MARTIN COUNTY

CRASH SURVEILLANCE REPORT

FROM

JULY 1, 2016

TO

JUNE 30, 2018

IDENTIFICATION AND ANALYSIS OF HIGH HAZARD INTERSECTIONS INVOLVING FATALITIES, PEDESTRIANS & BICYCLISTS

FEBRUARY 25, 2019

Table of Contents

1 Executive Summary

The Martin County Comprehensive Growth Management Plan requires the Public Works Department to prepare a crash surveillance report every other year that identifies, analyzes, and provides recommendations for reducing high-hazard intersections and fatal crashes as well as crashes involving pedestrians and bicyclists. The intended outcome of the report is to provide a planning tool to assist in establishing priorities and recommendations intended to advance improvements to the transportation network that can be funded through the five-year Capital Improvement Plan or the Florida Department of Transportation's (FDOT) Five Year Work Program. This report shifts slightly from the previous; to focus on the County transportation network, all crashes occurring on Florida's Turnpike, Interstate 95 and in parking lots were removed from the analysis.

During the reporting period of this study from July 1, 2016 until June 30, 2018, there were a total of 8,723 reported crashes in Martin County involving 21,852 motorists and passengers, 124 Bicyclists and 61 pedestrians. The crashes resulted in: 58 fatalities (53 crashes), 3,334 personal injuries (2,211 crashes), and 6,459 crashes with property damage only. Total estimated damages come in just under $40M. Table 1 provides a breakdown of the data by year, and also adds the crashes where alcohol, distracted driving or drug use were a contributing factor. The Crash Locations by Severity map on the following page is a visual display of the data use for this report.

Table 1

Year	Number of Crashes	Fatality	Injury	Property Damage Only	Alcohol	Distraction	Drug
July 1 – Dec. 31, 2016	2,028	19	508	1,502	95	183	22
2017	4,371	22	1,135	3,228	169	464	52
Jan. 1 - June 30, 2018	2,307	12	568	1,729	86	266	27

- When comparing the last crash surveillance reports data from 2013, there are no duplicate locations with fatal traffic crashes. Please see the Fatal Crash Locations map on page 5.c
- Alcohol accounted for one in five fatalities throughout the reporting period.
- Distracted driving accounted for two fatal crashes; one on SW High Meadow Avenue and another on SW Warfield Boulevard

The highest ranking crash severity intersections/segments identified in the Analysis Locations map on page 6 are identified to receive individualized attention and if applicable, recommendations to promote safety. Section 3.2 explains methodology performed during the intersection analysis and Section 4.1 explains the non-motorized location selections. Each location has a detailed sheet that explains the types of crashes that occurred and provides recommended countermeasures. Blanket recommendations that staff follow are:

- Evaluate AASHTO *Highway Safety Manual* Crash Mitigation Factors where applicable throughout the county.
- Use recommendations from the *2016 Martin MPO Bicycle and Pedestrian Safety Action Plan.*
- Continue to promote education and enforcement through proper communication channels.
- Support FDOT's various safety campaigns such as "Drive Sober or Get Pulled Over".

Legend

Crashes by Severity

- Fatality
- Injury
- Property Damage Only

Road Classification

- Expressway
- Parkway
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Residential
- Ramp
- Unclassed

N W E S

SW MARTIN HWY
SW WARFIELD BLV
SW CONNERS HWY
SW KANNER HWY
SW FOX BROWN RD
SW SILVER FOX LN
SW FARM RD
SW ALLAPATTAH RD
SW CITRUS BLVD
BOAT RAMP AVE
SW MURPHY RD
SW MEADOW AVE
SW MARTIN DOWNS BLV
SW MAPP RD
FLORIDA TRP
SW LOCKS RD
SW 96 TH ST
SW BRIDGE RD
SW PRATT WHITNEY RD
INTERSTATE 95
NE JENSEN BEACH BLVD
NE CAUSEWAY BLVD
NW FEDERAL HWY
GREEN RIVER PKWY
NE BAKER RD
NE PALMER ST
NE OCEAN BLVD
SE OCEAN BLVD
SE MACARTHUR BLV
SE MONTEREY RD
SE DIXIE HWY
SE ST LUCIE BLVD
S KANNER HWY
SE INDIAN ST
SE FEDERAL HWY
WILOUGHBY BLVD
SE SALERNO RD
SE COVE RD
SE SEABRANCH BLVD
SE GOMEZ AVE
SE PALM BEACH RD
SE BEACH RD
SE FEDERAL HWY
JONATHAN DICKINSON WAY
SE COUNTY LINE RD
SE ISLAND WAY

