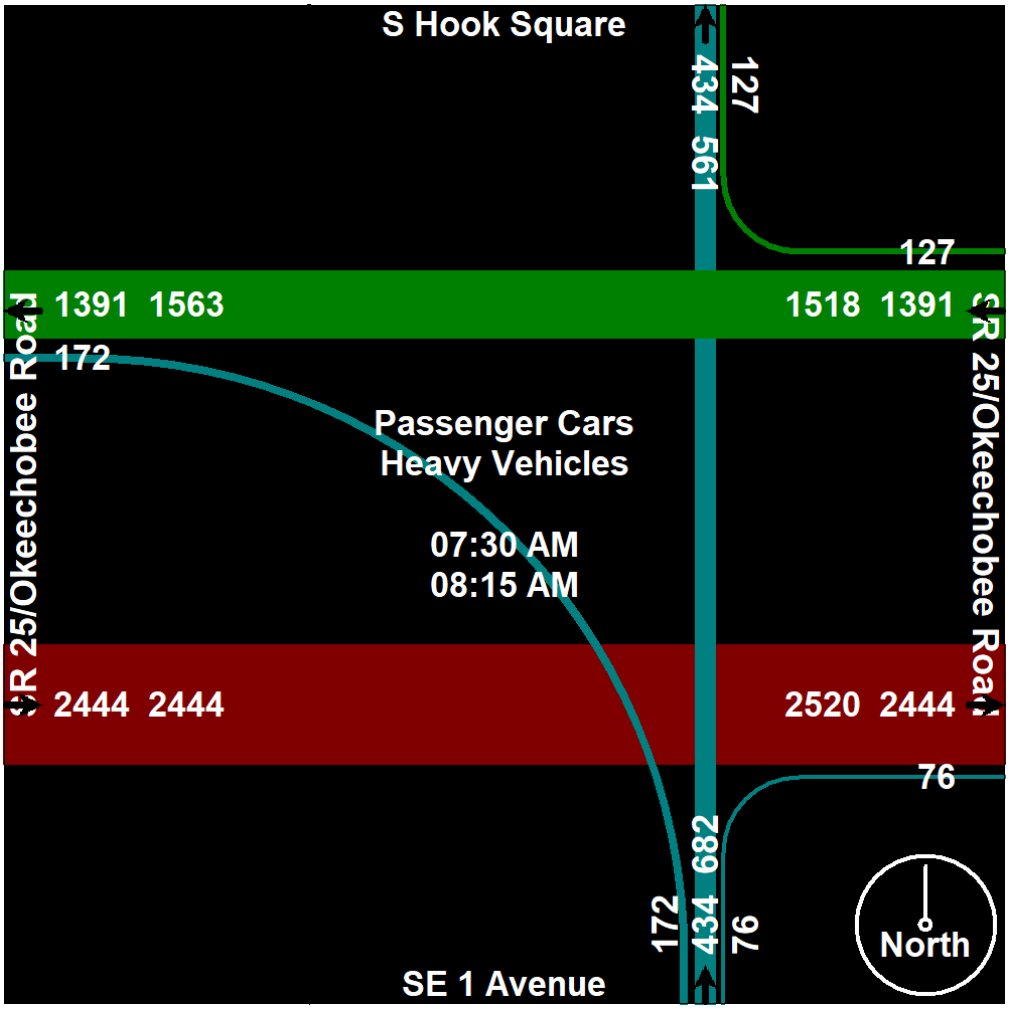
	S Hook Square Southbound					SR 25/Okeechobee Road Westbound					SE 1 Avenue Northbound					SR 25/Okeechobee Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	25	**370**	0	**1**	396	13	105	32	0	150	0	**642**	0	0	**642**	**1188**
07:45 AM	0	0	0	0	0	26	347	0	0	373	21	**130**	**49**	0	**200**	0	604	0	0	604	1177
08:00 AM	0	0	0	0	0	**40**	364	0	1	**405**	16	96	44	**1**	157	0	585	0	0	585	1147
08:15 AM	0	0	0	0	0	36	310	0	0	346	**26**	103	47	0	176	0	613	0	**1**	614	1136
Total Volume	0	0	0	0	0	127	1391	0	2	1520	76	434	172	1	683	0	2444	0	1	2445	4648
% App. Total	0	0	0	0		8.4	91.5	0	0.1		11.1	63.5	25.2	0.1		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.794	.940	.000	.500	.938	.731	.835	.878	.250	.854	.000	.952	.000	.250	.952	.978
Passenger Cars	0	0	0	0	0	121	1338										2307				
% Passenger Cars	0	0	0	0	0	95.3	96.2	0	100	96.1	98.7	97.7	99.4	0	98.1	0	94.4	0	100	94.4	95.5
Heavy Vehicles	0	0	0	0	0	6	53	0	0	59	1	10	1	1	13	0	137	0	0	137	209
% Heavy Vehicles	0	0	0	0	0	4.7	3.8	0	0	3.9	1.3	2.3	0.6	100	1.9	0	5.6	0	0	5.6	4.5



CH Perez and Associates Consulting Engineers Inc.
9594 NW 41st Street, Suite 201, Miami, Florida 33178

Turning Movement Counts
SR 25/Okeechobee Road at
SE 1 Avenue

File Name : Okeechobee Rd at SE 1 Ave
Site Code : 00100101
Start Date : 4/13/2021
Page No : 4



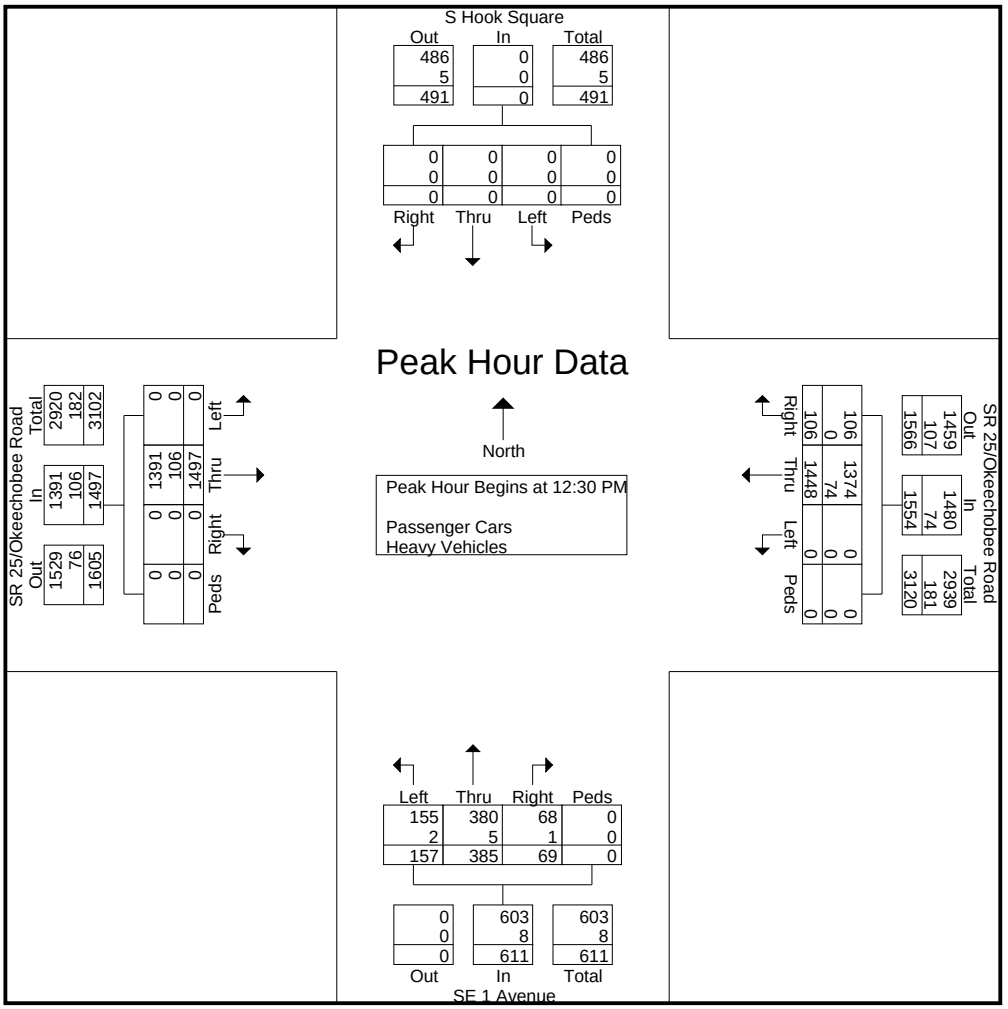
CH Perez and Associates Consulting Engineers Inc.

9594 NW 41st Street, Suite 201, Miami, Florida 33178

Turning Movement Counts
SR 25/Okeechobee Road at
SE 1 Avenue

File Name : Okeechobee Rd at SE 1 Ave
Site Code : 00100101
Start Date : 4/13/2021
Page No : 5

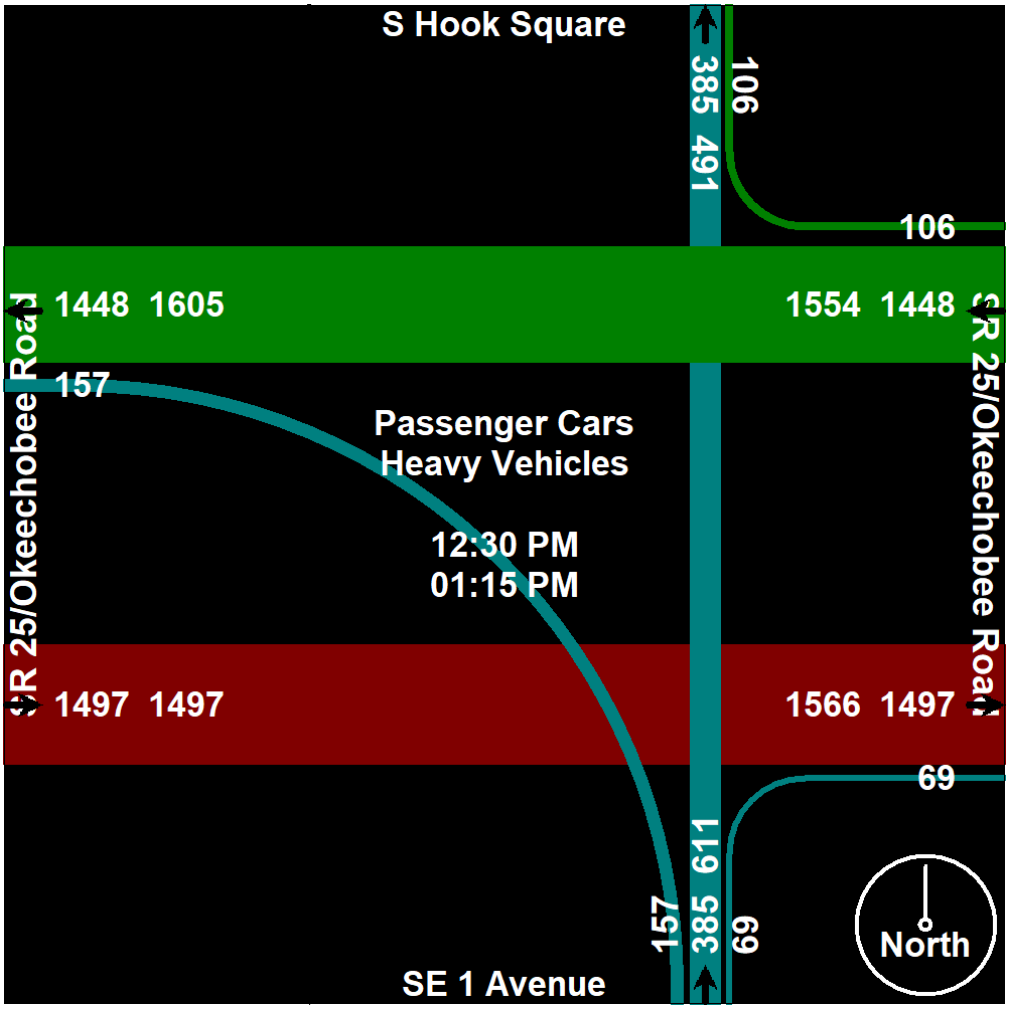
	S Hook Square Southbound					SR 25/Okeechobee Road Westbound					SE 1 Avenue Northbound					SR 25/Okeechobee Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	0	0	0	0	0	26	337	0	0	363	14	87	39	0	140	0	**397**	0	0	**397**	900
12:45 PM	0	0	0	0	0	26	341	0	0	367	19	**113**	37	0	**169**	0	353	0	0	353	889
01:00 PM	0	0	0	0	0	22	377	0	0	399	12	102	35	0	149	0	370	0	0	370	918
01:15 PM	0	0	0	0	0	**32**	**393**	0	0	**425**	**24**	83	**46**	0	153	0	377	0	0	377	**955**
Total Volume	0	0	0	0	0	106	1448	0	0	1554	69	385	157	0	611	0	1497	0	0	1497	3662
% App. Total	0	0	0	0		6.8	93.2	0	0		11.3	63	25.7	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.828	.921	.000	.000	.914	.719	.852	.853	.000	.904	.000	.943	.000	.000	.943	.959
Passenger Cars	0	0	0	0	0	106	1374										1391				
% Passenger Cars	0	0	0	0	0	100	94.9	0	0	95.2	98.6	98.7	98.7	0	98.7	0	92.9	0	0	92.9	94.9
Heavy Vehicles	0	0	0	0	0	0	74	0	0	74	1	5	2	0	8	0	106	0	0	106	188
% Heavy Vehicles	0	0	0	0	0	0	5.1	0	0	4.8	1.4	1.3	1.3	0	1.3	0	7.1	0	0	7.1	5.1



CH Perez and Associates Consulting Engineers Inc.
9594 NW 41st Street, Suite 201, Miami, Florida 33178

Turning Movement Counts
SR 25/Okeechobee Road at
SE 1 Avenue

File Name : Okeechobee Rd at SE 1 Ave
Site Code : 00100101
Start Date : 4/13/2021
Page No : 6



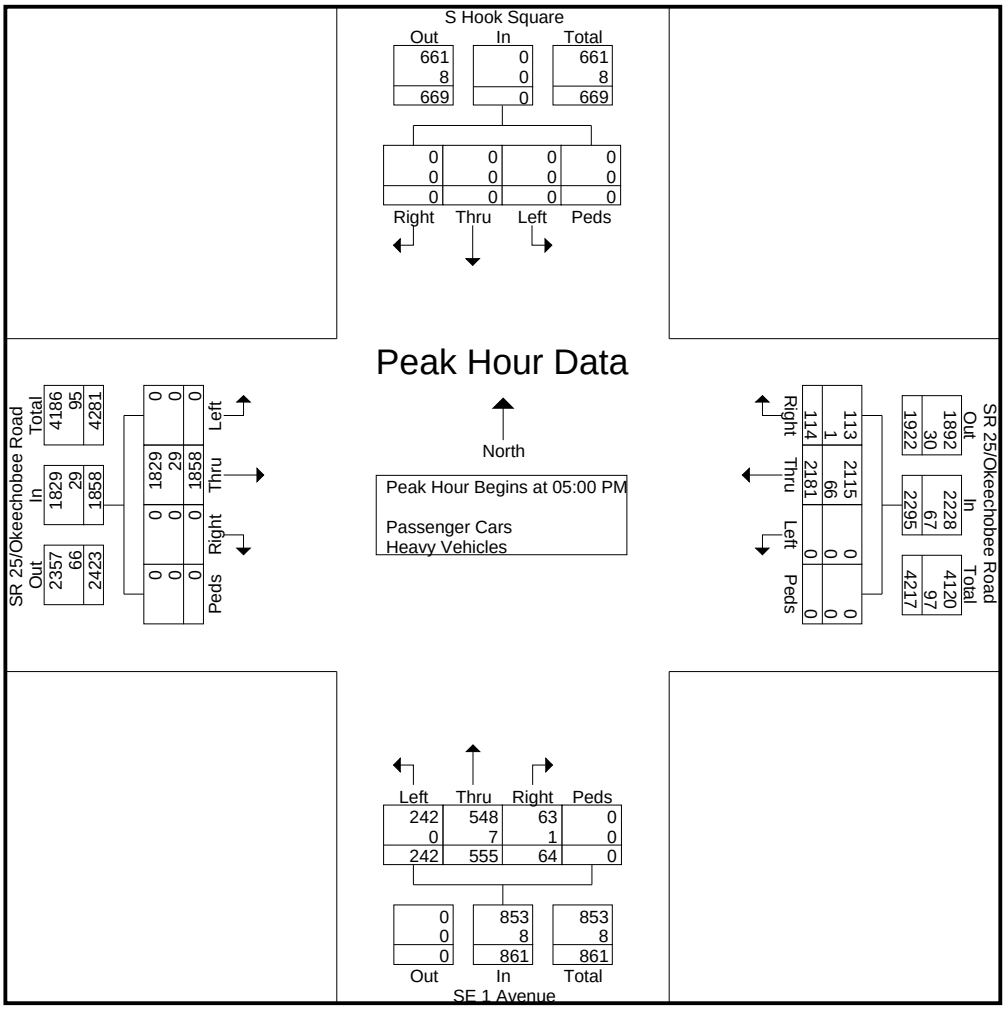
CH Perez and Associates Consulting Engineers Inc.

