

MARTIN COUNTY
CRASH SURVEILLANCE REPORT

FROM

JULY 1, 2020

TO

JUNE 30, 2022

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

SEPTEMBER 1, 2023



This document may be reproduced upon request in an alternative format by contacting the County ADA Coordinator (772) 320-3131, the County Administration Office (772) 288-5400, Florida Relay 711, or by completing our accessibility feedback form at www.martin.fl.us/accessibility-feedback

Table of Contents

Executive Summary	3
Introduction.....	4
Background and Purpose.....	4
Data Source	4
Crash Analyses.....	5
Crash Locations by Severity Map.....	7
Initial Review	8
Intersection Refinement.....	9
Intersection Severity Analysis Locations Map	10
1 – SW Warfield Boulevard (SR-710) & E. Thelma Waters Avenue.....	11
2 – SE Federal Highway & SE Central Parkway	12
3 – SE Federal Highway & SE Osprey Street	13
4 – NW Jensen Beach Boulevard & NW Goldenrod Road	14
5 – SE Federal Highway & SE Heritage Boulevard	15
Review of Previous High Hazard Intersections.....	16
Highway-Rail Crossings.....	16
Non-motorized	17
Non-Motorized Analysis Locations Map.....	18
1 – SE Federal Highway & SE Holly Street	20
2 – NE Jensen Beach Boulevard & NE Sunview Terrace	21
3 – SE Salerno Road between SE Federal Hwy & SE Pierson Drive	22
4 – SE Federal Highway & SE Constitution Boulevard	23
5 – SE Dixie Highway & SE Martin Luther King Jr Boulevard	24
Review of Previous Non-Motorized.....	25
Fatalities	25
Fatal Crash Locations Map.....	26
Conclusion	28

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. To focus on the County transportation network, all crashes occurring in parking lots were removed from the analysis. Crashes occurring on Florida’s Turnpike, Interstate 95 are included in the statistics, but will not be reviewed as a part of this analysis.

During the period of this study from July 1, 2020 until June 30, 2022, there were a total of 10,837 reported crashes in Martin County involving 26,6184 motorists and passengers, 138 bicyclists, and 185 pedestrians. The crashes resulted in: 51 fatalities (in 49 crashes); 3,698 personal injuries (in 2,455 crashes); and 8,333 crashes with property damage only. The total cost of the property damages was estimated at \$68M. Table 1 provides a breakdown of the data by year and includes the crashes where alcohol, drugs, or distractions were a contributing factor.

Table 1							
Timeframe	Number of Crashes	Fatality	Injury	Property Damage Only	Alcohol	Drugs	Distraction
July 1 – Dec. 31, 2020	2,475	10	548	1,917	88	28	207
Jan. 1 – Dec. 31, 2021	5,423	28	1,262	4,133	163	39	440
Jan. 1 - June 30, 2022	2,939	11	645	2,283	114	23	233
Total reported crashes	10,837	49	2,455	8,333	365	90	880

What Table 1 does not show is:

- nearly 30 percent of the fatal crashes involved impaired by alcohol;
- twenty-nine lane departure crashes resulted in fatalities; and
- seven fatal crashes involved a motorcyclist.

The highest-ranking crash severity intersections/segments are identified for both vehicular crashes and non-motorized crashes and examined closer. Each location has a detailed sheet that explains the types of crashes that occurred, the built-environment, and provides recommended countermeasures if applicable.

Introduction

Background and Purpose

The U.S. Department of Transportation's (U.S. DOT) Strategic Plan articulates the goal to "Reduce Transportation-Related Fatalities and Serious Injuries Across the Transportation System"¹. For this reason, the Federal Highway Administration's (FHWA) has adopted an objective to, "Save lives by expanding the use of data-driven, systemic safety management approaches and by increasing the adoption of proven safety solutions by all road owners."² The Florida Department of Transportation (FDOT) is, "committed to eliminating fatalities and reducing serious injuries with the understanding that the death of any person is unacceptable and based on that, zero deaths is our safety performance target."³ Consistent with these goals and objectives, 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 core purpose of the report is to establish priorities and implement changes that create a safer transportation network. High crash severity locations continue to be the focus of this report. The following general recommendations are made to promote roadway safety:

- Evaluate AASHTO *Highway Safety Manual* Crash Mitigation Factors where applicable throughout the County.
- Participate in and provide recommendations during all FDOT project scoping meetings.
- Evaluate and implement recommendations from the various plans of the Martin Metropolitan Planning Organization (MPO).
- Continue to promote education and enforcement through proper communication channels.
- Support FDOT's various safety campaigns such as "Drive Sober or Get Pulled Over".

The intended outcome of the Crash Surveillance Report is a planning tool to assist in establishing priorities and recommendations to advance improvements to the transportation network in 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, 2020.

Data Source

Crash reports are provided by the Division of Highway Safety and Motor Vehicles (DHSMV) and local law enforcement agencies such as the Martin County Sheriff's Office. The information about the crash is reported on either a Long-form or a Short-form Crash Report. If a crash: resulted in death of, personal injury to, or any indication of complaints of pain or discomfort by any of the parties or passengers involved in the crash; involved a person leaving the scene of crash with an attended vehicle or property or driving under the influence; rendered a vehicle inoperable to a degree that required a wrecker to remove it from the scene of the crash; or involved a

¹ U.S. Department of Transportation, U.S. DOT Strategic Plan FY 2018-2022, (February 2018), p. 10.

² Federal Highway Administration, FHWA Strategic Plan Fiscal Federal Highway Administration Years 2019–2022, (July 2018), p. 8.

³ Florida Department of Transportation, FY 2020 Highway Safety Plan, (c. 2019), p. 24.

commercial motor vehicle, then a Long-form Crash Report must be completed. If a Long-form Crash Report is not required, the law enforcement officer may complete a Short-form Crash Report.

The data from Long-form and Short-form Crash Reports is compiled in Signal Four Analytics (<https://signal4analytics.com>) software. Signal Four Analytics software 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 software is an interactive, web-based spatial database designed to support the crash mapping and analysis needs of law enforcement and transportation agencies. Effective March 1, 2023, the Florida Department of Highway Safety and Motor Vehicles will implement changes to their crash export process to comply with the provisions of Senate Bill 1614. To comply with the updated statutory requirements, crash data will be available in S4 Analytics only for reports that are 60 days or older from the crash report submission date. To provide useful recommendations for the local transportation network, every effort has been made to remove crashes occurring in parking lots from the analysis. Crashes occurring on Florida's Turnpike and Interstate 95 are included in the statistics but are not considered as a part of this analysis. Strong efforts have been made to remove duplicate records and inconsistent entries from the data to ensure accuracy.

Since crash data and statistics are available in many forms, it is 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 Long-form and Short-form Crash Reports.

The reported crash types are categorized into the following categories:

- Rear End (31.6%)
- Other (23.3%)
- Off Road (12.6%)
- Sideswipe (12.5%)
- Left Turn (6.5%)
- Angle (5.0%)
- Unknown (2.1%)
- Head On (1.2%)
- Right Turn (1.2%)
- Rollover (1.2%)
- Animal (1.0%)
- Bicycle (0.9%)
- Pedestrian (0.8%)

The percent of total is included for statistical purposes. The crash type "Other" includes single vehicle crashes, parked vehicle crashes, and backing vehicle crashes.