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Plot Date : February 8, 2019
ArcMapProjectFile T:\PWD\Traffic_Engineering\Crashes\Crash Surveillence Reports\2018\Supporting Documents\GIS\Severity 2018.mxd
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Crash Locations by Severity

July 1, 2016 - June 30, 2018

0 1 2 4 6 Miles

Legend

Fatalities By Type

- Pedestrian (5)
- Bicyclist (4)
- Motorist (33)

Road Classification

- Expressway
- Parkway
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Residential
- Ramp
- Unclassed

N W E S

NE JENSEN BEACH BLVD
NE CAUSEWAY BLVD
NW FEDERAL HWY
GREEN RIVER PKWY
NE BAKER RD
NE PALMER ST
NE OCEAN BLVD
BOAT RAMP AVE
SW MURPHY RD
SW HIGH MEADOW AVE
SW MARTIN HWY
SW MARTIN DOWNS BLV
SE OCEAN BLVD
SE MONTEREY RD
SE DIXIE HWY
SE INDIAN ST
SE ST LUCIE BLV
SE MACARTHUR BLV
FLORIDA TRP
SW MAPP RD
S KANNER HWY
SE WILLOUGHBY BLV
SE SALERNO RD
SE COVE RD
SW LOCKS RD
SW 96 TH ST

Western Martin County Inset

SW MARTIN HWY
SW ALLAPATTAH RD
SW FOX BROWN RD
SW WARFIELD BLV
SW CONNERS HWY
SW KANNER HWY
INTERSTATE 9
SW CITRUS BLV
SW 96 TH
SE GOMEZ AVE
SE LARES AVE
SE BEACH RD
SE FEDERAL HWY
SE DIXIE HWY
FLORIDA

0 1 2 4 6 8 Miles

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Fatal Crash Locations

July 1, 2016 - June 30, 2018

0 1 2 4 Miles

Legend

Locations By Type

- Non-motorized
- Crash Severity

Road Classification

- Expressway
- Parkway
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Residential
- Ramp
- Unclassed

1 - SW MARTIN HWY & SW BERRY AVE

2 - SE INDIAN ST & SE ASTER LN

3 - SW CITRUS BLVD & SW 96TH ST

2 - SE FEDERAL HWY & SE INDIAN ST

5 - SE DIXIE HWY & SE INDIAN ST

3 - SE SALERNO RD & SE FEDERAL HWY

3 - SE COVE RD & SE 44TH AVE

1 - SE MORNINGSIDE DR & SE FEDERAL HWY

4 - SE DIXIE HWY & SE PETTWAY ST

5 - SE FEDERAL HWY & SE DIXIE HWY

SW MURPH

SW HIGH MEADOW AVE

SW MARTIN HWY

SW MAPP RD

FLORIDA TRP

NE PALMER ST

SE OCEAN BLVD

SE OCEAN BLVD

SE MONTEREY RD

SE DIXIE HWY

SE ST LUCIE BLV

SE INDIAN ST

S KANNER HWY

SE WILLOUGHBY BLV

SE SALERNO RD

SE COVE RD

SW LOCKS RD

SW 96 TH ST

SW BRIDGE RD

SW PRATT-WHITNEY RD

INTERSTATE 95

SE SEABRANCH BLV

SE DIXIE HWY

SE GOMEZ AVE

SE GOMEZ AVE

SE LARES AVE

SE BRIDGE RD

SE FEDERAL HWY

JONATHAN DIC

N W E S

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Analysis Locations

July 1, 2016 - June 30, 2018

0 1 2 Miles

COUNTY OF MARTIN · STATE OF FLORIDA ·

2 Introduction

2.1 Background and Purpose

The U.S. Department of Transportation's (DOT) Strategic Plan articulates the goal of "working toward no fatalities across all modes of travel". Federal Highway Administration (FHWA) has adopted *Toward Zero Deaths* and Florida Department of Transportation annually produces its' *Highway Safety Plan.* The Martin County Comprehensive Growth Management Plan requires the Public Works Department prepare a crash surveillance report every other year that identifies, analyzes, and provides recommendations for reducing high-hazard intersections and fatal crashes as well as crashes involving pedestrians and bicyclists.

The intended outcome of the report is to provide a planning tool to assist in establishing priorities and recommendations intended to advance improvements to the transportation network that can be funded through the five-year Capital Improvement Plan or the Florida Department of Transportation's (FDOT) Five Year Work Program. The last Crash Surveillance Report analyzed data through June 30, 2016. To provide useful recommendations for the transportation network, every effort has been made to remove any crashes occurring on Florida's Turnpike, Interstate 95 and in parking lots from the statistics in this report.