9594 NW 41st Street, Suite 201, Miami, Florida 33178

Turning Movement Counts
SR 25/Okeechobee Road at
SE 1 Avenue

File Name : Okeechobee Rd at SE 1 Ave
Site Code : 00100101
Start Date : 4/13/2021
Page No : 7

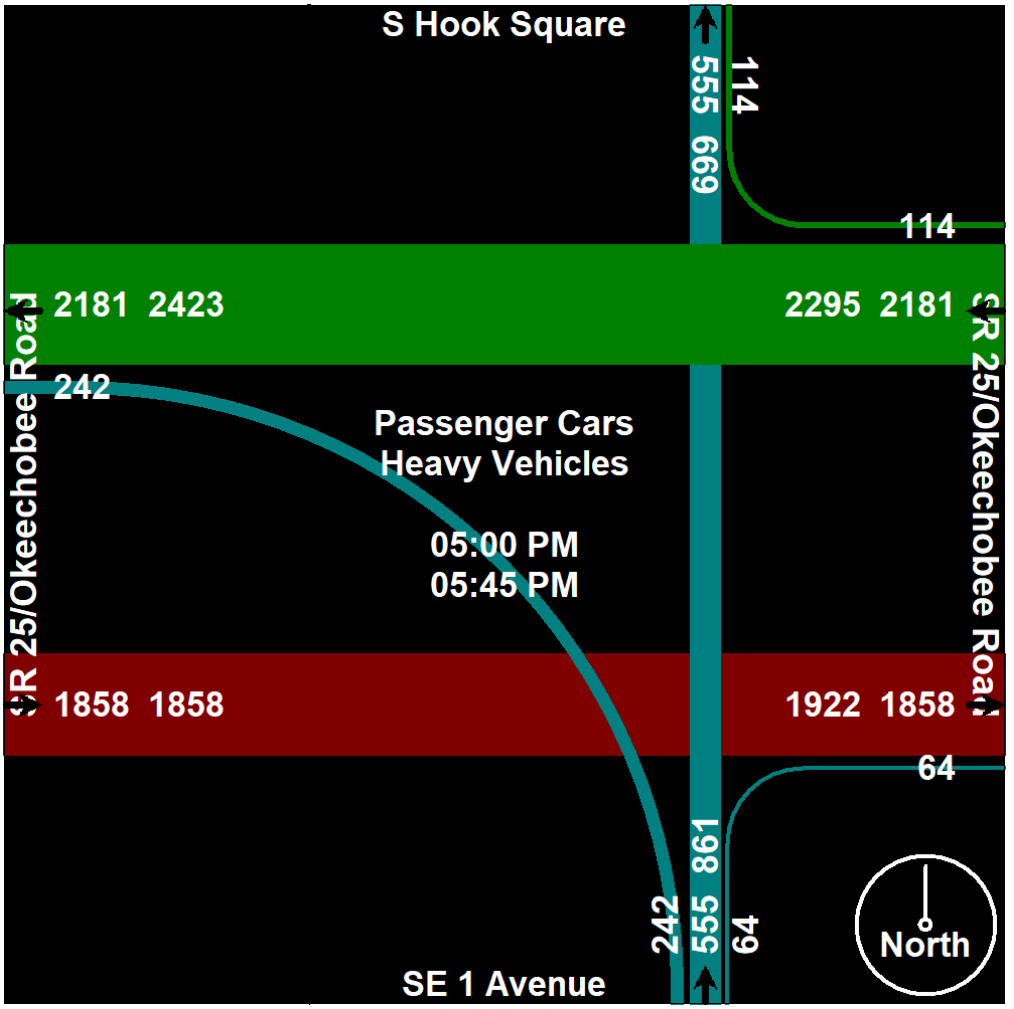
	S Hook Square Southbound					SR 25/Okeechobee Road Westbound					SE 1 Avenue Northbound					SR 25/Okeechobee Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	28	529	0	0	557	11	130	**100**	0	**241**	0	419	0	0	419	1217
05:15 PM	0	0	0	0	0	25	**575**	0	0	**600**	**21**	140	49	0	210	0	**503**	0	0	**503**	**1313**
05:30 PM	0	0	0	0	0	25	559	0	0	584	12	**148**	43	0	203	0	488	0	0	488	1275
05:45 PM	0	0	0	0	0	**36**	518	0	0	554	20	137	50	0	207	0	448	0	0	448	1209
Total Volume	0	0	0	0	0	114	2181	0	0	2295	64	555	242	0	861	0	1858	0	0	1858	5014
% App. Total	0	0	0	0		5	95	0	0		7.4	64.5	28.1	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.792	.948	.000	.000	.956	.762	.938	.605	.000	.893	.000	.923	.000	.000	.923	.955
Passenger Cars	0	0	0	0	0	113	2115										1829				
% Passenger Cars	0	0	0	0	0	99.1	97.0	0	0	97.1	98.4	98.7	100	0	99.1	0	98.4	0	0	98.4	97.9
Heavy Vehicles	0	0	0	0	0	1	66	0	0	67	1	7	0	0	8	0	29	0	0	29	104
% Heavy Vehicles	0	0	0	0	0	0.9	3.0	0	0	2.9	1.6	1.3	0	0	0.9	0	1.6	0	0	1.6	2.1



CH Perez and Associates Consulting Engineers Inc.
9594 NW 41st Street, Suite 201, Miami, Florida 33178

Turning Movement Counts
SR 25/Okeechobee Road at
SE 1 Avenue

File Name : Okeechobee Rd at SE 1 Ave
Site Code : 00100101
Start Date : 4/13/2021
Page No : 8



CH Perez and Associates Consulting Engineers Inc.

9594 NW 41st Street, Suite 201, Miami, Florida 33178

Turning Movement Counts
SR 25/Okeechobee Road at
SE 1 Avenue

File Name : Okeechobee Rd at SE 1 Ave
Site Code : 00100101
Start Date : 4/13/2021
Page No : 1

Groups Printed- Passenger Cars

	S Hook Square Southbound					SR 25/Okeechobee Road Westbound					SE 1 Avenue Northbound					SR 25/Okeechobee Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	20	256	0	0	276	24	79	31	0	134	0	477	0	0	477	887
07:15 AM	0	0	0	0	0	26	362	0	1	389	23	81	15	1	120	0	547	0	0	547	1056
07:30 AM	0	0	0	0	0	23	360	0	1	384	13	102	32	0	147	0	610	0	0	610	1141
07:45 AM	0	0	0	0	0	23	336	0	0	359	20	129	48	0	197	0	564	0	0	564	1120
Total	0	0	0	0	0	92	1314	0	2	1408	80	391	126	1	598	0	2198	0	0	2198	4204
08:00 AM	0	0	0	0	0	40	342	0	1	383	16	92	44	0	152	0	548	0	0	548	1083
08:15 AM	0	0	0	0	0	35	300	0	0	335	26	101	47	0	174	0	585	0	1	586	1095
08:30 AM	0	0	0	0	0	37	319	0	2	358	26	117	38	3	184	0	494	0	1	495	1037
08:45 AM	0	0	0	0	0	26	316	0	4	346	20	92	29	0	141	0	472	0	2	474	961
Total	0	0	0	0	0	138	1277	0	7	1422	88	402	158	3	651	0	2099	0	4	2103	4176
*** BREAK ***																					
12:00 PM	0	0	0	0	0	22	306	0	0	328	20	114	34	0	168	0	356	0	0	356	852
12:15 PM	0	0	0	0	0	20	335	0	0	355	23	106	34	0	163	0	351	0	0	351	869
12:30 PM	0	0	0	0	0	26	321	0	0	347	13	86	39	0	138	0	374	0	0	374	859
12:45 PM	0	0	0	0	0	26	318	0	0	344	19	113	36	0	168	0	325	0	0	325	837
Total	0	0	0	0	0	94	1280	0	0	1374	75	419	143	0	637	0	1406	0	0	1406	3417
01:00 PM	0	0	0	0	0	22	360	0	0	382	12	101	35	0	148	0	343	0	0	343	873
01:15 PM	0	0	0	0	0	32	375	0	0	407	24	80	45	0	149	0	349	0	0	349	905
01:30 PM	0	0	0	0	0	18	302	0	2	322	21	82	44	0	147	0	338	0	0	338	807
01:45 PM	0	0	0	0	0	20	279	0	2	301	22	129	40	0	191	0	365	0	0	365	857
Total	0	0	0	0	0	92	1316	0	4	1412	79	392	164	0	635	0	1395	0	0	1395	3442
*** BREAK ***																					
04:00 PM	0	0	0	0	0	26	476	0	0	502	9	139	55	0	203	0	425	0	0	425	1130
04:15 PM	0	0	0	0	0	27	481	0	0	508	20	131	50	0	201	0	395	0	1	396	1105
04:30 PM	0	0	0	0	0	27	467	0	2	496	24	131	47	2	204	0	372	0	0	372	1072
04:45 PM	0	0	0	0	0	35	502	0	0	537	13	140	45	0	198	0	419	0	1	420	1155
Total	0	0	0	0	0	115	1926	0	2	2043	66	541	197	2	806	0	1611	0	2	1613	4462
05:00 PM	0	0	0	0	0	28	502	0	0	530	11	129	100	0	240	0	411	0	0	411	1181
05:15 PM	0	0	0	0	0	24	555	0	0	579	20	137	49	0	206	0	498	0	0	498	1283
05:30 PM	0	0	0	0	0	25	545	0	0	570	12	145	43	0	200	0	479	0	0	479	1249
05:45 PM	0	0	0	0	0	36	513	0	0	549	20	137	50	0	207	0	441	0	0	441	1197
Total	0	0	0	0	0	113	2115	0	0	2228	63	548	242	0	853	0	1829	0	0	1829	4910
Grand Total	0	0	0	0	0	644	9228	0	15	9887	451	2693	1030	6	4180	0	10538	0	6	10544	24611
Apprch %	0	0	0	0		6.5	93.3	0	0.2		10.8	64.4	24.6	0.1		0	99.9	0	0.1		
Total %	0	0	0	0	0	2.6	37.5	0	0.1	40.2	1.8	10.9	4.2	0	17	0	42.8	0	0	42.8	

P&B CNL: Pedestrians and Biicyclistsl Crossing North Leg

P&B CSL: Pedestrians and Biicyclistsl Crossing South Leg

P&B CWL: Pedestrians and Biicyclistsl Crossing West Leg

P&B CEL: Pedestrians and Biicyclistsl Crossing East Leg

CH Perez and Associates Consulting Engineers Inc.

9594 NW 41st Street, Suite 201, Miami, Florida 33178

Turning Movement Counts
SR 25/Okeechobee Road at
SE 1 Avenue

File Name : Okeechobee Rd at SE 1 Ave
Site Code : 00100101
Start Date : 4/13/2021
Page No : 1

Groups Printed- Heavy Vehicles

	S Hook Square Southbound					SR 25/Okeechobee Road Westbound					SE 1 Avenue Northbound					SR 25/Okeechobee Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	8	4	0	0	12	1	1	2	0	4	0	32	0	1	33	49
07:15 AM	0	0	0	0	0	9	13	0	0	22	0	5	0	0	5	0	26	0	0	26	53
07:30 AM	0	0	0	0	0	2	10	0	0	12	0	3	0	0	3	0	32	0	0	32	47
07:45 AM	0	0	0	0	0	3	11	0	0	14	1	1	1	0	3	0	40	0	0	40	57
Total	0	0	0	0	0	22	38	0	0	60	2	10	3	0	15	0	130	0	1	131	206
08:00 AM	0	0	0	0	0	0	22	0	0	22	0	4	0	1	5	0	37	0	0	37	64
08:15 AM	0	0	0	0	0	1	10	0	0	11	0	2	0	0	2	0	28	0	0	28	41
08:30 AM	0	0	0	0	0	5	18	0	0	23	1	1	1	0	3	0	39	0	0	39	65
08:45 AM	0	0	0	0	0	1	13	0	0	14	0	3	1	0	4	0	36	0	0	36	54
Total	0	0	0	0	0	7	63	0	0	70	1	10	2	1	14	0	140	0	0	140	224
*** BREAK ***																					
12:00 PM	0	0	0	0	0	0	13	0	0	13	0	2	0	0	2	0	19	0	0	19	34
12:15 PM	0	0	0	0	0	1	23	0	0	24	0	3	0	0	3	0	28	0	0	28	55
12:30 PM	0	0	0	0	0	0	16	0	0	16	1	1	0	0	2	0	23	0	0	23	41
12:45 PM	0	0	0	0	0	0	23	0	0	23	0	0	1	0	1	0	28	0	0	28	52
Total	0	0	0	0	0	1	75	0	0	76	1	6	1	0	8	0	98	0	0	98	182
01:00 PM	0	0	0	0	0	0	17	0	0	17	0	1	0	0	1	0	27	0	0	27	45
01:15 PM	0	0	0	0	0	0	18	0	0	18	0	3	1	0	4	0	28	0	0	28	50
01:30 PM	0	0	0	0	0	2	20	0	0	22	1	4	0	0	5	0	19	0	0	19	46
01:45 PM	0	0	0	0	0	0	36	0	0	36	1	6	1	0	8	0	23	0	0	23	67
Total	0	0	0	0	0	2	91	0	0	93	2	14	2	0	18	0	97	0	0	97	208
*** BREAK ***																					
04:00 PM	0	0	0	0	0	1	25	0	0	26	0	0	0	0	0	0	12	0	0	12	38
04:15 PM	0	0	0	0	0	1	35	0	0	36	0	0	0	0	0	0	13	0	0	13	49
04:30 PM	0	0	0	0	0	3	26	0	0	29	0	2	0	0	2	0	11	0	0	11	42
04:45 PM	0	0	0	0	0	1	19	0	0	20	0	0	1	0	1	0	18	0	0	18	39
Total	0	0	0	0	0	6	105	0	0	111	0	2	1	0	3	0	54	0	0	54	168
05:00 PM	0	0	0	0	0	0	27	0	0	27	0	1	0	0	1	0	8	0	0	8	36
05:15 PM	0	0	0	0	0	1	20	0	0	21	1	3	0	0	4	0	5	0	0	5	30
05:30 PM	0	0	0	0	0	0	14	0	0	14	0	3	0	0	3	0	9	0	0	9	26
05:45 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	12
Total	0	0	0	0	0	1	66	0	0	67	1	7	0	0	8	0	29	0	0	29	104
Grand Total	0	0	0	0	0	39	438	0	0	477	7	49	9	1	66	0	548	0	1	549	1092
Apprch %	0	0	0	0		8.2	91.8	0	0		10.6	74.2	13.6	1.5		0	99.8	0	0.2		
Total %	0	0	0	0	0	3.6	40.1	0	0	43.7	0.6	4.5	0.8	0.1	6	0	50.2	0	0.1	50.3	

24-Hour Speed Counts
Westbound

Daily Westbound Speeds (MPH)

Study Date: Thursday, 05/06/2021 / Friday, 05/07/2021
Unit ID:
Location: Okeechobee rd east of Olive dr

