



MARTIN MPO

# Vision Zero Plan

June 2022

# ACKNOWLEDGMENTS

Prepared For:



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# I. WHY VISION ZERO?

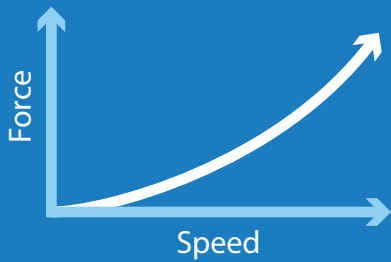
Over the past five years, Martin County has welcomed 10,000 new residents and the number of annual visitors continues to climb. Over the same time, there have been more than 8,000 crashes on roads in Martin County. Of these crashes, 351 resulted in death or serious injury.

The Martin Metropolitan Planning Organization (MPO) and its partner municipalities are taking a bold stand to no longer accept these traffic fatalities and injuries as the status quo. Our commitment is Vision Zero, which is a traffic safety initiative to reduce crashes and eliminate traffic-related deaths and serious injuries. Why? Because one traffic-related death is one too many.

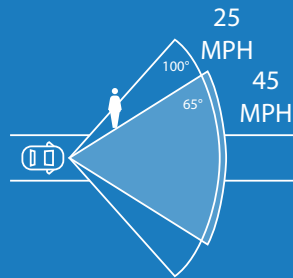
**GOAL** Vision Zero is simple in its mission: Eliminate traffic-related fatalities and serious injuries in Martin County.

The diagram below describes why high speed crashes are more likely to occur than crashes at lower speeds and, when they do occur, they are more likely to be deadly. A person hit by a vehicle at 23 mph has a 10% chance of dying. At 50 mph, the likelihood of dying is 75%.

**1** Crashes at higher speeds are more forceful and thus more likely to be fatal



**2** Drivers traveling at higher speeds have a narrower field of vision



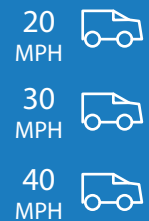
Source: NACTO City Limits: Setting Safe Speed Limits on Urban Streets, 2020

# Guiding Principles

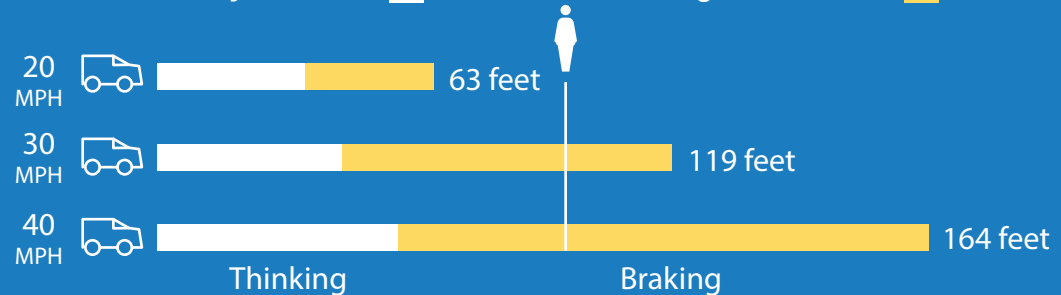
The following principles will guide the implementation of the Vision Zero Action Plan.

- 1** Traffic deaths and severe injuries are preventable and unacceptable.
- 2** Protecting human lives takes priority over all other objectives of the road system.
- 3** People will make mistakes on the road and the transportation system will be designed so mistakes are not fatal.
- 4** Reducing vehicle speed is fundamental to safer streets.
- 5** Solutions must be collaborative, equitable, and data-driven.
- 6** Local input is crucial during the planning, prioritization, and implementation of road projects.
- 7** Safety on Martin County streets is everyone's responsibility.
- 8** Our community is accountable for implementing the Vision Zero Action Plan, measuring performance, and responding accordingly.

**3** Drivers traveling at higher speeds travel further before they can react



**4** Vehicles traveling at higher speeds have longer braking distances



## Build on Adopted Plans and Policies

The MPO and community partners have already made policy changes and project investments to improve traffic safety and create a more complete and connected multimodal transportation system. Previously adopted goals and policies already document the MPO's commitment to reducing the number of crashes in Martin County. The focus of the Vision Zero Action Plan identifies strategies to reduce crashes that result in serious injuries and fatalities.

### Martin MPO Bicycle and Pedestrian Safety Action Plan (Adopted 2016)

The purpose statements connect MPO policy with FDOT policy, an important step to coordinate and secure resources to improve transportation safety in Martin County. Additionally, the plan identifies hotspots where crashes occur more frequently and how programs and projects can be used to improve safety at these hotspot locations.

### Martin MPO Bicycle, Pedestrian, and Trail Master Plan (Adopted 2017)

Safety is one of three priority outcomes associated with this plan. This desired outcome aligns with the prior vision established in the MPO's Bicycle and Pedestrian Safety Action Plan. The Vision Zero Action Plan can carry forward this vision for a safer transportation system. The vision can be achieved by carrying existing projects and programs forward as well as identifying new projects and programs.

### Martin MPO Complete Streets: Access to Transit (Adopted 2020)

Safety is one of the primary areas of focus for this study. The desired outcomes include making it safer to walk and bike to and from transit stops in Martin County. The Vision Zero Action Plan will implement the goals of this study by applying Complete Street concepts identified in the study to pedestrian and bicycle infrastructure around transit stops.

## Key Performance Measures

These key performance indicators (KPIs) are also identified in the MPO's 2045 Long Range Transportation Plan. The adopted goal by the MPO and FDOT is to achieve zero serious injuries and fatalities on roadways in Martin County. These KPIs should be reported annually to track trends and progress towards zero.

	Existing*	Goal
<b>All Modes</b>		
<b>Annual Fatalities</b>	<b>17</b>	<b>0</b>
<b>Annual Serious Injuries</b>	<b>53</b>	<b>0</b>
<b>Non-Motorized Fatalities and Serious Injury Crashes</b>		
<b>Fatalities</b>	<b>4</b>	<b>0</b>
<b>Serious Injuries</b>	<b>9</b>	<b>0</b>

\*Annual numbers based on five-year average of crash data from 2013 to 2017.

### Martin in Motion: 2045 Long Range Transportation Plan (LRTP) (Adopted 2020)

Safety is the first priority outcome described in the vision statement. Additionally, the vision for the transportation system in Martin County is one that supports all modes. The Vision Zero Action Plan will support the LRTP vision by specifically identifying ways to improve safety where the most serious and fatal crashes occur in the County.

## II. MARTIN COUNTY'S STORY

Over the past year, the Martin County community has worked to define what and where transportation safety is important and how government, businesses, and citizens can work together.

The work for this plan has also been a continuation of previous and on-going work by the MPO and other community members to address safety needs.

Key MPO plans the Vision Zero Action Plan advances and supports are:

- Martin MPO **Bicycle and Pedestrian Safety Action Plan**, adopted in May 2016
- Martin MPO **Bicycle, Pedestrian, and Trails Master Plan**, adopted in December 2017
- Martin MPO **Complete Streets: Access to Transit Study**, adopted in June 2020
- Martin MPO **Martin in Motion 2045 Long Range Transportation Plan**, adopted in October 2020



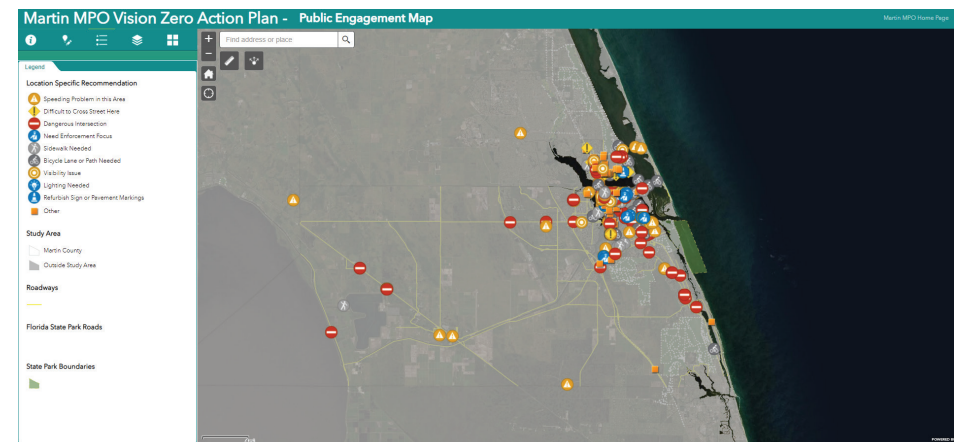
**Vision Zero is simple in its mission:**  
Eliminate traffic-related fatalities and serious injuries in Martin County.

The Vision Zero Martin website services as a central location for information about the Vision Zero Action Plan, safe street resources, as well as on-going safety activities and ways to get involved.

## Public Engagement Summary

This project included education and outreach activities as well as opportunities to provide input and shape recommendations. The project also included the launch of an MPO website specifically focused on Vision Zero information as well as the launch of an interactive online map to identify needs.

Engagement activities included a safety education programs. While a part of this project, these activities are also a part of the MPO's on-going efforts to promote safe streets in Martin County.



The public engagement map for this project allowed the community to provide input about safety needs throughout Martin County. Comments noted are related to speeding problems, difficult street crossings, dangerous intersections, where enforcement is needed, and where there are gaps in the network for sidewalks, bikeways, and street lighting.

# Public Outreach

There needs to be a way to get across the road without going a mile out of your way.

Sidewalk is too narrow for kids to bike safely to school.

As traffic comes over the bridge heading south, there is a major speeding problem. This is particularly important as it is very close to downtown and there are increasingly more walkers and bikers.

People ignore these stop signs.

There are kids playing along this road. A speed limit of 40 mph is way too fast!

The sidewalks and crosswalks need pedestrian scale lighting.

# Safety Campaign

The safety campaign for the Vision Zero Action Plan included online safety messages posted to the MPO's Facebook page as well as engagement activities in the community. Additionally, a Vision Zero Martin logo was developed to provide consistent branding and recognition for safety campaigns by the MPO and Martin County community partners.



The Vision Zero Logo will be used to link safety efforts to adopted policy in Martin County.



Safety campaigns included social media posts about how to walk and bike safely in Martin County.



# Stakeholder Committee

Two of the Vision Zero Action Plan guiding principles are:

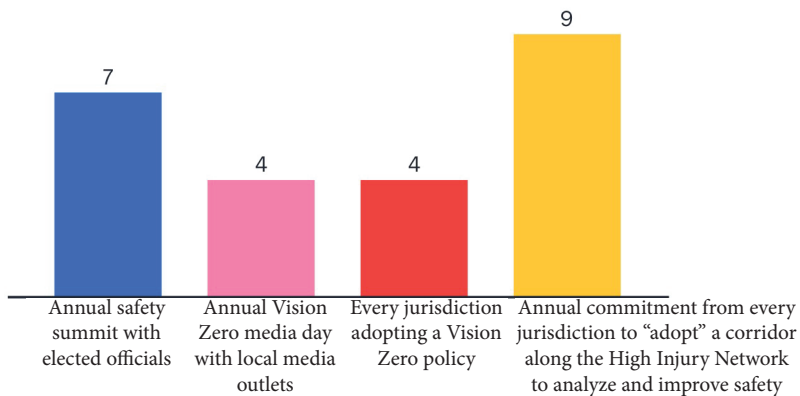
- Safety on Martin County Streets is everyone’s responsibility; and
- Our community is accountable for implementing Vision Zero, measuring performance, and responding accordingly.