2.2 Data Source

The information provided in this report was obtained from Signal Four Analytics (https://s4.geoplan.ufl.edu/). Signal Four Analytics was developed by the University of Florida's GeoPlan Center, and funded by the state of Florida through the Traffic Records Coordinating Committee (TRCC). The platform is an interactive, web-based spatial database designed to support the crash mapping and analysis needs of law enforcement and transportation agencies. The data is compiled from long and short form reports provided by the Division of Highway Safety and Motor Vehicles (DHSMV) and local law enforcement agencies such as the Martin County Sheriff's Office. Strong efforts have been made by staff to "scrub" the data to ensure its accuracy.

Crash data and statistics are available in many forms and it is also important to note that other agencies, such as the Florida Department of Transportation, record only Long Form crash data. When comparing crash statistics in this report to statistics provided by another agency, one must determine if the other agency's data includes both Short and Long Form crash reports.

The crashes are categorized into the following categories and shown with their respective percent of total:

- Rear end (37.8%)
- Off Road (7.8%)
- Angle (5.2%)
- Rollover (1.5%)
- Right Turn (1.3%)
- Pedestrian (0.6%)
- Other (21.2%)
- Left Turn (7.6%)
- Unknown (2.1%)
- Head on (1.4%)
- Bicycle (1.3%)
- Animal (0.6%)

The crash types are self-explanatory with the exception of "Other". Examples include single vehicle crashes, parked vehicle crashes, and backing vehicle crashes. After reviewing the data, some instances of "Other" included cyclist or pedestrians and were reclassified as such.

3 Crash Analyses

From July 1, 2016 until June 30, 2018 there were a total of 8,723 reported crashes in Martin County involving 21,852 motorists and passengers, 124 Bicyclists and 61 pedestrians. The crashes resulted in: 58 fatalities (53 crashes), 3,334 personal injuries (2,211 crashes), and 6,459 crashes with property damage only. Total estimated damages come in just under $40M.

Where applicable, suggestions to improve safety will be recommended. The American Association of State Highway and Transportation Officials (AASHTO) produces many guiding documents related to transportation. This report will focus on the *Highway Safety Manual (HSM)* and the *Manual on Uniform Traffic Control Devices,* or MUTCD. The HSM was created in order to "measurably reduce the frequency and severity of crashes" and is a guiding document for physical changes to the built environment. Suggested countermeasures come with a crash mitigation factor (CMF) which serves as a guide when selecting an appropriate method to reduce crashes. The MUTCD is the guiding authority for traffic control devices throughout the nation to ensure minimum standards are met and to ensure conformity to help reduce crashes and congestion, and improves the efficiency of the surface transportation system.

3.1 Initial Review

Rear end collisions were found to be the most frequent crash type, accounting for more than one-third (3,296) of the total crashes. Year after year, these are the most prevalent crash type. Regrettably, these crashes are not correctable by introducing changes to the built environment. Technological advances in "smart" car sensors are changing and many newer vehicles provide a level of autonomy such as brake assist or collision detection warning. 75 percent of rear end collisions result in property damage only and account for $6.8M in estimated damage.

Crashes classified as "Other" account for 21 percent (1,852) of the total. Of these, 88 percent resulted in property damage only. 75 percent of pedestrian crashes and 67 percent of bicycle crashes resulted in an injury and are expanded upon in Section 4 – Non-Motorized. Although only accounting for 0.6 percent of the total crashes, Pedestrian is the most dangerous crash type. 72 percent resulted in injury and 10 percent were fatal. Martin County recently installed "Pedestrian Count Down" notifications at all of the signalized intersections. By virtue of seeing this count down notification and the allotted time for crossing, they motivate pedestrians to use the striped intersection rather than crossing mid-block which is more dangerous. On the opposite end of the spectrum, only 13 percent of side-swipe collisions resulted in injury and only 0.2 percent resulted in a fatality. Other facts of interest include:

- When comparing the last crash surveillance reports data from 2013, there are no duplicate locations with fatal traffic crashes. Please see the Fatal Crash Locations map on page 5.c
- Alcohol accounted for one in five fatalities throughout the reporting period.
- Distracted driving accounted for two fatal crashes; one on SW High Meadow Avenue and another on SW Warfield Boulevard

The core purpose of the report is to identify hotspots in order to establish priorities and implement changes that create a safer transportation network. High crash severity locations have and continue to be the focus of this report. Staff offers the following general recommendations to promote roadway safety:

- Evaluate AASHTO *Highway Safety Manual* Crash Mitigation Factors where applicable throughout the county.
- Use recommendations from the *2016 Martin MPO Bicycle and Pedestrian Safety Action Plan.*
- Continue to promote education and enforcement through proper communication channels.
- Support FDOT's various safety campaigns such as "Drive Sober or Get Pulled Over".