Crash Analyses

From July 1, 2020 until June 30, 2022 there were a total of 10,837 reported crashes in Martin County involving 26,618 motorists and passengers, 138 bicyclists, and 185 pedestrians. The crashes resulted in: 51 fatalities (49 crashes), 3,698 personal injuries (2,455 crashes), and 8,333 crashes with property damage only. The total cost of the property damage was estimated at \$68M. Table 1 provides a breakdown of the data by year and includes the crashes where alcohol, drugs, or distractions were a contributing factor.

Where correctable patterns occur, suggestions to improve safety are recommended. The American Association of State Highway and Transportation Officials (AASHTO) produces many guiding documents related to

transportation. The recommendations in this report were based on guidance provided in AASHTO's *Highway Safety Manual (HSM)* and the FHWA's *Manual on Uniform Traffic Control Devices*, or MUTCD. The HSM was created to help reduce the frequency and severity of crashes. It includes suggested countermeasures that come with a crash mitigation factor (CMF), which serves as a guide when selecting an appropriate method to reduce crashes. A CMF is an estimate of the change in crashes expected after implementation of a countermeasure. The MUTCD is the guiding authority for traffic control devices throughout the nation to ensure minimum standards are met, to ensure conformity to help reduce crashes and congestion, and to improve the efficiency of the surface transportation system.

Table 1							
Timeframe	Number of Crashes	Fatality	Injury	Property Damage Only	Alcohol	Drugs	Distraction
July 1 – Dec. 31, 2020	2,475	10	548	1,917	88	28	207
Jan. 1 – Dec. 31, 2021	5,423	28	1,262	4,133	163	39	440
Jan. 1 - June 30, 2022	2,939	11	645	2,283	114	23	233
Total reported crashes	10,837	49	2,455	8,333	365	90	880

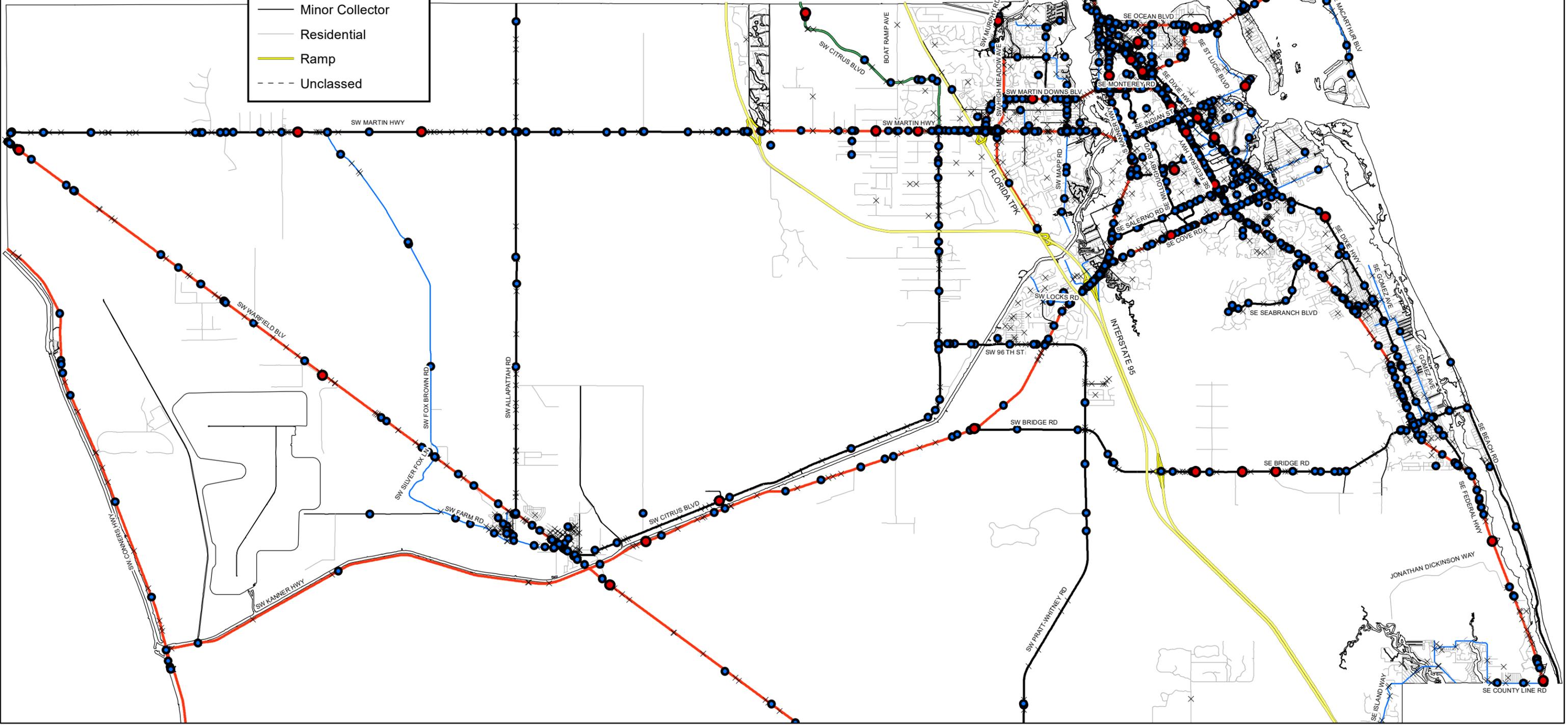
Legend

Crashes by Severity

- Fatality
- Injury
- × Property Damage Only

Road Classification

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



Disclaimer
 "This Geographic Information System Map Product, received from Martin County ("COUNTY") in fulfillment of a public records request is provided "as is" without warranty of any kind, and the COUNTY expressly disclaims all express and implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The COUNTY does not warrant, guarantee, or make any representations regarding the use, or the results of the use, of the information provided to you by the COUNTY in terms of correctness, accuracy, reliability, timeliness or otherwise. The entire risk as to the results and performance of any information obtained from the COUNTY is entirely assumed by the recipient."
 Please contact the responsible Martin County Department for specific determinations.
 Created By : llambert@martin.fl.us
 Plot Date : January 20, 2022
 ArcMapProjectFile : T:\PWDITraffic_Engineering\Crashes\Crash Surveillance Reports\2022\Supporting Documents\GIS\Severity 2022.mxd
 Plot Name : T:\PWDITraffic_Engineering\Crashes\Crash Surveillance Reports\2022\Supporting Documents\GIS\Severity 2022.pdf

Crash Locations by Severity

July 1, 2020 - June 30, 2022



Initial Review

The Florida Department of Transportation has published the *Florida Strategic Highway Safety Plan* which introduces top emphasis areas that are indicators for fatal and serious injury crashes. Specific factors which are prevalent are categorized into three categories 1) Roadways, 2) Road Users and 3) User Behavior. The top Roadway emphasis areas include a) Lane Departures and b) Intersections. Top Road Users emphasis areas include c) Pedestrians and Bicyclists, d) Aging Road Users, e) Motorcyclists and Motor Scooter Riders, f) Commercial Motor Vehicle Operators and g) Teen Drivers. Finally, User Behavior emphasis areas include h) Impaired Driving, i) Occupant Protection, j) Speeding and Aggressive Driving and k) Distracted Driving. Table 2 contains the emphasis area data which will be monitored in future reports.