No one organization or individual can improve safety on Martin County’s streets.

As part of the Vision Zero Action Plan, a stakeholder committee was formed to help identify safety needs and strategies for implementation. The group represented diverse responsibilities and perspectives, including local and state government agencies and departments, law enforcement, medical and public health organizations, the business community, and community non-profit organizations.

The committee met three times during the development of this plan. The first meeting focused on identifying safety needs and discussing on-going safety efforts in Martin County. The second meeting focused on identifying implementation priorities. The third meeting focused on providing input about implementation responsibilities and coordinating on-going safety initiatives and projects.

## What accountability actions would you be more interested in seeing in Martin County?



The Stakeholder Committee helped identify actions to implement this plan, such as voting for which evaluation and accountability actions the group is most interested in seeing for Martin County.

## Stakeholder Committee Representatives

Martin County Community Redevelopment Agency (CRA)

Martin County Fire Rescue Department

Martin County Growth Management Department

Martin County Public Works Department

Martin County School District

Martin County Sheriff’s Office

Martin County Transit

City of Stuart Community Redevelopment Agency (CRA)

City of Stuart Fire Rescue Department

City of Stuart Police Department

City of Stuart Public Works Department

Village of Indiantown

Town of Jupiter Island

United Way Martin County

Cleveland Clinic Martin Health

House of Hope

Stuart/Martin County Chamber of Commerce

Florida Department of Transportation (FDOT) Community Traffic Safety Team

Florida Department of Transportation (FDOT) Law Enforcement Liaison

Florida Department of Transportation (FDOT) MPO Liaison

Florida Department of Transportation (FDOT) Safety Administrator

Florida Department of Health (FDOH) Martin County

# III. UNDERSTANDING THE ISSUES

The Martin MPO’s approach to Vision Zero is grounded in research. The findings were used to identify and prioritize strategies to improve safety outcomes on Martin County’s roads.

The crash analysis for this plan provides an understanding of trends and context related to traffic crashes in Martin County, particularly those resulting in serious injuries and fatalities.

Traffic crashes in Martin County are not decreasing and the number of serious injury crashes and fatal crashes remains constant on an annual basis. In order to reverse course, significant changes to Martin County’s transportation system will need to be made to create a downward trend towards zero serious injuries and deaths. Business as usual will continue to generate preventable injuries and deaths every year.

In terms of crash context, most crashes are occurring in urban areas, on major roads where traffic speeds and volumes are highest, in dry conditions, and when drugs and alcohol are not involved. The top three contributing factors to serious injury and fatal crashes are operating motor vehicle in a careless or negligent manner (28%), failing to yield right-of-way (16%), and no contributing action (13%). People are going to make mistakes and decisions that are negligent or unsafe. The goal of a Vision Zero approach is to design a transportation system where mistakes and decisions aren’t fatal. Ultimately, slower streets are safer streets and they are more forgiving of human error.

Crash data for the past five years was analyzed using the Florida Department of Transportation’s (FDOT) Crash Analysis Reporting System (CARS). The CARS database is generated with crash data from the Department of Highway Safety and Motor Vehicles (DHSMV) and roadway information from FDOT. It is a central data collection system for traffic crashes in the State of Florida. The analysis excludes crashes that occurred on I-95 and Florida’s Turnpike.

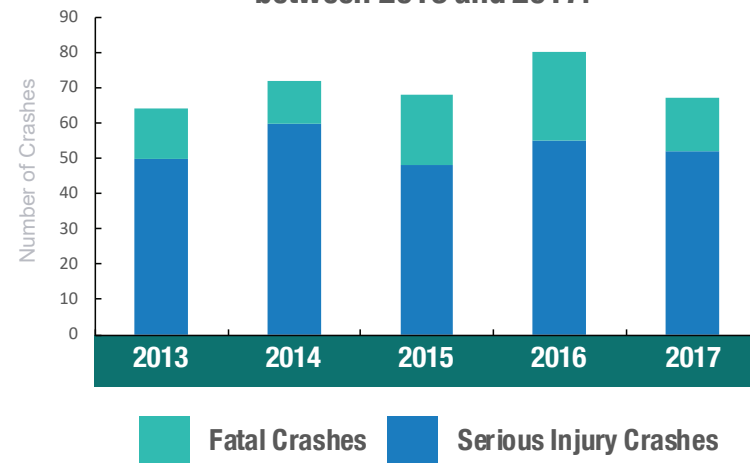
## Summary of Findings

### Key Findings

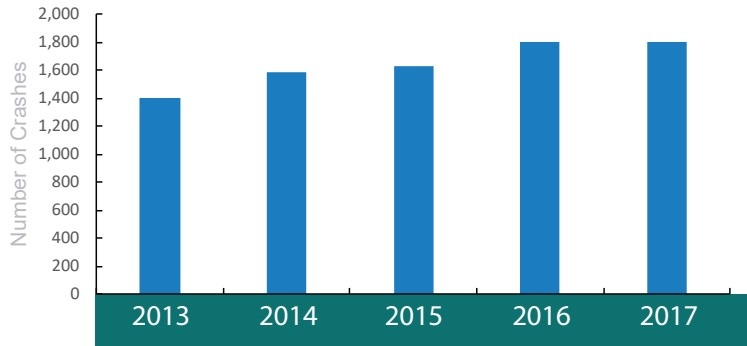
- 8,233 crashes occurred on Martin County’s roadways over the past five years.
- Four crashes on average occur every day on Martin County roadways.
- 351 fatal and serious injury crashes occurred on Martin County’s roadways over the past five years.
- Every month, six people on average are seriously injured or killed on Martin County roadways.

**With a Vision Zero approach, the goal is to design streets that acknowledge and accommodate human behavior in ways that do not result in serious injury or death.**

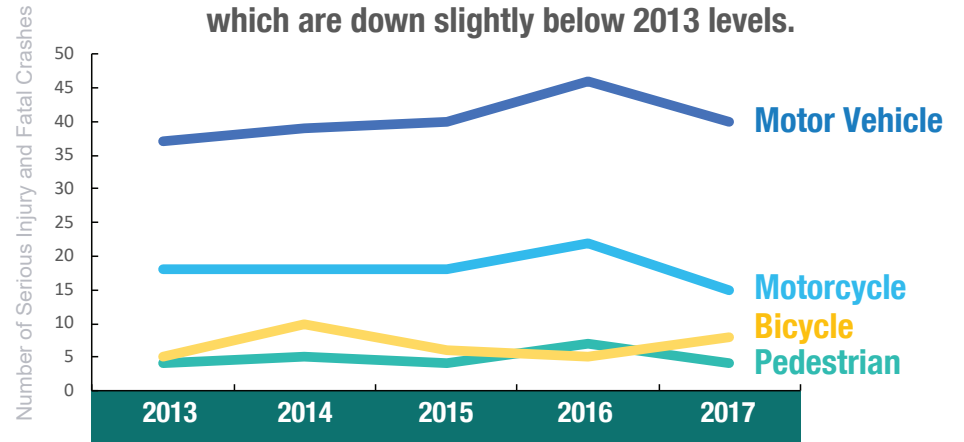
**351** crashes involved a fatality or serious injury between 2013 and 2017.



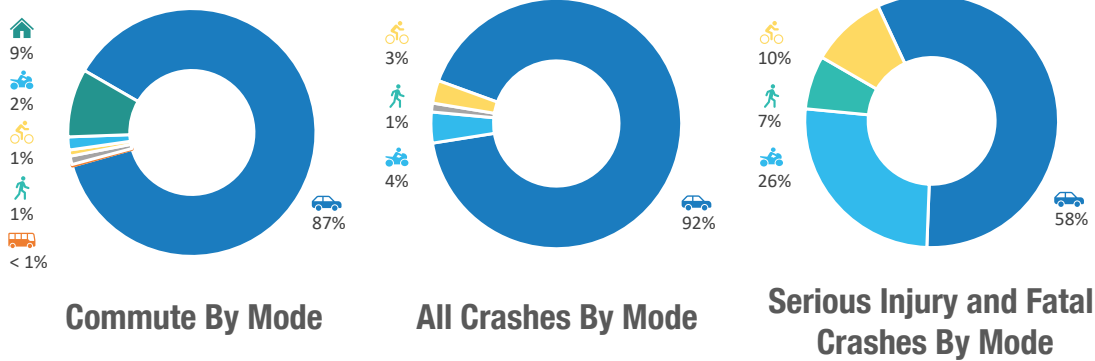
8,233 crashes occurred in Martin County from 2013 to 2017.



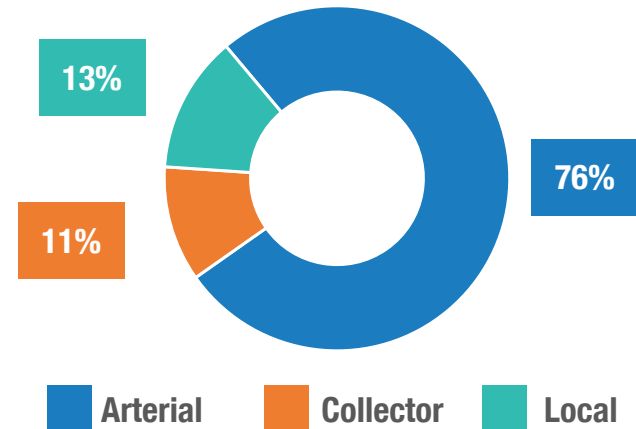
Serious injury and fatal crashes are higher for every mode in 2017 than in 2013, with the exception of motorcycles, which are down slightly below 2013 levels.



People driving motor vehicles account for most of the crashes from 2013 to 2017, particularly serious injury and fatal crashes.



The majority of serious injury and fatal crashes occur on major roadways. These roadways have higher speeds, more vehicular volumes, and more vehicle travel lanes.



## IV. HIGH INJURY CRASH NETWORK

All of the serious injury and fatal crashes in Martin County from 2013 to 2017 occurred on just 12% of the roadway network. They are highlighted in yellow on the High Injury Network Map.

Additionally, the top 16 crash segments are those with five or more serious injury and fatal crashes. These segments account for less than 1% of the roadway network and are highlighted in red on the map on the next page.

Concentrating Vision Zero efforts at high crash hot spots can help reduce crashes where they are most prevalent. Proposed safety strategies for these locations are described in the Action Plan chapter.

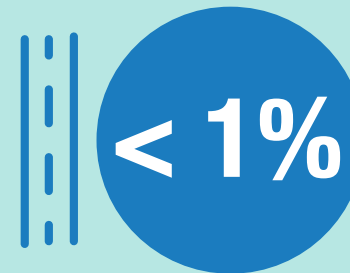
By combining proactive safety strategies with targeted improvements where serious injury and fatal crashes happen most frequently, the Martin County community can collectively work towards zero serious injury and fatal crashes.