3.2 Intersection Refinement

Intersections small and large contain the most conflict points on the transportation network. They are the critical points where motorists and non-motorist must make decisions regarding their trip. A network analysis was performed on all crashes within 250 feet of intersections in Martin County for the study period. Intersections with at least ten crashes were then ranked by crash severity, which is preferred over using the total number of crashes to follow the U.S. DOT's approach of working towards zero fatalities and since three quarters of all rear end crashes result in property damage only (PDO). Below is the formula used by Signal Four Analytics to calculate crash severity.

$$\text{Crash severity} = \frac{((12 * \text{Number of Fatal Crashes}) + (4 * \text{Number of Injury Crashes}) + \text{Number of Property Damage Only Crashes})}{\text{Total number of Crashes}}$$

After the initial top ranked intersections are identified, staff read all the narratives to confirm their locations are correct. Table 2 displays the top 5 ranked intersections.

Table 2

Intersection	Total Number of Crashes	Most Prevalent Crash Type	Number of Correctable Crashes	Final Crash Severity
SE MORNINGSIDE DR & SE FEDERAL HWY	13	Angle	9	3.31
SE INDIAN ST & SE ASTER LN	13	Rear End	2	3
SW 96TH ST & SW CITRUS BLVD	10	Off Road/Angle	3	3
SE DIXIE HWY & SE PETTWAY ST	10	Angle	0	2.8
SE FEDERAL HWY & SE DIXIE HWY	18	Angle	7	2.67

Each location in Table 2 is expanded upon in the following pages.

1 - SE Federal Highway (US-1) & SE Morningside Drive

Crash Summary:

Crash Severity:	**3.31**
Total Crashes:	13
Total Fatality Crashes:	0
Total Injury Crashes:	10
Total PDO Crashes:	3

Geometric Configuration:

SE Morningside Drive:	2-lane, undivided
SE Federal Highway:	6-lane, divided
Signalized:	No
Intersection Type:	T-Intersection
Lighting (street/ped/other):	Yes

SE Morningside Drive is the only ingress/egress for a 300+ unit, age restricted Planned Unit Development (PUD).

Notables:

This intersection is the repeat number one intersection from the 2016 Crash Surveillance Report. More than half of the crashes at this location occurred due to motorists making a northbound left turn movement and either being struck by southbound motorists or northbound motorists. The speed limit on US-1 is 55 miles per hour.

An effective countermeasure to reduce crashes at this intersection would be to change this open median geometry to a directional left-in only median. Motorists exiting Morningside Drive who wish to travel northbound on US-1 would be forced to head south 1,000 feet and make a U-turn via another left-only median opening with 500 feet of vehicle storage. Another recommendation would be to upgrade to a signalized intersection. Since Federal Highway is a state-maintained facility, these recommendations will be transmitted to the Florida Department of Transportation.

2 - SE Indian Street & SE Aster Lane

Crash Summary:

Crash Severity:	**3.00**
Total Crashes:	13
Total Fatality Crashes:	1
Total Injury Crashes:	5
Total PDO Crashes:	7

Geometric Configuration:

SE Indian Street:	4-lane, divided
SE Aster Lane:	2-lane, undivided
Signalized:	Yes
Intersection Type:	T-Intersection
Lighting (street/ped/other):	Yes

The properties abutting the intersection include an assisted-living facility, office space, and a restaurant.

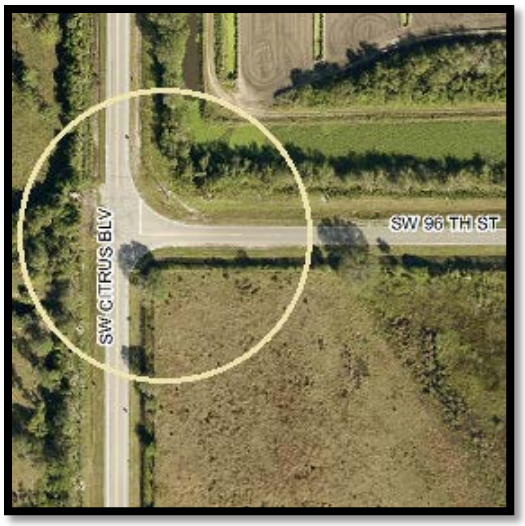
Notables:

The lone fatality which occurred at this intersection was due to a medical condition and is not correctable.

One bicycle crash occurred at this location resulting in injury to the bicyclist. The bicyclist attempted to cross the approach of SE Aster Lane (west to east) and was waiting for the pedestrian walk signal. The motorist failed to realize that the pedestrian walk symbol just changed and hit the cyclist. The most prevalent crash type here are rear-ends, of which two were distracted drivers and four resulted in injuries.