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
10:00 - 10:59	1	6	16	64	140	229	222	129	50	12	6	1	0	0	0	**876**
11:00 - 11:59	0	5	15	59	148	260	202	140	42	13	3	2	0	0	0	**889**
12:00 - 12:59	5	5	15	63	185	236	201	125	51	15	2	2	0	1	0	**906**
13:00 - 13:59	4	14	25	68	147	229	195	148	52	22	9	0	0	0	0	**913**
14:00 - 14:59	2	1	13	36	143	279	269	121	89	20	2	3	0	0	0	**978**
15:00 - 15:59	2	6	22	51	182	340	242	152	43	19	6	0	1	0	0	**1066**
16:00 - 16:59	12	27	68	127	198	278	181	95	36	15	4	0	0	0	0	**1041**
17:00 - 17:59	23	42	84	130	211	256	134	52	37	6	0	0	0	0	0	**975**
18:00 - 18:59	12	19	40	106	193	292	219	104	33	11	6	1	1	0	0	**1037**
19:00 - 19:59	5	10	31	95	205	217	174	73	16	5	0	0	0	0	0	**831**
20:00 - 20:59	1	1	5	30	107	176	204	134	54	15	3	1	2	1	0	**734**
21:00 - 21:59	0	0	1	11	53	136	179	140	91	20	5	2	0	0	0	**638**
22:00 - 22:59	0	0	1	5	25	105	160	172	89	31	9	3	0	0	0	**600**
23:00 - 23:59	1	1	0	2	18	80	109	148	81	36	20	2	1	1	1	**501**
00:00 - 00:59	0	0	1	5	14	37	85	101	76	34	19	5	2	1	0	**380**
01:00 - 01:59	0	0	0	1	4	21	53	70	62	33	9	4	1	2	1	**261**
02:00 - 02:59	0	1	0	2	2	14	52	50	37	14	10	4	2	0	1	**189**
03:00 - 03:59	0	0	0	3	5	12	43	37	40	18	8	2	0	1	1	**170**
04:00 - 04:59	0	0	0	0	9	18	44	57	51	35	12	5	1	0	0	**232**
05:00 - 05:59	0	0	0	3	15	58	122	125	90	37	14	5	0	1	0	**470**
06:00 - 06:59	0	2	2	13	72	133	196	199	98	68	15	3	4	2	0	**807**
07:00 - 07:59	4	14	18	45	117	180	209	141	82	30	10	2	0	0	1	**853**
08:00 - 08:59	11	19	31	84	146	172	158	118	66	20	9	2	1	0	0	**837**
09:00 - 09:59	5	4	16	42	156	225	194	120	65	19	5	0	1	0	0	**852**
Totals	**88**	**177**	**404**	**1045**	**2495**	**3983**	**3847**	**2751**	**1431**	**548**	**186**	**49**	**17**	**10**	**5**	**17036**
Percent of Total	**0.5**	**1.0**	**2.4**	**6.1**	**14.6**	**23.4**	**22.6**	**16.1**	**8.4**	**3.2**	**1.1**	**0.3**	**0.1**	**0.1**	**0.0**	**100**
Percent of AM	**0.3**	**0.7**	**1.5**	**4.7**	**12.1**	**19.9**	**23.2**	**18.9**	**11.1**	**4.9**	**1.8**	**0.5**	**0.2**	**0.1**	**0.1**	**100**
Percent of PM	**0.7**	**1.2**	**3.0**	**7.1**	**16.3**	**25.7**	**22.2**	**14.3**	**6.6**	**2.1**	**0.6**	**0.1**	**0.0**	**0.0**	**0.0**	**100**

Standard Deviation: 9.1 MPH
Mean Speed: 40.5 MPH
Median Speed: 40.4 MPH
Modal Speed: 37.5 MPH

Ten Mile Pace: 35 to 44 MPH
Percent in Ten Mile Pace: 46.0%

85th Percentile: 49.4 MPH
15th Percentile: 31.7 MPH
90th Percentile: 51.9 MPH
95th Percentile: 54.9 MPH

APPENDIX C – COLLISION DIAGRAMS AND CRASH SUMMARIES

State of Florida Department of Transportation
CRASH SUMMARY

SECTION: **87090000** STATE ROUTE: **25**

ROADWAY LIMITS: **SE 1 AVENUE TO LINDSEY COURT** M.P. **13.720** TO **13.763** ENGINEER: **FDOT D6**

STUDY PERIOD: FROM **1/ 2016** TO **12/ 2016** COUNTY: **Miami-Dade**

Crash Number	No.	MILE POST	DATE	DAY	TIME	CRASH TYPE	FATAL	INJURIES	PROP DAM	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE (VEHICLE ONLY)
860969910	1	13.721	03/29/16	Tue	1356	Rear-End	0	0	1	Day	Wet	Careless or Negligent Manner
861980580	2	13.721	10/11/16	Tue	0642	Rear-End	0	3	0	Day	Dry	Followed too Closely
861908380	3	13.721	06/21/16	Tue	0500	Curb	0	1	0	Night	Dry	Careless or Negligent Manner
860965850	4	13.720	01/19/16	Tue	1319	Sideswipe	0	0	1	Day	Dry	Improper Passing
860979620	5	13.720	01/02/16	Sat	1530	Right-Turn	0	0	1	Day	Dry	Careless or Negligent Manner
860984180	6	13.720	01/23/16	Sat	0215	Angle	0	0	1	Night	Dry	Ran Red Light
860987860	7	13.720	01/16/16	Sat	0450	Tree (Standing)	0	0	1	Night	Wet	Ran Off Roadway
861883570	8	13.720	01/28/16	Thu	2108	Angle	0	1	0	Night	Wet	Ran Red Light
861907130	9	13.720	06/15/16	Wed	1645	Right-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way
861920530	10	13.720	05/03/16	Tue	0008	Angle	0	0	1	Night	Dry	Other Contributing Action
861933890	11	13.720	05/28/16	Sat	0625	Angle	0	1	0	Day	Dry	Failed to Yield Right-Of-Way
861944150	12	13.720	06/13/16	Mon	1250	Sideswipe	0	0	1	Day	Dry	Improper Turn
861954650	13	13.720	07/05/16	Tue	0310	Concrete Traffic Barrier	0	0	1	Night	Dry	Careless or Negligent Manner
861962870	14	13.720	08/15/16	Mon	0743	Rear-End	0	0	1	Day	Wet	Careless or Negligent Manner
867254490	15	13.720	10/23/16	Sun	1050	Right-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way
861942280	16	13.721	11/18/16	Fri	1829	Right-Turn	0	0	1	Night	Dry	Failed to Yield Right-Of-Way
860960350	17	13.722	02/12/16	Fri	0050	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner
861924310	18	13.722	05/05/16	Thu	0230	Sideswipe	0	0	1	Night	Wet	Improper Passing
867307510	19	13.722	12/02/16	Fri	0005	Rear-End	0	0	1	Night	Wet	Drove too Fast for Conditions
867315590	20	13.722	12/21/16	Wed	1116	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
861946800	21	13.722	06/23/16	Thu	1725	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
861898630	22	13.722	03/19/16	Sat	0511	Curb	0	0	1	Night	Dry	Careless or Negligent Manner
861942740	23	13.722	06/03/16	Fri	1947	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner
867254750	24	13.722	10/24/16	Mon	1750	Sideswipe	0	0	1	Day	Dry	Improper Passing

Total No.	Fatal	Injury	PDO	Rear-End	Head-On	Angle	Left-Turn	Right-Turn	Sideswipe	Backed Into	Ped/Bike	Parked Car	Fixed Object	Ran into Water	Other
24	**0**	**4**	**20**	**7**	**0**	**4**	**0**	**4**	**5**	**0**	**0**	**0**	**4**	**0**	**0**
Percent	*0.00%*	*16.67%*	*83.33%*	*29.17%*	*0.00%*	*16.67%*	*0.00%*	*16.67%*	*20.83%*	*0.00%*	*0.00%*	*0.00%*	*16.67%*	*0.00%*	*0.00%*

Contrib. Cause	Day	Night	Wet	Dry	Careless Driving	FTYRW	Improper Turn	Ran Red Light	Exceeded Speed	Improper Passing	Disreg Cntl Dev	Erratic/ Aggress	Ran off Road	DUI	Wrong Way
Total	**12**	**12**	**6**	**18**	**9**	**4**	**1**	**2**	**1**	**3**	**0**	**0**	**1**	**0**	**0**
Percent	*50.00%*	*50.00%*	*25.00%*	*75.00%*	*37.50%*	*16.67%*	*4.17%*	*8.33%*	*4.17%*	*12.50%*	*0.00%*	*0.00%*	*4.17%*	*0.00%*	*0.00%*

TOTAL ENTERING VEHICLES/ADT: **64,000**

SEGMENT CRASH RATE: **23.893** CRASHES PER MILLION VEHICLE MILES

State of Florida Department of Transportation
CRASH SUMMARY

SECTION: 87090000 STATE ROUTE: 25
ROADWAY LIMITS: SE 1 AVENUE TO LINDSEY COURT M.P. 13.720 TO 13.763 ENGINEER: FDOT D6
STUDY PERIOD: FROM 1/ 2017 TO 12/ 2017 COUNTY: Miami-Dade

Crash Number	No.	MILE POST	DATE	DAY	TIME	CRASH TYPE	FATAL	INJURIES	PROP DAM	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE (VEHICLE ONLY)
867297040	1	13.693	04/12/17	Wed	1024	Rear-End	0	2	0	Day	Wet	Careless or Negligent Manner
867347130	2	13.701	06/03/17	Sat	1803	Sideswipe	0	1	0	Day	Wet	Improper Passing
867299070	3	13.702	04/18/17	Tue	1232	Sideswipe	0	0	1	Day	Dry	Improper Passing
867351690	4	13.702	06/16/17	Fri	1624	Rear-End	0	0	1	Day	Wet	Careless or Negligent Manner
873568050	5	13.703	07/29/17	Sat	0017	Other Post, Pole Or Support	0	1	0	Night	Dry	Failed To Keep In Proper Lane
867275910	6	13.720	02/17/17	Fri	0855	Rear-End	0	0	1	Day	Dry	Followed too Closely
867276030	7	13.720	02/17/17	Fri	1305	Angle	0	0	1	Day	Dry	Ran Red Light
867280950	8	13.720	03/02/17	Thu	1533	Sideswipe	0	0	1	Day	Wet	Improper Turn
867333260	9	13.720	04/28/17	Fri	0928	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
873567310	10	13.720	07/27/17	Thu	1015	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
873575020	11	13.720	08/16/17	Wed	1813	Sideswipe	0	0	1	Day	Dry	Improper Passing
873581250	12	13.720	09/02/17	Sat	0657	Angle	0	0	1	Day	Dry	Other Contributing Action
873622340	13	13.720	12/18/17	Mon	2300	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner
867283050	14	13.720	03/07/17	Tue	0526	Traffic Signal Support	1	0	0	Night	Dry	Failed To Keep In Proper Lane
867333130	15	13.724	04/28/17	Fri	1121	Rear-End	0	0	1	Day	Dry	Followed too Closely
873589530	16	13.724	09/26/17	Tue	1530	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
867350060	17	13.728	06/12/17	Mon	1329	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
873600060	18	13.728	10/21/17	Sat	1026	Sideswipe	0	0	1	Day	Wet	Drove too Fast for Conditions
873608660	19	13.731	11/13/17	Mon	1013	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
873621010	20	13.732	12/14/17	Thu	1851	Sideswipe	0	0	1	Day	Dry	Improper Passing
867341270	21	13.736	05/18/17	Thu	1707	Sideswipe	0	0	1	Day	Wet	Drove too Fast for Conditions
873611970	22	13.738	11/22/17	Wed	0725	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
873578670	23	13.739	08/26/17	Sat	2300	Rear-End	0	0	1	Night	Wet	Drove too Fast for Conditions
873598730	24	13.739	10/18/17	Wed	0523	Concrete Traffic Barrier	0	0	1	Night	Wet	Drove too Fast for Conditions
867292790	25	13.763	04/01/17	Sat	0244	Traffic Sign Support	0	0	1	Night	Dry	Careless or Negligent Manner
873608130	26	13.763	11/11/17	Sat	1145	Rear-End	0	0	1	Day	Dry	Followed too Closely
873622850	27	13.763	12/19/17	Tue	0645	Rear-End	0	0	1	Day	Dry	Followed too Closely
873620670	28	13.768	12/14/17	Thu	0820	Rear-End	0	0	1	Day	Dry	Followed too Closely

	Total No.	Fatal	Injury	PDO	Rear-End	Head-On	Angle	Left-Turn	Right-Turn	Sideswipe	Backed Into	Ped/Bike	Parked Car	Fixed Object	Ran into Water	Other
	28	**1**	**3**	**24**	**13**	**0**	**2**	**0**	**0**	**9**	**0**	**0**	**0**	**4**	**0**	**0**
	Percent	*3.57%*	*10.71%*	*85.71%*	*46.43%*	*0.00%*	*7.14%*	*0.00%*	*0.00%*	*32.14%*	*0.00%*	*0.00%*	*0.00%*	*14.29%*	*0.00%*	*0.00%*

	Contrib. Cause	Day	Night	Wet	Dry	Careless Driving	FTYRW	Improper Turn	Ran Red Light	Exceeded Speed	Improper Passing	Disreg Cntl Dev	Erratic/ Aggress	Ran off Road	DUI	Wrong Way
	Total	**22**	**6**	**8**	**20**	**8**	**0**	**1**	**1**	**4**	**4**	**0**	**0**	**0**	**0**	**0**
	Percent	*78.57%*	*21.43%*	*28.57%*	*71.43%*	*28.57%*	*0.00%*	*3.57%*	*3.57%*	*14.29%*	*14.29%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*

TOTAL ENTERING VEHICLES/ADT: **68,000**

SEGMENT CRASH RATE: **26.235** CRASHES PER MILLION VEHICLE MILES

State of Florida Department of Transportation
CRASH SUMMARY

SECTION: **87090000** STATE ROUTE: **25**

ROADWAY LIMITS: **SE 1 AVENUE TO LINDSEY COURT** M.P. **13.720** TO **13.763** ENGINEER: **FDOT D6**

STUDY PERIOD: FROM **1/ 2018** TO **12/ 2018** COUNTY: **Miami-Dade**

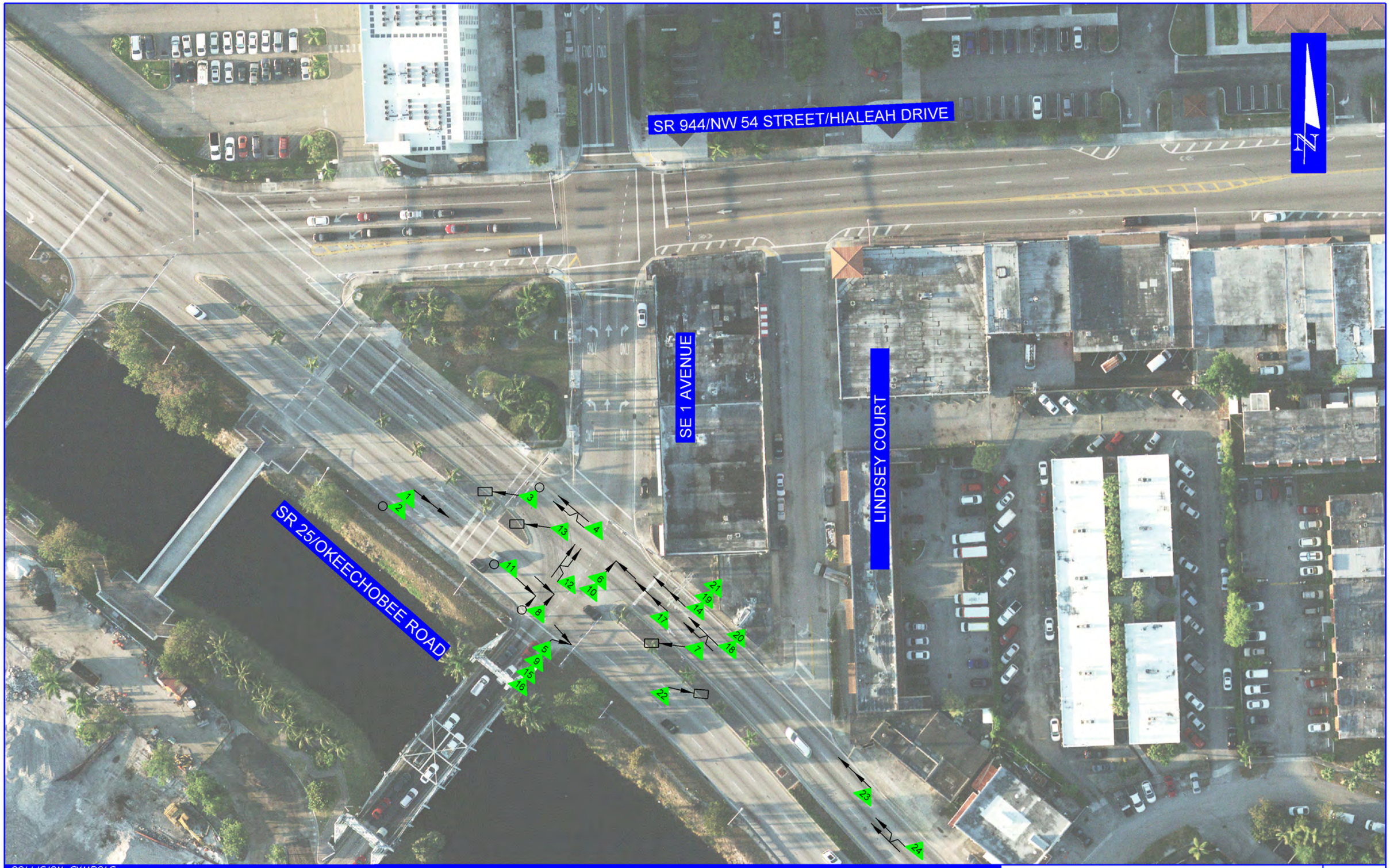
Crash Number	No.	MILE POST	DATE	DAY	TIME	CRASH TYPE	FATAL	INJURIES	PROP DAM	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE (VEHICLE ONLY)
878061100	1	13.693	08/25/18	Sat	2126	Rear-End	0	0	1	Night	Wet	Drove too Fast for Conditions
878056540	2	13.696	08/12/18	Sun	1536	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
878023520	3	13.699	04/30/18	Mon	1505	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
878091350	4	13.702	11/19/18	Mon	1024	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
878104240	5	13.702	12/27/18	Thu	1156	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
878050030	6	13.709	07/20/18	Fri	1732	Rear-End	0	0	1	Day	Wet	Drove too Fast for Conditions
878023490	7	13.711	04/30/18	Mon	1224	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
878098030	8	13.712	12/09/18	Sun	1200	Utility Pole/Light Support	0	0	1	Day	Wet	Drove too Fast for Conditions
878095080	9	13.716	11/30/18	Fri	1510	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
873650140	10	13.720	03/09/18	Fri	0942	Angle	0	1	0	Day	Dry	Ran Red Light
878012840	11	13.720	03/31/18	Sat	1425	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
878031160	12	13.720	05/23/18	Wed	1313	Angle	0	2	0	Day	Dry	Ran Red Light
878032290	13	13.720	05/27/18	Sun	2110	Angle	0	0	1	Night	Dry	Other Contributing Action
878041370	14	13.720	06/24/18	Sun	1550	Angle	0	0	1	Day	Dry	Ran Red Light
878045940	15	13.720	07/08/18	Sun	2325	Rear-End	0	2	0	Night	Dry	Careless or Negligent Manner
878069170	16	13.720	09/18/18	Tue	1352	Sideswipe	0	0	1	Day	Dry	Careless or Negligent Manner
878091490	17	13.720	11/19/18	Mon	1622	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
878101250	18	13.720	12/18/18	Tue	2355	Angle	0	0	1	Night	Dry	Ran Red Light
878104770	19	13.720	12/29/18	Sat	0756	Angle	0	0	1	Day	Dry	Other Contributing Action
878863910	20	13.720	08/09/18	Thu	1759	Rear-End	0	1	0	Day	Wet	Drove too Fast for Conditions
878042610	21	13.722	06/28/18	Thu	0710	Sideswipe	0	1	0	Day	Dry	Failed To Keep In Proper Lane
878092230	22	13.731	11/21/18	Wed	1110	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
878019910	23	13.734	04/19/18	Thu	2118	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
873644340	24	13.734	02/21/18	Thu	0244	Utility Pole/Light Support	1	0	0	Night	Dry	Erratic, Reckless or Aggressive
878018840	25	13.764	04/17/18	Tue	1247	Rear-End	0	0	1	Day	Dry	Followed too Closely
878022330	26	13.769	04/26/18	Thu	1802	Sideswipe	0	0	1	Day	Dry	Improper Passing