Major roads, like US-1, are where the majority of serious injury and fatal crashes occur in Martin County.

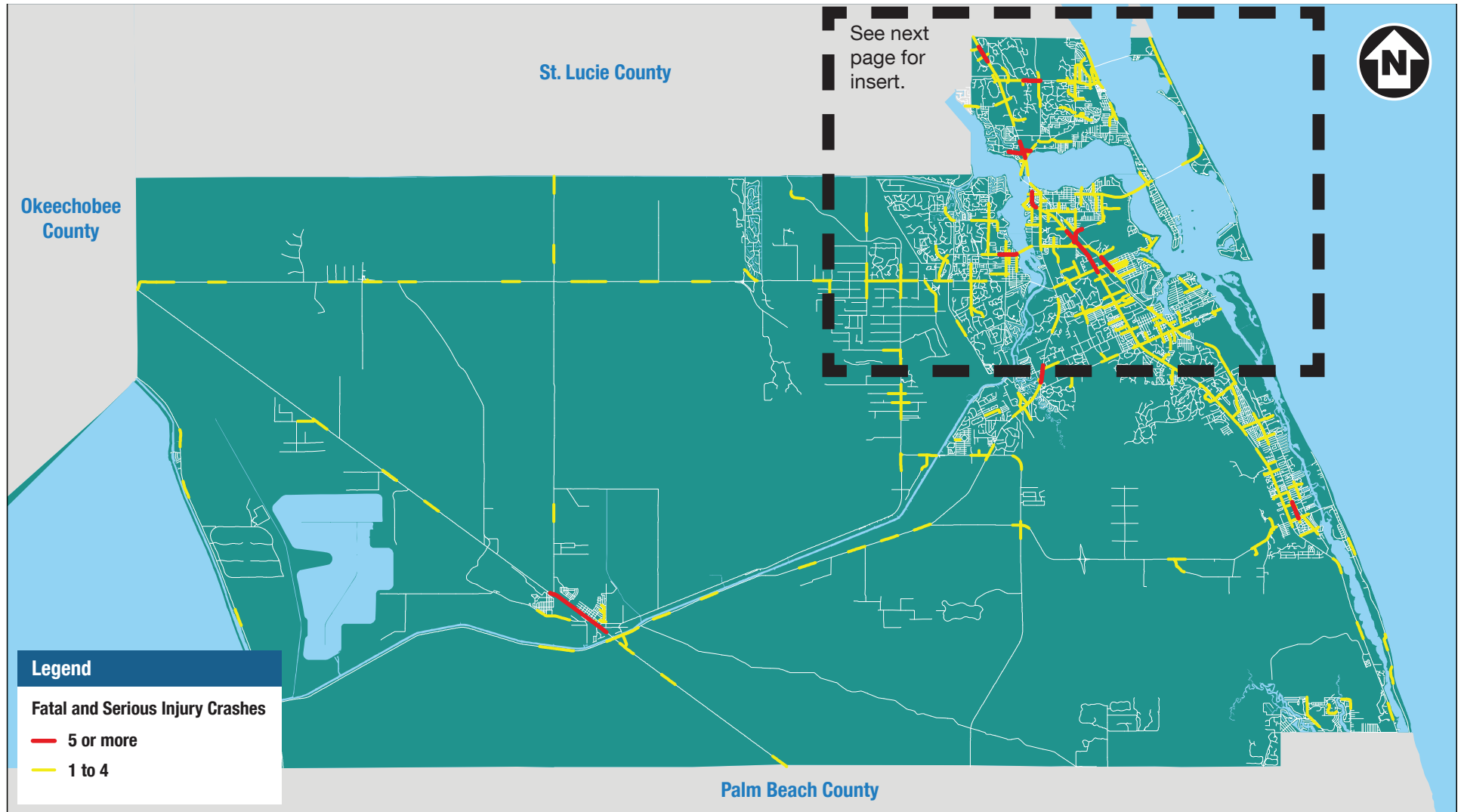


**of the roadway network in Martin County is where all of the serious injury and fatal crashes occurred over the past five years.**



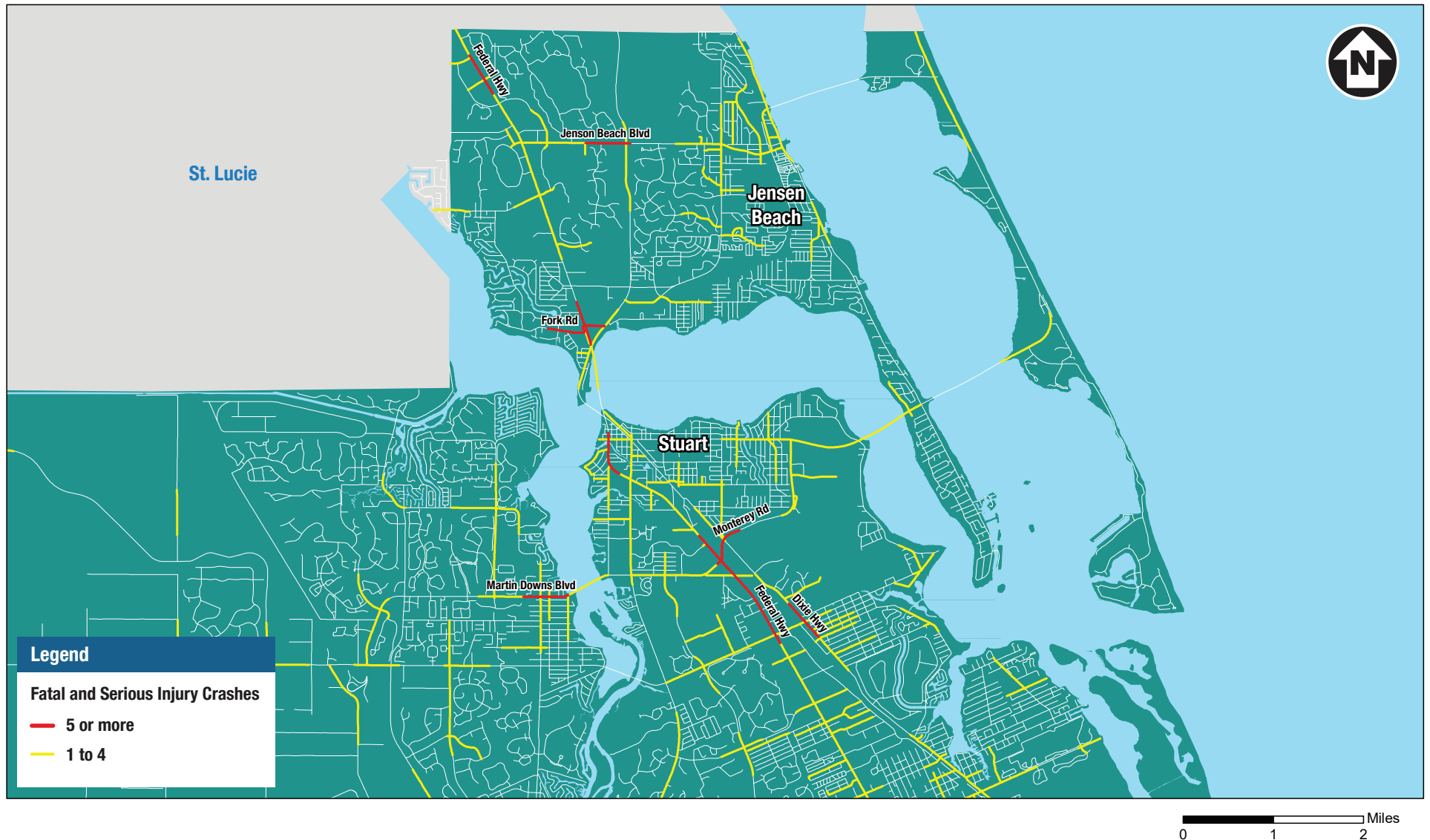
**of the roadway network in Martin County is where the top 16 crash segments occurred over the past five years.**

# High Injury Crash Network Map



Data Source: FDOT CAR Data (July 1, 2013 to June 30, 2018)

# High Injury Crash Network Map (insert)



Data Source: FDOT CAR Data (July 1, 2013 to June 30, 2018)

# V. VISION ZERO PLAN

The Vision Zero Plan outlines and describes the incremental steps the MPO and its partners will take to achieve the goal of zero serious injuries and fatalities on Martin County streets.

To achieve this goal, the Vision Zero Plan is organized into three focus areas:

**Focus Area 1: Safe Streets** – More than any other factor, the physical design of streets shape safety outcomes. A safe streets focus includes the physical changes and associated enforcement to create safe conditions on Martin County’s roads.

**Focus Area 2: Culture** – Achieving Vision Zero will be due in part to a change in travel behavior. Culture-related actions focus on non-infrastructure efforts to educate and encourage safety.

**Focus Area 3: Evaluation and Accountability** – The cornerstone of Vision Zero is a data-guided approach. Actions will focus on measuring, reporting, and tracking progress.



A key focus for Vision Zero is creating safe streets for all ages, abilities, and travel choices.



# Focus Area 1: Safe Streets

Safe Streets actions focus on two topics:

- Systems
- High Injury Network Sites

The **Systems** focus is about being proactive by integrating safety measures on all projects. Every capital project and maintenance project is an opportunity to address safety. By integrating safety into all aspects of street design and maintenance, the Martin County community can be proactive about preventing serious injury and fatal crashes. Additionally, enforcement of traffic laws and safe travel behavior help reduce and deter unsafe behaviors.

The focus on **High Injury Network Sites** is an effort to change conditions where serious injury and fatal crashes occur most frequently. By making safety changes at these locations, the Martin community can make significant strides towards eliminating serious injury and fatal crashes.



A focus for Vision Zero is to create safe streets for all modes. Creating dedicated space for people walking, biking, and driving, like this segment of Jensen Beach Boulevard, is part of a “systems” approach to creating safer streets.



## Speed Management

Fatalities on Martin County roads cannot be eliminated without reducing vehicle speeds.

76% of serious injury and fatal crashes occur on arterial roads. Posted speed limits along arterials are 45 MPH or higher, and vehicles are regularly exceeding posted speed limits.

Additionally, 44% of serious injury or fatal crashes are the result of drivers operating motor vehicles in a careless or negligent manner or failing to yield right-of-way. The combination of speed and dangerous driving behavior is a potent combination resulting in serious injuries and fatalities.

Research also supports the relationship between speed and likelihood of fatality. The American Association of State Highway and Transportation Officials (AASHTO) [Highway Safety Manual](#) reports a 1 mph reduction in operating speeds can result in 17% decrease in fatal crashes. A [separate study](#) found that a 10% reduction in average speed results in 19% fewer injury crashes, 27% fewer severe crashes, and 34% fewer fatal crashes.