In early 2017, operational changes were made to this intersection which removed the southbound-to-westbound and westbound-to-northbound overlapping right-turn indicators in hopes of reducing angle crashes and conflicts with U-turning traffic.

3 - SW 96th Street & SW Citrus Boulevard



Crash Summary:

Crash Severity:	**3.00**
Total Crashes:	10
Total Fatality Crashes:	1
Total Injury Crashes:	3
Total PDO Crashes:	6

Geometric Configuration:

SW 96th Street:	2-lane, undivided
SW Citrus Boulevard:	2-lane, undivided
Signalized:	No
Intersection Type:	T-Intersection
Lighting (street/ped/other):	Yes

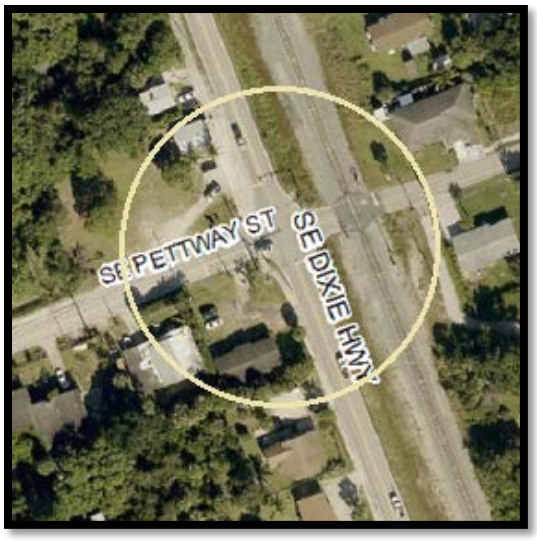
The properties abutting the roadways are agricultural.

Notables:

Five crashes occurred due to motorists failing to stop and drove through the intersection off the roadway. Four crashes occurred due to motorists disregarding the STOP sign, not expecting conflicting vehicles, and were hit.

An effective countermeasure to reduce crashes at this intersection would be to install advanced warning rumble strips and upgrade the STOP sign to include a red flashing beacon which would be visible from farther distances and in inclement weather conditions.

4 - SE Dixie Highway (CR-A1A) & SE Pettway Street



Crash Summary:

Crash Severity:	**2.80**
Total Crashes:	10
Total Fatality Crashes:	0
Total Injury Crashes:	6
Total PDO Crashes:	4

Geometric Configuration:

SE Dixie Highway:	2-lane, undivided
SE Pettway St:	2-lane, undivided
Signalized:	Yes
Intersection Type:	Four-Way
Lighting (street/ped/other):	Yes

The properties abutting the roadways are residential and the Florida East Coast Railroad runs parallel to SE Dixie Highway.

Notables:

The predominant crash type at this location is “failure to yield”, which results in motorists turning into or in front of a motorist with the right-of-way. Because this intersection is already signalized and right-of-way is limited, there are few options available to reduce crashes by introducing dedicated turn lanes. Staff installed landscaping on the northwest corner to reduce instances of impatient motorists travelling on the sidewalk to pass left turning motorist who might be queued at the intersection.

5 - SE Federal Highway (US-1) & SE Dixie Highway (CR-A1A)

Crash Summary:

Crash Severity:	**2.67**
Total Crashes:	18
Total Fatality Crashes:	0
Total Injury Crashes:	10
Total PDO Crashes:	8

Geometric Configuration:

SE Federal Highway:	4-lane, divided
SE Dixie Highway:	2-lane, undivided
Signalized:	No
Intersection Type:	T-Intersection
Lighting (street/ped/other):	Yes

Located south of the Bridge Road Community Redevelopment Area (CRA), properties around the intersection are residential and conservation.

Notables:

Angle crashes are predominant at this intersection because the preferred movement is a westbound to southbound left turn. An alternative to SE Federal Highway, SE Dixie Highway offers motorists a relaxed driving experience when travelling southbound from the City of Stuart towards Palm Beach County. Staff identified seven crashes occurring from September 2016 to September 2017 which would be mitigated by a traffic signal. It is staff's recommendation that the Florida Department of Transportation conduct a signal warrant analysis at this location.

3.3 Highway-Rail Crossings

The Federal Railroad Administration (FRA) Office of Safety is the maintaining agency of rail related crashes. The FRA reports there were no highway-rail crashes reported in Martin County from July 1, 2016 to June 30, 2018.

4 Non-motorized

Pedestrians and cyclists are the most vulnerable users of the transportation network; and every trip begins and ends as a pedestrian. The Florida Department of Transportation (FDOT) produces its *Highway Safety Plan* to improve the safety of Florida's roadways and specifically targets non-motorized users by producing a *Pedestrian and Bicycle Strategic Safety Plan.* In 2016, FDOT has allocated $100 million over the next five years for targeted State Highway System Intersection Lighting Retrofits to improve night-time visibility of pedestrians.