Emphasis Area	Crashes	Serious Injuries	Fatalities
Roadway			
Lane Departures	3,874	121	29
Intersections	2,461	68	9
Road Users			
Pedestrians and Bicyclists	318	26	7
Bicycle Involved	138	13	2
Pedestrian Involved	176	13	5
Aging Road Users	2,894	50	10
Motorcyclists and Motor Scooter Riders	176	32	7
Motorcyclists	163	29	7
Motor Scooter Riders (Mopeds)	13	3	0
Commercial Motor Vehicle Operators	711	19	7
Teen Drivers	1,387	31	2
User Behavior			
Impaired Driving	409	27	21
Impairment - Alcohol	365	17	15
Impairment - Drugs	90	16	16
Occupant Protection	236	21	13
Speeding and Aggressive Driving	446	24	3
Aggressive Driving	446	24	3
Speeding	351	16	1
Distracted Driving	881	17	1

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. This area will be referred to as the zone of influence. Intersections with at least ten crashes were then ranked by crash severity to follow the U.S. DOT’s approach to work towards zero fatalities. By doing so, many of the rear-end crashes that did not include injuries are removed from the analysis. The formula used by Signal Four Analytics to calculate crash severity is:

Crash severity =

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

This formula puts most of the emphasis on fatal crashes, with injurious crashes second, and property damage last. After the initial top ranked intersections are identified, staff read all the narratives to confirm their locations are correct. Table 2 displays the five intersections with the highest crash severity.

Table 3					
Intersection	Fatal Crashes	Injury Crashes	Property Damage Only Crashes	Total Number of Crashes	Crash Severity
SW WARFIELD BLVD & E. THELMA WATERS AVE	0	8	2	10	3.40
SE FEDERAL HWY & SE CENTRAL PKWY	0	12	11	23	2.57
SE FEDERAL HWY & SE OSPREY ST	0	12	11	23	2.57
NW JENSEN BEACH BLVD & NW GOLDENROD RD	0	10	10	20	2.50
SE FEDERAL HWY & SE HERITAGE BLVD	0	6	6	12	2.50

A detailed review of each intersection identified in Table 2 is expanded upon in the following pages.

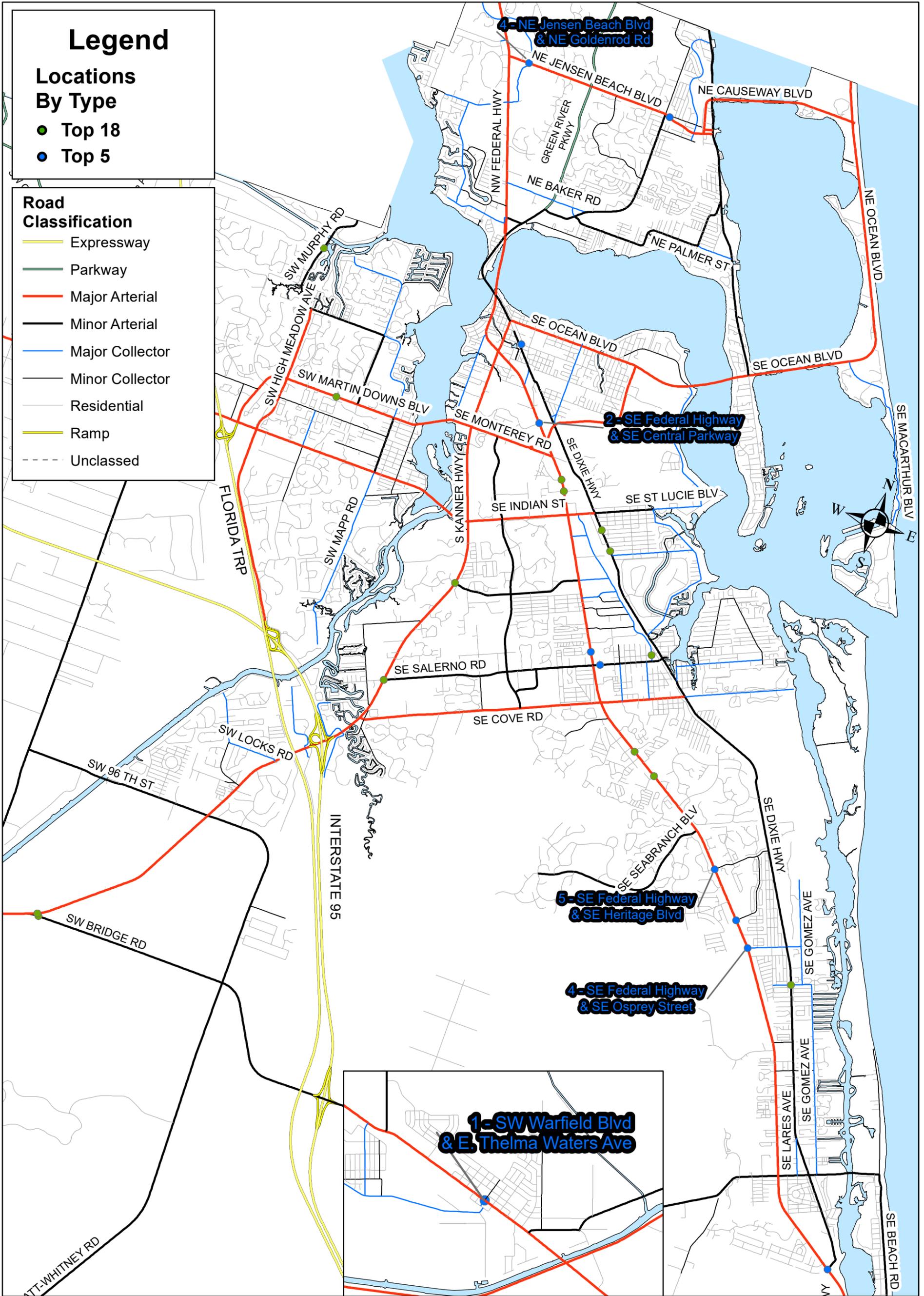
Legend

Locations By Type

- Top 18
- Top 5

Road Classification

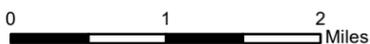
- Expressway
- Parkway
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Residential
- Ramp
- Unclassed



Disclaimer
 This Geographic Information System Map Product, received from Martin County ("COUNTY") in fulfillment of a public records request is provided "as is" without warranty of any kind, and the COUNTY expressly disclaims all express and implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The COUNTY does not warrant, guarantee, or make any representations regarding the use, or the results of the use, of the information provided to you by the COUNTY in terms of correctness, accuracy, reliability, timeliness or otherwise. The entire risk as to the results and performance of any information obtained from the COUNTY is entirely assumed by the recipient.
 Please contact the responsible Martin County Department for specific determinations.
 Created By: llambert@martin.fl.us
 Plot Date: January 20, 2023
 ArcMapProjectFile: T:\PW\DTraffic_Engineering\CrashSurveillanceReports\2022\Supporting Documents\GIS\Analysis Locations 2022.mxd
 Plot Name: T:\PW\DTraffic_Engineering\Crash SurveilanceReports\2022\Supporting Documents\GIS\Intersection Severity Analysis Locations 2022.pdf

Intersection Severity Analysis Locations

July 1, 2020 - June 30, 2022



1 – SW Warfield Boulevard (SR-710) & E. Thelma Waters Avenue



Crash Summary:

Crash Severity:	3.40
------------------------	-------------

Total Crashes:	10
----------------	----

Most Prevalent Crash Type:	Non-motorist
----------------------------	--------------

Geometric Configuration:

SW Warfield Boulevard:	4-lane, undivided
-------------------------------	-------------------

E. Thelma Waters Avenue:	2-lane, undivided
---------------------------------	-------------------

Signalized:	Yes
-------------	-----

Intersection Type:	Four-Way
--------------------	----------

Lighting (street/ped/other):	Yes
------------------------------	-----

The properties abutting the roadways are commercial with residential directly behind.