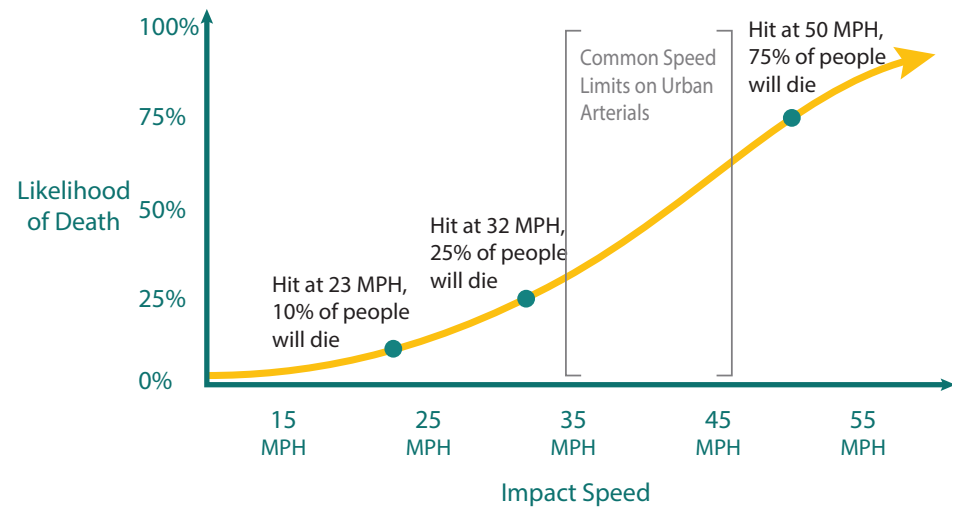
Reducing speed limits can be difficult. State and local regulations as well as default professional standards for traffic engineering can make speed reductions challenging. Speed reductions should be done in combination with other strategies, such as enforcement and street design changes. By working with state and local partners, Martin County can reduce speed limits and vehicle speeds. The outcome will be lives saved.



### Speed Management Recommendations

- 1.1 Evaluate speed reduction for MPO-funded projects
- 1.2 Work with partners to review speed limits on the High Injury Network

The Likelihood of Fatality Increases Exponentially with Vehicle Speed



Source: NACTO City Limits

# Countermeasures

A cornerstone of a Vision Zero approach to transportation safety is proactive changes to street design and traffic operations.

Countermeasures are researched strategies that have been shown to improve safety and save lives. Countermeasures should be considered with every new transportation project in Martin County. New roads should be designed to promote safe travel behavior that reduce the likelihood of serious injury and fatal crashes.

Additionally, safety studies should be performed at high crash locations on the High Injury Network. The safety studies can identify the type of contributing factors associated with the corridor and identify other context factors that contribute to crashes.

The Federal Highway Administration (FHWA) maintains guidance and research about countermeasures. The guidance should be a regular source for safety strategies and street design in Martin County ([FHWA Safety Countermeasures](#)).

## FHWA Countermeasure Categories

### SPEED MANAGEMENT

- Speed Safety Cameras
- Variable Speed Limits
- Appropriate Speed Limits for All Road Users

### ROADWAY DEPARTURE

- Wider Edge Lines
- Enhanced Delineation for Horizontal Curves
- Longitudinal Rumble Strips and Stripes on Two-Lane Roads
- SafetyEdge<sup>SM</sup>
- Roadside Design Improvements at Curves
- Median Barriers

### INTERSECTIONS

- Backplates with Retroreflective Borders
- Corridor Access Management
- Dedicated Left- and Right-Turn Lanes at Intersections
- Reduced Left-Turn Conflict Intersections
- Roundabouts
- Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections
- Yellow Change Intervals

### PEDESTRIANS/BICYCLES

- Crosswalk Visibility Enhancements
- Bicycle Lanes
- Rectangular Rapid Flashing Beacons (RRFB)
- Leading Pedestrian Interval
- Medians and Pedestrian Refuge Islands in Urban and Suburban Areas
- Pedestrian Hybrid Beacons
- Road Diets (Roadway Reconfiguration)
- Walkways

### CROSSCUTTING

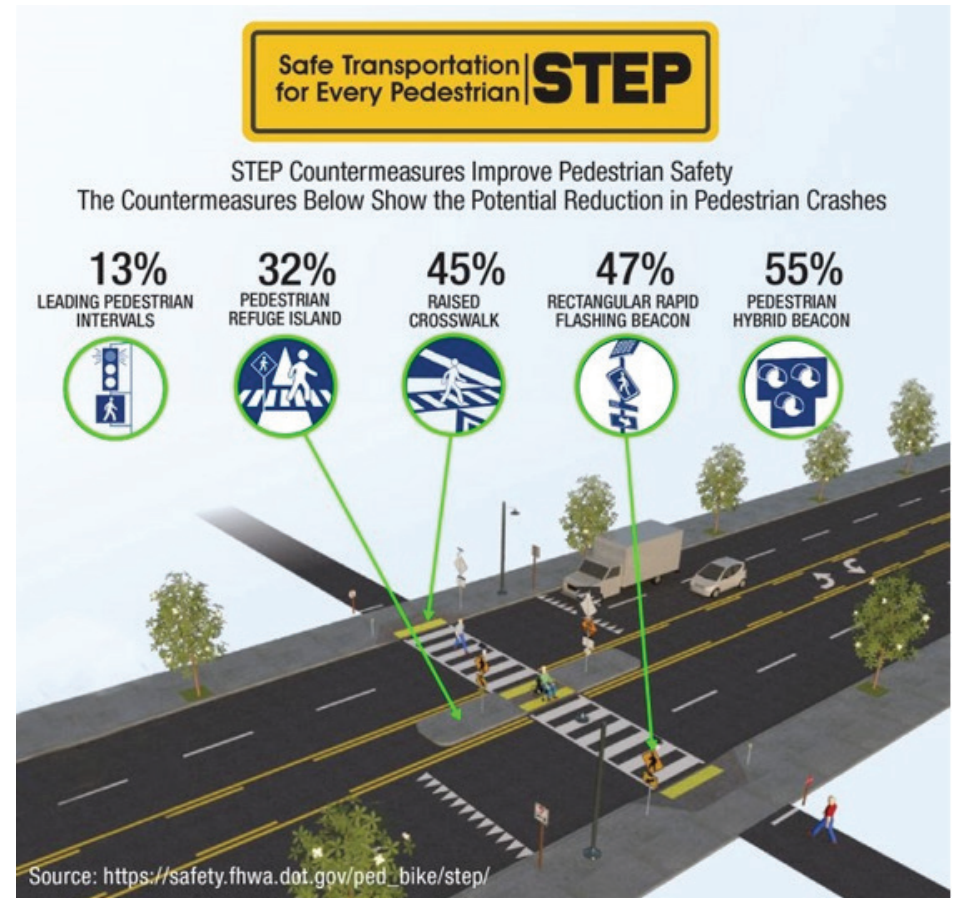
- Pavement Friction Management
- Lighting
- Local Road Safety Plans
- Road Safety Audit

FHWA-SA-21-082

Source: FHWA Proven Safety Countermeasures

## Countermeasures Recommendations

- 1.3 Evaluate resurfacing projects annually for safety countermeasure opportunities
- 1.4 Evaluate capital projects annually for safety countermeasure opportunities
- 1.5 Identify where high visibility crosswalks are needed
- 1.6 Review signalized intersections on the High Injury Network to identify candidates for safety improvements
- 1.7 Evaluate High Injury Network corridors for opportunities to narrow lane widths or reduce the number of vehicular lanes
- 1.8 Provide recommendations for Land Development Codes (LDCs) related to safe and connected transportation facility design on an as needed basis
- 1.9 Work with partners to review and update Maintenance of Traffic (MOT) Plan policies related to bicyclist and pedestrian mobility considerations
- 1.10 Work with partners to identify where new lighting is needed along High Injury Network corridors
- 1.11 Identify areas to improve safe access to high activity bus stops in areas of frequent severe injury and fatal crashes
- 1.12 Work with agency partners to identify areas to install bicycle facilities and sidewalks where there is a high frequency of bicycle and pedestrian serious injury and fatal crashes and where there are no existing bicycle facilities or sidewalks
- 1.13 Work with partners to identify potential locations for roundabouts on the High Injury Network
- 1.14 Evaluate elimination of dedicated right-turn lanes along High Injury Network where speed and turning movements are contributing to crash frequency





Traffic calming countermeasures and multimodal improvements, like these completed changes to Mapp Road, improve safety and increase access to destinations by walking, biking, and driving.

## Enforcement

Public safety agencies and departments play an important role in reducing traffic-related crashes and promoting safe travel behavior. Enforcement works best when it is implemented in conjunction with education and awareness activities.

Additionally, enforcement should be done equitably. In some cases, enforcement has resulted in alienating under-served communities or over-enforcing certain populations. In other cases, enforcement has focused on victims and the most vulnerable populations. An example is an overemphasis on pedestrian enforcement over vehicular enforcement.

In Martin County, local law enforcement should continue to work with the MPO, FDOT, and local partners to enforce traffic laws, particularly in areas with known safety issues and crash histories.

### Enforcement Recommendations

- 1.15 Coordinate with partners to focus on enforcement efforts along the High Injury Network
- 1.16 Recommend increased enforcement activity during seasonal peak periods when crashes are most frequent
- 1.17 Work with FDOT to create a Martin-specific Community Traffic Safety Team (CTST) and hold regular meetings
- 1.18 Incorporate use of data-driven analytics and road safety assessments within each of the respective law enforcement agencies' traffic safety programs



Source: FDOT Alert Today Florida



Enforcement events have been a regular part of public safety initiatives in Martin County and should continue to promote safe travel behavior.

## High Injury Network Sites

High Crash sites are roadway segments on the High Injury Network where serious injuries and fatal crashes occur most frequently. The top 5 locations account for 20% of all serious injuries and fatal crashes in Martin County over the past five years. Improving safety at these locations will provide a significant reduction in serious injuries and fatal crashes.

For each site summarized, a Road Safety Audit (RSA) should be conducted. RSA's are formal safety performance examinations of a road by an independent, multidisciplinary team.