FDOT encourages a more localized effort by requiring each Metropolitan Planning Organization (MPO) to develop a Pedestrian Safety Action Plan. In May 2016, the Martin MPO completed its *Bicycle and Pedestrian Safety Action Plan* and in December 2017 its *Bicycle, Pedestrian & Trails Masterplan* for Martin County. The locations identified as a result of this report are an attempt to avoid duplication of efforts made by the MPO.

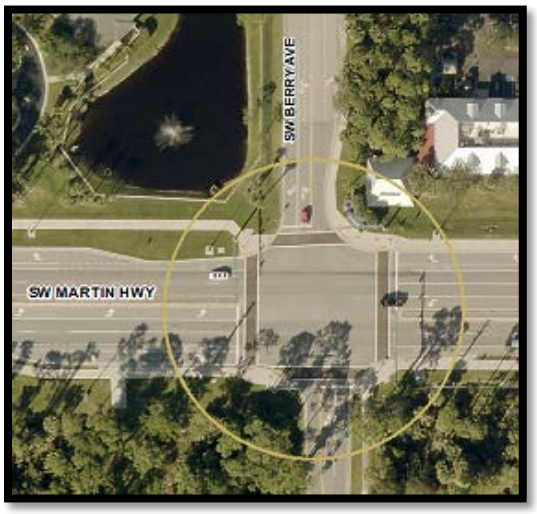
4.1 Analysis of Non-motorized Crashes

During the study period, there were 50 pedestrian crashes of which 36 (72%) resulted in an injury and 5 (10%) were fatal. There were 113 bicycle crashes of which 76 (67%) resulted in an injury and 4 (4%) were fatal. Table 3 displays the top five intersections and roadway segments with at least 2 crashes within 250ft of another, have not been recently reconstructed, and are prioritized by crash severity.

Table 3

Location	Number of Crashes	Crash Severity	Fatality	Injury
SW MARTIN HWY & SW BERRY AVE	2	8.00	1	1
SE FEDERAL HWY & SE INDIAN ST	3	5.67	1	1
SE COVE RD & SE 44TH ST	2	4.00	0	2
SE FEDERAL HWY & SE SALERNO RD	3	3.00	0	2
SE DIXIE HWY & SE INDIAN ST	5	2.80	0	3

1 - SW Martin Highway (CR-714) & SW Berry Avenue



Crash Summary:

Crash Severity:	**8.00**
Total Crashes:	2
Total Fatality Crashes:	1
Total Injury Crashes:	1
Total PDO Crashes:	0

Geometric Configuration:

SW Martin Highway:	4-lane, divided
SW Berry Road:	2-lane, undivided
Signalized:	Yes
Intersection Type:	4-Way
Lighting (street/ped/other):	Yes

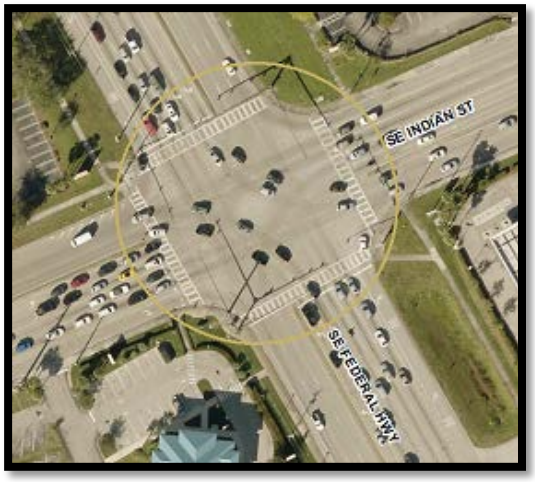
The area is a mix of residential with restaurants, office, and retail on the northwest corner.

Notables:

The fatality occurred around 3:00 A.M. when a non-motorist attempted to cross Martin Highway. The motorist was travelling eastbound in the outside lane and it appears the crash occurred in the crosswalk. The crash report does not specify whether the pedestrian activated beacon was used to create a protected walk phase across Martin Highway, which would have stopped eastbound and westbound traffic.

The second crash involved a westbound to southbound, left-turning motorist who failed to recognize the directions of a school crossing guard. The cyclist was injured while using the crosswalk. Unfortunately, staff cannot recommend any physical counter measures at this location that would have mitigated these pedestrian crashes.