Summary:

Forty percent of crashes at this intersection involved a non-motorist failing to yield right-of-way to a motorist, half of which involved aging road users. Two crashes involved an unlicensed motorist traveling on SW Warfield Blvd failing to stop for a steady red signal causing right-angle collisions with injuries.

This intersection is currently span-wire and subject to mast arm upgrade but contributing factors for most collisions during the study period are unlikely to be corrected by operational improvements. Since SW Warfield Boulevard is a state-owned and maintained facility, the 'Alert Today High Visibility Enforcement for Pedestrian and Bicycle Safety Program' is recommended to increase awareness of, and compliance with, traffic laws and regulations that protect the safety of non-motorists on Florida's roads.

2 – SE Federal Highway & SE Central Parkway

Crash Summary:



Crash Severity:	2.57
------------------------	-------------

Total Crashes:	23
----------------	----

Most Prevalent Crash Type:	Rear End
----------------------------	----------

Geometric Configuration:

SE Federal Highway:	6-lane, divided
----------------------------	-----------------

SE Central Parkway:	4-lane, undivided
----------------------------	-------------------

Signalized:	Yes
-------------	-----

Intersection Type:	Four-Way
--------------------	----------

Lighting (street/ped/other):	Yes
------------------------------	-----

The properties abutting the intersection are commercial retail and automotive services.

Summary:

The most prevalent crash type here are rear end crashes, of which seven resulted in injuries. Most crashes occurred when southbound motorist failed stop in time.

The intersection is a candidate for a traffic signal rehabilitation to upgrade the signal indicators as well as a pedestrian lighting analysis. Staff will coordinate with the Florida Department of Transportation on this intersection.

3 – SE Federal Highway & SE Osprey Street



Crash Summary:

Crash Severity:	2.57
------------------------	-------------

Total Crashes:	23
----------------	----

Most Prevalent Crash Type:	Rear End
----------------------------	----------

Geometric Configuration:

SE Federal Highway:	4-lane, divided
----------------------------	-----------------

SE Osprey Street:	2-lane, undivided
--------------------------	-------------------

Signalized:	Yes
-------------	-----

Intersection Type:	T-Intersection
--------------------	----------------

Lighting (street/ped/other):	Yes
------------------------------	-----

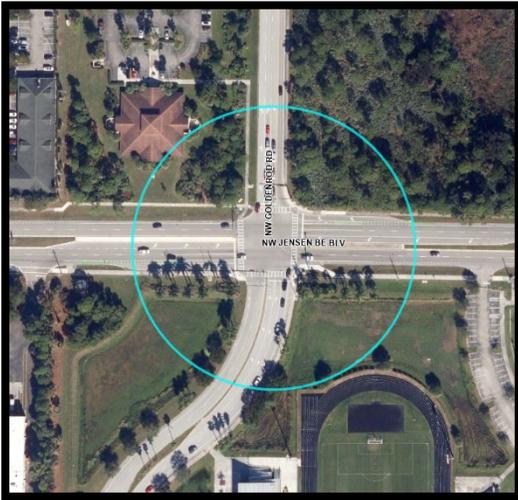
The properties abutting the roadways are commercial.

Summary:

Eleven crashes occurred due to motorists failing to stop and rear-ending another motorist. Five left-turn crashes occurred, four of which resulted in injuries. On SE Federal Highway, left turns are permissive, meaning a green ball is displayed on a five-section signal head. A grocery store was developed which will increase trips through this intersection.

An effective countermeasure to reduce crashes at this intersection would be to change operations to flashing-yellow arrow or remove permissive turning movements all-together and move to protected left turns. This would increase delay on SE Federal Highway and should be implemented after further review and concurrence from the Florida Department of Transportation.

4 – NW Jensen Beach Boulevard & NW Goldenrod Road



Crash Summary:

Crash Severity:	2.50
------------------------	-------------

Total Crashes:	20
----------------	----

Most Prevalent Crash Type:	Right Angle
----------------------------	-------------

Geometric Configuration:

NW Jensen Beach Boulevard:	4-lane, divided
-----------------------------------	-----------------

NW Goldenrod Road:	4-lane, divided
---------------------------	-----------------

Signalized:	Yes
-------------	-----

Intersection Type:	Four-Way
--------------------	----------

Lighting (street/ped/other):	Yes
------------------------------	-----

The properties abutting the intersection are commercial retail and educational.

Summary:

The highest crash type occurrence (40%) at this intersection during the study period were right-angle collisions, all resulting from a motorist running a red light. Four of the twenty total crashes were rear ends, half causing injuries.

The Florida Department of Transportation owns and maintains this segment of NW Jensen Beach Boulevard and has recently completed a resurfacing and bike lane project. This intersection is within the project limits and was under construction for a large portion of the study period.

Although the predominant crash type is not easily corrected by nature of the contributing violation, staff will evaluate the signal timing and operation and consult with FDOT for any possible improvements which may dissuade motorists from failing to stop for a steady red signal. The Public Works Department recently completed a traffic signal rehabilitation in 2022 which added backplates to the signal indicators.

5 – SE Federal Highway & SE Heritage Boulevard



Crash Summary:

Crash Severity:	2.50
Total Crashes:	12
Most Prevalent Crash Type:	Rear End

Geometric Configuration:

SE Federal Highway:	4-lane, divided
SE Heritage Boulevard:	2-lane, divided
Signalized:	Yes
Intersection Type:	T-Intersection
Lighting (street/ped/other):	Yes

The properties abutting the roadways are residential.

Summary:

The most prevalent crash type here are rear ends (45%) and angle crashes (27%), of which four resulted in injuries. While the crash type remains consistent with previous years, the total crashes have reduced by twenty-nine percent and overall crash severity has reduced by thirty-four percent.

SE Federal Highway was under construction for resurfacing and bike lanes for most of the study timeframe, so the cause of the reduction in crashes may be attributed to the lower “work zone” speeds on SE Federal Highway and increased driver awareness.

An effective countermeasure to reduce crashes at this intersection would be to change operations to flashing-yellow arrow or remove permissive turning movements all-together and move to protected left turns. This would increase delay on SE Federal Highway and should be implemented after further review and concurrence from the Florida Department of Transportation.

Review of Previous High Hazard Intersections

SE Cove Road at SE 44th Avenue was ranked with the highest crash severity for the 2020 Crash Surveillance Report with a total of 14 crashes including 5 injuries and one fatality; During the timespan of this study, only 3 intersection-related crashes occurred with no serious injuries or fatalities. Since the previous crash study, streetlights along the corridor have been upgraded from low-pressure sodium to LED, and school-zone crossing signs were replaced for maximum visibility. Further safety and capital improvements include the SE Cove Road Resurfacing & Bike Lanes Project fully funded for construction in Fiscal Year 2023.