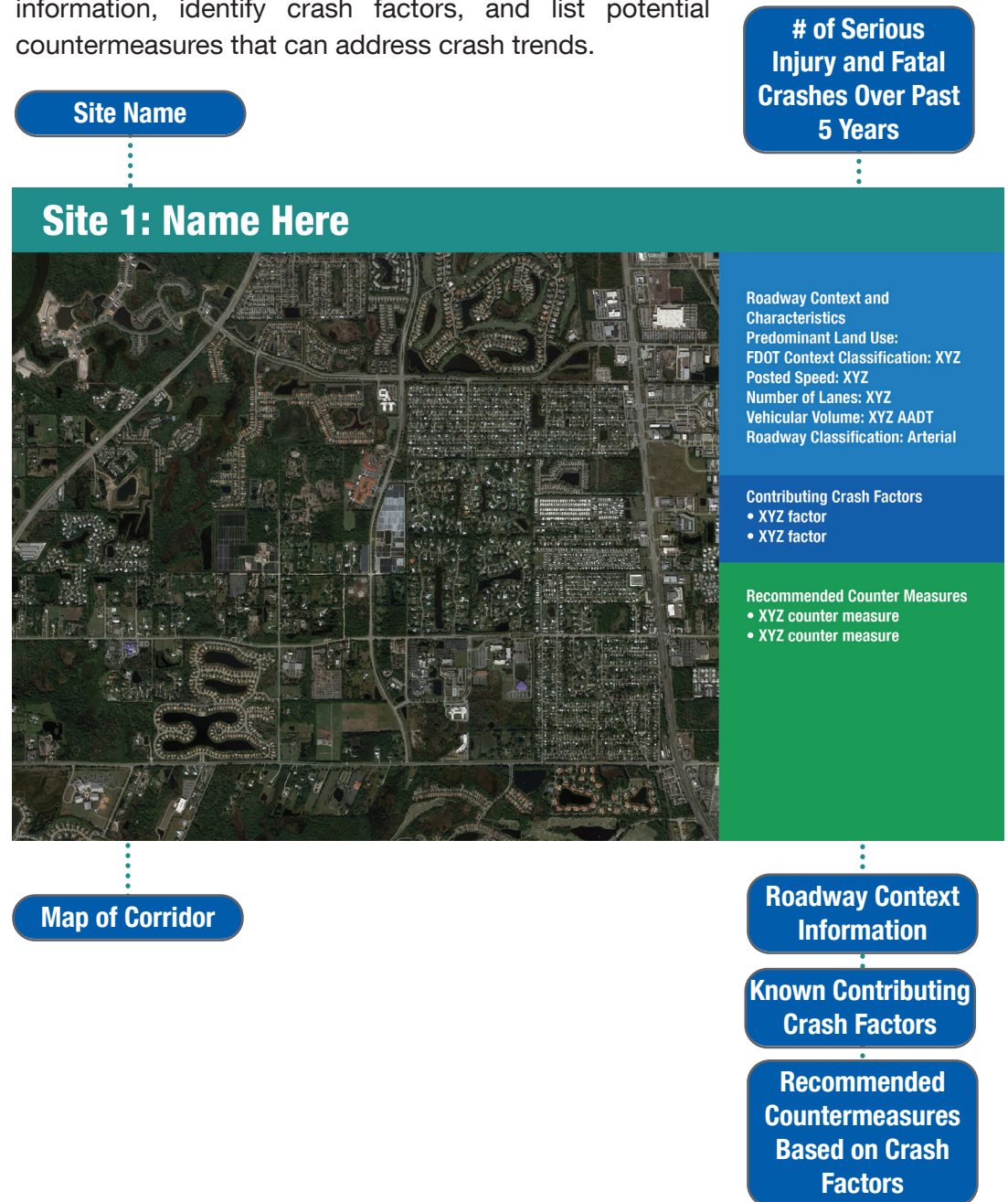
The aim of the RSA is to answer the following questions:

- What elements of the road may present a safety concern?
- What opportunities exist to eliminate or mitigate identified safety concerns?

Additionally, planned capital and maintenance project lists should be reviewed to identify if any projects are scheduled along these corridors. If so, the projects should consider safety countermeasures that address the frequency of serious injuries and fatal crashes at these locations.

## High Injury Network Sites Page Layout

The High Crash Site summaries provide the basic context information, identify crash factors, and list potential countermeasures that can address crash trends.



## Context Classification

The Florida Department of Transportation (FDOT) has a context classification system to guide decision-making about street design. Streets and roads function differently and generate different travel needs based on development patterns.

For example, a two-lane rural road through farmland in western Martin County is going to function differently than a two-lane street in Downtown Stuart. FDOT has developed preliminary context classifications for all major roads in Martin County. These classifications can be used as a starting point to determine the types of design changes that can be applied to create safer travel conditions. The [FDOT Florida Design Manual](#) (FDM) establishes design criteria and standards for design controls like

design speed, traffic operations, and widths of different street elements such as sidewalks, bike lanes, and travel lanes for vehicles. The FDM uses the context classification system to organize many of the design criteria and standards for a street.

The graphic on the next page provides an example of how the context classification system describes roadway elements and how land use influences roadway design.

The goal for the High Injury Crash Network sites is to align the design of the roadway with the surrounding land use context. The desired outcome is safer streets.



Source: FDOT

Example Street: **Ocean Blvd in Downtown Stuart**  
FDOT Context Classification: **C4 Urban General**



**Roadway**

Frequent intersections, space dedicated to multiple modes, and the scale of the road is oriented to people walking. Speeds are slower than in a suburban or rural context.

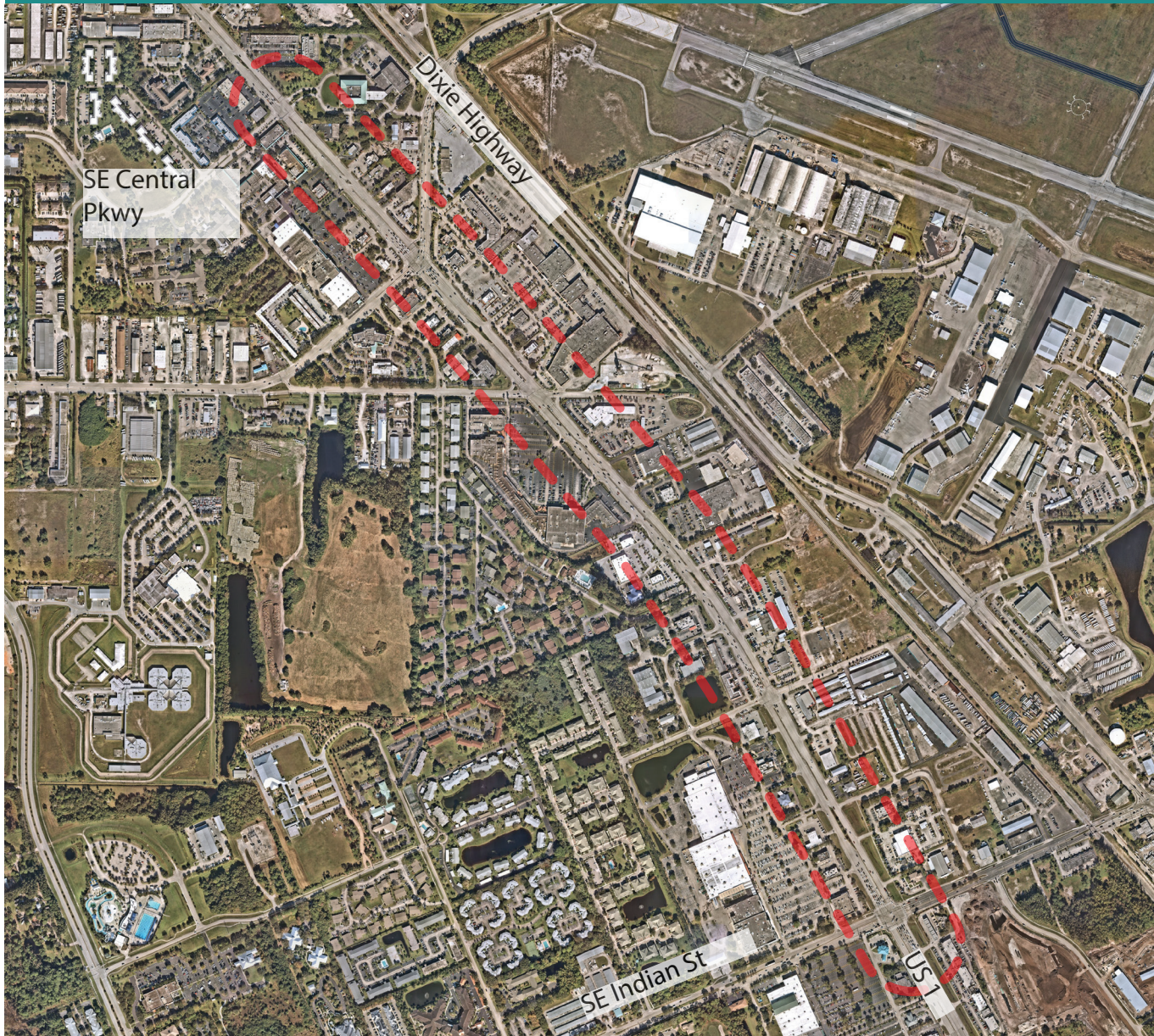
**Land Use**

A mix of uses with buildings that have direct access to sidewalks. Destinations and neighborhoods are within a short walking distance.



## Site 1: US 1/SE Federal Hwy From SE Indian St to SE Central Pkwy

**26** Serious Injuries and Fatal Crashes



### Roadway Context and Characteristics

Predominant Land Use: Retail

FDOT Context Classification: C4-Urban General

Posted Speed: 45 MPH

Number of Lanes: 6-Lane Divided

Vehicular Volume: 45,498 AADT

Roadway Classification: Arterial

Sidewalk: Both Sides

Bicycle: Designated bicycle lanes along both sides

Transit: MARTY Route 1

### Contributing Crash Factors

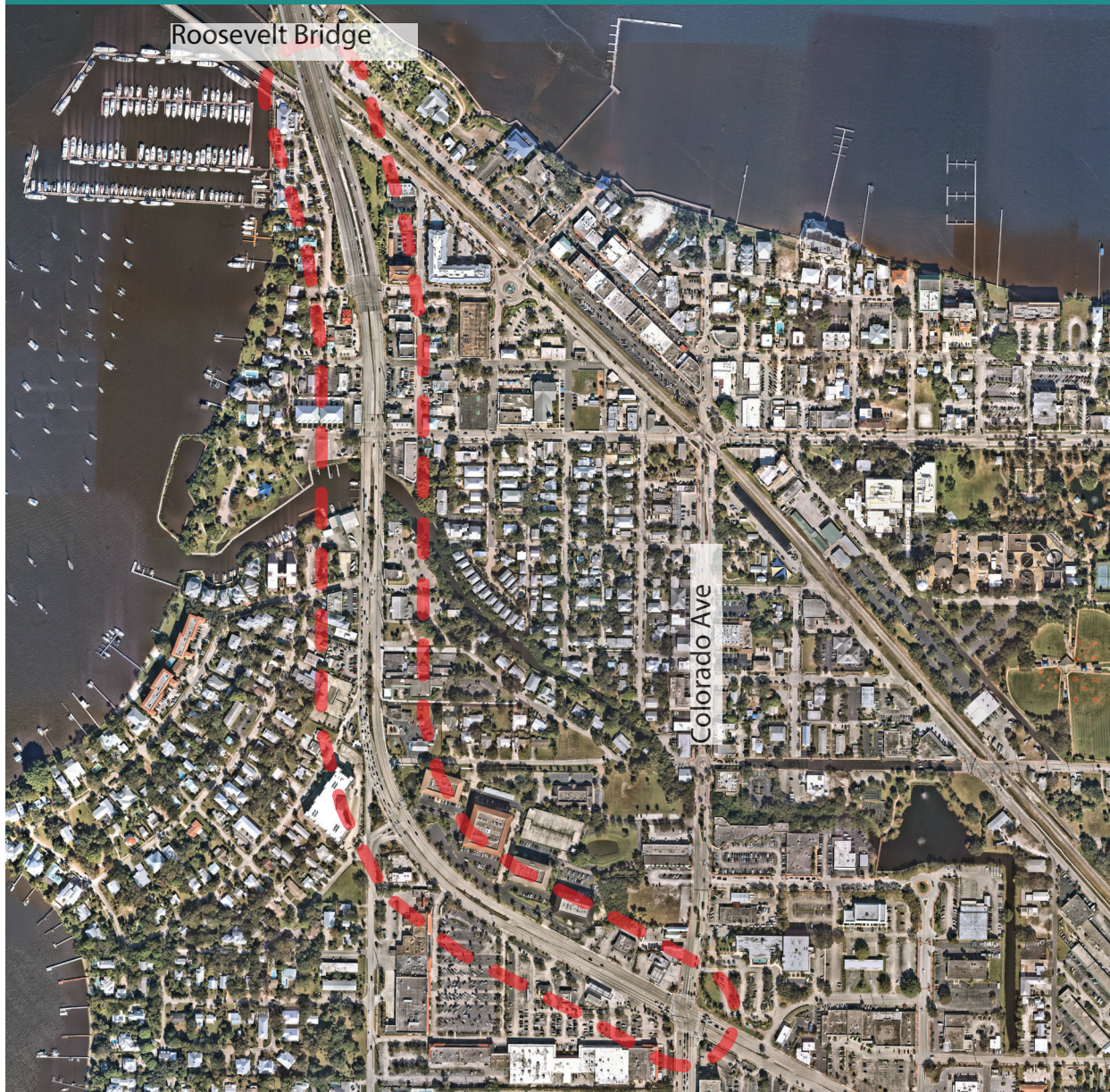
- Operated motor vehicle in careless or negligent manner
- Failed to yield right-of-way
- Followed too closely
- Improper turn