2 - SE Federal Highway (US-1) & SE Indian Street



Crash Summary:

Crash Severity:	**5.67**
Total Crashes:	3
Total Fatality Crashes:	1
Total Injury Crashes:	1
Total PDO Crashes:	1

Geometric Configuration:

SE Federal Hwy:	6-lane, divided
SE Indian St:	4-lane, divided
Signalized:	Yes
Intersection Type:	4-Way
Lighting (street/ped/other):	Yes

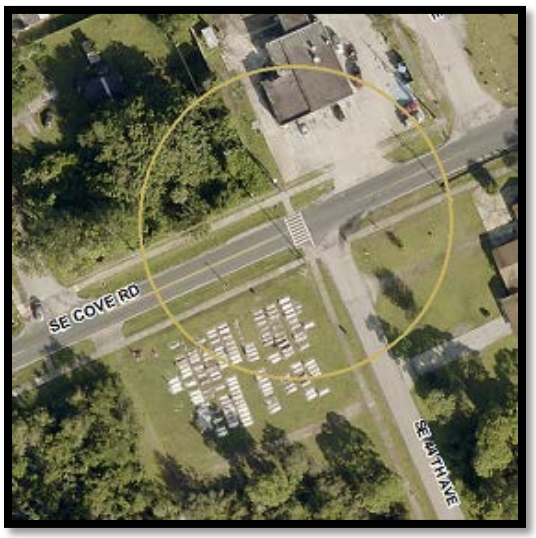
The area is a mix of retail, office, restaurants and banking institutions.

Notables:

This intersection is one of the top 10 busiest intersections in Martin County. From the AM peak until the PM peak, this intersection handles between 4000 and 6500 vehicles per hour. There are many driveways near the intersection and a non-injury crash occurred when a cyclist was riding on the sidewalk against the flow of traffic. In another case, a pedestrian was hit in the northbound departure crosswalk when the right turning motorist failed to yield to the pedestrian who was using the appropriate pedestrian crossing phase.

The fatality occurred when a young cyclist attempted to cross Federal Highway while not in the crosswalk on the southbound departure. The cyclist did not yield to the southbound motorist in the inside lane and was struck. At the recommendation of the MPO's *2016 Bicycle and Pedestrian Safety Action Plan*, high visibility crosswalk striping and a Lead Pedestrian Interval were added in 2017. Because this intersection experiences high pedestrian and vehicle volumes, and is a state-maintained facility, staff believes this intersection is a top candidate for a FDOT pedestrian lighting retrofit.

3 - SE Cove Road & SE 44th Avenue



Crash Summary:

Crash Severity:	**4.00**
Total Crashes:	2
Total Fatality Crashes:	0
Total Injury Crashes:	2
Total PDO Crashes:	0

Geometric Configuration:

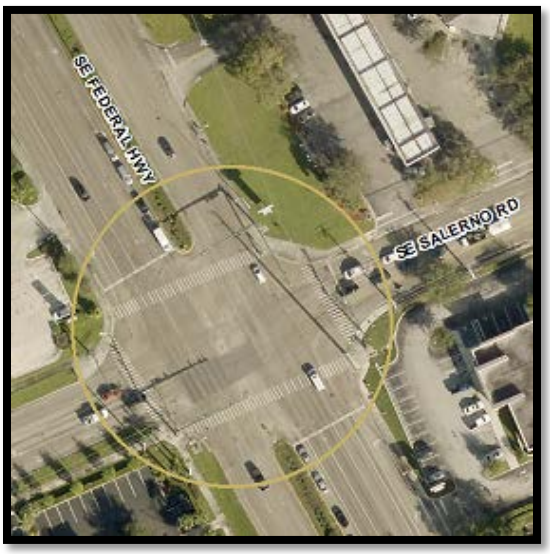
SE Cove Rd:	2-lane, undivided
SE 44th Ave:	2-lane, undivided
Signalized:	No
Intersection Type:	T-Intersection(s)
Lighting (street/ped/other):	Yes

Located in the Port Salerno Community Redevelopment Area (CRA), properties around the segment include residential, commercial, industrial uses and a middle school.

Notables:

Both crashes in this area occurred after dark. A cyclist riding southbound on the sidewalk along SE 44th Avenue was struck in a hit-and-run crash just south of the intersection. The second crash occurred when an intoxicated cyclist, operating without proper headlights or taillight travelled through a STOP sign and struck the side of an eastbound motorist. This intersection is used daily by students walking to and from Murray Middle School and will be evaluated for additional lighting.