SE Cove Road at SE Cable Drive was ranked with the second highest crash severity for the 2020 Crash Surveillance Report with a total of 15 crashes, primarily left-turning and angle crashes. Implementation of advance warning signs for eastbound traffic notifying motorist to be cautious of vehicles entering intersection has contributed to a sixty (60) percent reduction of left-turn crash occurrences, and a fifty-six (56) percent reduction of crash injuries at the intersection over the study timeframe.

SR-5 (US-1 / SE Federal Highway) at SE Heritage Boulevard has fallen from third to fifth highest intersection crash severity ranking as result of a twenty-nine (29) percent reduction of total crashes and a thirty-four (34) percent reduction of crash injuries, despite no operational changes to the signalized intersection. Most crash types remain rear end and angle related. SE Federal Highway was under construction for resurfacing and bike lanes for most of the study timeframe, so the cause of the reduction in crashes may be attributed to the lower “work zone” speeds on SE Federal Highway and increased driver awareness.

Although the intersection of SR-5 (US-1 / SE Federal Highway) at SE Fischer Street experienced only a slight reduction in total crashes of five (5) percent since the 2020 Crash Surveillance Report, it has dropped entirely out of the of Top 20 ranking as of 2022. This can be directly attributed to a reduction of crash injuries by twenty-eight (28) percent and the lack of any fatalities during the evaluation period. Most crashes remain rear-end type, likely caused by stacking vehicles from the upstream intersection of SE Federal Highway at SE Indian Street. Traffic operations will continue monitoring signal timing for any potential efficiency adjustments.

Traffic Engineering staff worked with FDOT to prioritize the addition of a Northbound to Westbound left-turn lane and accompanying signal improvements at SR-76 (SW Kanner Highway) at SE Cove Road after observing excessive stacking on SE Cove Rd. A reduction of serious injuries and zero fatalities during the timespan of the study have dropped its ranking out of the Top 20 highest crash severity intersections, which may correlate to the lack of alcohol related crashes occurred during the study period.

Highway-Rail Crossings

The Federal Railroad Administration (FRA) Office of Safety is the maintaining agency of rail related crashes. The FRA reports there was one highway-rail crash reported in Martin County between July 1, 2020 to June 30, 2022. The incident occurred at the CSX grade crossing MP SX929.2 at SW Amaryllis Avenue and resulted in a single fatality. This grade crossing is not equipped with gates or warning lights. In place are Manual on Uniform Traffic Control Device W10-1 Grade Crossing Advance Warning signs and R15-1 RAILROAD CROSSING signs fixed atop of R1-1 STOP signs.

Non-motorized

Every trip begins and ends as a pedestrian, and it is the expectation that every road user arrives at their destination safely. The Florida Department of Transportation (FDOT) has updated its *Pedestrian and Bicycle Strategic Safety Plan* in September 2021 which is a five-year comprehensive plan to reduce traffic-related fatalities. Crash circumstance data is now easier than ever to analyze with improvements made to the Signal Four Analytics suite. Staff provides input in FDOT's Multimodal Scoping Checklist, Road Safety Audits, and makes comments during Electronic Review Comments during plan engineering phases for state projects. Staff also works closely with the Martin County Sheriff's Office deputies and school crossing guards, Martin County School District staff and local advisory boards to design and implement projects.

In 2022, Martin County Public Works partnered with Martin County Fire Rescue and installed vehicle pre-emption for ambulances and fire apparatus at key signalized intersections which clears traffic ahead of an emergency vehicle and thus reducing response times to emergency calls. By virtue of new system, automatic pedestrian walk calls no longer available and thus the pedestrian must utilize the push-button actuation. Many pedestrians grew accustomed to the automatic pedestrian walk indicator and thus educational information will be distributed in the future.

During the study period, there were 86 pedestrian crashes of which 71 (83%) resulted in an injury and 4 (5%) were fatal. There were 96 bicycle crashes of which 76 (79%) resulted in an injury and 2 (2%) were fatal. Table 4 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.