### Recommended Countermeasures

- Road safety audit
- Consider speed reduction, speed feedback signs, and/or enforcement
- Evaluate street lighting
- Install retro-reflective backplates for signal heads
- Improve bicycle facilities to protect bicyclists (protected or Cycle Track)
- Education for bicycle etiquette
- Consider transit amenities
- Provide transit shelter
- Evaluate signalized intersections for leading pedestrian interval (LPI)

## Site 2: US 1/Federal Hwy from SR 76/Kanner Hwy to Roosevelt Bridge

**14** Serious Injuries and Fatal Crashes



SR 76/  
Kanner Hwy

### Roadway Context and Characteristics

Predominant Land Use: Retail, residential, public spaces  
FDOT Context Classification: C4-Urban General, bridge is C3C-Suburban Commercial  
Posted Speed: 35 to 45 MPH  
Number of Lanes: 6-Lane Divided  
Vehicular Volume: 54,897 AADT  
Roadway Classification: Arterial  
Sidewalk: Both Sides  
Bicycle: Designated bicycle lanes along both sides of bridge  
Transit: MARTY Route 1

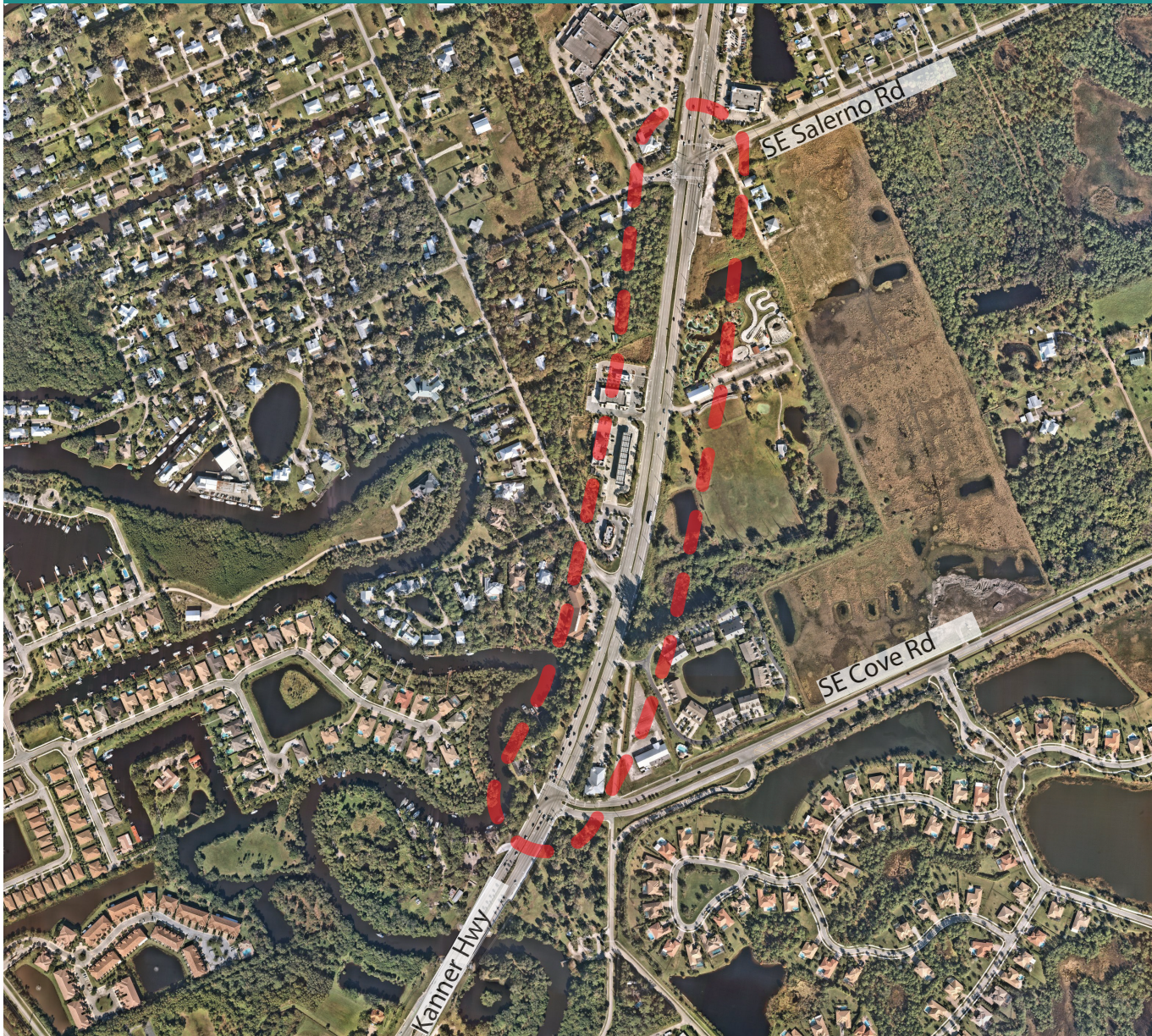
### Contributing Crash Factors

- Operated motor vehicle in careless or negligent manner
- Failed to yield right-of-way
- Ran off roadway

### Recommended Countermeasures

- Road safety audit and speed reduction
- Consider bicycle facilities south of the bridge (one of the fatal crashes involved a bike)
- Protected bicycle lanes along bridge
- Speed feedback signs, and/or enforcement
- Evaluate street lighting condition, especially along bridge
- Install retro-reflective backplates for signal heads
- Consider transit amenities
- Provide transit shelter
- Evaluate signalized intersections for leading pedestrian interval (LPI) phase

## Site 3: S Kanner Hwy from SE Cove Rd to SE Salerno Rd



# 10 Serious Injuries and Fatal Crashes

### Roadway Context and Characteristics

Predominant Land Use: Retail, park, residential  
FDOT Context Classification: C3R-Suburban Residential  
Posted Speed: 45 MPH  
Number of Lanes: 6-Lane Divided  
Vehicular Volume: 34,493 AADT  
Roadway Classification: Arterial  
Sidewalk: Both Sides  
Bicycle: Buffered bicycle lanes  
Transit: None

### Contributing Crash Factors

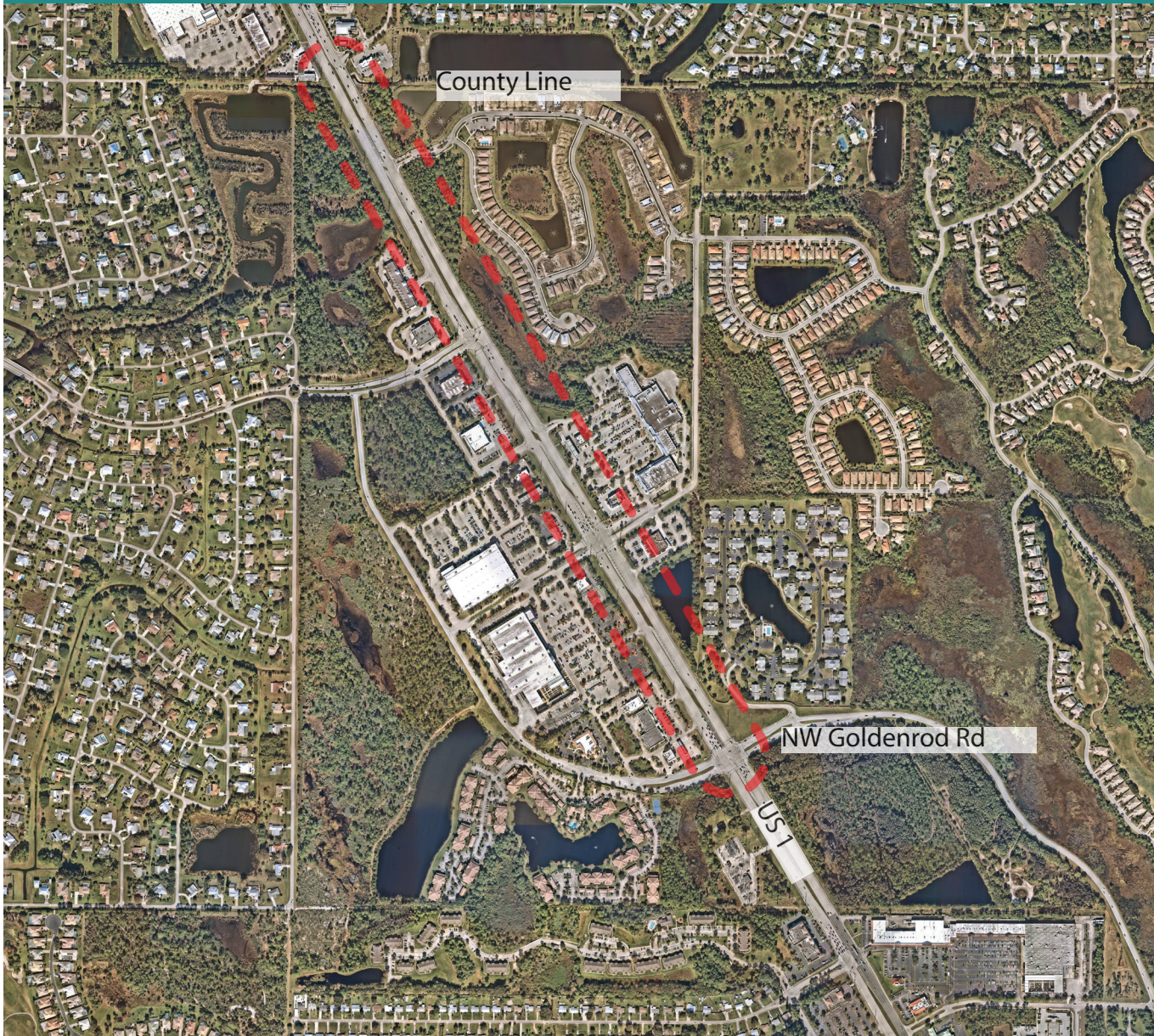
- Failed to keep in proper lane
- Failed to yield right-of-way
- Improper turn
- Operated motor vehicle in careless or negligent manner