	Total No.	Fatal	Injury	PDO	Rear-End	Head-On	Angle	Left-Turn	Right-Turn	Sideswipe	Backed Into	Ped/Bike	Parked Car	Fixed Object	Ran into Water	Other
	26	**1**	**5**	**20**	**15**	**0**	**6**	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**0**	**0**
	Percent	*3.85%*	*19.23%*	*76.92%*	*57.69%*	*0.00%*	*23.08%*	*0.00%*	*0.00%*	*11.54%*	*0.00%*	*0.00%*	*0.00%*	*7.69%*	*0.00%*	*0.00%*

	Contrib. Cause	Day	Night	Wet	Dry	Careless Driving	FTYRW	Improper Turn	Ran Red Light	Exceeded Speed	Improper Passing	Disreg Cntl Dev	Erratic/ Aggress	Ran off Road	DUI	Wrong Way
	Total	**21**	**5**	**4**	**22**	**12**	**0**	**0**	**4**	**4**	**1**	**0**	**1**	**0**	**0**	**0**
	Percent	*80.77%*	*19.23%*	*15.38%*	*84.62%*	*46.15%*	*0.00%*	*0.00%*	*15.38%*	*15.38%*	*3.85%*	*0.00%*	*3.85%*	*0.00%*	*0.00%*	*0.00%*

TOTAL ENTERING VEHICLES/ADT: **68,000**

SEGMENT CRASH RATE: **26.235** CRASHES PER MILLION VEHICLE MILES

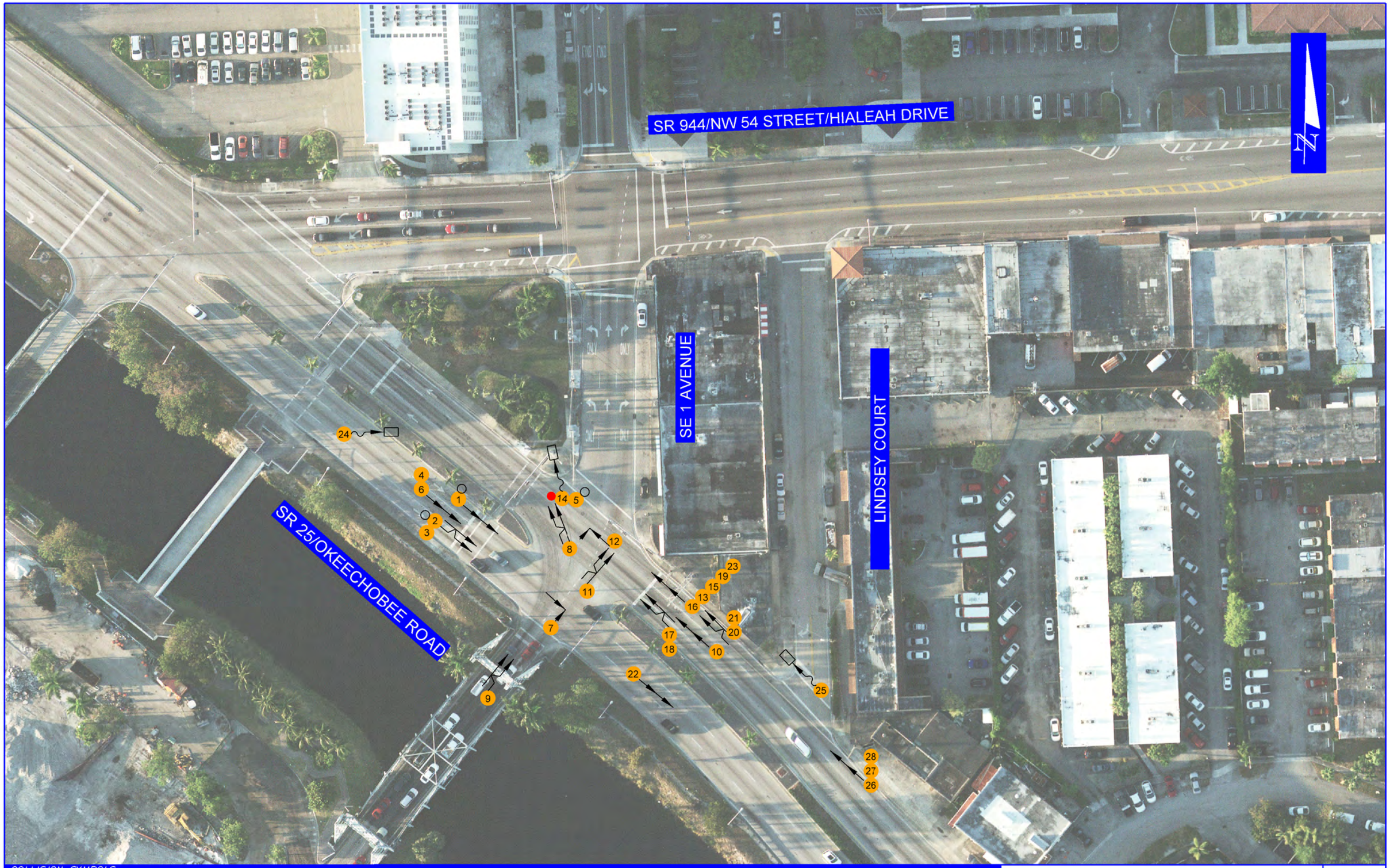


COLLISION SYMBOLS:

RECORD NUMBER	BICYCLIST	FIXED OBJECT	LEFT TURN	HEAD ON	YR 2016		
INJURY	PEDESTRIAN	PARKED CAR	OUT OF CONTROL	ANGLE	YR 2017		
FATAL	BACKING VEHICLE	REAR END	RIGHT TURN	SIDE SWIPE	YR 2018		

COLLISION DIAGRAM
SR 25/OKEECHOBEE ROAD
BETWEEN LINDSEY COURT AND SE 1 AVENUE

FIGURE NO.
C-1



COLLISION SYMBOLS:

RECORD NUMBER	BICYCLIST	FIXED OBJECT	LEFT TURN	HEAD ON	YR 2016		
INJURY	PEDESTRIAN	PARKED CAR	OUT OF CONTROL	ANGLE	YR 2017		
FATAL	BACKING VEHICLE	REAR END	RIGHT TURN	SIDE SWIPE	YR 2018		

COLLISION DIAGRAM
SR 25/OKEECHOBEE ROAD
BETWEEN LINDSEY COURT AND SE 1 AVENUE

FIGURE NO. C-2

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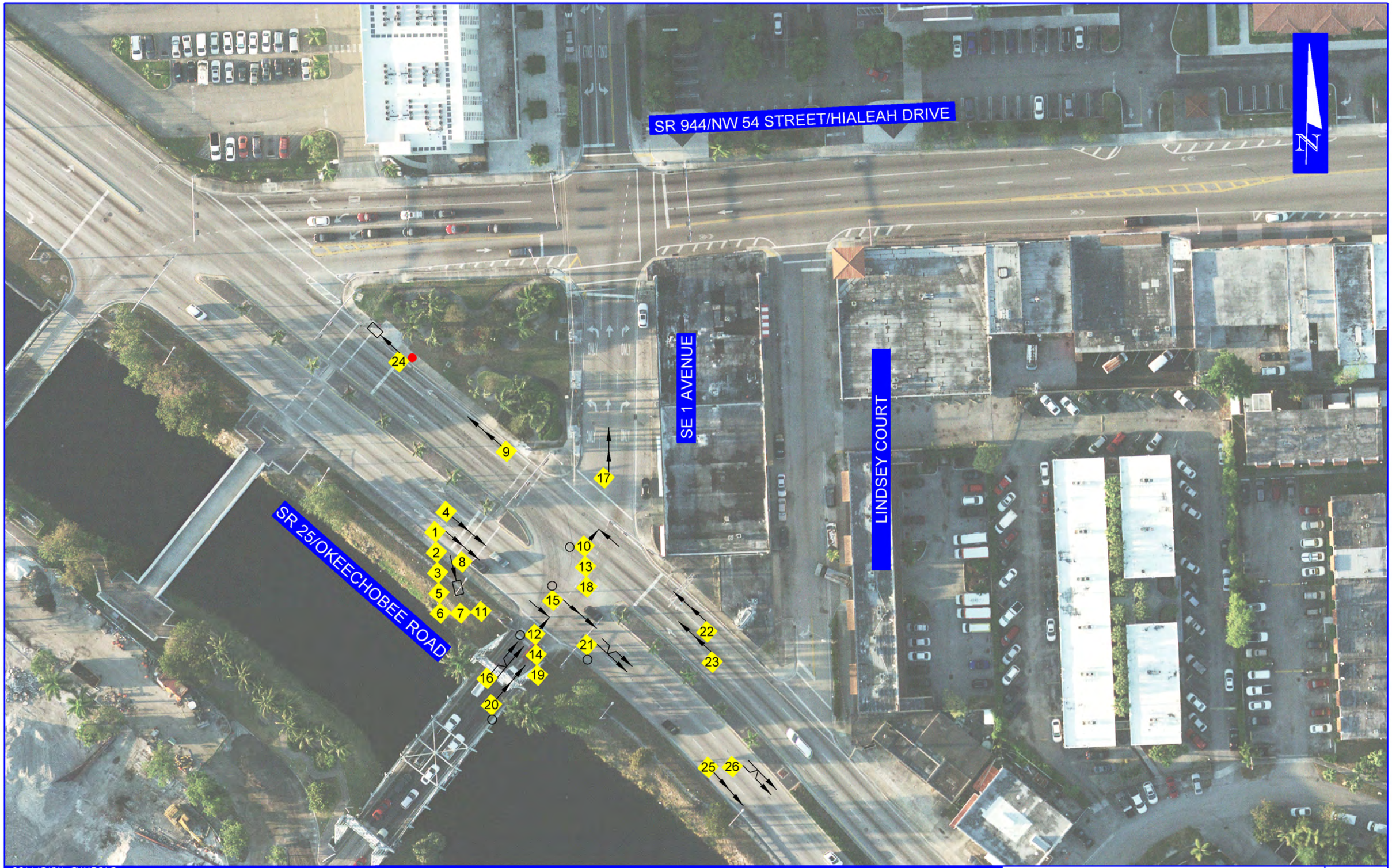


COLLISION SYMBOLS:

RECORD NUMBER	BICYCLIST	FIXED OBJECT	LEFT TURN	HEAD ON	YR 2016
INJURY	PEDESTRIAN	PARKED CAR	OUT OF CONTROL	ANGLE	YR 2017
FATAL	BACKING VEHICLE	REAR END	RIGHT TURN	SIDE SWIPE	YR 2018

COLLISION DIAGRAM
SR 25/OKEECHOBEE ROAD
BETWEEN LINDSEY COURT AND SE 1 AVENUE

FIGURE NO. C-3

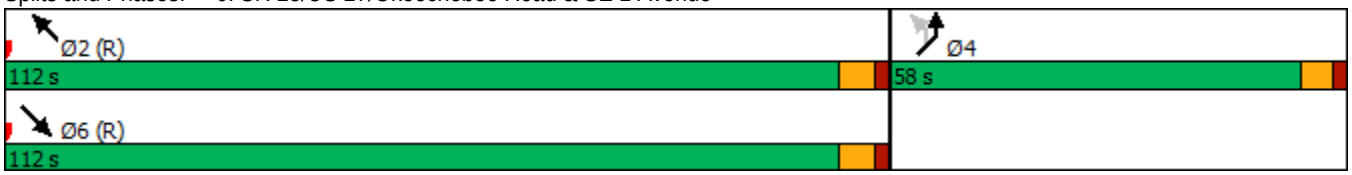
APPENDIX D – OPERATIONAL ANALYSIS

Lane Group	SET	NWT	NEL
Lane Configurations			
Traffic Volume (vph)	2444	1391	434
Future Volume (vph)	2444	1391	434
Lane Group Flow (vph)	2573	1641	822
Turn Type	NA	NA	Prot
Protected Phases	6	2	4
Permitted Phases			
Detector Phase	6	2	4
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	27.4	27.4	27.0
Total Split (s)	112.0	112.0	58.0
Total Split (%)	65.9%	65.9%	34.1%
Yellow Time (s)	4.4	4.4	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	C-Max	C-Max	None
v/c Ratio	0.83	0.53	0.89
Control Delay	26.4	16.6	70.5
Queue Delay	46.8	0.0	0.0
Total Delay	73.2	16.6	70.5
Queue Length 50th (ft)	775	339	443
Queue Length 95th (ft)	904	408	455
Internal Link Dist (ft)	284	143	265
Turn Bay Length (ft)			
Base Capacity (vph)	3088	3104	1023
Starvation Cap Reductn	1012	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.24	0.53	0.80

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 0 (0%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 6: SR 25/US 27/Okeechobee Road & SE 1 Avenue



SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

Movement	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR	NEL2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	0	0	0	2444	0	0	1391	127	172	434	76
Future Volume (vph)	0	0	0	2444	0	0	1391	127	172	434	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.4			6.4			6.0	
Lane Util. Factor				0.91			0.91			0.97	
Frt				1.00			0.99			0.98	
Flt Protected				1.00			1.00			0.96	
Satd. Flow (prot)				4730			4746			3295	
Flt Permitted				1.00			1.00			0.96	
Satd. Flow (perm)				4730			4746			3295	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.92	0.92	0.94	0.79	0.88	0.83	0.73
Adj. Flow (vph)	0	0	0	2573	0	0	1480	161	195	523	104
RTOR Reduction (vph)	0	0	0	0	0	0	7	0	0	16	0
Lane Group Flow (vph)	0	0	0	2573	0	0	1634	0	0	806	0
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%	4%	5%	1%	2%	1%
Turn Type				NA			NA		Perm	Prot	
Protected Phases				6			2			4	
Permitted Phases									4		
Actuated Green, G (s)				111.0			111.0			46.6	
Effective Green, g (s)				111.0			111.0			46.6	
Actuated g/C Ratio				0.65			0.65			0.27	
Clearance Time (s)				6.4			6.4			6.0	
Vehicle Extension (s)				3.0			3.0			3.0	
Lane Grp Cap (vph)				3088			3098			903	
v/s Ratio Prot				c0.54			0.34				
v/s Ratio Perm										0.24	
v/c Ratio				0.83			0.53			0.89	
Uniform Delay, d1				22.5			15.6			59.3	
Progression Factor				1.00			1.00			1.00	
Incremental Delay, d2				2.8			0.6			11.1	
Delay (s)				25.3			16.3			70.4	
Level of Service				C			B			E	
Approach Delay (s)	0.0			25.3			16.3			70.4	
Approach LOS	A			C			B			E	