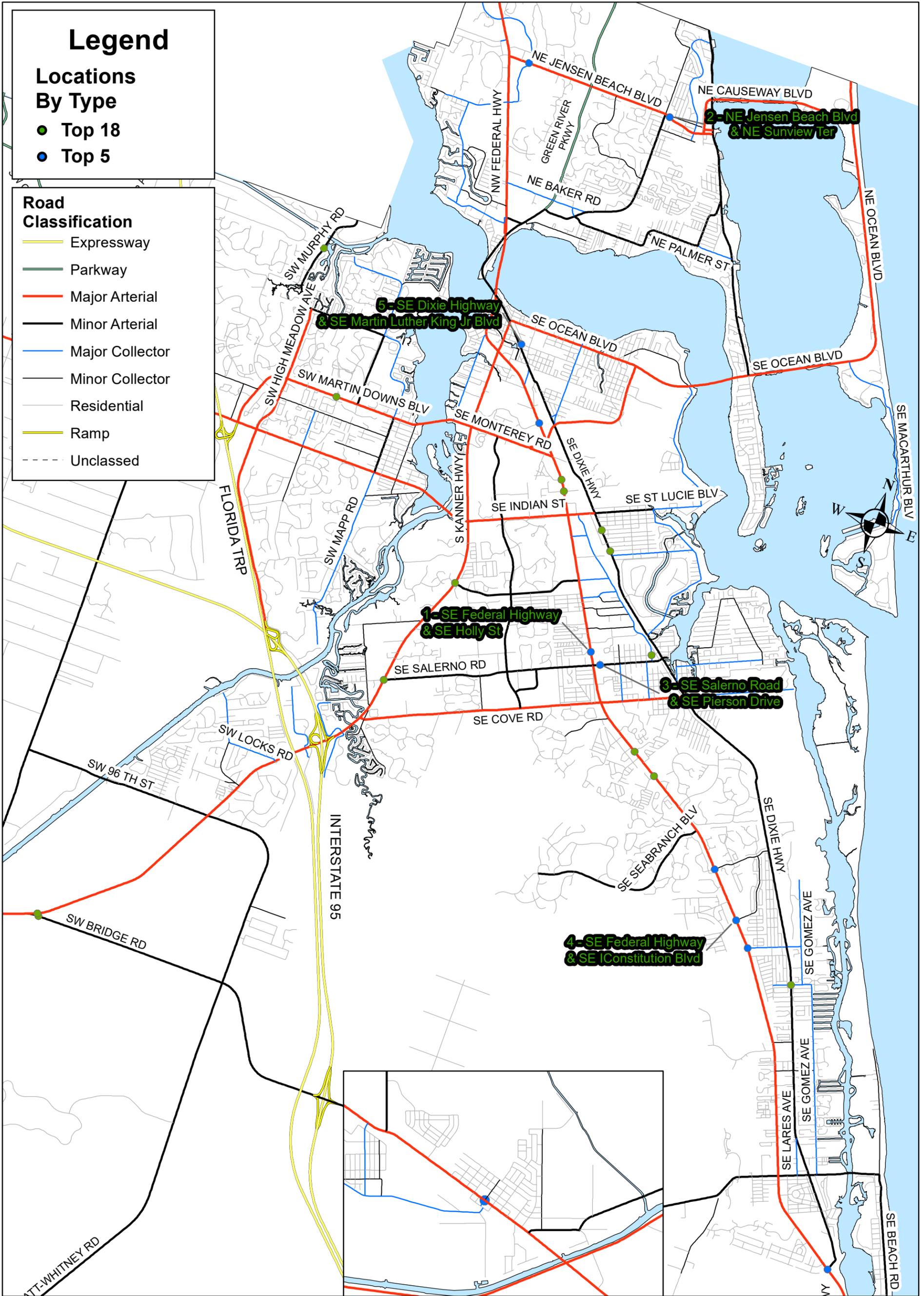
Legend

Locations By Type

- Top 18
- Top 5

Road Classification

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



Disclaimer
 This Geographic Information System Map Product, received from Martin County ("COUNTY") in fulfillment of a public records request is provided "as is" without warranty of any kind, and the COUNTY expressly disclaims all express and implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The COUNTY does not warrant, guarantee, or make any representations regarding the use, or the results of the use, of the information provided to you by the COUNTY in terms of correctness, accuracy, reliability, timeliness or otherwise. The entire risk as to the results and performance of any information obtained from the COUNTY is entirely assumed by the recipient.
 Please contact the responsible Martin County Department for specific determinations.
 Created By: llambert@martin.fl.us
 Plot Date: January 20, 2023
 ArcMapProjectFile: T:\P\W\DTraffic_Engineering\Crashes\Crash Surveillance Reports\2022\Supporting Documents\GIS\Analysis Locations 2022.mxd
 Plot Name: T:\P\W\DTraffic_Engineering\Crash Surveillance Reports\2022\Supporting Documents\GIS\Non-Motorized Analysis Locations 2022.pdf

Non-Motorized Analysis Locations

July 1, 2020 - June 30, 2022

0 1 2 Miles



Table 4					
Location	Number of Crashes	Crash Severity	Fatality	Injury	PDO
SE FEDERAL HWY & SE HOLLY ST	9	13.89	1	3	5
NE JENSEN BEACH BLVD & NE SUNVIEW TER	6	13.33	1	1	4
SE SALERNO RD - FEDERAL HWY & SE PIERSON DR	15	3.40	0	12	3
SE FEDERAL HWY & SE CONSTITUTION BLVD	9	3.00	0	6	3
NE DIXIE HWY & SE MARTIN LUTHER KING JR BLVD	6	2.50	0	3	3

1 – SE Federal Highway & SE Holly Street



Crash Summary:

Crash Severity:	13.89
Total Crashes:	9
Total Fatal Crashes:	1
Total Injury Crashes	3
Total PDO Crashes	5

Geometric Configuration:

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

SE Holly Street is the sole ingress/egress for an 86-unit all-age mobile home park shared with abutting retail development. SE Federal Highway is lined with commercial development and residential development surrounding.

Summary:

One fatal crash occurred at 4:00 AM when two non-motorists attempted to cross SE Federal Highway from east to west outside of a marked crosswalk, approximately 10 feet north of the intersection. The non-motorists crossed three northbound lanes, a raised median, and was struck in the outside southbound lane. Toxicology results indicated that one of the non-motorists was impaired at 3.5 times the legal limit.

One serious injury crash occurred at 6:30 AM when a non-motorist attempted to cross SE Federal Highway from west to east outside of a marked crosswalk, approximately 171 feet south of the intersection. The non-motorist crossed two southbound lanes and was struck by a southbound motorist in the inside lane.

The remaining crashes at this location are predominately rear-end and angle, with distracted/inattentive motorist violations contributing to the collision. Unfortunately, staff cannot recommend any physical counter measures at this location that would have mitigated these non-motorist crashes. Motorist and non-motorists must share responsibilities by obeying traffic laws.

2 – NE Jensen Beach Boulevard & NE Sunview Terrace

Crash Summary:



Crash Severity:	13.33
------------------------	--------------

Total Crashes:	6
----------------	---

Total Fatality Crashes:	1
-------------------------	---

Total Injury Crashes:	1
-----------------------	---

Total PDO Crashes:	4
--------------------	---

Geometric Configuration:

NE Jensen Beach Boulevard:	4-lane, undivided
-----------------------------------	-------------------

NE Sunview Terrace:	2-lane, undivided
----------------------------	-------------------

Signalized:	No
-------------	----

Intersection Type:	T-Intersection
--------------------	----------------

Lighting (street/ped/other):	Yes
------------------------------	-----

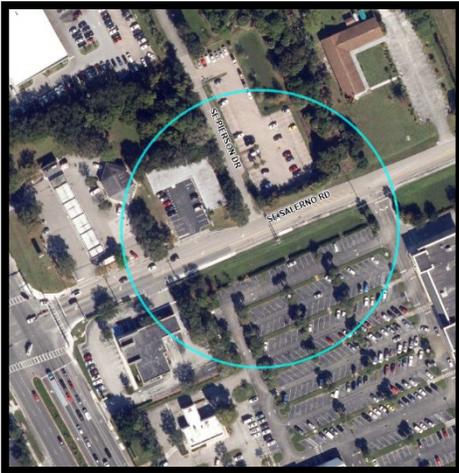
The area is a mix of commercial with retail, banking, gas stations and residential surrounding.

Summary:

The fatality occurred at 7:30 PM when a non-motorist attempted to cross NE Jensen Beach Blvd in a northbound direction outside of a marked crosswalk, approximately 30 feet east of the intersection. The non-motorist crossed two eastbound lanes, a two-way left-turn lane, and was struck in the inside westbound through lane by a motorist. Toxicology results indicated that the motorist was impaired and failed to yield right-of-way to a motorist which contributed to this crash.

Unfortunately, staff cannot recommend any physical counter measures at this location that would have mitigated this non-motorist crash. Motorist and non-motorists must share responsibilities by obeying traffic laws.

3 – SE Salerno Road between SE Federal Highway & SE Pierson Drive



Crash Summary:

Crash Severity:	3.40
Total Crashes:	15
Total Fatality Crashes:	0
Total Injury Crashes:	12
Total PDO Crashes:	3

Geometric Configuration:

SE Salerno Road:	2-lane, undivided
SE Pierson Drive:	2-lane, undivided
Signalized:	No
Intersection Type:	T-Intersection
Lighting (street/ped/other):	Yes

SE Salerno Road in this area is lined by dense retail, banking, grocery, and fuel station properties with residential development surrounding.

Summary:

All but one non-motorist crash in this area occurred when a non-motorist failed to yield right-of-way to a motorist. One crash involved a cyclist traveling the wrong way on a sidewalk and struck a motorist exiting a business driveway. Five crashes occurred when a non-motorist was crossing the roadway outside of a marked crosswalk and was struck by a passing motorist. One final non-motorist crash occurred when a cyclist traveling within a marked bicycle lane was struck by a hit-and-run motorist. Nearly eighty percent of all crashes in this study area involved an aging road user.