### Recommended Countermeasures

- Education for bicycle etiquette
- Speed enforcement
- Install retro-reflective backplates for signal heads
- Evaluate signalized intersections for leading pedestrian interval (LPI) phase

## Site 4: US 1/Federal Hwy from NW Goldenrod Rd to County Line

## 9 Serious Injuries and Fatal Crashes



### Roadway Context and Characteristics

Predominant Land Use: Retail and residential  
FDOT Context Classification: C3C-Suburban Commercial  
Posted Speed: 45 MPH  
Number of Lanes: 8-Lane Divided  
Vehicular Volume: 60,343 AADT  
Roadway Classification: Arterial  
Sidewalk: Both Sides  
Bicycle: Designated bicycle lanes  
Transit: MARTY Route 1

### Contributing Crash Factors

- Operated motor vehicle in careless or negligent manner
- Erratic or careless driving
- Followed too closely
- Ran red light

### Recommended Countermeasures

- Education for bicycle etiquette
- Speed enforcement
- Install retro-reflective backplates for signal heads
- Evaluate signalized intersections for leading pedestrian interval (LPI) phase
- Improve crosswalk pavement markings and signage
- Improve transit stop amenities

## Site 5: S Dixie Hwy from SE Delmar St to SE Aviation Way



## 8 Serious Injuries and Fatal Crashes

### Roadway Context and Characteristics

Predominant Land Use: Retail, industrial, residential  
FDOT Context Classification: C3R-Suburban Commercial  
Posted Speed: 35 to 45 MPH  
Number of Lanes: 4-Lane with Center Turn Lane  
Vehicular Volume: 18,389 AADT  
Roadway Classification: Arterial  
Sidewalk: Both Sides  
Bicycle: None  
Transit: MARTY Route 3

### Contributing Crash Factors

- Operated motor vehicle in careless or negligent manner
- Failed to yield right-of-way

### Recommended Countermeasures

- Evaluate installing bicycle facilities.
- Improve transit stop amenities
- Install retro-reflective backplates for signal heads
- Improve crosswalk pavement markings and signage
- Evaluate signalized intersections for leading pedestrian interval (LPI) phase

## Focus Area 2: Culture

Achieving zero serious injury crashes and fatal crashes in Martin County will require a change in how people travel. Creating safe travel behavior can be promoted and supported by investing in education and encouragement activities and campaigns.

Culture focuses on two topics:

- **Education** - Efforts are done in collaboration with existing partners, like schools in Martin County, as well as stand alone activities, such as marketing campaigns to educate people about laws and safety trends.
- **Encouragement** - Activities focus on empowering people to travel safely. Examples include handing out bike lights at a community event or marketing campaigns that promote safe travel behavior, such as anti-speeding campaigns.



Bike to work events provide a clean, fun, and healthy way to get to work.

Bike to School events encourage kids to ride their bikes to school and help them learn how to do so safely.

## Education

Education efforts help people get the skills and knowledge necessary to make safe travel choices. These efforts can be tied to street design changes, such as the construction of a new roundabout, or targeted campaigns, such as biking clinics for kids and adults. Safety education efforts are often collaborative and opportunities to share resources should be considered with any effort.

### Education Recommendations

- 2.1 Conduct Safe Route to School programs at schools in Martin County
- 2.2 Conduct adult bike ride once a year
- 2.3 Conduct annual back to school messaging campaign
- 2.4 Conduct safety event geared towards 65+ years population



Bicycle helmets were provided at this safety event.



Education events and activities, like when the MPO partnered with this FDOT-funded Alert Today Alive Tomorrow event, provide opportunities to connect with people in the community as they walk, bike, take transit, and drive.

## Encouragement

Government, businesses, and community groups can promote safe travel by collaboratively working together. Encouragement activities can be done in conjunction with on-going community events, such as a festival or farmer's market. They can also be stand-alone efforts, such as a safety marketing campaign. The goal with these efforts should be creating a positive environment that encourages safe travel behavior.

### Encouragement Recommendations

- 2.5 Conduct Vision Zero engagement activity at community events
- 2.6 Develop annual Vision Zero messaging campaign
- 2.7 Conduct regular encouragement activities in partnership with FDOT Alert Today Alive Tomorrow program
- 2.8 Sustain Martin MPO social media pages
- 2.9 Develop a coordinated program to brand Vision Zero-consistent projects to heighten safety awareness



Encouragement activities, like bike rodeos and helmet giveaways, can motivate people to walk, bike, and drive safely.



# Focus Area 3: Evaluation and Accountability

Two of the primary principles of Vision Zero efforts are a data-driven approach to safety strategies and shared accountability with safety outcomes.



Evaluation activities, like safety audits and before/after project evaluations, can help measure effectiveness of safety investments and help communicate the benefits safety projects.

## Evaluation

Data should be used to track progress towards eliminating serious injuries and fatalities. This evaluation should be done annually and reported regularly.

Evaluation strategies should also be used to analyze the effectiveness of investments. Before-and-after project evaluations should be conducted with the results published to communicate if and how desired outcomes are achieved.

### Evaluation Recommendations

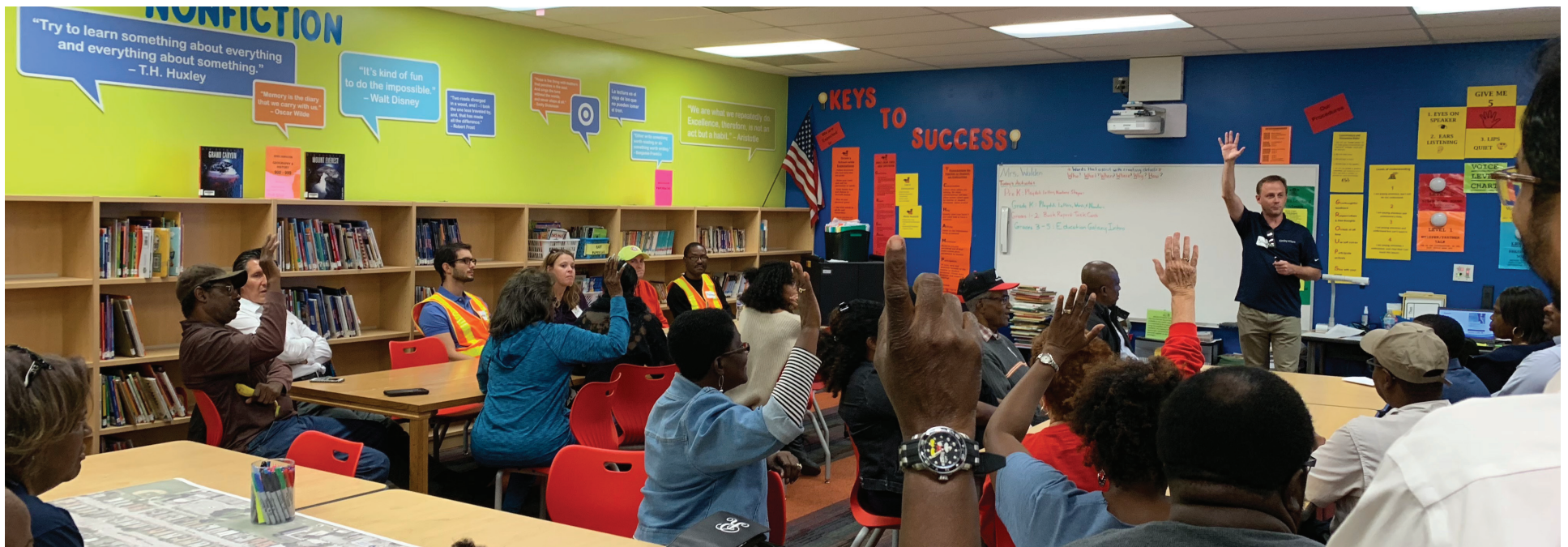
- 3.1 Conduct before/after traffic and safety data collection for roadway projects
- 3.2 Publish annual report noting trends related to key Vision Zero performance metrics

## Accountability

Accountability strategies focus on ensuring that community partners, particularly community leaders, are regularly engaged with the business of reducing traffic-related serious injuries and fatalities in Martin County. In addition to elected officials and local government, the business community should be involved. Safety impacts quality of life, and quality of life impacts the economy.

### Accountability Recommendations

- 3.3 Commit to address safety on one High Injury Network corridor every year
- 3.4 Annual Vision Zero media day with local media
- 3.5 Inform every jurisdiction in Martin County the importance of a Vision Zero policy



Coordination meetings and other reoccurring events, like stakeholder or committee meetings, help track progress and coordinate safety resources.

Action Number	Recommendations	Description	Desired Outcome	Performance Measure	Taking the Lead	Providing Support	Time Frame*			
							Short	Medium	Long	Annual
<b>Focus Area 1: Safe Streets</b>										
<b>Speed Management</b>										
1.1	Evaluate speed reduction for MPO-funded projects	Speed reduction should be considered for projects to be adopted as part of MPO Transportation Improvement Program (TIP).	Vehicular speeds and how they impact to reduce serious injuries and fatalities on roadways are considered when projects are included in the MPO Transportation Improvement Program (TIP)	Number of projects considered for speed reduction	Martin MPO		X			X
1.2	Work with partners to review speed limits on the High Injury Network	The MPO reviews speed reduction efforts and investments on the High Injury Network.	Vehicular speeds are considered on High Injury Network in Martin County	Number of miles of roadways on High Injury Network reviewed for reduced speed limits	Martin County, Martin MPO, municipalities		X			X
<b>Countermeasures</b>										
1.3	Evaluate resurfacing projects annually for safety countermeasure opportunities	Regularly review scheduled maintenance projects for opportunities to implement safety improvements.	Proactively implement roadway safety changes that reduce severity and frequency of crashes as part of regular maintenance projects	Percent of resurfacing projects that include safety countermeasures in plans	Martin MPO, Martin County, FDOT, municipalities		X			X
1.4	Evaluate capital projects annually for safety countermeasure opportunities	Regularly review scheduled capital projects for opportunities to implement safety improvements.	Proactively implement roadway safety changes that reduce severity and frequency of crashes as part of regular capital projects	Percent of capital projects that implement safety countermeasures	Martin MPO, Martin County, municipalities		X			X
1.5	"Identify where high visibility crosswalks are needed. a. Review methodology and criteria to identify crossing locations b. Identify priority intersection locations c. Coordinate implementing of high visibility crosswalks with resurfacing projects d. Include crosswalks on side streets when a road is being resurfaced"	Identify where high visibility crosswalks are needed and coordinate implementation.	Improve visibility and safety for people walking through intersections	Number of high visibility crosswalks incorporated into the transportation system	Martin MPO	Martin County, municipalities, FDOT		X		X
1.6	Review signalized intersections on the High Injury Network to identify candidates for safety improvements, such as Leading Pedestrian Intervals and Flashing Yellow Left Turn Signals	Identify changes to signal at intersection to improve safety for all users.	Improve safety for people crossing signalized intersections	Number of signalized intersections modified	Martin County	Martin MPO, FDOT, municipalities		X		
1.7	Evaluate High Injury Network corridors for opportunities to narrow lane widths or reduce the number of vehicular lanes	Narrow or eliminate travel lanes to reduce vehicular speeds and create dedicated and protected space for people walking, biking, and taking transit.	Slow vehicular speeds and create dedicated and protected space for people walking, biking, and taking transit	Number of lane narrowing or lane elimination projects included in the plans	Martin MPO	Martin County, municipalities, FDOT		X		

\*Time Frame is divided into short-term (under 3 years), medium-term (3-5 years), long-term (6+ years), and annual.