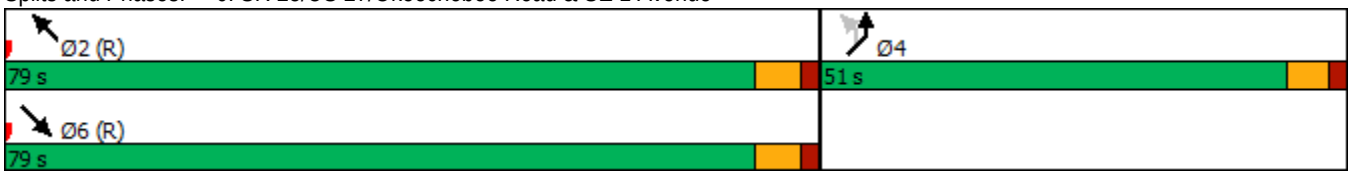
Intersection Summary			
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

Lane Group	SET	NWT	NEL
Lane Configurations			
Traffic Volume (vph)	1497	1448	385
Future Volume (vph)	1497	1448	385
Lane Group Flow (vph)	1593	1702	734
Turn Type	NA	NA	Prot
Protected Phases	6	2	4
Permitted Phases			
Detector Phase	6	2	4
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	27.4	27.4	27.0
Total Split (s)	79.0	79.0	51.0
Total Split (%)	60.8%	60.8%	39.2%
Yellow Time (s)	4.4	4.4	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	C-Max	C-Max	None
v/c Ratio	0.53	0.56	0.83
Control Delay	14.0	14.3	51.7
Queue Delay	3.1	0.0	0.0
Total Delay	17.1	14.3	51.7
Queue Length 50th (ft)	250	272	289
Queue Length 95th (ft)	336	365	312
Internal Link Dist (ft)	284	143	265
Turn Bay Length (ft)			
Base Capacity (vph)	3015	3055	1165
Starvation Cap Reductn	1286	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.92	0.56	0.63

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: SR 25/US 27/Okeechobee Road & SE 1 Avenue



SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

Movement	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR	NEL2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	0	0	0	1497	0	0	1448	106	157	385	69
Future Volume (vph)	0	0	0	1497	0	0	1448	106	157	385	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.4			6.4			6.0	
Lane Util. Factor				0.91			0.91			0.97	
Frt				1.00			0.99			0.98	
Flt Protected				1.00			1.00			0.96	
Satd. Flow (prot)				4686			4738			3315	
Flt Permitted				1.00			1.00			0.96	
Satd. Flow (perm)				4686			4738			3315	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.92	0.92	0.92	0.83	0.85	0.85	0.72
Adj. Flow (vph)	0	0	0	1593	0	0	1574	128	185	453	96
RTOR Reduction (vph)	0	0	0	0	0	0	6	0	0	21	0
Lane Group Flow (vph)	0	0	0	1593	0	0	1696	0	0	713	0
Heavy Vehicles (%)	2%	2%	2%	7%	2%	2%	5%	0%	1%	1%	1%
Turn Type				NA			NA		Perm	Prot	
Protected Phases				6			2			4	
Permitted Phases									4		
Actuated Green, G (s)				83.6			83.6			34.0	
Effective Green, g (s)				83.6			83.6			34.0	
Actuated g/C Ratio				0.64			0.64			0.26	
Clearance Time (s)				6.4			6.4			6.0	
Vehicle Extension (s)				3.0			3.0			3.0	
Lane Grp Cap (vph)				3013			3046			867	
v/s Ratio Prot				0.34			c0.36				
v/s Ratio Perm										0.21	
v/c Ratio				0.53			0.56			0.82	
Uniform Delay, d1				12.5			12.9			45.2	
Progression Factor				1.00			1.00			1.00	
Incremental Delay, d2				0.7			0.7			6.3	
Delay (s)				13.2			13.6			51.5	
Level of Service				B			B			D	
Approach Delay (s)	0.0			13.2			13.6			51.5	
Approach LOS	A			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

Lane Group	SET	NWT	NEL
Lane Configurations			
Traffic Volume (vph)	1858	2181	555
Future Volume (vph)	1858	2181	555
Lane Group Flow (vph)	2020	2440	1071
Turn Type	NA	NA	Prot
Protected Phases	6	2	4
Permitted Phases			
Detector Phase	6	2	4
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	27.4	27.4	27.0
Total Split (s)	123.0	123.0	57.0
Total Split (%)	68.3%	68.3%	31.7%
Yellow Time (s)	4.4	4.4	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	C-Max	C-Max	None
v/c Ratio	0.63	0.78	1.11
Control Delay	20.1	24.7	121.7
Queue Delay	47.9	0.0	0.0
Total Delay	68.0	24.7	121.7
Queue Length 50th (ft)	501	717	~735
Queue Length 95th (ft)	542	768	#875
Internal Link Dist (ft)	284	143	265
Turn Bay Length (ft)			
Base Capacity (vph)	3184	3132	961
Starvation Cap Reductn	1442	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.16	0.78	1.11

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 0 (0%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 25/US 27/Okeechobee Road & SE 1 Avenue

SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

Movement	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR	NEL2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	0	0	0	1858	0	0	2181	114	242	555	64
Future Volume (vph)	0	0	0	1858	0	0	2181	114	242	555	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.4			6.4			6.0	
Lane Util. Factor				0.91			0.91			0.97	
Frt				1.00			0.99			0.99	
Flt Protected				1.00			1.00			0.96	
Satd. Flow (prot)				4916			4830			3342	
Flt Permitted				1.00			1.00			0.96	
Satd. Flow (perm)				4916			4830			3342	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.79	0.61	0.94	0.76
Adj. Flow (vph)	0	0	0	2020	0	0	2296	144	397	590	84
RTOR Reduction (vph)	0	0	0	0	0	0	4	0	0	15	0
Lane Group Flow (vph)	0	0	0	2020	0	0	2436	0	0	1056	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	1%	0%	1%	2%
Turn Type				NA			NA		Perm	Prot	
Protected Phases				6			2			4	
Permitted Phases									4		
Actuated Green, G (s)				116.6			116.6			51.0	
Effective Green, g (s)				116.6			116.6			51.0	
Actuated g/C Ratio				0.65			0.65			0.28	
Clearance Time (s)				6.4			6.4			6.0	
Vehicle Extension (s)				3.0			3.0			3.0	
Lane Grp Cap (vph)				3184			3128			946	
v/s Ratio Prot				0.41			c0.50				
v/s Ratio Perm										0.32	
v/c Ratio				0.63			0.78			1.12	
Uniform Delay, d1				19.0			22.5			64.5	
Progression Factor				1.00			1.00			1.00	
Incremental Delay, d2				1.0			2.0			66.6	
Delay (s)				19.9			24.5			131.1	
Level of Service				B			C			F	
Approach Delay (s)	0.0			19.9			24.5			131.1	
Approach LOS	A			B			C			F	

Intersection Summary			
HCM 2000 Control Delay	43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

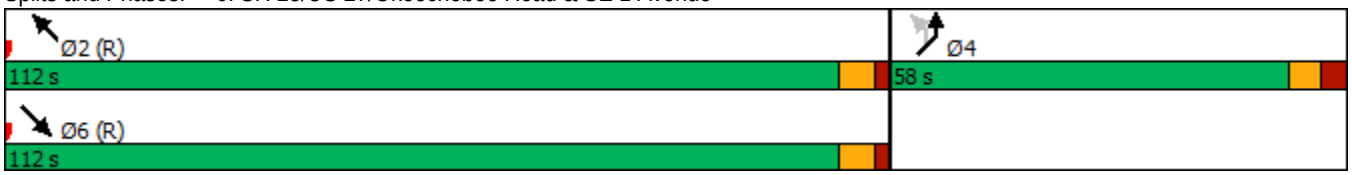
SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

Lane Group	SET	NWT	NEL
Lane Configurations			
Traffic Volume (vph)	2444	1391	434
Future Volume (vph)	2444	1391	434
Lane Group Flow (vph)	2573	1641	822
Turn Type	NA	NA	Prot
Protected Phases	6	2	4
Permitted Phases			
Detector Phase	6	2	4
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	27.4	27.4	28.6
Total Split (s)	112.0	112.0	58.0
Total Split (%)	65.9%	65.9%	34.1%
Yellow Time (s)	4.4	4.4	4.0
All-Red Time (s)	2.0	2.0	3.6
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	7.6
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	C-Max	C-Max	None
v/c Ratio	0.84	0.53	0.90
Control Delay	27.4	17.2	71.9
Queue Delay	46.8	0.0	0.0
Total Delay	74.2	17.2	71.9
Queue Length 50th (ft)	795	348	444
Queue Length 95th (ft)	904	408	461
Internal Link Dist (ft)	284	143	265
Turn Bay Length (ft)			
Base Capacity (vph)	3056	3072	992
Starvation Cap Reductn	1000	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.25	0.53	0.83

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 0 (0%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 6: SR 25/US 27/Okeechobee Road & SE 1 Avenue



SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

Movement	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR	NEL2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	0	0	0	2444	0	0	1391	127	172	434	76
Future Volume (vph)	0	0	0	2444	0	0	1391	127	172	434	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.4			6.4			7.6	
Lane Util. Factor				0.91			0.91			0.97	
Frt				1.00			0.99			0.98	
Flt Protected				1.00			1.00			0.96	
Satd. Flow (prot)				4730			4746			3295	
Flt Permitted				1.00			1.00			0.96	
Satd. Flow (perm)				4730			4746			3295	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.92	0.92	0.94	0.79	0.88	0.83	0.73
Adj. Flow (vph)	0	0	0	2573	0	0	1480	161	195	523	104
RTOR Reduction (vph)	0	0	0	0	0	0	7	0	0	16	0
Lane Group Flow (vph)	0	0	0	2573	0	0	1634	0	0	806	0
Heavy Vehicles (%)	2%	2%	2%	6%	2%	2%	4%	5%	1%	2%	1%
Turn Type				NA			NA		Perm	Prot	
Protected Phases				6			2			4	
Permitted Phases									4		
Actuated Green, G (s)				109.9			109.9			46.1	
Effective Green, g (s)				109.9			109.9			46.1	
Actuated g/C Ratio				0.65			0.65			0.27	
Clearance Time (s)				6.4			6.4			7.6	
Vehicle Extension (s)				3.0			3.0			3.0	
Lane Grp Cap (vph)				3057			3068			893	
v/s Ratio Prot				c0.54			0.34				
v/s Ratio Perm										0.24	
v/c Ratio				0.84			0.53			0.90	
Uniform Delay, d1				23.3			16.2			59.8	
Progression Factor				1.00			1.00			1.00	
Incremental Delay, d2				3.0			0.7			12.3	
Delay (s)				26.3			16.9			72.0	
Level of Service				C			B			E	
Approach Delay (s)	0.0			26.3			16.9			72.0	
Approach LOS	A			C			B			E	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

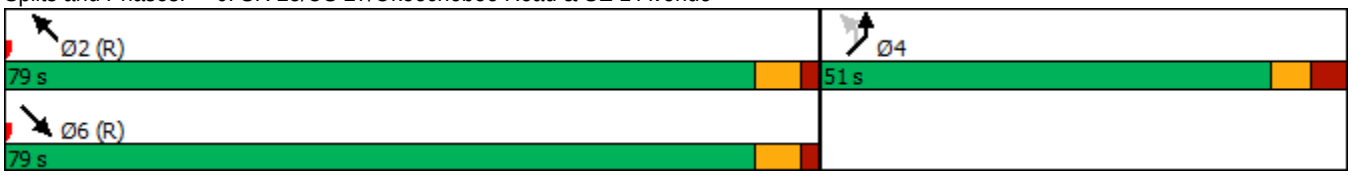
SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

Lane Group	SET	NWT	NEL
Lane Configurations			
Traffic Volume (vph)	1497	1448	385
Future Volume (vph)	1497	1448	385
Lane Group Flow (vph)	1593	1702	734
Turn Type	NA	NA	Prot
Protected Phases	6	2	4
Permitted Phases			
Detector Phase	6	2	4
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	27.4	27.4	28.6
Total Split (s)	79.0	79.0	51.0
Total Split (%)	60.8%	60.8%	39.2%
Yellow Time (s)	4.4	4.4	4.0
All-Red Time (s)	2.0	2.0	3.6
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	7.6
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	C-Max	C-Max	None
v/c Ratio	0.54	0.57	0.83
Control Delay	14.8	15.1	52.0
Queue Delay	3.7	0.0	0.0
Total Delay	18.5	15.1	52.0
Queue Length 50th (ft)	259	283	290
Queue Length 95th (ft)	346	375	313
Internal Link Dist (ft)	284	143	265
Turn Bay Length (ft)			
Base Capacity (vph)	2961	3001	1125
Starvation Cap Reductn	1253	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.93	0.57	0.65

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: SR 25/US 27/Okeechobee Road & SE 1 Avenue



SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

Movement	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR	NEL2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	0	0	0	1497	0	0	1448	106	157	385	69
Future Volume (vph)	0	0	0	1497	0	0	1448	106	157	385	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.4			6.4			7.6	
Lane Util. Factor				0.91			0.91			0.97	
Frt				1.00			0.99			0.98	
Flt Protected				1.00			1.00			0.96	
Satd. Flow (prot)				4686			4738			3315	
Flt Permitted				1.00			1.00			0.96	
Satd. Flow (perm)				4686			4738			3315	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.92	0.92	0.92	0.83	0.85	0.85	0.72
Adj. Flow (vph)	0	0	0	1593	0	0	1574	128	185	453	96
RTOR Reduction (vph)	0	0	0	0	0	0	6	0	0	21	0
Lane Group Flow (vph)	0	0	0	1593	0	0	1696	0	0	713	0
Heavy Vehicles (%)	2%	2%	2%	7%	2%	2%	5%	0%	1%	1%	1%
Turn Type				NA			NA		Perm	Prot	
Protected Phases				6			2			4	
Permitted Phases									4		
Actuated Green, G (s)				82.2			82.2			33.8	
Effective Green, g (s)				82.2			82.2			33.8	
Actuated g/C Ratio				0.63			0.63			0.26	
Clearance Time (s)				6.4			6.4			7.6	
Vehicle Extension (s)				3.0			3.0			3.0	
Lane Grp Cap (vph)				2962			2995			861	
v/s Ratio Prot				0.34			c0.36				
v/s Ratio Perm										0.21	
v/c Ratio				0.54			0.57			0.83	
Uniform Delay, d1				13.3			13.7			45.4	
Progression Factor				1.00			1.00			1.00	
Incremental Delay, d2				0.7			0.8			6.6	
Delay (s)				14.0			14.5			51.9	
Level of Service				B			B			D	
Approach Delay (s)	0.0			14.0			14.5			51.9	
Approach LOS	A			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

Queues
6: SR 25/US 27/Okeechobee Road & SE 1 Avenue

06/23/2021

Lane Group	SET	NWT	NEL
Lane Configurations			
Traffic Volume (vph)	1858	2181	555
Future Volume (vph)	1858	2181	555
Lane Group Flow (vph)	2020	2440	1071
Turn Type	NA	NA	Prot
Protected Phases	6	2	4
Permitted Phases			
Detector Phase	6	2	4
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	27.4	27.4	28.6
Total Split (s)	123.0	123.0	57.0
Total Split (%)	68.3%	68.3%	31.7%
Yellow Time (s)	4.4	4.4	4.0
All-Red Time (s)	2.0	2.0	3.6
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	7.6
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	C-Max	C-Max	None
v/c Ratio	0.63	0.78	1.15
Control Delay	20.1	24.7	134.5
Queue Delay	47.9	0.0	0.0
Total Delay	68.0	24.7	134.5
Queue Length 50th (ft)	501	717	~754
Queue Length 95th (ft)	542	768	#894
Internal Link Dist (ft)	284	143	265
Turn Bay Length (ft)			
Base Capacity (vph)	3184	3132	932
Starvation Cap Reductn	1442	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.16	0.78	1.15

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 0 (0%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 25/US 27/Okeechobee Road & SE 1 Avenue

SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

Movement	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR	NEL2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	0	0	0	1858	0	0	2181	114	242	555	64
Future Volume (vph)	0	0	0	1858	0	0	2181	114	242	555	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.4			6.4			7.6	
Lane Util. Factor				0.91			0.91			0.97	
Frt				1.00			0.99			0.99	
Flt Protected				1.00			1.00			0.96	
Satd. Flow (prot)				4916			4830			3342	
Flt Permitted				1.00			1.00			0.96	
Satd. Flow (perm)				4916			4830			3342	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.79	0.61	0.94	0.76
Adj. Flow (vph)	0	0	0	2020	0	0	2296	144	397	590	84
RTOR Reduction (vph)	0	0	0	0	0	0	4	0	0	15	0
Lane Group Flow (vph)	0	0	0	2020	0	0	2436	0	0	1056	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	1%	0%	1%	2%
Turn Type				NA			NA		Perm	Prot	
Protected Phases				6			2			4	
Permitted Phases									4		
Actuated Green, G (s)				116.6			116.6			49.4	
Effective Green, g (s)				116.6			116.6			49.4	
Actuated g/C Ratio				0.65			0.65			0.27	
Clearance Time (s)				6.4			6.4			7.6	
Vehicle Extension (s)				3.0			3.0			3.0	
Lane Grp Cap (vph)				3184			3128			917	
v/s Ratio Prot				0.41			c0.50				
v/s Ratio Perm										0.32	
v/c Ratio				0.63			0.78			1.15	
Uniform Delay, d1				19.0			22.5			65.3	
Progression Factor				1.00			1.00			1.00	
Incremental Delay, d2				1.0			2.0			80.7	
Delay (s)				19.9			24.5			146.0	
Level of Service				B			C			F	
Approach Delay (s)	0.0			19.9			24.5			146.0	
Approach LOS	A			B			C			F	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

SE: Okeechobee Road Eastbound
NW: Okeechobee Road Westbound
NE: SE 1 Avenue/S Hook Square

APPENDIX E – PRELIMINARY CONSTRUCTION COST ESTIMATE

Cost Estimate

Location:	**SR 25/OKEECHOBEE RD AT SE 1 AVE/S HOOK DRIVE**
Roadway Section:	**87090000**
Date:	**6/23/2021**
Produced By:	JS
QA/QC By:	KC

Pay Item	Description	Unit Measured	Avg. Unit Cost	Quantity	Total
0110 1 1	CLEARING & GRUBBING	LS	$ 5,000.00	1.00	$ 5,000.00
0522 2	CONCRETE SIDEWALK, 6"	SY	$ 64.26	15.00	$ 963.90
0630 2 12	CONDUIT, F&I, DIRECTIONAL BORE	LF	$ 19.68	50.00	$ 984.00
0632 7 1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, F&I	PI	$ 5,687.65	1.00	$ 5,687.65
0635 2 11	PULL & SPLICE BOX, F&I, 13" x 24"	EA	$ 694.40	4.00	$ 2,777.60
0646 1 12	ALUMINUM SIGNALS POLE, F&I PEDESTRIAN DETECTOR POST	EA	$ 1,333.33		$ -
0649 21 3	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 40'	EA	$ 53,308.46	2.00	$ 106,616.92
0649 26 3	STEEL MAST ARM ASSEMBLY, REMOVE, SHALLOW FOUNDATION- BOLT ON ATTACHMENT	EA	$ 2,313.61	2.00	$ 4,627.22
0650 1 14	TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY/ **WITH BACKPLATES**	AS	$ 959.02	6.00	$ 5,754.12
0653 1 11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	AS	$ 761.25	2.00	$ 1,522.50
0665 1 11	PEDESTRIAN DETECTOR, F&I, STANDARD	EA	$ 226.93	1.00	$ 226.93
0670 5400	TRAF CNTL ASSEM, MODIFY	AS	$ 1,815.95	1.00	$ 1,815.95
	DE-ENERGIZED TRANSMISSION/DISTRIBUTION LINES - NORTH SIDE	DAY	$ 6,500.00	3.00	$ 19,500.00
0700 5 21	INTERNALLY ILLUMINATED SIGN, F&I OVERHEAD MOUNT, UP TO 12 SF	EA	$ 2,763.94	2.00	$ 5,527.88
0700 11261	ELECTRONIC DISPLAY SIGN,F&I GROUND MOUNT- SOLAR POWE, SPEED FEEDBACK W/FLASHING BEACON, UP TO 12 SF	AS	$ 12,558.50	2.00	$ 25,117.00
0700 3201	SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF	EA	$ 632.91	3.00	$ 1,898.73
0711 11125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR CROSSWALK	LF	$ 3.52	225.00	$ 792.00
0715 1 12	LIGHTING CONDUCTORS, F&I, INSUL,NO.8-6	LF	$ 1.95	57.00	$ 111.15
0715 5 31	LUMINAIRE & BRACKET ARM- ALUMINUM, F&I NEW LUMINAIRE AND ARM ON NEW/EXISTING POLE	EA	$ 1,928.45	1.00	$ 1,928.45

	Roadway	$ 5,963.90
	Signing and Pavement Markings	$ 33,335.61
	Signalization	$ 149,512.89
	Lighting	$ 2,039.60
	Pre-Total	**$ 190,852.00**
20%	Maintenance of Traffic (MOT)	$ 38,170.40
10%	Mobilization	$ 19,085.20
32%	Preliminary Engineering	$ 61,072.64
18%	Construction Engineering & Inspection	$ 34,353.36
	Project Contigency	$ 50,000.00
	Grand-Total	**$ 393,533.60**

APPENDIX F – BENEFIT/COST ANALYSIS CALCULATION

FORM 511-09

CONCEPTUAL ALTERNATIVE SAFETY 7/1/1991

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SAFETY OFFICE ANNUAL BENEFIT COST ANALYSIS

1	SUBMITTED BY	**CH Perez & Associates Inc**			WPA NO.	**N/A**		SAFETY PRIORITY	
2	DATE SUBMITTED	**June 23, 2021**			ENVIRONMENTAL STUDY				
3	PROJECT NO.	**FM: 250650-5-32-01 - C-AA02 - TWO 25**						SKID (I.D.)	**N/A**
4	ALTERNATIVE NO.	**1**			SN	**NA**		SPEED	**40**
6	DISTRICT	**VI**	COUNTY **87**	SECTION **87090000**	STATE ROAD	**25**		U.S. ROAD	**27**
7	BEGINNING MILE POST	**13.720**	ENDING MILE POST **13.763**		LENGTH	**0.043**	miles	NODE	-

8 DESCRIPTION OF LOCATION/FACILITY TYPE **SR 25/OKEECHOBEE ROAD/US 27 AT SE 1 AVENUE/S HOOK DRIVE AND LINDSEY COURT**

9 CAUSE OF CRASH PROBLEMS (LIST AND DISCUSS)

Pattern of Sideswipe Rear-End, Angle, Fixed-Object, and Nightime crashes
Limited visibility to the signal heads, Speeding, Red-light running

10 PROPOSED IMPROVEMENTS (LIST AND DISCUSS)

- **Install an additional signal head facing the eastbound and westbound approaches.**
- **Install rigid retroreflective backplates facing the eastbound and westbound approaches.**
- **Install an internally illuminated street name sign facing the eastbound approach.**
- **Install flexible retroreflective backplates facing the northbound approach.**
- **Install speed feedback signs facing the westbound approach.**
- **Enforcement of speeding and red-light running**
- **Increase the All Red-Clearance Interval from 2 to 2.6 for northbound traffic.**

		2015	2016	2018	AVG.
11	NO. OF CRASHES	**24**	**28**	**26**	**26.0**
12	NO. CRASHES POTENTIALLY REDUCED	**3.0**	**3.5**	**3.3**	**3.3**

14 **CRASH INFORMATION FOR FACILITY**

COST/CRASH	$	123,598
CRASH CLEANUP	$	100
INTEREST RATE		4%

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TYPE OF CRASH	NUMBER OF CRASHES (3-year)	CRASHES TO BE REDUCED
Rear End	35	5.21
Head On	0	0.00
Angle	12	1.79
Left Turn	0	0.00
Right Turn	4	0.00
Sideswipe	17	2.53
Backed Into	0	0.00
Parked Car	0	0.00
Pedestrian	0	0.00
Pedalcycle	0	0.00
Fixed Object	10	0.25
Ran into Water	0	0.00
Overturned	0	0.00
Other	0	0.00
Total Crashes	78	9.78
Crashes Per Year	26.00	**3.26**
Wet/Slippery	18	0.00
Night Time	23	0.00

15 **ANNUAL COST OF IMPROVEMENTS**

	TYPE	COST	LIFE	CRF	ANNUAL COST
A.	R-O-W	$ -	20	0.0736	$ -
B.	P.E.C.E.I.	$ 145,426	15	0.0899	$ 13,079.77
C.	LIGHTING	$ 2,040	15	0.0899	$ 183.44
D.	ROADWAY	$ 63,220	20	0.0736	$ 4,651.80
E.	SIGNING/PAVEMENT	$ 33,336	15	0.0899	$ 2,998.24
F.	SIGNALS	$ 149,513	15	0.0899	$ 13,447.35
G.	SUBTOTAL	$ 393,534			$ 34,360.60
H.	CHANGE IN MAINTENANCE				$ -
I.	CRASH CLEANUP				$ (325.89)
J.	**TOTAL**				**$ 34,034.71**

16 **BENEFITS**

A.	CRASH REDUCTION	3.26	crash @	$ 123,598	$ 402,794.35
B.	DELAY SAVINGS	0.00	veh-hrs @	$ -	$ -
	SUB TOTAL ANNUAL BENEFIT				**$ 402,794.35**
C.	OTHER BENEFIT	0		$ -	$ -
D.	**TOTAL ANNUAL BENEFIT**				**$ 402,794.35**

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NET BENEFIT/COST	$ 402,794.35	$ 34,034.71	**11.8**
SAFETY BENEFIT/COST	$ 402,794.35	$ 34,034.71	**11.8**

PREPARED BY **JS** APPROVED BY **KC** DATE **06/23/2021**

COMMENTS/CRASH REDUCTION METHOD:

Crash Modification Factors (CMF) Clearinghouse (FHWA)
FDOT Traffic Safety Portal

HIGH CRASH LISTINGS:

.

Project Name	**SR 25/OKEECHOBEE ROAD/US 27 AT SE 1 AVENUE/S HOOK DRIVE AND**
Current Year	2021
Project Completion	2024
Project Life	15
Project Category	• Install an additional signal head facing the eastbound and westbound approaches. • Install rigid retroreflective backplates facing the eastbound and westbound approaches. • Install an internally illuminated street name sign facing the eastbound approach. • Install flexible retroreflective backplates facing the northbound approach. • Install speed feedback signs facing the westbound approach. • Enforcement of speeding and red-light running • Increase the All Red-Clearance Interval from 2 to 2.6 for northbound
Discount Rate	0.07
Project Ends	2038

Estimated Reduction in Crashes = 3.25890666666667 crashes/year; Total Annual benefit = $402,794; Cost Per Crash $123,598

Year #	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Calendar Year	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Estimated Cost	$393,534														
Estimated Benefits		402,794	402,794	402,794	402,794	402,794	402,794	402,794	402,794	402,794	402,794	402,794	402,794	402,794	402,794
Calculation															
Discount Factor	1.000	0.935	0.873	0.816	0.763	0.713	0.666	0.623	0.582	0.544	0.508	0.475	0.444	0.415	0.388
Discounted Cost	-393,534	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discounted Benefits	0	376,443	351,816	328,800	307,290	287,187	268,399	250,840	234,430	219,093	204,760	191,365	178,846	167,145	156,211
NPV	**3,129,091.49**														

APPENDIX G – ERC COMMENTS AND RESPONSES

Submittal Report

Financial Project:	250650-5-32-01	Submittal Type:	SAFETY REPORT
Submittal Phase:	OTHER	Submittal Staff Type:	CONSULTANT
Received Date:	5/20/2021	Response Due Date:	5/28/2021
Grace Period:	0	District:	SIXTH
Status:	OPEN	Create Date:	5/20/2021
Create User Id:	RD652NP	Last Update:	5/20/2021
		Last Update User Id:	RD652NP

Description:

250650-5: TWO 24 - SR 25 Okeechobee Rd at Lindsey Ct - Safety Study
Group: PRELIMINARY ENGINEERING Phase Review Type: Safety Study
Status: Submitted
Phase Initiation Date: 5/17/2021
Comments Due Date: 5/27/2021 Days Allowed for Review: 11
Review Meeting: 5/28/2021 5:00 PM to 5:00 PM @ No meeting necessary
Field Meeting:
Plans Format: Electronic
Comments: Please allow the consultant Keffler Castro (KCastro@chperez.com) to respond to comments.

Threads:

Name	Assignment	Due Date	Status	Comments
Alejandro Almaguer	REVIEWER	5/27/2021	ACTIVE	0
Alejandro Casals	LEAD REVIEWER	5/27/2021	ACTIVE	0
Alejandro Gomez	LEAD REVIEWER	5/27/2021	ACTIVE	0
Antonette Adams	LEAD REVIEWER	5/27/2021	ACTIVE	0
Arturo Gomez	REVIEWER	5/27/2021	ACTIVE	0
Barbara J Culhane	LEAD REVIEWER	5/27/2021	ACTIVE	0
Barbara Russell	REVIEWER	5/27/2021	ACTIVE	1

No	Status	Current Holder	Reference	Categories
19	RESPONSE SUBMITTED	Barbara Russell	General	MAINTENANCE

Created By	Created On	Version	Delegate For
Barbara Russell	5/27/2021	1	

If other mast arms will be replaced, please consider replacement of the mast arm at the NE corner due to impact damage. Coordinate with the D6 Structures Maintenance Department.

Keffler Castro	5/28/2021	1	

We'll evaluate/consider your recommendation.

Name	Assignment	Due Date	Status	Comments
Calvin Mason	LEAD REVIEWER	5/27/2021	ACTIVE	0

Carl Sandin	REVIEWER	5/27/2021	ACTIVE	0*

Name	Assignment	Due Date	Status	Comments
Carlos Benitez	REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
Carlos Perez	REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
Carlos Perez	REVIEWER	5/27/2021	ACTIVE	0*

Name	Assignment	Due Date	Status	Comments
Christa Cherry	REVIEWER	5/27/2021	ACTIVE	6

No	Status	Current Holder	Reference	Categories
20	COMMENT AGREED WITH			ENVIRONMENTAL PERMITS

Created By	Created On	Version	Delegate For
Christa Cherry	5/27/2021	1	

The project falls within the limits of the South Florida Water Management District (SFWMD) Environmental Resource Permit (ERP) No. 13-01410 -P. Based on a review of the recommended improvements, the work as proposed is exempt from state environmental resource permitting requirements. Please note that if the project scope changes and/or drainage retrofit activities, widening, or other activities are proposed at a later design phase, the project will require additional analysis to verify if it still meets exemption criteria.

Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
21	COMMENT AGREED WITH			ENVIRONMENTAL PERMITS

Created By	Created On	Version	Delegate For
Christa Cherry	5/27/2021	1	

The SFWMD C-6 Canal is adjacent to the proposed project area. The canal and associated right-of-way (R/W) should be shown and labeled on design plans. If work is proposed in the canal R/W, a SFWMD Right-of-Way Occupancy Use Permit may be required. If work is not to occur within the canal R/W, design plans should include the following note: "No staging or other activities shall occur adjacent to or within the existing SFWMD C-6 Canal right-of-way".

Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
22	COMMENT AGREED WITH			ENVIRONMENTAL PERMITS

Created By	Created On	Version	Delegate For
Christa Cherry	5/27/2021	1	

Based on a review of aerial imagery and the National Wetlands Inventory GIS data, the project area is adjacent to surface waters (SFWMD C-6 Canal). Due to the location and scope of the recommended improvements, no impacts to wetlands or surface waters are anticipated. Therefore, no federal environmental permits would be required for this project.

Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
23	COMMENT AGREED WITH			ENVIRONMENTAL PERMITS

Created By	Created On	Version	Delegate For
Christa Cherry	5/27/2021	1	

The proposed project area falls within the South Florida Urban Bat Area. Any tree impacts (removal, relocation, or trimming/pruning) will require coordination with the PLEMO office.

Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
24	COMMENT AGREED WITH			ENVIRONMENTAL PERMITS

Created By	Created On	Version	Delegate For
Christa Cherry	5/27/2021	1	

Roadway projects that occur wholly within existing State Highway System R/W are exempt from local and county environmental permitting requirements pursuant to Section 335.02, Florida Statutes.

Keffler Castro 5/28/2021 1

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
25	COMMENT AGREED WITH			ENVIRONMENTAL PERMITS

Created By	Created On	Version	Delegate For
Christa Cherry	5/27/2021	1	

Please contact me at Christa.Cherry@WGInc.com with any questions pertaining to environmental permits. Thank you.