In total, the area of SE Salerno Road between SE Federal Highway and SE Pierson Drive experienced seven crashes involving non-motorists. According to data from the traffic signal operation system, this intersection is in the top-five of pedestrian actuations. These two intersections are candidates for both education and High Visibility Enforcement (HVE) due to the volume of vehicles, pedestrians, and aging road users at this location; this intersection is just south of SE Holly Street.

4 – SE Federal Highway & SE Constitution Boulevard



Crash Summary:

Crash Severity:	3.00
Total Crashes:	9
Total Fatality Crashes:	0
Total Injury Crashes:	6
Total PDO Crashes:	3

Geometric Configuration:

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

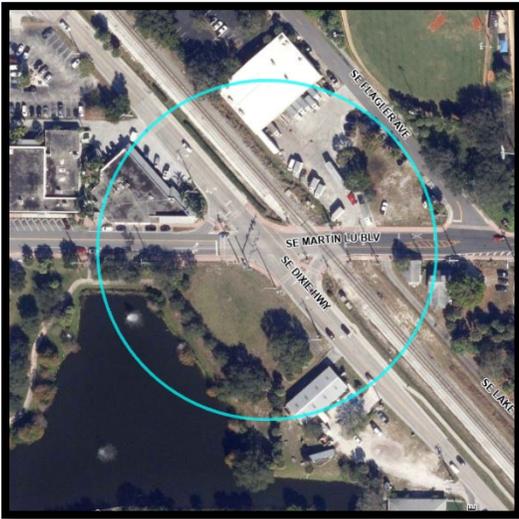
SE Constitution Boulevard is a major ingress/egress for a large 55+ age restricted mobile home community shared with a retail store.

Summary:

One crash involving a non-motorist occurred at this intersection when a westbound motorist traveling on SE Constitution Blvd failed to stop at STOP sign and was struck by a southbound non-motorist traveling in a marked crosswalk.

A traffic signal is in design at this location in response to new residential development to the west of SE Federal Highway, creating a new road opening and a fourth leg to the intersection. Most remaining crashes at this location were angle crashes resulting from westbound vehicles entering SE Federal Highway, failing to yield right-of-way to northbound traffic. Dedicated pedestrian phases to the signalized intersection will provide safe non-motorist facilities for a net reduction of conflict points.

5 – SE Dixie Highway & SE Martin Luther King Jr Boulevard



Crash Summary:

Crash Severity:	2.50
Total Crashes:	6
Total Fatality Crashes:	0
Total Injury Crashes:	3
Total PDO Crashes:	3

Geometric Configuration:

SE Dixie Highway:	2-lane, undivided
SE Martin Luther King Jr Blvd:	2-lane, undivided
Signalized:	No
Intersection Type:	4-Way
Lighting (street/ped/other):	Yes

This area is located within the City of Stuart downtown area with dense retail, tourism, commercial, and industrial properties abutted by residential development to the east.

Summary:

One crash at this location involved a non-motorist traveling southbound through the intersection within a marked crosswalk during a signalized pedestrian phase. A westbound to southbound turning motorist with a green ball signal failed to yield right-of-way and struck the non-motorist. The crash occurred at dusk, and an external distraction of sun glare was cited as a contributing factor.

Review of Previous Non-Motorized

NE Indian River Drive at Indian Riverside Park Entrance experienced two fatal crashes involving a pedestrian failing to yield right-of-way to motorist, ranking it with the highest severity in the 2020 Crash Surveillance Report. Push-button activated, edge-lit Pedestrian Crossing (W11-2) signs were installed as a safety countermeasure; there were no crashes involving non-motorists between July 1, 2020, to June 30, 2022, at this location. Staff has since moved to edge-lit STOP HERE FOR PEDS (R1-5b) signs which are regulatory signs at this and other locations.

SE Federal Highway (US-1) at SE Cove Road had the third highest crash severity with one fatal crash involving a pedestrian, and one injury crash involving a cyclist. The Florida Department of Transportation has completed a resurfacing and bike lane improvement project during the timeframe since the last Crash Surveillance Report, and no pedestrian or cyclist crashes have occurred. Lower vehicle speeds and increased alertness through an active construction zone may contribute to a reduction in non-motorist crashes.

No non-motorist crashes occurred at the intersection of SE Federal Highway (US-1) at SE Lillian Court and does not appear on the 2022 Crash surveillance Report. This intersection is also within the limits of the Florida Department of Transportation resurfacing and bike lane improvement project on SE Federal Highway.

SE Federal Highway (US-1) at SE Indian Street experienced three non-motorist injury crashes in the previous report; current data identifies only one non-motorist injury crash. All three crashes from the 2020 Report resulted from a non-motorist failing to clear the intersection during the pedestrian crossing phase and were struck by a turning motorist. The single non-motorist crash within the current study period involved a cyclist crossing the intersection utilizing the marked crosswalk during pedestrian phase was struck by a turning motorist who failed to yield right-of-way. Public Works staff has had Lead-Pedestrian Interval timing for the highest use crosswalk in place for many years; High Visibility Enforcement (HVE) efforts may have contributed to the lowered crash frequency at this location.

NW Federal Highway (US-1) at NW Mall Entry Road was the fifth location previously identified with three total non-motorist crashes. No crashes involving non-motorists occurred during this report. This location is adjacent to Federal Highway and remains a key intersection for education and enforcement.

Fatalities

During the study period, there were a total of 49 fatal crashes in Martin County. Of the 35 fatal crashes occurring off Interstate-95 and Florida's Turnpike, 7 involved a motorcycle. Of the 96 total bicycle crashes, two resulted in fatalities: both involved impaired driving. Of the 86 total pedestrian crashes, there were a total of four events resulted in a fatality during the study period; these are discussed in detail in the non-motorized reviews. Fourteen fatal crashes occurred due to the driver impairment; the remaining are reviewed in Table 4.