4 - SE Federal Highway (US-1) & SE Salerno Road



Crash Summary:

Crash Severity:	**3.00**
Total Crashes:	3
Total Fatality Crashes:	0
Total Injury Crashes:	2
Total PDO Crashes:	1

Geometric Configuration:

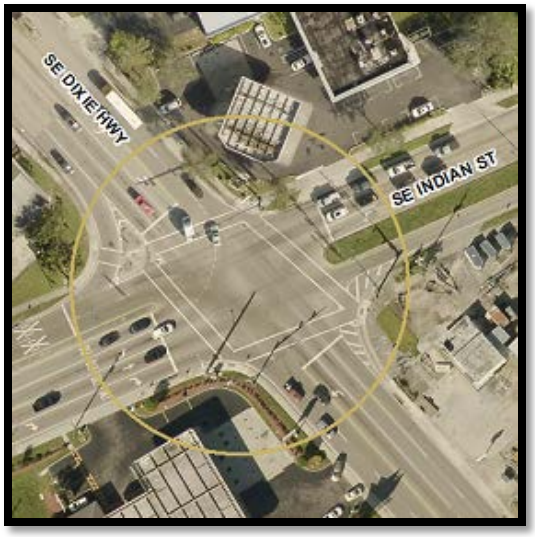
SE Federal Hwy:	6-lane, divided
SE Salerno Rd:	4-lane, divided
Signalized:	Yes
Intersection Type:	4-Way
Lighting (street/ped/other):	Yes

Properties around the intersection include residential, restaurants, retail space, banking institutions, gas stations and grocery shopping.

Notables:

One incident that did not result in an injury was the result of the cyclist failing to obey the DO NOT WALK symbol and was struck by a left-turning motorist who had the right-of-way. The second crash occurred when a northbound, right-turning motorist struck a cyclist in the crosswalk. The final instance at this intersection occurred when a motorist crept forward into the sidewalk/crosswalk from a driveway and impeded the movement of the non-motorist coming from their right. Crashes on divided roadways are prevalent at driveways and intersections because typically motorists are only looking to their left for conflicting vehicle traffic. Staff plans to construct a raised median along SE Salerno Road on the eastern approach in order to reduce right angle conflicts present at the driveways within 400 feet of the intersection.

5 - SE Dixie Highway (CR-A1A) & SE Indian Street



Crash Summary:

Crash Severity:	**2.80**
Total Crashes:	5
Total Fatality Crashes:	0
Total Injury Crashes:	3
Total PDO Crashes:	2

Geometric Configuration:

SE Dixie Hwy:	4-lane, divided
SE Indian St:	4-lane, divided
Signalized:	Yes
Intersection Type:	4-Way
Lighting (street/ped/other):	Yes

Located in the Golden Gate CRA, properties around the segment include gas stations, industrial, and retail space with residential properties surrounding.

Notables:

Two crashes resulting in injuries occurred when the motorist's crept forward into the sidewalk/crosswalk from a driveway and impeded the movement of the non-motorist coming from their right. The final injury crash occurred when a northbound motorist was making a right turn on red and failed to yield to the non-motorist crossing with the WALK indicator in the crosswalk. The first property-damage only crash occurred when a northbound motorist received a green light and was hit by an eastbound cyclist in the crosswalk. The final crash occurred when a cyclist rode parallel to a motorist exiting a driveway and sideswiped the vehicle. The Metropolitan Planning Organization took initiative to exercise education as a counter measure and held a safety campaign at this intersection on .

5 Fatalities

During the study period, there were a total of 53 fatal crashes in Martin County, excluding Interstate 95, Florida's Turnpike and those occurring in parking lots. Of the 44 fatal crashes involving motorists only, 25 percent (11) involved an impaired motorist. Four bicycle crashes resulting in a fatality are detailed in Table 4 and five pedestrian crashes resulting in a fatality are detailed in Table 5.

Table 4

Location	Fatalities	Crash Type	Contributing Factor
SW WARFIELD BLVD NEAR SW INDIANWOOD DR	1	Bicycle	Impaired Driver
SW FARM RD NEAR PRIVATE DRIVEWAY	1	Bicycle	Impaired Cyclist
NE GREEN RIVER PWY NEAR JENSEN BEACH BLVD	1	Bicycle	Impaired Cyclist
SE FEDERAL HWY & SE INDIAN STREET	1	Bicycle	Cyclist

Table 5

Location	Fatalities	Crash Type(s)	Contributing Factor
NE FEDERAL HWY NEAR NW WINDEMERE DR	1	Pedestrian	Impaired Pedestrian
SE DIXIE HWY & SE BROWARD ST	1	Pedestrian	Not in crosswalk
SE FEDERAL HWY & SE DOMINICA TER	1	Pedestrian	Impaired Pedestrian
SE COVE RD & SE RIVERBOAT DR	1	Pedestrian	Visibility
SW MARTIN HWY & SW BERRY AVE	1	Pedestrian	Visibility