Keffler Castro 5/28/2021 1

Comment Agreed & Closed

Name	Assignment	Due Date	Status	Comments
Christopher Tavella	REVIEWER	5/27/2021	ACTIVE	2

No	Status	Current Holder	Reference	Categories
11	COMMENT AGREED WITH		page 7 of the pdf	SIGNALIZATION,STRUCTURES

Created By	Created On	Version	Delegate For
Christopher Tavella	5/27/2021	1	

The first two bullets: "Install an additional signal head facing the eastbound and westbound approaches." and "Install flexible retroreflective backplates…"
If the recommendation was ONLY to install one new traffic signal on each mast arm facing EB and WB, then structural analysis would be required and each mast arm might pass current FDOT criteria. However, based on the second bullet, the recommendation is to also have backplates. We know from previous attempts with structural calculations that existing Miami-Dade County style mast arm will NOT pass when flexible backplates are retrofitted. Therefore, we discourage spending the time and money to perform such calculations.
In conclusion, I suggest that if both improvements are truly desired (backplates and new traffic signal), then clarify/update the report to just propose the two mast arms (with rigid backplates) and remove any language about conducting structural analysis of the existing mast arms.

Keffler Castro 5/28/2021 1

Agree. Based on our analysis, the additional signal heads and backplates are necessary. We'll revise the report to propose the two mast arms with the additional signal heads and rigid backplates, and remove the text about the structural analysis, as per your recommendation. Thank you,

No	Status	Current Holder	Reference	Categories
12	COMMENT AGREED WITH		pages 7 & 86 of the pdf	SIGNALIZATION,STRUCTURES

Created By	Created On	Version	Delegate For
Christopher Tavella	5/27/2021	1	

The existing WB mast arm in the NW corner of the intersection currently has a light luminaire and arm. If this existing mast arm is replaced with a new mast arm, then provide language in the report to address replacing the luminaire possibly attached to the new mast arm or a new standalone light pole. Also, the appropriate 715-XXX-XXX lighting pay item(s) should be added to the cost estimate.

Keffler Castro 5/28/2021 1

Agree. We'll follow your recommendation.

Name	Assignment	Due Date	Status	Comments
Cristina Morales	IN-HOUSE PROJECT MANAGER	5/27/2021	ACTIVE	0
Diana Peralta	REVIEWER	5/27/2021	ACTIVE	0*
Dionne Richardson	LEAD REVIEWER	5/27/2021	ACTIVE	0*
Elisa Azcona	REVIEWER	5/27/2021	ACTIVE	0

Erki Suarez	LEAD REVIEWER	5/27/2021	ACTIVE	0
Name	**Assignment**	**Due Date**	**Status**	**Comments**
Felipe Gonzalez	REVIEWER	5/27/2021	ACTIVE	0
Name	**Assignment**	**Due Date**	**Status**	**Comments**
Felix Hernandez	LEAD REVIEWER	5/27/2021	ACTIVE	0
Name	**Assignment**	**Due Date**	**Status**	**Comments**
Gustavo Firpi	REVIEWER	5/27/2021	ACTIVE	0
Name	**Assignment**	**Due Date**	**Status**	**Comments**
Hailing Zhang	LEAD REVIEWER	5/27/2021	ACTIVE	0
Name	**Assignment**	**Due Date**	**Status**	**Comments**
Hector Hartmann	LEAD REVIEWER	5/27/2021	ACTIVE	0*
Name	**Assignment**	**Due Date**	**Status**	**Comments**
Javier Hurtado	REVIEWER	5/27/2021	ACTIVE	0
Name	**Assignment**	**Due Date**	**Status**	**Comments**
Javier Rodriguez	LEAD REVIEWER	5/27/2021	ACTIVE	0*
Name	**Assignment**	**Due Date**	**Status**	**Comments**
Jinyan Lu	LEAD REVIEWER	5/27/2021	ACTIVE	0
Name	**Assignment**	**Due Date**	**Status**	**Comments**
JOHN MCWILLIAMS	REVIEWER	5/27/2021	ACTIVE	1

No	**Status**	**Current Holder**	**Reference**	**Categories**
3	COMMENT AGREED WITH			OTHER

Created By	**Created On**	**Version**	**Delegate For**
JOHN MCWILLIAMS	5/26/2021	1	

A Project Level Context Classification (PLCC) review was conducted for this study/project and it was determined no changes to the CC are warranted. Please see the attached memo for the project file.

Keffler Castro	5/28/2021	1	

Thank you for your review,

Name	**Assignment**	**Due Date**	**Status**	**Comments**
Judy Solaun-Gonzalez	LEAD REVIEWER	5/27/2021	ACTIVE	0
Name	**Assignment**	**Due Date**	**Status**	**Comments**
Keffler Castro	CONSULTANT PROJECT MANAGER	5/28/2021	ACTIVE	0
Name	**Assignment**	**Due Date**	**Status**	**Comments**
Ken Jeffries	LEAD REVIEWER	5/27/2021	ACTIVE	0
Name	**Assignment**	**Due Date**	**Status**	**Comments**
Kevin Might	REVIEWER	5/27/2021	ACTIVE	1

No	**Status**	**Current Holder**	**Reference**	**Categories**
2	COMMENT AGREED WITH		11	ACCESS MANAGEMENT

Created By	**Created On**	**Version**	**Delegate For**
Kevin Might	5/26/2021	1	

Report calls for canopy trimming of trees. Trees should be trimmed per FDOT Standard Plans index 110-100 to maintain health, appearance, and structure of the trees.

Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

Name	**Assignment**	**Due Date**	**Status**	**Comments**

Kirenia Borbolla	LEAD REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
Krish Dial	REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
KRISTI SAVIO	REVIEWER	5/27/2021	ACTIVE	6

No	Status	Current Holder	Reference	Categories
5	COMMENT AGREED WITH		General	ENVIRONMENTAL MANAGEMENT OFF.

Created By	Created On	Version	Delegate For
KRISTI SAVIO	5/27/2021	1	

Based on a review of the proposed project described within the Draft May 2021 Traffic Safety Study, the class of action has been determined to be a Non-Major State Action. No response is necessary. This comment is for documentation purposes only.

Keffler Castro	5/28/2021	1	

Thank you for your review.

No	Status	Current Holder	Reference	Categories
6	COMMENT AGREED WITH		General	ENVIRONMENTAL MANAGEMENT OFF.

Created By	Created On	Version	Delegate For
KRISTI SAVIO	5/27/2021	1	

Any changes in the project scope, limits, and/or design may impact the effect determinations and, subsequently, the Class of Action. We highly recommend that the project manager keep the D6 Environment Section abreast of any significant design changes and/or scope additions as early in the design phase as possible to avoid any potential delays to the project schedule.

Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
7	RESPONSE ACCEPTED		General	ENVIRONMENTAL MANAGEMENT OFF.

Created By	Created On	Version	Delegate For
KRISTI SAVIO	5/27/2021	1	

Please be aware that this project is within the South Florida Urban Bat Area (consultation area) for the Florida bonneted bat, which is listed as an endangered species. A field review would be warranted to determine whether roosting or foraging habitat exists within the project corridor for any tree and/or bridge impacts, and coordination with the U.S. Fish and Wildlife Service may be required. PLEMO will conduct the necessary field reviews and agency coordination. Are any tree impacts anticipated for this project? The ERDA currently assumes there are no tree impacts. If tree impacts are anticipated, the ERDA will need to be updated.

Keffler Castro	5/28/2021	1	

Agree. The improvements proposed under this study don't impact any tree.

KRISTI SAVIO	6/1/2021	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
8	RESPONSE ACCEPTED		General	ENVIRONMENTAL MANAGEMENT OFF.

Created By	Created On	Version	Delegate For
KRISTI SAVIO	5/27/2021	1	

Will any work potentially occur outside of the existing FDOT ROW for this project?

Keffler Castro	5/28/2021	1	

All work will occur inside of the existing FDOT ROW. Thank you,

KRISTI SAVIO	6/1/2021	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
9	COMMENT AGREED WITH		General	ENVIRONMENTAL MANAGEMENT OFF.

Created By	Created On	Version	Delegate For
KRISTI SAVIO	5/27/2021	1	

Please include the following Environmental Resource Desktop Analysis (ERDA) as an Appendix of the Traffic Safety Study Report.

Keffler Castro	5/28/2021	1	

Agree. We'll include the Environmental Resource Desktop Analysis (ERDA) as an Appendix.

No	Status	Current Holder	Reference	Categories
10	COMMENT AGREED WITH		General	ENVIRONMENTAL MANAGEMENT OFF.

Created By	Created On	Version	Delegate For
KRISTI SAVIO	5/27/2021	1	

Should you have any questions or require clarification regarding these environmental comments, please contact Kristi Savio at 813-636-2604/ kristi.savio@rsandh.com.

Keffler Castro	5/28/2021	1	

We will. Thank you,

Name	Assignment	Due Date	Status	Comments
Leonard Salazar	LEAD REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
Luis Lopez	REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
Marvin Guillen	REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
Mauricio Gomez	LEAD REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
Max Imberman	REVIEWER	5/27/2021	ACTIVE	1

No	Status	Current Holder	Reference	Categories
4	COMMENT AGREED WITH		General Comment	CULTURAL RESOURCES

Created By	Created On	Version	Delegate For
Max Imberman	5/27/2021	1	

My comment is contained within Rudy Westerman's comment.

Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

Name	Assignment	Due Date	Status	Comments
Michael Miller	REVIEWER	5/27/2021	ACTIVE	1

No	Status	Current Holder	Reference	Categories
1	COMMENT AGREED WITH			CONTAMINATION

Created By	Created On	Version	Delegate For
Michael Miller	5/25/2021	1	

There are known contaminated sites within a 500-foot radius of the project corridor. However, due to the scope and location of the proposed improvements, no contamination impacts are anticipated.

If drainage is added to the project scope, additional evaluation for contamination impacts may be required.

Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

Name	Assignment	Due Date	Status	Comments
Mikhail Dubrovsky	LEAD REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
NAGUL PRABAHARAN	REVIEWER	5/27/2021	ACTIVE	0*

Name	Assignment	Due Date	Status	Comments
Osvaldo Diaz	REVIEWER	5/27/2021	ACTIVE	6

No	Status	Current Holder	Reference	Categories
13	COMMENT AGREED WITH			SIGNING AND MARKING

Created By	Created On	Version	Delegate For
Osvaldo Diaz	5/27/2021	1	

Considering recommending upgrading midblock crosswalk, at west side of the intersection to high-emphasis crosswalk.

Created By	Created On	Version	Delegate For
Keffler Castro	5/28/2021	1	

Agree. We'll revise the report as follows:

• Upgrade the crosswalk at the east leg of Hialeah Drive to high emphasis. This is recommended based on the high pedestrian activity observed during the field reviews.

No	Status	Current Holder	Reference	Categories
14	RESPONSE SUBMITTED	Osvaldo Diaz		SIGNING AND MARKING

Created By	Created On	Version	Delegate For
Osvaldo Diaz	5/27/2021	1	

Considering recommending installing Pedestrian/Downward Diagonal Arrow (W11-2/ W16-7p) sign assemblies at midblock crosswalk for east and west approaches.

Created By	Created On	Version	Delegate For
Keffler Castro	5/28/2021	1	

We'll consider your recommendation.

No	Status	Current Holder	Reference	Categories
15	RESPONSE SUBMITTED	Osvaldo Diaz		SIGNING AND MARKING

Created By	Created On	Version	Delegate For
Osvaldo Diaz	5/27/2021	1	

Consider recommending Advance street name sign (Next Signal), on eastbound, on the median, in Okeechobee Rd, per TEM.

Created By	Created On	Version	Delegate For
Keffler Castro	5/28/2021	1	

We'll consider your recommendation.

No	Status	Current Holder	Reference	Categories
16	COMMENT AGREED WITH		Page 31	SIGNALIZATION

Created By	Created On	Version	Delegate For
Osvaldo Diaz	5/27/2021	1	

Figure No. 5. Considering recommending pedestal with pedestrian countdown signal head and push button at SW corner to cross Okeechobee RD.

Created By	Created On	Version	Delegate For
Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
17	COMMENT AGREED WITH		Page 31	SIGNALIZATION

Created By	Created On	Version	Delegate For
Osvaldo Diaz	5/27/2021	1	

Figure No. 5. Considering recommending pedestrian detectors (push buttons) on NE and NW corners to make north leg crosswalk actuated to cross SE 1st Ave.

Created By	Created On	Version	Delegate For
Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
18	COMMENT AGREED WITH		Page 31	SIGNALIZATION

Created By	Created On	Version	Delegate For
Osvaldo Diaz	5/27/2021	1	

Figure No. 5. Considering recommending replacing no standard push button on mast arm in NW corner.

Created By	Created On	Version	Delegate For
Keffler Castro	5/28/2021	1	

Agree. The pushbutton will be replaced/upgraded due to the replacement of the mast-arm facing WB; however, we'll add this improvement as a non-safety improvement (there was no pedestrian/bicycle crashes at that intersection). Thanks

Name	Assignment	Due Date	Status	Comments
Pablo Orozco	LEAD REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
Paola Baez	REVIEWER	5/27/2021	ACTIVE	0*

Name	Assignment	Due Date	Status	Comments
Patrick Marchant	LEAD REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
Phani Allu	REVIEWER	5/27/2021	ACTIVE	8

No	Status	Current Holder	Reference	Categories
26	COMMENT AGREED WITH		Page 4	TRAFFIC OPERATIONS

Created By	Created On	Version	Delegate For
Phani Allu	5/27/2021	1	

(editorial) Page 4, please ensure that the aerial photo is oriented correctly or provide a aerila specific north arrow. Also, adjust the label for Lindsey Court to be closer to the roadway.

Created By	Created On	Version	Delegate For
Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
27	COMMENT AGREED WITH		Page 5	TRAFFIC OPERATIONS

Created By	Created On	Version	Delegate For
Phani Allu	5/27/2021	1	

(editorial) Page 5: Please change PTMS “No. 8702000” to “No. 870200”.

Created By	Created On	Version	Delegate For
Keffler Castro	5/28/2021	1	

Agree. The text has been revised.

No	Status	Current Holder	Reference	Categories
28	COMMENT AGREED WITH		Page 5	TRAFFIC OPERATIONS

Created By	Created On	Version	Delegate For
Phani Allu	5/27/2021	1	

Page 5: From Florida Traffic Online, the 2019 AADT at PTMS Site No 878633 is 9,600. The report states the 2019 AADT is 22,000. Please verify and update, if needed.

Created By	Created On	Version	Delegate For
Keffler Castro	5/28/2021	1	

AGree. The report has been revised.

No	Status	Current Holder	Reference	Categories
29	COMMENT AGREED WITH		Page 23	TRAFFIC OPERATIONS

Created By	Created On	Version	Delegate For
Phani Allu	5/27/2021	1	

(editorial) Page 23: Please remove the highlight on the caption of the last picture to make the text legible.

Created By	Created On	Version	Delegate For
Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
30	COMMENT AGREED WITH		Page 29	TRAFFIC OPERATIONS

Created By	Created On	Version	Delegate For
Phani Allu	5/27/2021	1	

(editorial) Page 29: Please update the description under "Posted Speed Criteria" column in Table 6.

Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
31	COMMENT AGREED WITH		Appendix D	TRAFFIC OPERATIONS

Created By	Created On	Version	Delegate For
Phani Allu	5/27/2021	1	

(editorial) Appendix D: Please consider providing the signal timing input sheets from Synchro.

Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
32	COMMENT AGREED WITH		Appendix F	TRAFFIC OPERATIONS

Created By	Created On	Version	Delegate For
Phani Allu	5/27/2021	1	

Appendix F, NPV Sheet - please remove the estimated benefit before completion of the project and beyond the project life. In this particular case, it will be 2022, 2023, and 2039. Appropriate text and table within the report may also need to be updated.

Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
34	COMMENT AGREED WITH		Page 24	TRAFFIC OPERATIONS

Created By	Created On	Version	Delegate For
Phani Allu	5/27/2021	1	

Page 24, considering that nighttime crashes have been identified as a pattern, and that one of the probable countermeasures for fixed object crashes is improving lighting, it may be prudent to evaluate lighting at the intersection and including it as part of the recommended improvements.

Keffler Castro	5/28/2021	1	

Agree. One of the recommendations is to consider conducting a lighting study to determine if the lighting level along the north side of Okeechobee Road is adequate.