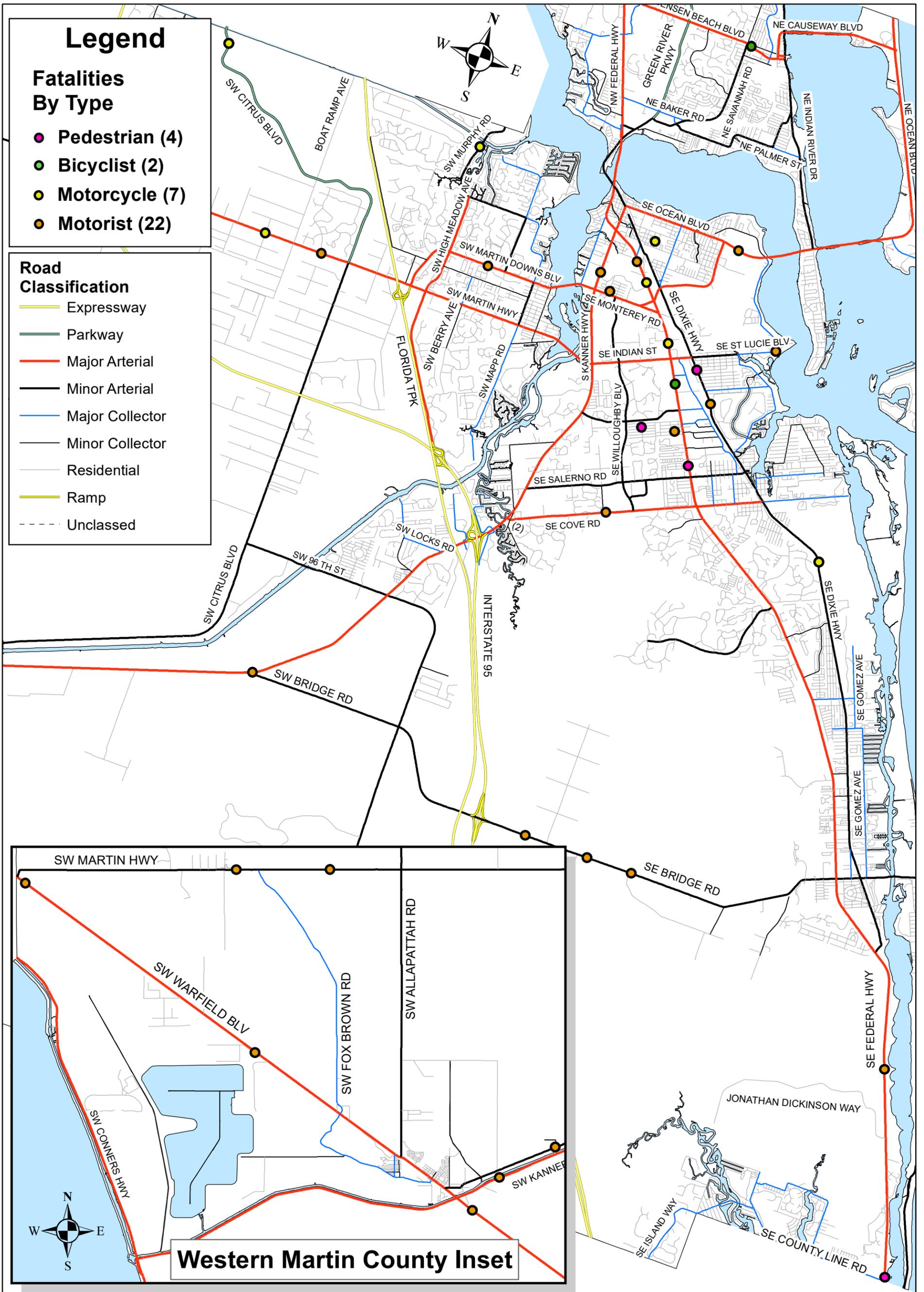
Legend

Fatalities By Type

- Pedestrian (4)
- Bicyclist (2)
- Motorcycle (7)
- Motorist (22)

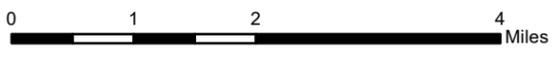
Road Classification

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



Fatal Crash Locations

July 1, 2020 - June 30, 2022



Disclaimer
 *This Geographic Information System Map Product, received from Martin County ("COUNTY") in fulfillment of a public records request is provided "as is" without warranty of any kind, and the COUNTY expressly disclaims all express and implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The COUNTY does not warrant, guarantee, or make any representations regarding the use, or the results of the use, of the information provided to you by the COUNTY in terms of correctness, accuracy, reliability, timeliness or otherwise. The entire risk as to the results and performance of any information obtained from the COUNTY is entirely assumed by the recipient.
 *Please contact the responsible Martin County Department for specific determinations.
 Created By: llambert@martin.fl.us
 Plot Date: January 18, 2022
 ArcMapProjectFile: T:\PWD\Traffic_Engineering\Cashes\Cash Surveillance Reports\2022\Supporting Documents\GIS\Fatalities 2022.mxd
 Plot Name: T:\PWD\Traffic_Engineering\Cashes\Cash Surveillance Reports\2022\Supporting Documents\GIS\Fatalities 2022.pdf

Table 5				
Location	Fatalities	Injuries	Crash Type	Contributing Factor
SE FEDERAL HIGHWAY & SE LUCKHARDT ST	1	0	Other	Motorcycle
SE FEDERAL HIGHWAY SOUTH OF SE TRESSLER DR	1	0	Off Road	Fail to maintain lane
SE FEDERAL HIGHWAY NORTH OF SE 171 ST STREET	1	1	Off Road	Excessive Speed
SE FEDERAL HIGHWAY & SE CENTRAL PKWY	1	1	Rear End	Failed to STOP
SW MARTIN HWY WEST OF SW FOX BROWN RD	1	0	Head On	Failed to maintain lane
SW MARTIN HWY WEST OF SW ALLAPATTAH RD	1	1	Head On	Failed to maintain lane
SE JACKSON STREET & SE ALDEN AVENUE	1	1	Off Road	Excessive Speed
SE VELASQUEZ AVENUE & SE SEVILLE STREET	1	2	Angle	Failed to STOP
SE COVE ROAD EAST OF SE AULT AVENUE	1	1	Head On	Failed to maintain lane
SE DIXIE HIGHWAY SOUTH OF SE GRAFTON AVENUE	1	0	Angle	Motorcycle
SW MARTIN DOWNS BLVD & SW OLYMPIC CLUB TER	1	2	Angle	Failed to STOP at RED Signal
SE BRIDGE ROAD EAST OF STATE ROAD 9	1	5	Head On	Improper passing
SE BRIDGE ROAD EAST OF STATE ROAD 9	2	0	Head On	Failed to maintain lane
SE BRIDGE ROAD EAST OF SE 138 TH STREET	1	1	Head On	Improper passing
SE OLD SAINT LUCIE BLVD & SE SAINT LUCIE BLVD	1	0	Off Road	Excessive Speed
SE NASSAU AVENUE & SE CHURCH STREET	1	0	Angle	Motorcycle
SW CITRUS BLVD SOUTH OF SW BECKER RD	1	0	Off Road	Motorcycle
SE OCEAN BLVD EAST OF SE MONTEREY ROAD	1	0	Off Road	Medical episode
SW MARTIN HIGHWAY & SW 66 th AVENUE	1	0	Angle	Motorcycle
SW MARTIN HIGHWAY & SW GOLDENGLOW DRIVE	1	0	Angle	Improper turn
S KANNER HIGHWAY & SE HANCOCK STREET	1	2	Angle	Crossed median
SW KANNER HIGHWAY EAST OF STATE ROAD 710	1	2	Head On	Failed to maintain lane

SW KANNER HIGHWAY EAST OF SW BRIDGE ROAD	1	0	Off Road	Failed to maintain lane
SW MURPHY ROAD SOUTH OF SW RIVERS END WAY	1	0	Off Road	Motorcycle
SW CITRUS BLVD EAST OF SW MINUTE MAID ROAD	1	0	Off Road	Failed to maintain lane
SE DIXIE HIGHWAY SOUTH OF SE KENSINGTON ST	1	4	Angle	Failed to maintain lane
STATE ROAD 710 SOUTH OF STATE ROAD 714	1	0	Head On	Failed to maintain lane

Conclusion

Producing a Crash Surveillance Report will always seem like a reactive measure, but it is important to review recent data to make informed decisions that will affect the future. One of the most important things Public Works staff can do is to participate in and provide recommendations during all transportation project scoping meetings. Most recently, Martin County collaborated with FDOT for safety improvements on SW Warfield Boulevard (SR-710) near SW Tommy Clements Street; as well as SW Conners Highway (SR-15/US-98) and Federal Highway (SR-5/US-1) for upcoming projects through their Five-Year Work Program.