Action Number	Recommendations	Description	Desired Outcome	Performance Measure	Taking the Lead	Providing Support	Time Frame*			
							Short	Medium	Long	Annual
<b>Countermeasures Cont...</b>										
1.8	Provide recommendations for Land Development Codes (LDCs) related to safe and connected transportation facility design on an as needed basis.	New development creates opportunities to change infrastructure, including streets, sidewalks and bike lanes. By integrating Vision Zero principles into code requirements, safety and multimodal improvements can be required as part of new development projects.	Vision Zero-related infrastructure as part of new development projects	Number of recommendations for LDCs amendments to the Transportation Element of the Comprehensive Plan	Martin MPO, Martin County, municipalities		As Needed			
1.9	Work with partners to review and update Maintenance of Traffic (MOT) Plan policies related to bicyclist and pedestrian mobility considerations	Making changes to MOT plan policies can help create safe and convenient pathways through construction zones for people walking, biking, and riding transit.	Make it easier and safer for people walking, biking, and riding transit to navigate construction in the public right of way	Number of MOT policies coordinated with partners	Martin MPO, Martin County, municipalities, FDOT		X			
1.10	Work with partners to identify where new lighting is needed along High Injury Network corridors	Proactively improving lighting along high-crash corridors can save lives and improve safety for everyone.	Create safer conditions when it is dark	Number of street lights considered along High Injury Network corridors during planning stage	Martin MPO, Martin County, municipalities, FDOT		X			X
1.11	Identify areas to improve safe access to high activity bus stops in areas of frequent severe injury and fatal crashes	Improved safety around transit stops will save lives and reduce serious injuries.	Create safer conditions for all users	Number of bus stops identified for safety improvements	Martin County, Martin MPO, municipalities, FDOT		X			
1.12	Work with agency partners to identify areas to install bicycle facilities and sidewalks where there is a high frequency of bicycle and pedestrian serious injury and fatal crashes and where there are no existing bicycle facilities or sidewalks	Having dedicated space to walk and bike along a street is a safety benefit, particularly for vulnerable users like people walking, biking, and riding transit.	Create safer conditions for people walking and biking.	Number of miles of bike facilities and sidewalks included in early planning stage	Martin County, municipalities, FDOT		X			X
1.13	Work with partners to identify potential locations for roundabouts on the High Injury Network	This action will focus on identifying where roundabouts can be effective.	Create safer intersections	Number of roundabouts included in early planning stage	Martin MPO, Martin County, municipalities, FDOT		As Needed			
1.14	Evaluate elimination of dedicated right-turn lanes along High Injury Network where speed and turning movements are contributing to crash frequency	In some locations, removing dedicated right turn lanes can reduce vehicular speeds and reduce severity of crashes.	Reduce vehicular speeds of turning vehicles and reduce the number of conflict points at intersections	Number of dedicated right turn lanes removed	Martin MPO, FDOT, Martin County, municipalities		X			
<b>Enforcement</b>										
1.15	Coordinate with partners to focus on enforcement efforts along the High Injury Network	Focus traffic law enforcement along high injury networks and use safety data to guide enforcement strategies.	Reduce serious injury and fatal crashes	Reduction is total annual serious injury and fatal crashes associated with High Injury Network	Martin County Sheriff, Local Police Departments		X			

Action Number	Recommendations	Description	Desired Outcome	Performance Measure	Taking the Lead	Providing Support	Time Frame*			
							Short	Medium	Long	Annual
<b>Enforcement Cont...</b>										
1.16	Recommend increased enforcement activity during seasonal peak periods when crashes are most frequent	Cluster traffic law enforcement when serious injury and fatal crashes occur most frequently.	Reduce serious injury and fatal crashes when they occur most frequently during a year	Reduction in the total annual serious injury and fatal crashes during high peak periods	Martin County Sheriff, Local Police Departments		X			
1.17	Work with FDOT to create a Martin-specific Community Traffic Safety Team (CTST) and hold regular meetings	Group should include police, fire rescue, sheriff, and other agencies responsible for public safety.	Create traffic safety coordination efforts across agencies and departments	Participate in Martin-specific regular meetings of Community Traffic Safety Team meetings	FDOT	Martin County Sheriff, Local Police Departments, Martin MPO	X			
1.18	Incorporate use of data-driven analytics and road safety assessments within each of the respective law enforcement agencies' traffic safety programs	Incorporate data-driven decision making into traffic safety programs.	Communicate effectiveness of traffic safety programs	Number of safety programs	Martin County Sheriff, Local Police Departments		X			X

\*Time Frame is divided into short-term (under 3 years), medium-term (3-5 years), long-term (6+ years), and annual.

Action Number	Recommendations	Description	Desired Outcome	Performance Measure	Taking the Lead	Providing Support	Time Frame*			
							Short	Medium	Long	Annual
<b>Focus Area 2: Culture</b>										
<b>Education</b>										
2.1	Conduct Safe Route to School programs at schools in Martin County	Host regular events at schools in Martin County to teach children how to walk and bike to safely.	Teach kids how to walk and ride safely	Number of school children that participate in classes	Martin MPO, Martin County School District	FDOT, Martin County Sheriff's Office	X			X
2.2	Conduct adult bike ride once a year	Host regular events for adults to ride bikes.	Teach adults how to ride a bike safely	Number of adults that attend bicycle events	Martin MPO	Law Enforcement, Martin County, Municipalities	X			X
2.3	Conduct annual back to school messaging campaign	Developing an annual messaging campaign can help re-orient to safe travel behavior. The focus on return to school prioritizes efforts around an annual community event and on a vulnerable population (children).	Increase awareness and access to resources related to traveling to and around schools	Number of media impressions	Martin MPO	Safe Kids, FDOT	X			X
2.4	Conduct safety event geared towards 65+ years population	Bring safety transportation optinos for 65+ years population	Increase awareness of 65+ years population	Number of participants	Martin MPO	FDOT	X			X
<b>Encouragement</b>										
2.5	Conduct Vision Zero engagement activity at community events	Actively engage in discussions about safety trends and safe travel behavior. Example events are farmers markets or festivals.	Support safe travel behavior through community engagement	Number of events attended	Martin MPO		X			X
2.6	"Develop annual Vision Zero messaging campaign a. Work with local law enforcement to identify key themes and messages"	Campaign theme can be used throughout the year to create brand awareness about Vision Zero and the desired outcomes of zero traffic-related serious injuries and fatalities.	Encourage safe travel behavior	Number of campaigns	Martin MPO, local media partners, law enforcement	Martin County, Sheriff's Office	X			X
2.7	Conduct regular encouragement activities in partnership with FDOT Alert Today Alive Tomorrow program	The MPO should work with FDOT and local partners to secure these safety resources annually.	Encourage safe travel behavior	Number of encouragement activities	Martin MPO, FDOT, Public Safety Agencies		X			X
2.8	Sustain Martin MPO social media pages	Use social media to reach a broader audience, share information, and keep the community engagement in road safety discussions.	Grow and sustain interest in road safety improvements	" Number of updates Number of Facebook followers"	Martin MPO	Martin County, municipalities, FDOT, Business Community	X			X
2.9	Develop a coordinated program to brand Vision Zero-consistent projects to heighten safety awareness	Develop a brand for Vision Zero and use brand to highlight projects and programs.	Highlight awareness of safety investments	Number of campaigns	Martin MPO	Martin County, municipalities, FDOT, Business Community	X			X

\*Time Frame is divided into short-term (under 3 years), medium-term (3-5 years), long-term (6+ years), and annual.

Action Number	Recommendations	Description	Desired Outcome	Performance Measure	Taking the Lead	Providing Support	Time Frame			
							Short	Medium	Long	Annual
<b>Focus Area 3: Evaluation and Accountability</b>										
<b>Evaluation</b>										
3.1	Conduct before/after traffic and safety data collection for roadway projects	Collecting safety data before and after MPO funded projects will support analysis to understand if investments are reducing traffic-related serious injury and fatal crashes.	Measure traffic and safety outcomes for all MPO-funded projects	Number of before/after studies completed	Martin MPO, Martin County, municipalities		Ongoing			
3.2	Publish annual report noting trends related to key Vision Zero performance metrics	An annual safety report will communicate progress towards achieving traffic-related serious injury and fatal crashes in Martin County.	Communicate trends and track progress towards eliminating traffic-related serious injuries and fatalities	Annual safety report published	Martin MPO		X			X
<b>Accountability</b>										
3.3	Commit to address safety on one High Injury Network corridor every year	Local municipalities annually commit to address at least one corridor in their jurisdiction. Regular commitment will improve safety outcomes.	Secure local commitment from every Martin County government to work annually to reduce traffic related injuries and fatalities	Implement at least one change in every city or unincorporated area of Martin County every year	Martin MPO, Martin County, municipalities		X			X
3.4	Annual Vision Zero media day with local media	Local media can play an important role in communicating safety trends and highlighting associated investments to improve safety. Local coverage can also help with education and encouragement efforts.	Share safety trends regularly with local media	Number of media days	Martin MPO		X			X
3.5	Inform every jurisdiction in Martin County the importance of a Vision Zero policy	Recognizing Vision Zero by each jurisdiction in Martin County will secure local commitment to the goal.	Have every jurisdiction recognize the MPO's commitment to zero serious injury and fatal crashes in their community	Number of communication touchpoints in Martin County about the MPO's Vision Zero policy	Martin MPO, Martin County, municipalities		X			X

\*Time Frame is divided into short-term (under 3 years), medium-term (3-5 years), long-term (6+ years), and annual.



Vision Zero is a community initiative that will benefit everyone.



VISION  
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MARTIN 