Name	Assignment	Due Date	Status	Comments
Phil Steinmiller	REVIEWER	5/27/2021	ACTIVE	0*

Name	Assignment	Due Date	Status	Comments
Rafael Diaz	REVIEWER	5/27/2021	ACTIVE	0*

Name	Assignment	Due Date	Status	Comments
Rodrigo Ley	LEAD REVIEWER	5/27/2021	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
Rudy Westerman	REVIEWER	5/27/2021	ACTIVE	1

No	Status	Current Holder	Reference	Categories
33	COMMENT AGREED WITH		General Comment	CULTURAL RESOURCES

Created By	Created On	Version	Delegate For
Rudy Westerman	5/27/2021	1	

The preliminary cultural review identified no archaeological or historic properties within the area recommended for improvements. The Planning and Environmental Management Office (PLEMO) will need to revisit this project during design once the full scope of work and funding information is available. This information is needed to confirm an area of potential effect (APE) and to determine the appropriate scope of coordination with state and/or federal agencies. If you have any questions or require clarification for these comments, please contact Rudy J. Westerman at 727-423-1939 / rudy_westerman@janus-research.com.

Created By	Created On	Version	Delegate For
Keffler Castro	5/28/2021	1	

Comment Agreed & Closed

Name	Assignment	Due Date	Status	Comments
Simon Gutierrez	REVIEWER	5/27/2021	ACTIVE	0
Simon Prilutsky	REVIEWER	5/27/2021	ACTIVE	0
Stefan Escanes	REVIEWER	5/27/2021	ACTIVE	0
Steven James	LEAD REVIEWER	5/27/2021	ACTIVE	0
Tiffany Gehrke	LEAD REVIEWER	5/27/2021	ACTIVE	0*
X Negrin	LEAD REVIEWER	5/27/2021	ACTIVE	0*
Xiomara Nunez	LEAD REVIEWER	5/27/2021	ACTIVE	0
Yimy Perez	REVIEWER	5/27/2021	ACTIVE	0
Zurelys Perez De Alejo	LEAD REVIEWER	5/27/2021	ACTIVE	0

MEMORANDUM

To: Kenneth Jeffries - FDOT District 6

From: John J. McWilliams, P.E. - Kimley-Horn and Associates, Inc.

Date: May 26, 2021

Subject: FM# 250650-5-32-01 – SR 25/Okeechobee Road/US 27 at SE 1 Avenue/S Hook Square and Lindsey Court Project Level Context Classification (PLCC) Review

Per your request, we have completed our Project Level Context Classification (PLCC) review for the above-mention project. Below is a summary of our findings:

Current Context Classification (CC) ▪ *C4-Urban General*
Project Level Context Classification (PLCC) Recommendation: ▪ ***C4-Urban General***

Context Classification Review

- ***C4-Urban General*** – **SR 25/Okeechobee Road/US 27 at SE 1 Avenue/S Hook Square and Lindsey Court**
  - Roadway network is highly connected to the north with a well-defined street grid pattern, but with limited connectivity to the south due to the presence of the canal
  - Block sizes are under 500 feet, consistent with C4-Urban General
  - Mix of uses including commercial, institutional, and residential
  - Building height between 1-3 floors with some taller buildings, suggesting high residential and employment density
  - Both detached and attached buildings with moderate parking lots located in the front, side, rear, on-street, and in parking garages
  - Shallow setbacks, typically under 20 feet

Conclusion

In summary, we determined that the existing CC of C4 within these project limits is appropriate. No changes are recommended at this time.

Florida Department of Transportation

RON DESANTIS
GOVERNOR

1000 NW 111th Avenue
Miami, Florida 33172-5800

KEVIN THIBAULT, P.E.
SECRETARY

The environmental review, consultation and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016, executed by FHWA and FDOT.

Date: May 25th, 2021

To: Christina Morales, Project Manager (FDOT)
Keffler Castro, Project Manager (C. H. Perez & Associates Consulting Engineers, Inc.)

From: Steven Craig James, RLA, District Environmental Administrator
Kristi Savio, Environmental Specialist II, RS&H Inc.

Subject: **ENVIRONMENTAL RESOURCES DESKTOP ANALYSIS**
Project Name: SR 25/Okeechobee Road/US 27 at SE 1st Avenue/ South Hook Square and Lindsey Court
Financial Management Number: 250650-5-32-01 TWO 24
Federal Aid Project No.: TBD
Limits: Okeechobee Road at SE 1st Avenue/ South Hook Square and Lindsey Court
County: Miami-Dade

The project is located along SR 25/Okeechobee Road/US 27 at SE 1st Avenue/ South Hook Square and Lindsey Court. The project is located within in Miami-Dade County primarily within the City of Hialeah. The proposed improvements appear to be limited to the existing right-of-way. The Traffic Safety Study completed for the above referenced project, dated May 2021, recommended the following improvements:

- Install an additional signal head facing the eastbound and westbound approaches. This improvement is recommended to improve the visibility of traffic signals. The implementation of these improvements will require the following:
    - Conduct a structural analysis of the eastbound and westbound mast arms to determine if the existing structures can withstand the additional dead load and wind load. We have assumed the replacement of the mast arms, but the structural analysis will confirm. Based on the information available (excluding survey), it appears that there is enough right-of-way to install the new mast arms.
    - There are transmission/distribution power lines and cable lines running along the north side of SR 25/Okeechobee Road. Given the height of the transmission/distribution power lines and cable lines, these will have to be de-energized to install the mast arm. Therefore, coordination with Florida Power and Light is necessary.
    - Reconstruct the curb ramps and sidewalk at the northwest corner.
    - Replace the pedestrian signal heads and sign attached to the mast arm facing westbound.
    - Coordination with the Miami-Dade County Traffic and Signal Division.

- Install flexible retroreflective backplates facing the eastbound and westbound approaches. This improvement is recommended to improve the visibility of traffic signals.
- Install speed feedback signs facing the westbound approach. This improvement is recommended to discourage excessive speeding within the study area and reduce crash frequency and severity. See Section 4.4.
- Enforcement. The Department should coordinate with the local Police Department to enforce speed limits and red-light running, especially involving eastbound and westbound vehicles. This improvement is recommended to discourage excessive speeding and red-light running at the intersection and reduce crash frequency and severity.
- Increase the All Red-Clearance Interval from 2 to 2.6 for northbound traffic. This improvement requires coordination with the Miami-Dade County Traffic and Signal Division.
- Given the conditions observed during the field review, the results of the operational analysis, and that the intersection is coordinated with Hialeah Drive, additional signal timing modifications were discarded.
- Consider conducting a lighting study to determine if the lighting level along the north side of Okeechobee Road is adequate.
- In addition, the following non-safety improvements are recommended.
  - Upgrade the west, north, and south leg crosswalks to high emphasis.
  - Install pedestrian countdown signal heads at the northwest corner (facing westbound).
  - Upgrade the crosswalk at the south leg of Hialeah Drive. This is recommended based on the high pedestrian activity observed during the field reviews.

Based on a review of the ProjectSuite Enterprise Editions (PSEE) financial module, the proposed project would not constitute a federal action. Therefore, the Class of Action for this project is anticipated to be a Non-Major State Action. The D6 Environment Section will continue to evaluate the project's Class of Action during future phases.

An Environmental Resources Desktop Analysis (ERDA) was prepared for the above-referenced project. This evaluation was prepared in support of the Traffic Safety Study by C. H. Perez & Associates Consulting Engineers, Inc. (CHP), Inc. The purpose of this evaluation is to identify environmental features and advise the design team of such features prior to preparation of initial engineering plans to facilitate compliance with the National Environmental Policy Act (NEPA). The design team must be aware that any required environmental surveys, environmental documents, and/or agency coordination identified in this memorandum will require time for completion. For example, certain environmental processes have a minimum agency review time (e.g., Cultural Resources Assessment Surveys, Section 4(f) coordination, wetland impact permitting, etc.) or must be conducted within specific months of the year (e.g., threatened and endangered species surveys). Therefore, the design team must coordinate with the D6 Environment Section as early in the design phase as possible, especially if any plans review phases will be skipped, and must consider any required environmental activities when preparing the design schedule.

The geographical information system (GIS) layers within the Efficient Transportation Decision Making (ETDM) Environmental Screening Tool (EST) are continually updated. Likewise, the anticipated determinations of effect are based on the project improvements as currently proposed/recommended. Any changes in project scope, limits, and/or design may impact the effect determinations and, subsequently, the Class of Action. We highly recommend that the project manager keep the D6 Environment Section abreast of any significant design changes and/or scope additions. The D6 Environment Section will continue to review the ETDM EST and the project

documents as the project advances through future phases.

The project was evaluated using the following sources:

- GIS review of natural, social, cultural, and physical resource layers including water quality, wetlands, wildlife and habitat, public lands and recreational areas, socioeconomic resources, historic and archaeological sites, and contamination, using the ETDM EST;
- Aerial imagery and street maps; and
- Review of C. H. Perez & Associates Consulting Engineers, Inc. (CHP), Inc. May 2021 Traffic Safety study.

Local Traffic Patterns

The project is located along SR 25/Okeechobee Road/US 27 at SE 1st Avenue/ South Hook Square and Lindsey Court. Temporary impacts to local traffic patterns are likely to occur during the implementation of the recommended improvements; however, there are no anticipated permanent adverse impacts to traffic patterns, property access, community cohesiveness, planned community growth, or land use associated with the proposed safety improvements.

Planned Community Growth/Land Use Patterns

Implementation of the proposed project would not affect capacity or alter land use. Any effects from these activities would be temporary in nature, and as such, are not expected to adversely impact planned community growth or planned land use patterns.

Property Access

Based on a review of the proposed project in the May 2021 Traffic Safety Study, no adverse effects to property access are expected as a result of the recommended activities. No relocation of businesses or residences will be required, and no right-of-way acquisition is proposed.

Air Quality and Noise

Based on the May 2021 Traffic Safety Study and the proposed improvements, the project does not involve construction of additional through lanes or auxiliary lanes that would increase capacity and does not change the horizontal or vertical alignment of the existing travel lanes.

Per Part 2, Chapter 19 (Air Quality) of the FDOT PD&E Manual dated July 1, 2020, no air quality analysis is required for the proposed improvements. Therefore, no long-term air quality impacts will occur as a result of the proposed project. The project is located in an area which is designated as in attainment for all of the National Ambient Air Quality Standards under the criteria provided in the Clean Air Act. Therefore, the Clean Air Act conformity requirements do not apply.

Per Part 2, Chapter 18 (Noise) of the FDOT PD&E Manual dated July 1, 2020, this project represents a Type III Project. Type III Projects do not require a detailed noise analysis or consideration of abatement measures since they do not result in a noticeable increase in traffic noise levels. The proposed improvements do not increase roadway capacity or shift the horizontal / vertical alignment of any roadway that would represent a Type I Project that would require a noise analysis to be performed. There may be a temporary increase in noise and vibration from additional truck traffic and staging equipment during construction at adjacent noise and vibration sensitive sites (Snappers Fish and Chicken). It is anticipated that the application of the FDOT *Standard Specifications for Road and Bridge Construction* will minimize or eliminate most of the potential construction noise and vibration impacts.

Water Quality
Based on a review of EST GIS layers and aerial imagery, the Miami Canal is adjacent the project area. According to the May 2021 Traffic Safety Study, no work is proposed within the canal. Therefore, no adverse impacts to water quality are anticipated as a result of the proposed project. A Stormwater Pollution Prevention Plan (SWPPP) may be required to be included in the plans to address water quality and erosion control during construction. In addition, the Contractor will be required to use Best Management Practices (BMPs) and comply with the most recent edition of the FDOT *Standard Specifications for Road and Bridge Construction* to ensure that no adverse impacts will occur. All activities associated with construction must be in compliance with the current National Pollutant Discharge Elimination System (NPDES) requirements.

Wetlands
Based on a review of EST GIS layers (including the National Wetlands Inventory and South Florida Water Management District wetland GIS layers) and aerial imagery, the Miami Canal is adjacent the project area. According to the May 2021 Traffic Safety Study, no work is proposed within the canal. The scope of work is limited to the existing right-of-way and no work is proposed within wetlands. Based on the minor scope of work, no wetland impacts are anticipated as a result of the proposed project.

Navigation
Based on a review of EST GIS layers and aerial imagery, the project corridor does not cross a navigable waterway. Therefore, no impacts to navigable waterways are anticipated based on the proposed improvements.

Floodplain Encroachment
Based on a review of EST GIS layers and the Miami-Dade County Flood Zones GIS map, the project corridor is located within Zone AE and Zone AH of the 100-year floodplain. However, this project will not: 1) affect flood heights or base floodplain limits, 2) result in increased or new adverse environmental impacts, 3) increase flood risks or damage, or 4) significantly change the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, this project will not encroach upon the base floodplain, as defined in Part 2, Chapter 13 of the Project Development and Environment (PD&E) Manual dated July 1, 2020.

Wild and Scenic Rivers
Based on a review of EST GIS layers and aerial imagery, there are no Wild and Scenic Rivers within or adjacent to the project corridor. The recommended activities will not require construction in, across, or adjacent to a river designated as a component of, or proposed for inclusion in, the National System of Wild and Scenic Rivers. Therefore, no adverse impacts to Wild and Scenic Rivers are anticipated as a result of the proposed project.

Endangered and Threatened Species, Wildlife, and Critical Habitats
Based on a review of EST GIS layers, the project is within the United States Fish and Wildlife Service (USFWS) critical habitat for the West Indian manatee (*Trichechus manatus*). No essential fish habitat (EFH) is present within the project area. The project area is within the USFWS Consultation Areas for the following species: Florida bonneted bat (*Eumops floridanus*), Everglade's Snail Kite *(Rostrhamus sociabilis)* and the American Crocodile (*Crocodylus acutus*). The project area is also within the South Florida Urban Bat Area. Additionally, the project is within the Core Foraging Area (CFA) of five wood stork (*Mycteria americana*) colonies (3B Mud East, Tamiami Trail East 1, Tamiami Trail East 2, Tamiami Trail West and Emerald States 1 and 2

Griffin).

Based on the scope of work, which is not anticipated to include in-water work or impacts to trees or bridges, and the USFWS wood stork Key and the USFWS West Indian manatee, this project is expected to have No Effect on threatened and endangered species.

During the design phase, coordination regarding potential impacts to protected species and their habitat within the project area will occur with USFWS to confirm species effects determinations.

Right of Way Acquisition and Displacements
Based on a review of the May 2021 Traffic Safety Study, it appears that the proposed project is contained within the existing FDOT operational right-of-way. No right-of-way acquisition is proposed, and no residential or non-residential displacements are anticipated. The D6 Environment Section will continue to evaluate the project's right-of-way requirements during future phases. Please notify the D6 Environment Section of any proposed work outside of the existing right-of-way.

Section 4(f) of the Department of Transportation Act
Based on a review of EST GIS layers and aerial imagery, the Miami Greenway Trail is adjacent to the project. The proposed improvements are not anticipated to require permanent incorporation, temporary occupancy, or constructive use of the Miami Greenway Trail. Additionally, the sidewalks that are designated as trails within the FDOT existing ROW are not considered Section 4(f) Resources as they are for transportation use. No other public parks, recreation areas, wildlife and waterfowl refuges, National Register-listed or -eligible historic districts, or other Section 4(f) resources are present within the project area. Therefore, there will be no use within the meaning of Section 4(f) and no impacts to Section 4(f) protected parks or other recreational resources are anticipated as a result of the proposed project, in accordance with Section 4(f) of the USDOT Act.

As discussed in more detail below, there are historic and potentially historic resources within the project corridor. Impacts to these properties and staging of equipment or materials on these properties must be avoided. Access to these properties/facilities must be maintained at all times. If these features cannot be avoided, additional coordination with the Office of Environmental Management may be required.

The D6 Environment Section will continue to evaluate the project's effects on potential Section 4(f) properties during the plans review phases.

Section 106 of the National Historic Preservation Act
A cultural resources desktop review identified no archaeological or historical resources within the area recommended for improvements. More information regarding any federal involvement and a full scope of work for an overall project will be needed to determine the appropriate level of coordination with the Florida Division of Historical Resources (FDHR) or the State Historic Preservation Officer (SHPO). These improvements will need to be revisited during design, once the footprint of project improvements is more clearly defined and an appropriate area of potential effect (APE) can be confirmed.

Contamination
A contamination impact review utilizing the FDOT District VI Contamination Screening Tool was performed for the project corridor. The Contamination Screening Tool contains Geographic

Information System layers depicting contaminated sites identified by the Florida Department of Environmental Protection and Miami Dade County Department of Regulatory Economic Resources. Based on said review, several potentially contaminated sites have been identified within a 500-ft radius of the project corridor. However, there are no proposed drainage features, subsurface excavation, and/or dewatering in proximity of the known contaminated sites, therefore, no contamination impacts are anticipated.

Controversy

There are no known controversial environmental issues associated with this project. The action is not anticipated to have substantial controversy on environmental grounds.

Permits

Environmental permitting requirements are to be provided by the Environmental Permits Office.

Based on a review of the GIS Environmental Permit Information Tool (EPIT) and aerial imagery, there are jurisdictional surface waters within the project limits (Miami Canal). However, based on the proposed recommended scope of work, no federal environmental permits will be required for this project. If the recommended scope of work should change to include activities below the control elevation of the canal, then federal and state permitting would be required